## Field Engineering Manual

# System 8870

Models 2, 4 and 6

Description of the program interfaces

5.79

1st Edition

Order Number: S 0402 101 05 79

NIXDORF COMPUTER



Weltergabe zowie Verreitätigung dieser Unterlage, Verwerfung und Kitalium, Inter Institut getattet, soweit infini ausfoldicht zugestanden. Zufürfandaufungen serpfiliehen zu Schadenersatt, Alle sechte für den Fall der Fatentartellung oder Gebrauchsmuster-Eintragung vorbehalten.

Table of o	contents	
1	Module Supply Block	1
2	Long-Time Area	7
3	Short Time Area	15
4	Job Fields	19
5 5.1 5.2 5.3 5.4	Device Control Fields  Device Control Field for Printer  Device Control Field for Punched Card  Device Control Field for Punched Tape  Device Control Field for Mark Reader  Device Control Field for Magnetic Tape/	27 28 30 32 33
5.6 5.7 5.8 5.9 5.10	Magnetic Tape Cassette  Device Control Field for Magnet Disk  Device Control Field for Display  Line Device Control Field  Line Program Unit Control Field  BDC Line Job Control Field	34 36 38 39 40 41
6	Software Bell	43
7 7.1 7.2	Installation and System Parameters Installation Parameters System Parameters	45 47 55
8.1	Relationship between the Module Supply Block, installation parameters and long-time area program interfaces	61 62
9 9.1 9.2	Working Memory Assignment	63 63 65
10.1 10.1.1	Reference and Working Table in the Working Memory Reference Table I/O Stackpointer (only in the case of 8870/2/4)	67 67
10.1.2 10.1.3 10.1.4 10.1.4.1	System Output Table  Device Combination Table  "Program Unit to Device Control Field" Table  Relationship between the device/program unit number and the Device Control Field	68 69 69
10.1.5	Program unit to Long-Time AreaRelationship between Program Unit, Long-Time Area, Module Supply Block and Program Unit Micro	70

5.79

10.1.6 10.1.6.1 10.1.7 10.1.8 10.1.9 10.1.9.1	"Bell Number to Short Time Area" Table Relationship between Clock Interrupt, Bell Table and Program unit Micro Device Combination Table "Program Unit to Device Control Field" Table. Interrupt Number to Short Time Area Relationship between I/O interrupt and I/O Stackpointer	71 72 72 73 73 74
11 11.1	"Device Number to Program Unit Number" Table. Relationship between the "Device Number to Program Unit Number" Table and the "Program Unit Number to Device Control Field" Table	75 75
12 12.1 12.2	Description of the SC Memory Cell Assignment in System 8870/4 Initial Loader Working Area in 8870/4 Assignment of the Global Cells	77 78 78
13	Description of the First 256 Working Cells in 8870/6	85
14 14.1 14.2	Description of the System and Index Registers System Registers	95 95 98
15	File Assignment List	105
16	FCB Assignment List	107
17 17.1	Display Parameter Field	109 109
18 18.1 18.2 18.3 18.4 18.5	"Operating System" Common Area	111 111 114 115 116 117 117
19 19.1 19.1.1 19.2 19.3	Overlay Area	119 119 120 121
19.3.1	Memory Distribution of an Overlay Partition	

Verienzaba sovia Varnielititigumo disser Unterlago, Americumo und Ameliumo, mise in histo inclu gociattis, sovieti noti austrotockich ropessaden. Ludichtadiumose perplicitata au Schadenessiz, Alia Rochte tirr der Fail der Rematerialisma ades, Gotrauchsamster-Einragum vordehalten.

Copying of this document, and giving it to others and the see recommensation the boomless takenged are foreigned without express authority. Gliedings are latel lets to the payment of damages. All rights are reserved, with exert of the area of the payment of damages. All rights are reserved, with exert of the and of a paem or the registration of a utility model for design.

Weitergabe sowie Verrieffaltgung dieser Unterlage, Werentung und Mittelling hiers, infalts einful gestiet, soweil nicht ausdrücklich zugestanden. Zulerhandlungen verpflichten zu Schadenersatz. Alle Anfah für der Tal der Patentreitlung oder Geörfauchsmusster-fürfagung vorbehalten.

## 1 Module Supply Block

Each micromodule is identified by a module supply block located at the start of the module.

The information on the module supply block is required in the initialisation phase to create the long-time areas and the table (program unit to long-time area, long-time area to short time area, etc.). This information is also required when calling the program unit in during a program run (does dynamic short time area have to be requested? must the program unit be called at its initialisation address? etc.).

Vord	Rel. addr.	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
1	0		18.38		Ac.	Sale i	m	odule	numb	er -	î i çi				43	call allow ed	time chara istics	acter-	
2	2						le	ngth c	of mod	ule in i	numbe	r of m	emory	word	s				
3	4		submodule number qual						intity	of sub	omodul	es							
4	6		init	ialisati	on star	rt addı	ess, re	lative	to the	start c	of the i	modul	e supp	ly bloo	ck				
5	8	leng	th of	ong-tir	me are	ea ≥ 6		le	ength o	of the s	tatical	ly assi	gned s	hort ti	me ar	rea			
6	10	logic	cal DN	IA no.	, other	rwise z	ero						ntity o	of que	ues			lass, d	ynamic

<sup>\*</sup> This bit has a special meaning, and is evaluated by MA 8870.
MA 8870 = module, which interprets the (Assembler 8870) macro-instructions.

#### Example:

5.79

Module Supply Block for NP 0817.01

1				0 2	6.4.4 HDF IN-MVBHD+2	MODULE NO. 100 MODULE LENGTH
0	0	1	0	1	11	1
0	0	1	8	14	INHID-MVBHD	START ADR INIT.
0	8	0	0	0	8	LENGTH OF SHORT TIME
						AREA

#### Passa all was executed by the formation along about Timeses and

Module Supply Block for ZD 0811.01, 0816.01, to DMA 1804

LALO	Jau	re :	supl	DIA	DIOCK TO	1 20 0011.01, 001	o.or, co bini roor
0	0	6	8			6.8.4	MODULE NO./SIMULTAN.
0	0	3	3	10		SZF IN-MVBSZ+2	MODULE LENGTH
0	0	1	0	1.		11	SUBMODULES
0	0	2	14	6		INISZ-MVBSZ	INI. CALL-IN
0	12	00	0	0		12	LENGTH OF SHORT TIME
							AREA
0	0	1	0	3		13	DMA BIT, SHORT TIME
							CLASS 3

Oppying off this document, and giving it to others and the use or nomination of the contains the evolution are forticiden without expess authority. Utenders are listals to the symment of damages. All rights are reserved in the event of the grant of a patent or the registration of a utility model or design.

SHORT TIME CLASS 2



• Word 1

Bit	
1	not used
2	Bit 2 = 0 the module has central time character- Bit 3 = 0 istics Bit 2 = 0 the module has simultaneous time
3	Bit 3 = 1 characteristics
4	= 1, the module may be called by means of the call instructions (change from UP to OP Program).
5	
6	The module number is given for purposes of identi- fication at the time of initialisation and during
7	normal program running.
8	
9	
10	
11	
12	
13	
14	
15	
16	The peripheral element is entitled to request a job field and to load this from the UP level.
17	not used
18	THE PROPERTY OF THE PERSON OF

#### • Word 2

Bits 1 to 16 give the length of the module in the number of memory words. This information is necessary in order to find the start address of the next module.

Weitergabe sowe Verheifstligung dieser Unterlage, Generung und Witteling har hinalts nicht gestattet, soweit nicht sachrodicht zugestaden, Ze
wichtwandingervorfflichen schotzenband, ze
Rechte für der Fill der Peterbergebing odes, Gebranchanster-Ernzgang orderlaten.

Oppying of this document, and giving it to others and the use roommunization thouseness these are forbidden without excess authority, Citerders are incident without excess authority, Citerders are incident without excess and an incident and a reserved in the exert of the grant of a patent or the registration of a utility model of design.



Weitergabe sowie Verrielfältigung dieser Untackage, Verwertung und Kritellung ihres mistist micht gestattet, soweit nicht ausdrücklich upgestanden. Zuvicerhandlungen verflichten zu Schademenstiz. Min Joeht für den Fall der Patenstreilung oder Gebrauchsmister-Eintragung vorbeibten.

Word 3

Bit	v so enter her restrict salt need to light a go trous entra	_
10	Quantity of submodules	
2	If a module extends over more than one memory block	
3	it must be broken down into submodules, both in the case of 2 k directly addressable memory areas and in	
4	the case of block structures where external means of storage are involved.	
5	The quantity of submodules and the submodule numbers must be known in order to tell, before the start of the module, whether it is complete (quantity of sub-	
6	modules) and, where applicable, whether the submodule are in corect sequence in the memory (submodule	es
117.0	numbers). Furthermore, a module supply block is to b created for submodules, although this only consists	е
8	of words 1 to 3.	
9		
10		
11		
12	Submodule number	
13		
14		
15		
16		
17	AP.	
18	not used	

Example: If word 3 reads 0.0.1.0.1, there is only one, undivided module.

If word 3 reads 0.0.1.0.2, the module consists of two submodules, of which this is the first. In the case of the second submodule, word 3 would read 0.0.2.0.2.

5.79



Kundendienst

Weitergabe sowie Vernielfättigung dieser Unterlage, wererung und Kittellung hires finalis eicht ge-attet, soweit in cht ausdrichtler tugsstanden. Zu-wiedenlandungen verplichten zu Schadenersatz. Alle Rechte für dem Sail der Fattenereilung oder Ge-brauchsmusser-Enfragung röbelatien.

Word 4 Initialisation Call Address

The initialisation address is called when initialising on the occasion of time or parity interruptions or when starting up again after power failure. The address is given relative to the start of the module supply block.

Word 5

Bit	CHARLES AND SENERAL SECTION OF THE S	
1		
2	Bust be known in order to tell, before the	
3	Length of the statically assigned short t Every program unit allocated to this modu	le is
4	assigned a short time area on initialisat length of which is given in bits 1 to 12.	ion, the
5	If bits 1 to 12 = 0, the module's termina	ls are
6	working with a dynamic short time area. In that case, the short time area class i	
7	is given in word 6 of the module supply b	lock.
8		
9		
10		
11		
12		LAN
13		
14		
15	Length of the long-time area.	
16	Every program unit is assigned a long-time the time of initialisation. This remains	e area at permanently
17	available to it	
18		

Copying of this document, and giving it to others and the use renormalization the confessions thereof as folialder without expess authority. Offenders are oliable to the payment of damage. At it ghts are reserved, in the enter of the gament of a pasent or the registration of a utility model or design.



Weitergabe sowie Verrieliätigung dieser Unterlage, Verwertung und Kindlium, Inste halts in foll geetattet, soweit infin ausfoldelich goesanden. Juliefnandlungen repflichten zu Schademenatz Alia sochie für den Fall der Patentetlellung oder Gebracchsmusser-Einstagung vorbeihiten.

#### • Word 6

A CONTRACTOR	
Bit	
1	On initialisation, additional short time areas are
2	created. Their lengths are specified in the system parameters. 15 different length specifications
3	(classes) are possible. Should it require it - and if entitled - any program unit of module can request one of these areas through the job connector. Dynamic
4	short time areas exclude static short time areas.
5	This gives the number of queues, minus 1, of each program unit of this module which are to be engaged in
6	their temporary work areas. The queues record the start addresses of the job fields which the program
7	unit has to process.
8	
9	
10	If the module is working with DMA, the allocation of the module to the LDMA is given a DMA number, since
11	there may be more than one DMA in the system. The first such allocation is given no. 1, the second
12	no. 2, etc. This information can be replaced for individual
13	program units of this module by information in the equipment parameters, if bit 7 is set in the index
14	of these parameter. In this case, the logical DMA number appears in the
15	first word after the sequence parameters in the set if equipment parameters.
16	The term DMA refers to DMA 1804 or I/O 1802.
17	
18	

Copyingsal this document, and giving it to others and the use romamination of the conventible thereof are forbidden without express anthority. Ultenders are includen without express anthority. Ultenders are inbis to the apprented of amongsa. All rights are reserved in the event of the grant of a patient or the registration of a utility model or design.

5.79

5



For notes

This sives the number of queues, missis i, of each process unit of this additionants are to be entaged in

Weitergabe sowie Verreifältigung dieser Unterlage, Vewerung und Kittillung nien finalt in ein gestättet, soweit nicht sachfücklich zugsstaden. Luwidenhandlungen verplichten zu Schadenersatz. Alle Rechte für der han der gestemstellung oder Gebrauchweiser-diffizigung vorbeitigte.

Dopying of this document, and giving it to others the document, and the contents thereof the to contents thereof the contents thereof the contents are included to the payment of damages. Alt rights are serving in the cent of the payment of a damages. Alt rights are serving in the cent of the payment of a patitive model or design.



Weitergabe sowie Verrielfäktigung dieser Unterfäge, Werkerfung und Mittelling Instein innalts nicht gestättet, sowell nicht ausdrücklich zugestanden. Zuylderhandlungen verplichten zu Schadenersatz. Alle Aechte für den Fall der Patentertellung oder Gebrauchsmusster-Eintragung vorbehalten.

## 2 Long-Time Area

The long-time area is assigned to the program unit on initialisation and remains available to it from then onwards.

The long-time areas are called by the "Program unit to Long-Time Area" table (YTNLTB, address 2.4.8 in the case of 8870/4 and 2.1.0 in the case of 8870/6).

Word	Rel. addr.	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
XLW1	0			error thr. I/O		parity inter.		quanti form	ity of XLW 7	param	eters		inhib bit						PU active
XLW2	2						modu	le supp	ly blo	ck star	t addr	ess							
		798	1111	3 33	33. 1	edi	dia	time ar	21	11.51	1 011	12.94		the			•		
XLW3	4			-			snort	time ar	ea sta	rt addr	ess		1010	20	130	H J	-		-1
XLW4	6	in the case of simultaneous program units, logical DMA no., otherwise zero quantity of queues minus 1 length class of the dynamic short time area																	
XLW5	8		b	7.08	mo :	3 3	oadin	g numl	ber for	the U	JP, = 0	in th	e case	of cen	tral pro	ogram	units	0.	
XLW6	10			own	progr	am uni	t num	nber				prog	ne case J. units 1-8,oth	prior	ity in	I/O INT 2	I/O INT 1	bell INT 2	bell INT 1
XLW7	12	bell n	io. (in	structi	on co	unter 1	)			0	1/0 i	nterru	pt no.	(instru	ction	count	er 1)	. 9	0
XLW8	14	bell n	io. (in	structi	on cou	unter 2	)	, pri	100	0	I/O i	nterru	pt no.	(instru	iction	count	er 2)		0
		na	73.91	ed a	ean.	919	fur	ther pa	aramet	ers as	given i	n Wor	d 1, bi	ts 8 to	13				
XLW9	16																		
XLW10	18																		
XLWn	n																		
		-	/					_	_	_	28								
																	5.1		1

Copyingsof this document, and giving it to others and of the use or communication this confinish thereof a reforded without express authority. Ultenders are liable to the payment of damages. All rights are reserved in the event of the grant of a patent or the registration of a utility model or design.

5.79

7



• Word 1

Bit	ieds mort is of missilsus aniems; box contemble to
1	"1", the program unit is being processed (is active).
2	
3	not used
4	
5	
6	W2 2 . Translate supply from our address
7	"l", the program unit is inhibited for either inter- ruption process (I/O or bell).
8	
9	Ouantity of parameters to be taken over into the short
9	Quantity of parameters to be taken over into the shor time area. The parameters start from word 7.
9	Quantity of parameters to be taken over into the short time area. The parameters start from word 7.
9 10 11	Quantity of parameters to be taken over into the shortime area. The parameters start from word 7.
9 10 11	Quantity of parameters to be taken over into the shortime area. The parameters start from word 7.
9 10 11 12	Quantity of parameters to be taken over into the shortime area. The parameters start from word 7.  "1", during job processing, there has been a parity interruption.
9 10 11 12 13	Quantity of parameters to be taken over into the shortime area. The parameters start from word 7.  "l", during job processing, there has been a parity interruption.  "l", during job processing, there has been an error interruption (time error).
9 10 11 12 13 14	Quantity of parameters to be taken over into the shortime area. The parameters start from word 7.  "1", during job processing, there has been a parity interruption.
9 10 11	Quantity of parameters to be taken over into the shortime area. The parameters start from word 7.  "l", during job processing, there has been a parity interruption.  "l", during job processing, there has been an error interruption (time error).  "l", a parity or time error has occurred during data

## • Word 2

This contains the start address of the module supply block, and is required for the program unit first call-in.

Weitergabe sowie Vernielfättigung dieser Unterlage, Fewerdung und Mittellung hiere in Inhalts micht gerätter, soweit nicht ausdrochten zugestanden. Zuwicht-andiungen verpflichte au Schadenersatz, Alle Rechte für den Fall der Patanterielung oder der Grachsamuster-Einfragung vorbehatten.



Weitergabe sowie Verrielifaltigung dieser Unterlage, Wewertung und Kitelling in Frei mitals miht gestatter, soweit nicht ausdrückten ungestanden. Luylderhandlungen werflichten zu Schadeneratz. Alle echte für den Fall der Patentertellung oder Gebrauchsmusser-Eintragung vrückeiten.

• Word 3

This contains the start address of the associated short time area, but only when the program unit is active. The start address is loaded by the job scheduler at the time of job scheduling.

• Word 4

	The design to the design of the court to the second of the court of th
Bit	
1	mystem) is allocated at least one load number "
2	This gives the length code of the dynamic short time area which is to be made available to the program unit, if the program unit has been assigned one.
3	Allocation emanates from word 6 (bits 1 to 4) of the module supply block. If bits 1 to $4 \neq 0$ , the program
4	unit has been allocated a dynamic short time area.
5	Quantity of queues which are to be allocated to the program unit, minus 1.
6	The queues are created in the short time area.  The start addressed of the job fields to be processed
7	are filed in the queues.
8	e logical DNA no. E
9	a maximum of two load numbers for operation
10	This gives the logical DMA number in the case of simultaneously operating program units (distinction between the individual program units). It reads 0
11	in the case of non-simultaneous program unit.
12	This reads 0 in the case of simultaneous program unit working without DMA.
13	diffe working without Dria.
14	
15	
16	ioad mimbers : with TMA assignment
17	not used best and ore
18	c) Signifeseque program units with differing t

Copying-of this document, and giving it to others and the use or communication of the acoustic harvest are forbidden without express authority. Clienders are fiable to the payment of damages, All rights are reserved in the event of the grant of a patent or the registration of a utility model or design.

In the case of progress units with SMA operation, the iMA nu indicate in the image of action regressions the control of the co

5.79

9



Kundendienst

#### Word 5

This contains the time load when the program unit is operating simultaneously.

	13 12	7 6 1
additional load numbers	additional load numbers	load numbers for program unit central call

The job scheduler takes over time management.

Every simultaneous program unit in MS 8870 (MS = modular system) is allocated at least one load number "1", with 0 = i = 18. This number is established when generating the System according of the configuration, the uninterruptable processing times, the program unit's DMA assignment and clock times, and the memories used by the program.

Special points to be considered are:

- a) i = 0: the program unit should always be able to operate, that is to say that simultaneous time is henceforth reserved for it in the system.
  - b) Simultaneous program units which are working with DMA require the following information:
    - logical DMA no. Z
    - a maximum of two load numbers for operation with DMA assignment
  - one load number for operation without DMA assignment.

Example: 3 magnetic tape transports, 1 card reader operated with DMA. The logical DMA no. of all three is Z = 1, and the load numbers are:

Device	load no.	with DMA	without DMA
Tape 1	2	3	1
Tape 2	2	3	4
Tape 3	2	3	5
Card	7	-	6
reader			

Load numbers without DMA operation must be different.

Load numbers with DMA assignment are the same for the same load.

c) Simultaneous program units with differing time requirements may specify up to three (different) load numbers.

Program units to which neither a), b) nor c) apply are to be clearly identified by a load number.

In the case of program units with DMA operation, the DMA numbers and the load numbers are codified in the installation parameters. Information on this comes from the index (bits 7 and 8).

Weitergabe sowie Vervielfältigung dieser Unterlage, ewerbung und Mittellung inkes inhalts nicht gelattet, soweit nicht ausdrickfich zugstanden. Euxiderhandlungen verfülcher au Schadereraatt. Alle Rechte für der Fait der Edenmeterlüng oder Gechauchsmisser-Einfragung-ordenziere,

Bit

Copying of this document, and is and the use or communication of the are forbidden without express as are iable to the payment of dama casivation the event of the grant registration of a utility model on

Weitegabe sowie Verheiffätigung dieser Unterlage, ververtung und Kitellium (hier mistis mihlt gestatte, sowiet incht ausforderich upgestaden. Luderhandlungen verpflichten zu Schädenerstit. Alle sechte für den Fall der Patenterfellung oder Gebranchsmuster-Eintragung vorbehalten.

#### • Word 6

Bit		
1	"l", the program unit is working with bell l. the bell interrupt no. is in word 7.	
2	"1", the program unit is working with bell 2. The bell interrupt no. is in word 8.	
3	"l", the program unit is working with I/O Valid as an alternative to bit 1.	
4	"l", the program unit is working with I/O Valid as an alternative to bit 2.	interrupt 2.
5	In the case of centrally operating program	
6	1 to 8 give the priority with which the pr is entered in the job scheduler's output q	ueue.
7	In the case of simultaneously operating pr priority of processing is established by m	ogram units, eans of the
8	bell and I/O interrupt numbers.	
9		
9	This contains information concerning the inumber.	
		ndividual
10	number.	
10	number.  Bell interrupt so. 1.	
10 11 12	Bell interrupt no. 1. This bell 'nearrupt no. is allecated to in counter 1 in short time word 3.	
10 11 12 13	number.  Ball interrupt no. is allocated to in	
10 11 12 13	Bell interrupt no. 1. This bell interrupt no. is alloward to in counter I in short time word 5. It is possible to work simultaneously with	
10 11 12 13 14	Bell interrupt no. 1. This bell interrupt no. is alloward to in counter I in short time word 5. It is possible to work simultaneously with	



• Word 7

Bit		
1	free free ni al and inditional limit and it	
2	2. One ball intertupt on is in word B.	
3	I/O interrupt no. 1.	_1_1
4	This I/O interrupt no. is allocated to inscounter 1 in short time word 5.	truction
5	In the case of centrally operating program	
6		
Control of		
8		
9	The respective designations are along the large and a respective to the respective t	0.1
10	free	±1
11		Portion of
12	Bell interrupt no. 1.	
13	This bell interrupt no. is allocated to in	struction
14	counter 1 in short time word 5.  It is possible to work simultaneously with	I/O inter-
15	rupt no. 1 and bell interrupt no. 1.	
16		
17	. 4 0013	
18	*	

"Gitergabo sowie Vernierfaltigung dieser Unterhage, werfung und Kittellung hier Anitatis erlicht gerifet, sowiel in ohrt auschschiffen, zugestanden, zuwiderhandfungen resprichten au Schaenersztz, Alie Rechte für den Fall der Bannerelung oder Gebrachsmister-Einfagung Achelatien.

Oppying of this document, and giving it to others and the use of nominalization the contents thereof are forbidden without expess authority. Offerdens are lotbidden without expess authority. Offerdens are challed to the apprent of damages. All rights are reserved as the event of the agent of a patent or the registration of a utility model for design.



Weitergabe sowie Verrieffähigung dieser Unterlage, Verwertung und Mittellung hires mittel mibli gestatte, soweit nicht ausdrücklich upgestaden. Ludichtendungung vergriichten zu Schädeneratz. Alle sechte für den Fall der Patenterfellung oder Gebrauchenviser-Eintragung vorbehalten.

• Word 8

Bit	
1	free
	1160
2	
3	I/O Interrupt no. 2.
4	This number is allocated to instruction counter 2 in
5	short time word 6.
6	
7	
8	
9	
10	free
11	
12	Bell interrupt no. 2
13	This bell number is allocated to instruction counter
14	no. 2 in short time word 6. It is possible to work simultaneously with I/O inter-
15	rupt no. 2 and bell interrupt no. 2.
16	
17	
18	

From word 9 onwards there are sequence parameters which are taken over from the equipment parameters.

Example: Board select address, output bit configuration, flag data, etc.

5.79

Kundendienst

For notes

sell interrupt no. 2	
ns. 2 in short time word 6. It is possible to work simultaneously with 1/0 inter	
rept no. 2 and bell interrupt no. 2.	

Oopying of this document, and giving it to others and not be used recommission of the confinishment are forbicized without express authority. Offenders are choice to the suppress of domages. All rights are reserved to be eart of the grant of a patent or the registration of a utility mode or design.



Weitergabe sowie Verweifättigung dieses Unterlage, Werwichung und Kindling in View in Mailla micht gesätztet, sowiet in offi ausdrücklich ungestanden. Lu-Viderhandlungen verpflichten zu Schadeneratz. Alle Jechle ibr den Fall der Patentarteilung oder Gebracchsmisser-Einragung vorbehalten.

#### 3 Short Time Area

The short time area contains the program unit's present working data when it is active.

It can be static or dynamic. The static short time area is created during the initialisation phase before the relevent program unit's long-time area and remains available to it during the active time.

The short time area start address is to be found in longtime word 3.

The dynamic short time area is requested only when the program unit's call-in phase is reached, and is released again by the program unit once the job has been completed. The dynamic short time areas are managed by the system. They are located via the short time class indicator.

Class Indicator	Address 8870/4	8870/6
YKZK 1	2.5.E	2.2.A
YKZK 2	2.6.0	2.2.C
YKZK 3	2.6.2	2.2.E
YKZK 4	2.6.4	2.3.0
YKZK 5	2.6.6	2.3.2
YKZK 6	2.6.8	2.3.4
YKZK 7	2.6.A	2.3.6
YKZK 8	2.6.C	2.3.8
YKZK 9	2.6.E	2.3.A
YKZK 10	2.7.0	2.3.C
YKZK 11	2.7.2	2.3.E
YKZK 12	2.7.4	2.4.0
YKZK 13	2.7.6	2.4.2
YKZK 14	2.7.8	2.4.4
YKZK 15	2.7.A	2.4.6



Short Time Area

1	0	chaining address of short time areas, or zero
1		THE REPORT OF THE PROPERTY OF
2	2	start address of the job field at present in use
	-00	
3	4	auxiliary cell
3		advindy con
4	6	start address of the long-time area
		T westers wis out begansment and seems smill frods passage
5	8	instruction counter 1 76015nl 28810 BRIS 1108k add Sky Be35001
		aversa averse secrebs considers engin
6	10	instruction counter 2
		2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2
7	12	index word
		2.6.6 至.3.7
8	14	auxiliary cell 1
	40	auviliary cell 2
9	16	auxiliary cell 2
10	18	auxiliary cell 3/chaining of short time area in scheduler, input queue 1
11	20	auxiliary cell 4
		A C C C C C C C C C C C C C C C C C C C
12	22	start address of queue 1
13	24	end address of queue 1
14	26	start address of queue 2
15	28	end address of queue 2
:	:	
	:	start address of queue n
		end address of queue n (n ≥ 16)
		During job connection, the quantity of words given in long-time word 1, bits 8-13, is transferred from the long-time area to the (dynamic) short time area by the job scheduler.

Weitergabs sowie Verneifaltigung dieser Unterlage, gewertung und Mitalium Inhei ben hindlis nicht gestallert, soweit nicht ausfrücklich zugestunden. Zu wicherhaublungen verhillichten zu öchabereneszt. Alle Protein Lif den Zu der Verlagen und Vorbertung des Geberaternessen zu der Vorbertung oder Geberaternessen zu der Vorbertung der Vorbertung

Oopying of this document, and giving it to others and the use robomunication foll benchmentalinered are forbidden without express authority. Offenders estable to the symment of demanges, it in gits are reserved to the secret of the grant of a patent or the registration of a utility mod6 or design.

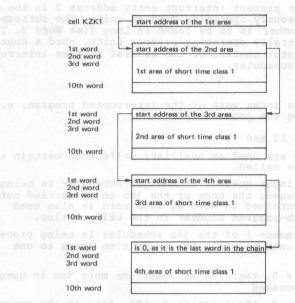


Weitergabe sowie Vernielfätigung dieser Unterfige, werentung und Kittelling Inters inhalls nieht gerjattet, sowiel nicht ausdrücklich zugestanden. Ludehandlungen werpflichten zu Schadenersatz. Alle John für den Fall der Patenterellung oder Geörauchsamuster-Eintragung vorbehalten.

Chaining of areas of the same short time class

The areas are chained via the first word of each individual area.

Example: Class 1 is to be created four times, and class 1 is to be ten words long.



Word 1

Refers to the start address of the next free short time area in a chain, and contains zero when the short time area is the last in the chain. It also contains a zero when the short time area is active.

- Word 2
   Start address of the current job field.
- Word 3
   Used as an auxiliary cell for example when further job fields are being scheduled.
- Word 4
   Contains the start address of the long-time area.

ge-Zu-Aile Ge-

Wetergabe sowie Vernielfältigung dieser Unterlag Wewertung und Mittellung, inses inhaltes nicht ge stattet, sowielt nicht ausdrücklich zugestanden. widerhandlungen verpflichten zu Schadenersatz. All Schot ibr den fan der Statenerstellung ober Ge brauchsmusfer-Einfragule-vorbehalten.

Word 5 (Instruction Counter 1)

Contains the present interrupt entry address 1 in the case of simultaneously operating program units. The corresponding interrupt number is to be found in Long Time Word 7.

Word 6 (Instruction Counter 2)

Contains the present interrupt entry address 2 in the case of simultaneously operating program units. The corresponding interrupt number is to be found in Long Time Word 8. In the case of centrally operating program units, Word 6 contains the accumulator content of the central program interrupted by the job scheduler.

Word 7

Contains the index word of the interrupted program, e.g. when calling the job scheduler.

Words 8, 9, 10 and 11

These words are used as auxiliary cells when certain subprograms are called.

When input queue 1 of the job scheduler is being processed, the code of the job to be carried out is contained in Word 8. This word is also used as sub-program counter in the bell routine.

When input queue 1 of the job scheduler is being processed, Word 10 is used to chain the short time areas to one another.

If Word 10 ≠ 0, there is at least one more job in queue 1 to be processed

If Word 10 = 0, there are no further jobs in the queue.

Word 12

From Word 10 onwards the queues are created for the program unit. The number of queues is stipulated in Word 6 of the module supply block.

In the case of dynamic areas, further data may be taken over from the long-time area (from Word 7) after the queues data. This does not apply to static short time

After that, further words follow as program unit work cells, e.g. register label, macro interpreter, disk drive work cells, etc.

opying of this document, and giving it to others the use or communication of the concless thereof re-forbidden without express authority. Offenders re-liable to the payment of damagas. A. Ir ghts are serveryen in the senter of the garner of payment of payment of payment of servery and payment of the garners of the garners of the garners of a chilly model or design.



Weitergabe sowie Verneitättigung dieser Unterhage, Verwertung und Aufteilung ihres innalts nicht gestattet, soweit nicht ausdrückfich zugestanden. Unkriderhandlungen verpflichten zu Schadenerzatz. Alle Konch für den Fall der Patentrateilung oder Gebrauchsmusser-Efriragung vorbelatien.

#### 4 Job Fields

The purpose of job fields is to connect jobs from one program unit to another. They are generated by intelligent program units (macro interpreters) when they want to send a job to an unintelligent program unit.

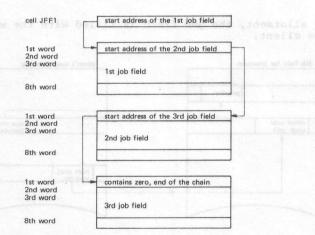
Job fields are memory areas which are dynamically managed by the system and allotted when a request comes from the appropriate program unit. The job fields are located via cell YJFF1.

YJFF1, address 8870/4 2.5.C, 8870/6 2.2.8.

#### Chaining of job fields

The start address of the first field is filed in Word YJFFl while the individual areas are connected via the first of each particular area.

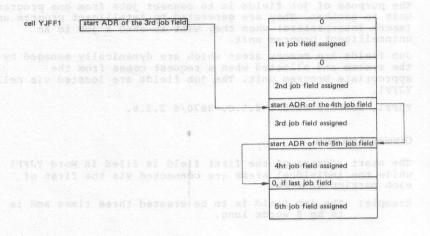
Example: The job field is to be created three times and is to be 8 words long.



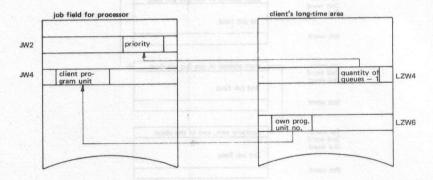
Copying of this document, and giving it to others and the use or communication the becomes therefore are choicides without express authority. Officioles are liable to the payment of damages. All rights are reserved in the event of the grant of a patent or the registration of a utility model or design.



Chaining of job fields according to job allotment



After allotment, the job field is filled with the work data by the client.



Americages even evertealingung of the control of Mitteling of his statistics of widerhandlungen verplichten zu Sch American of Statistics of Statistics and Reache für den Statistics of frauchsburger-dintagning verbehalt of the statistics of the statistics of the frauchsburger-dintagning verbehalt of the statistics of the statistics of the frauchsburger of frauchsburger

Copying of this document, and giving it to others and the use or communication this continuity fleepole are forbidden without express authors. Vifenders are liable to the payment of damages. A rights are reserved in the perior of a patient of the payment of admages. A rights are preserved in the active of the abeat of the payment of a patient or the pasteriarian of a utility monic or design.



Weltergabe sowie Verrieffaltigung dieser Unterhage, kewerdung und Kittellung hiers in Innata infolkt gestattet, soweit infolk ausdrückfich zugestaden. Uzviderhandfungen reptlichten zu Schadenersatz. Alle Rechts für den Fall der Patenterfallung oder Gebrauchsmusser-Einfragung vorbehalten.

Job Field

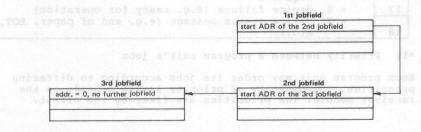
Word	Rel. addr.	18	17	16	15	14	13	12	11	10	9	8	7	6	. 5	4		3 2		1
1	0				chain	addres	s for j	ob fiel	ds						19.3 18.7					
2	2	6	error co	ode		NOR.	100	JF work ing	JF used	síui L E	ned 12	wait	reply signal	pro	iority og. ur eue	= no. o	of it –	1st iter que	n	
3	4	1-1 ake	984 1 - 84	eup d z	operat	ion co	de	3o doi					. y:							
4	6			pro	gram i	unit nu	ımber	- clien	t ·			pro	gram u	nit nu	ımber	- recei	ver	2		
5	8	637	1.1	seq	uence	progra	m uni	t numb	per 2	LBGS	118	seq	uence p	rogra	m un	it numl	ber 1	1 -	1	
6	10	07 97	1, 84 6.81	135a	addres	s of a	cell fo	or reply	/ signal	10 1	11.9			6	nj) od		1	9	1	
8	14	, 9I	ni.	XQ.	progra	m unit	t-speci	fic dat	a 53	cas	on	* n	b s	api	an.		Ĺ			
			- Internation		oli della carri	en production of the	g Acord with			Territor Story Cle				14 ok - \$1.00	sign reads	erne samenna				
18	34	-				_		- 278	enpi	BRE	8	(el			a L			4.3		_

A job field normally 19 words long, expect for the controlling program unit's job fields, which are 20 words long.

#### Word 1

5.79

Refers to the start address of the next free job field in a chain and contains zero if the current job field is the last in the chain. It also contains a xx zero when the job field is being processed.





Kundendienst

## Word 2 (Job Field Status)

	Bit	1 4 8 3 4 4 8 10 185 135 CH 53 125 131 31 31 31 31 31 31 31 31 31 31 31 31
	1	free "1", the job is to be entered in the first position
	2	of the job scheduler's input and in the first position of the receiver's specified queue.
	3	Annual destruction of the contract of the cont
*	4	Priority = the number of the input gueue $(-1)$ of the receiver in which the job field must be taken over.
	5	wissers reclaim their equipons (i.e., prefix - welling their mitigate) (i.e., p. )
	6	
	7	"l", a reply signal is stored in a cell, the address of which is given in Word 6.
	8	"l", a job field could not be connected, no time, no short time area, no program available. WAIT
	9	Assigned in the case of job field for line.
	10	
	11	"l", job field assigned.
	12	"l", job field working
	13	free free
		= 0, jobs carried out in order
	14	= 1, no time available for program unit
1	15	= 2, program unit not available = 3, no short time area available
	16	<pre>= 4, error in drive layout (false parameters) = 5, information error (e.g. read-after-write check</pre>
	17	= 6, device failure (e.g. ready for operation)
	18	= 7, device status message (e.g. end of paper, EOT, etc.)

## Priority between a program unit's jobs

Each program unit may order its jobs according to differing priorities. The quantity of priority levels depends on the receiver module. The priorities are fixed by the client.

Weitergabe sowie Verrieifaltigung dieser Unterlage, inverstung und Kindeling, Inse habts micht ge-statet, soweit micht ausstedent, zu-vichrändlungen verpflichten, zus Schadenersatz. Als Rechte für den Fall der Patenarteilung oder Ge-brachsmusser-Entragum drobabiten.

Weitergabe sowie Verrielfaltigung dieser Unternage, Werentung und Kriteling ihres inmlats einfolt gerattet, sowiel nicht ausdrücklich zugestenden. Lu-Idenhandlungen erpflichten zu Schadenersatz. Alle eich Eir den Fall der Patenertellung oder Gebrauchsemiser-Einfragung vorbelatien.

If the client selects a priority level which the receiver module cannot handle, the job will be handled at the receiver module's lowest priority level.

Example: A job field is to be entered in the receiver program unit's third queue. The maximum quantity of queues is stipulated in Word 6 of the module supply block.

Receiver's queues

Start address queue 1
End address queue 2
End address queue 2
Start address queue 3
End address queue 3

Start address queue 4
End address queue 4

\*2)

If it has not been possible to connect the jobfield, a reply signal is required in the cell, of which the address is given in Word 6. (Start address of the present User Program Index Register Label).

Jobs to be connected are entered in queue 3 of the job connector. The client may receive messages about his job by entering a code in the job status word.

In particular, the following takes place in such situations:

## Reply signal

Bit 7 = 1 in JF Word 2: If connection has been successful, the content of the cell addressed through JF Word 6 is reduced by 1, and Bit 11 (job could be connected) is inserted in this cell.

If a job is not connected because of a failure in the operating media such as a program unit time, or scratchpad, the corresponding failure code is entered in the job status word, the content of the cell for reply signal is reduced by one, and Bit 12 (Job could not be connected) is inserted in this cell.

The job scheduler then removes the job field from its third input queue.



Kundendienst

.000-200-7110 600-

Weitergabe sowie Vervieitätigung disser Uni Gerwerung und Mitte. Voor girtes Inhalis er-tätiett. Soweit nicht ausgründlich zugestand widerhandlungen verpflichsen zu Schadeness Rechte für den Fall der Bedeherteilung o

Wait function in the job scheduler

Bit 8 = 1 in the job field word 2: The client receives no reply signal after completion of the connection process. If the system has no time or short time area available for the receiver terminal or does not know the receiver, the job remains in the first position in input queue 3 until the necessary operating media are available.

Exception: Jobs with a status which requires their entry in the first position of input queue 3 may supersede those jobs waiting for operation media to become free. The "cause of waiting" is codified in the job status in bits 14 to 18.

Clients who are in output queue 1 (time characteristics: central part of a simultaneous program) or output queue 3 (central program) are reactivated after any jobs lined up in input queue 3 of the job scheduler have been completed.

#### Word 3

The activity which the program unit has to carry out is codified in this word.

Example: 04 = positioning and/or line feed

10 = print number of characters with control

character processing
Ol = long-term job for operating the Alphakeyboard release



Weitergabe sowie Verrieifaltigung dieser Unterlage, Verwerfung und Killeiling ihre. Inhalts infül ge-statut, soweit infat ausfrücklich zugestaden. Zu-eldenhandlungen verpflichten zu Schädenersatz. Alle Rechte für der Fall der Patenterleilung oder Ge-brauchsmusster-Eintragung verbehatten.

Word 4

Number of the program unit which has to process the job.  Number of the program unit which has created the job field.  Number of the program unit which has created the job field.  free  free  free	Bit	[178]	_
3 4 5 6 7 8 9 10 11 Number of the program unit which has created the job field.  12 13 14 15 16 17 free	1		
3 4 5 6 7 8 9 10 11 Number of the program unit which has created the job field.  12 13 14 15 16 17 free	2		
4 5 6 7 8 9 10 11 Number of the program unit which has created the job field. 12 13 14 15 16 17 free	3		
6 7 8 9 10 11 Number of the program unit which has created the job field.  12 13 14 15 16 17 free	4		
7 8 9 10 11 Number of the program unit which has created the job field.  12 13 14 15 16 17 free	5		
8 9 10 11 Number of the program unit which has created the job field.  12 13 14 15 16 17 free	6		
9 10 11 Number of the program unit which has created the job field.  12 13 14 15 16 17 free	7		
Number of the program unit which has created the job field.  12 13 14 15 16 17 free	8		
Number of the program unit which has created the job field.  12 13 14 15 16 17 free	9		
12 13 14 15 16 17 free	10		
12 13 14 15 16 17 free	11	Number of the program unit which has created the job	
14 15 16 17 free	12	rieia.	
15 16 17 free	13		
16   17   free   9013   11	14		
17 free en and the	15		
The second secon	16		
10	17	free	
	18		

Oppying of this document, and giving it to others and the use or communication the content between are forbidden without express anthority. Offenders are inbide to the syment of demages. All rights are reserved in the event of the grant of patient or the registration of a utility model or design.

5.79

25



Kundendienst

## Word 5 (Route data)

Bit		1318]
1		
2	Mumber of the program unit which bas to pr	Transportunction
3	Number of the program unit which will be work the job field after the first process	the next to sing of the
4	job.	
5	*	
6		
7		
8		1 8 1
9		
10		81
iı	Gives the subsequent program unit as alterathose in bits 1 to 8.	rnative to
12	14640	
13		
14		
15		
16		
17	free	
18	*	l ay l

Weitergabs sowie Verwielfältigung dieser Unterlage, werverlung und Mittelling hiers in India in onlit ge-fattet, sowit nicht ausstrücklich zugsstanden. Zu-widerhandlungen verfüllichen zu Schadenersatz. Mis Rechte für den Fall der Patentertellung oder üb-brauchsmusser-Eilntragung-örbelakten.

Copying of this document, and giving it to others and the socialisation and the socialisation are forbidged without express authority. Uninders are forbidged without express authority, Uninnecess are rules to the operated of demander. At rights are reserved, the event of the grant of a patent or the registration of a utility model or design.

Weitergabe sowie Vervielfältigung dieser Unterlage, wererung und Mitelium Inter Intalts infolt gestatute, soweit nicht ausdrücklich zugestanden. Lusiderhandungen verpflichten zu Schadenergatz. Alle Beche für den Fail der Patenterteilung oder Gebrachsmusser-Eintragung werbelaten.

· Word 6

Bits 1 to 18 give the address of a cell in which reply signals about the connected job are to be found. When job processing has finished, the content of the cell indicated by this address is reduced by one.

Bits 11 and 12 of the cell indicated by this address are for the client to use to check job connection.

This happens as follows (if bits 7 and 8 = 1 in word 2 of the job field).

Bits 11 and 12 = 1 it has been possible to connect the job

= 2 it has not been possible to connect the job, because of failure in the job status

• Words 7 to 16

These words contain program unit specific data.

Example: start address of a print buffer length of the print buffer position data address of the input code table address of the output code table etc.

Words 17 and 18

When the job has been carried out, error reply signals are entered in these two words.

Word 17, program unit (device) status messages and operating errors are entered in this word.

Word 18, device faults are entered in this word.

#### 5 Device Control Fields

The device control fields consist of a standard part and a device-specific part. They are created in the initialisation phase, and are called by means of the table "program unit to Device Control Field", YGKFTB.

YGKFTB address: 870/4 2.4.6, 8870/6 2.0.14.



5.1 Device Control Field for Printers

MIN	49	Device allocation in double operation	1	byte	
		Flag Bytes		bytes	
2		Device number and to hearbar at magnitude		-	
3	-	I/O Operating code	1	byte	
4		Remaining quantity of Bytes after I/O completition			Stand- ard part = 19 B
6		Parameters (boundary characters) (blat			
7		Start address (data field)		ADR	
10	-	Max. quantity of bytes to be transferred	2	bytes	
12	-	Address of output code table	-	dual DR char	
15	-	Address of input code table		dual DR char	
18	-	Last printing position +1 after carry- ing out printing instruction		byte	
19	_	Quantity of lines for platen	1	byte	
20	_	Line counter for platen	]	byte	
21	-	Sheet height for roller	1	byte	
22		Quantity of lines for tractor 1	1	byte	Device
23	_	Line counter for tractor 1	1	byte	specific
24	-	Sheet height for tractor 1	1	byte	part
25	_	Quantity of lines for tractor 2	1	byte	
26		Line counter for tractor 2	1	byte	
27	_	Sheet height for tractor 2	1	byte	
28		Free		bytes	
Charles and the					

Copying of this document, and giving it to others and the use romanication the confession thereof a robotic service as anitors, Ultenders are light to the payment of damage. A - rights are researed in the need of the payment of damage. A - rights are researed in the need of the payment of damage and a parent or the registration of a utility mice or design.

shiel Fields Control Fields



29

Weitergabe sowie Verrieifäkigung dieser Unterläge, Verwertung und Kiteliung ihres infalts nicht gevatats, soweit nicht ausdrücklich zugestaden. Zudechandlungen verpflichten zu Schadenersatz Alle eiche für den falt die Patenterteitung oder Georauchsmusser-Eintragung vorbeitalten.

Meaning of the Device Control Field flag bytes 15,14,13,12 11,10,9,8 7,6,5,4 3,2,1,0 Flags key ready for sboo paliferaci operation erle astyd le ining quantity 1 ≥ End of doine femon paper 2 = Time error power address, data field failure REA error 9 ☐ Inadmissess of output code table able I/O instruct. ress of input code table 1 ☐ End of paper, " OP code, in the case of fi tractor 1 1 

Call for correction routine 40 1 SKIP instruct. 1 ≙ Feed to base line 1 ≜ Overflow channel 12 in the case of channel feed (CDC printer) 1 ≙ Power failure (+ key 2) 1 ≜ Device failure in flags 0-3) o ≙ Device in operation (evaluated only by op system) 1 △ Device in operation

Copying of this document, and giving it to others and the use or communication the contents thereof are forbidden without express authority. Chanders are includen without express and and are includent without express and are includent without expression of a finite or the preparation of a child model or design.

5.79



Kundendienst

Weitergabe sowie Vernieifältigung dieser Unterlage, derertung ein Kettellung ihre hauft ein oht gestattet. sowiet in ich austrocklich upgesteden. Zudefrandbrungen serführtet aus Scharderestatz. Alle Rechte für des Fall der fältenfertellung odengiebzauchsmusster-Eintragung verbehäten.

MIN	- De	vice allocation in double operation	1	byte	AT TO
0	- Fl	ag bytes	2	bytes	
2	- De	vice number	1	byte	
3	- I/	O operating code	1	byte	
4		maining quantity of bytes after O completion	2	bytes	
6	- Pa	rameters	1	byte	Standard
7	- St	art address, data field		dual OR char.	part
10		x. quantity of bytes to be ansferred	2	bytes	
12	- Ad	dress of output code table	100	dual OR char.	
15	- Ad	dress of input code table	3	dual OR char.	
18	- FS	3 = OP code, in the case of film punched card	3	bytes	
21	- FS	4 = column K, in the case of film punched card	3	bytes	>Device-
24	- FS	5 = column 1, in the case of film punched card		bytes	specific part

Copying of this document, and giving it to others and the use or formunication the confusit state end as 6 biblioder without expess authors, Utlenders are initials to the payment of tamage A. Ir gibts are reserved in the event of the grant of a patent or the registration of a utility mode or fession.



Weitergabe sowie Vervieifskligung dieser Unterlage, Verwertung und Killeilung ihres in finalis eincht gesätztet, sowiel nicht ausdrücklich zugestanden. Zuviderhandlungen verpflichten zu Schadenersatz. Alle Rechte für den Fall der Patanterteilung oder Gechauchsmussier-Einfragung vorbehalten.

Meaning of the Device Control Field flag bytes 15, 14, 13, 12 11, 10, 9, 8 7, 6, 5, 4 3, 2, 1, 0 Flags Key 0 

□ Device not ready for operation, no cards 2 ≜ Time error, power failure (multi-punch, readafter-write check error) instruction Error in OPEN -1 = Error in CLOSE -1 

File opened ario sua -1 ≙ Power failure (+ key 2) - 1 ≜ Device failure (in flags 0-3) 1 <sup>△</sup> Device in operation

Copying of this document, and giving it to others are in the uses or communication (the contents thereof are incided without express authority, Olfenders are liable to the payment of damages. All rights are reserved in the event of the grant of a patent or the registration of a utility model or design.

5.79

31

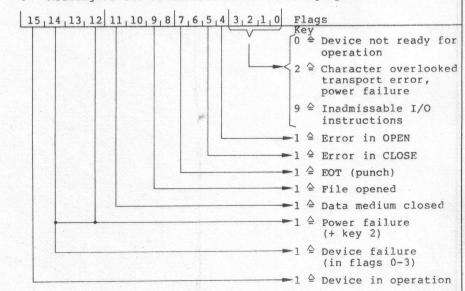


Kundendienst

for	Punched	Tape
	tor	for Punched

MIN	-	Device allocation in double operation	1 byte
0	-	Flag bytes	2 bytes
2	-	Device Number	1 byte
3	-	I/O operating code	1 byte
4	-	Remaining quantity of bytes after I/O completion	2 bytes
6	-	Parameters (boundary/leader chars)	1 byte
7	-	Start address, data field	3 dual Standard ADR chars part
10	ī	Max. quantity of bytes to be transferred	2 bytes
12	10 10 10	Address of output code table or quantity of channels to be evaluated channel mask with tape reader	3 dual ADR chars
15	-	Address on input code table or quantity of channels to be evaluated channel mask with tape punch	3 dual ADR chars

Meaning of the Device Control Field Flag Bytes



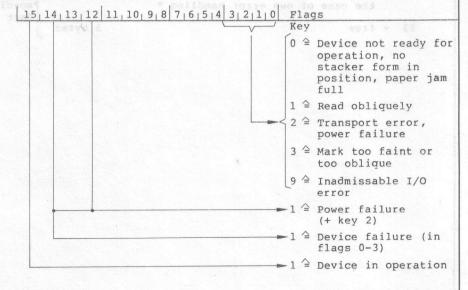
Veitergabe sowie Verveifältigung dieser Unterlage, wewtong und Kittellion, Inne hands nicht ge-Jattet, sowiet nicht austricklich zegstanden. Zu-dichtet, sowiet nicht austricklich zegstanden. Zu-dichhabdungen applichten zu Schadenersatz. Alle Rechte if den Fail der fährenterellung oden, Ge-brauchmusser-Eintragung vorbeheiten.

Copying of this document, and giving it to others and the use crommination the confusithered are fobilded without express authority. Clienders are liable to the payment of damages. A. rights are reserved in the enter of the payment of damages. A. rights are reserved in the good of a patent or the registration of a utility model or design.

Weitergabe sowie Verrielfägigung disser Unterlage, Werertrung und Kinklium firtis mindls infelt gestattet, sowiet in folk ausdrödklich zugestadfen. Lu-) Uderhandlungen werpflichten zu Schadenersatz. Alle Beiht für der Fall der Patenferteilung oder Gererauchsmusser-Efintagung vorbehalten.

5.4		Device Control Field for Mark Reader		
MIN	-	Device allocation in double operation	1 byte	NEM
0	-	Flag bytes	2 bytes	
2	-	Device number	1 byte	
3	-	I/O operating code	1 byte	į.
4	-	Remaining quantity of bytes after I/O completion	2 bytes	
6	-	Parameters (aboo paldias egas) ase	1 byte	3
7	-	Start adress, data field	3 dual ADR chars	Standard part
10	-	Max. quantity of bytes to be a to yellow transferred	2 bytes	01
12	-	Address of output code table jumped to	3 dual ADR chars	71
15	-	Address of input code table of duant to	3 dual ADR chars	- 21

Meaning of Flag Bytes



31		
	Watergate sow a Verveitation disser Unterlage, Verwerfung and Mittelling thes Inhalts nicht ge- stattle, sevel from Lastrouchin zugstanden. Lu- wider an Jungan erpflichten zu Schadensstat. Alle Rechte, 1-zr den Fall de "Patenterteilung oder Ge-	Drauchshillster - Christophy Wordenanten.

5.5		Device Control Field for Magnetic Tape/Magnetic Tape Ca	ssette	
MIN	-	Device allocation in double operation	1 byte	UEN
0	-	Flag bytes	2 bytes	9
2	-	Device number	1 byte	
3	-	I/O operating code	1 byte	
4	-	Remaining quantity of bytes after I/O completion	2 bytes	
6	-	Parameters (tape marking code)	1 byte	
7	-	Start address , data field	3 dual ADR chars	Standard Part
10	-	Max. quantity of bytes to be transferred	2 bytes	0.5
12	-	Address of output code table	3 dual ADR chars	\$2
15	-	Address of input code table	3 dual ADR chars	či
18	_	Date of last use (decimally packed)	4 bytes	
22		Flag byte 1 (bits 5 and 6) doubled in the case of own error handling *	l byte	Device- specific Part

5 bytes

23 - free

' Power failure '

Weitergabe sowie Verrielfaltigung dieser Unterläge, Werentrong und Kittelling hiers, inn its nicht geratiets, sowiel nicht ausdrücklich zugekanden. Zuldenhandlungen verpflichten zu Schadenersatz, Alle Georb für den Fall der Patenerellung oder Gebrauchsemser-Efriragung vrobehälten.

Meaning of Flag Bytes And Market with Lotter assess Flags 15, 14, 13, 12 11, 10, 9, 8 7, 6, 5, 4 3, 2, 1, 0 Key solved -0 = Device not ready for operation stacker full (random access loader) 2 = Time/Transport error power failure 103 3316 3 = Long block Bas 4 = Write lock 9 = Inadmissable I/O instruction 11 = Reading/writing error - 1 = Magnetic tape cassette, error in OPEN \* 1 = Hopper for random access loader empty, error in CLOSE \* 1 = Tape mark read 1 = EOT pyte 1 = EVEN-Parity, with TC track B = File opened 1 1 = Closed with rewind 1 = Data medium closed 1 = Power failure (+ key 2) 1 = Information error (in flags 0-3, codes 3 and 11) 1 = Device failure (in flags 0-3) → 1 = Device in operation In the case of error specified in IOCS, PRG 17, errors in

OPEN/CLOSE are indicated in flags 4 and 5. The old flag

setting of Flags 4 and 5 are in MDEV, DN 22.

Copying of this document, and giving it to others and the use or comminication of the oblivious insered as forbidder without express authority. Obterders are liable to the payment of damages. All rights are preserved in the served to the grant of a patent or the registration of a cultily model or design.



.ge. Zu-Zu-Ge-

Device Control Field for Magnet Disk 5.6 2 bytes - Flag bytes - Device number 1 byte 3 - Reference address 3 dual ADR chars 1 byte 6 - Type of device Standard 7 - Identification bytes 8 7 6 5 4 3 2 1 part for - IMO file types 0,1 - ISO file -fixed library -variable library - OPEN/CLOSE SYSDISK CONDISK -Disk contains system tracks 3 bytes 8 - Archive number 1 byte 11 - Library name 3 bytes 12 - Program label 16 bytes only types 15 - Delimiter term . 0,1 - identifying byte 1 byte 15 16 - Archive number 3 bytes Type 3, 1 byte lower half 19 - Library name

2 bytes

3 bytes

Copying of this document, and giving it to others and the uses reportmentation of the consents thereof and for the user communication of the consents are lead is to the payment of damages. Air rights are reserved in the event of the grant of the patent or the restration of a utility mode or design.

20

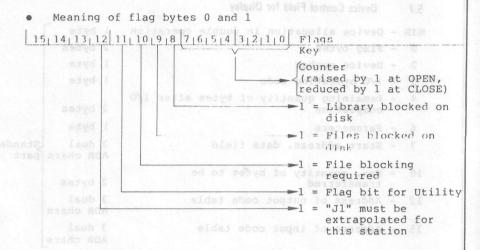
22

- Flag bytes

- Program identification

in the case of error specified in 1005, 880 if, errors in

Neitergabs sowie Verriehaltigung 1889 Unterlaga, herretung und Kindlingen Files 11.3 midt gestatte, sowiet indit austrickiet 1.38standen. Un der denhandungen werplichten in Schaeneratt, Alle Repthe file den Fall der Betreters ung oder Gebrauchsmuster-Entragung vorbert 35.



• Meaning of bytes 12, 13 and 14 (program label)

Byte 12 = (SYX, X61) Utility Flag bit 11

Byte 13 = (SYX, X61) by "files blocking", bit 9

Byte 14 = (SYX, X61) by "library blocking", bit 8

Copying, of this document; and giving it to others are the use or communication (the cochaet shereof are forbidden without express authority. Offenders are liable to the payment of damages. All rights are reserved in the event of the grant of a patent or the registration of a utility model or design.

(+ key 2)

(- key 2)

(- key 2)

(- key 2)

(- key 2)

37

5.79



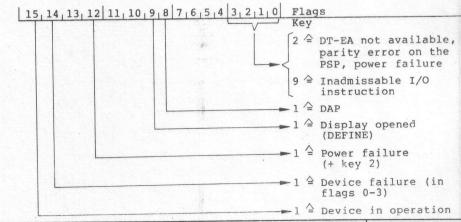
Kundendienst

200-200-Zu-Zu-Zu-Ge-

Weitergabe sowie Vernieffattigung dieser Unterlage Weitergabe sowie in clint up erkeretung und Wittellung ihres "Inhalts nicht up sitzter, sowiet in clint ausgrücklich zugstanden. Zu widerhanblungen verpflichten zu Schadenersatz. Allis Rechte 1.c. der Tail der Patentertellung oder überbrachsmisser-Einfragule vorbehalten.

5.7		Device Control Field for Display		
MIN	_	Device allocation in double operation		
0		Flag bytes	2 bytes	
2	-	Device number	1 byte	
3	_	I/O operating code	1 byte	
4	-	Remaining quantity of bytes after I/O completion	2 bytes	
6	-	Parameters	1 byte	
7	-	Start address, data field	3 dual ADR chars	Standard
10	-	Max. quantity of bytes to be transferred	2 bytes	
12	- -	Address of output code table	3 dual ADR chars	
15	-	Address of input code table	3 dual ADR chars	
18		FS3 character	3 bytes	
21	-	FS <sub>4</sub> character, screen buffer address/ start address of the 6 special bytes	3 bytes	Device-
				Part
24	-	Absolute screen size	2 bytes	
26		Lock key setting in bits 1 to 4	1 byte	
27		Intermediate buffer for keyboard inputs	15 bytes	Only in the case of DAP

Meaning of the Flag bytes



38

5.79

Copying of this document, and giving it to others and he used rounmination of the contrast shared are forbidden without express authority. Utenders are incident on the apparent of champes, A. Ir gits are reserved in the event of the grant or the registration of a utility model or design.

Weitergabe sowie Verrieffältigung dieser Untalkage, werenting um Mittellung Inters in malls infül gestatiet, sowiet nicht ausdrücklich urgestanden. Luwickenandlungen verpflichten zu Schadeneratz. Alle Rechte für den Fall der Patenterfeilung oder Gebrauchsmuster-Eintragung vorbehalten.

5.0 Line Device Control Field		
MIN - Line program allocation	n in double operation	l byte
0 - OPEN STATUS		l byte
00 = no OPEN; CLOSE has	s been performed	
01 = CLOSE working 80 = OPEN has been per 40 = it has not been p	formed ossible to perform OPEN	
1 - OPEN STATUS	사람이 있는 것이 없는 것이 없었다. 어린 바람이 그 그리고 있는 것이 없었다. 그 사람이 없는 것이 없었다.	l byte
01 = OPEN working		
2 - Device number		l byte
3 - Failure byte		l byte
4 - Failure Program address		2 bytes
4 - Fallule Plogram addres	autr   teld)   t	(16 bit)
• Meaning of the bits in t	he line failure byte  Flags Key	>-
Slock length in the receiver buffer (max. 5. 5535) Chantity of sub-buffers the puller buffers	<pre>1      Stop line processing     for test purposes; d     bring about any inte     failure)</pre>	oes not
res eds to secubs state	2 ⊆ Illegal instruction	sequence
talled base and to dyonal	3	ot cleared
(86888 . Man)	4	line
	5  ☐ Incorrect instruction arrangement	n
	6 - Incorrect program un field arrangement	it control
	7 ≙ Inadmissable address program unit control instruction	
	the state of the second	



#### Program Unit Control Field of Transmission Line 5.9

The terminal control fields are created by the user. Their start addresses are to be found in the allocated present line instructions (M-addr).

Rel. ADR	Length (bytes)	Description	Meaning
0	a Ingan and	TMK	With Nixdorf daisy chain procedure, flag register can contain one of the FNR sent from the TCU.
1	2 (bin)	TJTIME	Job limit time for READ/WRITE instructions, (min l s; = 0 = no time limitation)
3	l (bin)	TTNL	Program unit number on the line
4	3 (dual)	TDAE	Start address of the receiver buffer
7	3 (dual)	TAAE	Start address of the working buffer* (for GET instructions)
10	2 (bin)	TDLE	Block length in the receiver buffer (max. 65535)
12	l (bin)	TMB	Quantity of sub-buffers in the multi-block buffer *
13	3 (dual)	TDAS	Start address of the send buffer
1.0	2 (bin)	TDLS	Length of the send buffer (max. 65535)
Varia	nt B (UP Wo	rd 10 bit 9 = 0	)
1,2	3 (dual)	THDRL	Start address of the header buffer (for WRITE and OPENAW instructions)
1.5	1	THDRL	Length of the header data
1.6	2 (bin)	TITBL	Length until ITB is in- serted in data block
The f		rd 10 bit 9 = 1 ta are not eval	) uated, but are controlled
1.2	3 (dual)	THDRP	Start address of the (identifiers and addresses are the same)
	1	TEZ	End character of program unit control field (15.15)

Only required for LDA 900. TIOCS 901 uses these bytes differently.

Fixed terminal control field arrangement. - Variable terminal control field arrangement.

5.79

40

Weitergabe sowie Vernielfättigung dieser Unterlage Weitergabe sowie fricht gewertung und Witfellung in Ness Inhalts in chich geweit richt ausdrücklich zugestanden Zu widerhandlungen verpflichten zu Schadenersatz. Alls Rechte für den Tail der Patenhertellung ober der brauchsmusser-Eintragunf vorbehalten.



Weitergabe sowie Verrieffältigung disser Unterlage, Werkerfung um Kintellung ihres in inalis nieht gestättet, sowelt nicht ausdrücklich zugestaden. Zuyflochhandlungen verpflichten zu Schadeneraztz. Alle Rechte für den fall der Patenterlung oder Gebrauchsmuster-Einfragung vorbehalten.

## 5.10 BDC Line Job Control Field

When a Get-All instruction is pending, the reply signals from the job field are filed in the job control field after a job has been fully performed (line instruction carried out).

The job control field start address is to be found in the Getall instruction  $\mbox{\scriptsize M-data}.$ 

Rel. ADR	quantitiy of bytes	Description	Message
+ 0	1	RGNR	Line no. (device no.)
+ 1	1	RTNL	Terminal line
+ 2	1	ROP	OP-code (instruction FS 2 code)
+ 3	1	RPROZ	Procedure reply signals
+ 4	1	RFCODE	Error code
+ 5	1	RFEEA	Last I/O status
+ 6	2	RFEADR	Error address 16 bits.   error signal
+ 8	3	RFTIME	Seconds
+ 11	3	RTKF	Program unit control field address
+ 14	3	RPANF	Buffer address
+ 17	2	RZAHL	Quantity of data characters
+ 19	1	RHDRL	Length of header data

If an error signal is waiting in RFCODE, Bit 8 = 1 is inserted in reply signal store RPROZ.



Kundendienst

200-200-600-

For notes

epasash		
i.on abiyeb) von enid		
Terminal Line	Y DEFE	
OP-code (instruction EB 2 code)		
Procedure reply signals		
abou south		
Last 1/0 status		
tone decembers to the best bearing		
Seconds		
Program unit control field		
Butter address		
Countley of data characters		
Longth of header date		

Weitergabe sowie Vernielfänigung dieser Unterräge.
Verwertung und Kittellung hiers innats nicht gerqattat, soweit nicht ausdicktich zugestanden. Lukidenhandlungen erpflichten zu Schadenersatz. Alle
den bir der der hat i der Patentretining oder Gebrauchsmusser-Einfragung vorbelatien.

6 Software Bell

The software bell is used for the simultaneous time management of the system. It is called up via bell queue YWKAND.

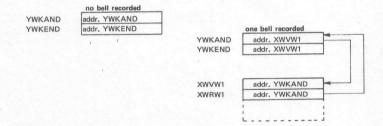
YWKAND addr. 8870/4 2.1.C, 8870/6 2.0.0.

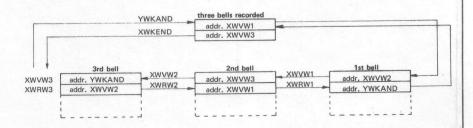
1st word	XWVW,	Forward reference
2nd word	XWRW,	Backward reference
3rd word	XWKZI,	Scratchpad area reference
4th word	XWWDH,	Repetition counter
5th word	XWLFD,	Running counter

Since all simultaneously operating program units can activate bells, there is a queue for the bells. They are chained to one another through Words XWVW, while the address of the previously activated bell is recorded in XWRW.

The bell queue consists of the two memory words YWKAND and YWKEND. The XWVW address of the first bell activated is to be found in YWKAND, while the XWRW address of the last recorded bell is to be found in YWKEND. If no bell has been recorded, the YWKAND address is to be found YWKAND and YWKEND.

#### Bell Queue





5.79



198. 20-118 58-

Weitergabe sowie Verrielfältigung dieser Unterlage Wewertung und Mittellung inns Inhalts in clicit ga statet, sowiel nicht ausdrücklich zugestanden. Zu widerbandlungen verpflichten au Schadenersatt. MI Rechte für den Tall der Patentertellung oder Gruchsmusser-Entragel vorden Franchsmusser-Entragene vordenkalten.

Word 3

The start address of the program unit's short time area to which the bell is allocated is to be found in XWKZI.

Word 4

If the bell is to operate cyclically, its finishing time is to be found in XWWDH, bits 2 to 18. If XWWDH Bits 2 to 18 = 0, there is no cyclical bell, i.e. the bell only goes off once.

Bit 1 determines whether the program unit micro is to be called via Instruction Counter 1 or Instruction Counter 2.

If Bit 1 = 0, it is called via Instruction Counter 1 (Short time Word 5)

Bit 1 = 1, it is called via Instruction Counter 2 (Short time Word 6)

ons Word 5 strow wroman and he als snow enemy lied of

The time during which the bell is to be active is given in units of 4 ms at the beginning of XWLFD. XWLFD is pell is to be found in YMP the YMEAND address is to i reduced by 1 every 4 ms.

If XWLFD = 0, the program unit is called.

ppying of this document, and giving it to others the use occumentation the contents thereof enforces are included in the content statement or forbidden without express authority. Offenders exited to the payment of damages. All rights are exaged in the event of taggerand of a pattent or the gistration of a utility mode or design. Copyi and t are fi are li reser

Weitergabe sowie Vernielfältigung dieser Unteslage, verwertung und Mittellung ihres inhalts nicht gestättet, sowielt nicht ausdrücklich zugestanden. Uzwirderhandlungen verpflichten zu Gebadenersatz. Alle Rechte für den Fall der Patenderteilung oder Gebrauchsmuser-Einfragung vorbelatien.

## 7 Equipment and System Parameters

The equipment parameters contain the current information for the program unit (bell and I/O interrupt numbers, device number, etc.), while the system parameters contain systemspecific data such as quantity of job fields and dynamic short time areas, and interrupt numbers for core and DMA units.

These parameters are required in the initialisation phase for the apportionment of the working memory and system part.

There is a module supply block consisting of three words in front of the equipment and system parameters for purposes of identification.

#### • Word 1

Contains the search argument of the equipment and system parameter module.

If Word 1 reads 0.0.0.0.15, it concerns the equipment and system parameters for Systool (Block 3, 12).

If Word 1 reads 0.0.0.14, it concerns the equipment and system parameters for the overall system (full initialisation in Block 3, 11).

#### Word 2

Gives the total length of the equipment and system parameters in the number of words.

#### • Word 3

5.79

Specifies that the equipment and system parameters consist of only one module and may have no submodules.

Copying of this document, and giving it to others and the uses recommentation of the conclust statement are forbidden without express authority. (Benders are itable to the payment of damages. All rights are reserved in the exert of the grant of a patent or the registration of a utility model or design.



Kundendienst

7 6 5 4 3 2 1 Bit 10 9 8 18 17 16 15 14 13 12 11 word with content "14" = module supply block for the equipment and system parameters This module supply block consists of only 3 module length (equipment parameters + system parameters) words, No submodules allowed. Equipment parameter call time charspec. word 1 (identical to module number bit acteristics funct module supply block word 1.) priority in bits 1-8 for centr. progr. units otherwise bits 1-4 I/O INT1 bell bell 1/0 program unit number INT2 bell number (instruct, counter 1) hell number (instruct counter 2) If required in 1/O interrupt no. (instruction counter 1) this sequence I/O interrupt no. (instruction counter 2) Equipment parameter number of sequence param. DMA free for further sequence to be taken over into the long-time area index parameters Sequence parameters which to be taken over into the long-time area. In this sequence, if logical DMA no. (replaces word 6 of the module supply block) given in the index. load number for time requirem. load number on activation first device number length of device control field in bytes second device number ( must be first device number) Either word 1 of the next equipment param, record word = zero = end of equipment parameters or end of the egpt, param. quantity of additional global cells to be kept free System parameter word 1 Variable quantity of param. length of a byte area to be kept free for additional device control fields max. 32 words for 15 shortquantity of short time areas to be created for class to be entered in time classes + job fields. short time class Short time class 0 = JF = last bits 13-16, or quantity of job fields to be created of there is a 0 in bits 13-16 parameter. length of a short time area for previously entered class or length of a job field System output table I/O address The table consists of word pairs: value to be issued 1st word = I/O addr. 2nd word = issue value The table is also run I/O address through after power fail. 1st word = I/O addr. = value to be issued zero = end of table. zero = end of the table Device combination first word of the device combination table table. Length = variable. zero = end of the system parameters

Weitergabs sowie Verriefältigung disser Unterlage, Werentung und Mittalium (Inser Matta ficht) gestättet, sowiet in cht ausdrücklich ungestanden. Zueiter machungen verpflichtes aus Obhadensresta. Mie Rechte für den Fall der Patentretilium oder Gebrauchsmisser-Einstaguß verbehaten.

Oppying of this document, and giving, it to others and off the societary thereof are forbidden without express authorit, Offenders are libely to the payment of damages. A 'rights are reserved in the event off-payment of a

## 7.1 Installation Parameters

Word 1 (first word of the equipment parameters)

Bit	working with bell interrupt 1, the number	111
1	Not used	
nr si	= 0, the program unit specified in word 2,	bits 9
2	to 16, is operating centrally = 2, the program unit specified in word 2,	hits 9 to
3	16. is operating simultaneously and cannot	be interr
4	= 1, the module to be called by the Call I (change UP to Operating Program).	nstruction
5		
7		
8	Gives the module number	
9		
10		
11		
12		
13		
14		
15		LACT
16	= 1, for this module, a job instruction ma generated on the UP level (JOBAB instruction)	on)
17	not used	
18	99.13	1 11

5.79



## • Word 2

1 Il. was a war in it amonified	
= 1, the program unit specific 1 working with bell interrupt 1	. The number is in word
2 (hite 9 to 16)	
= 1, the program unit specific	ed in bits 9 to 16 is
working with bell interrupt 2	. The number is in word
4 (bits 9 to 16) = 1, the program unit specific	ed in bits 9 to 16 is
3 working with I/O interrupt 1.	The number is in word
5 (hite 1 to 6)	
= 1, the program unit specific	ed in bits 9 to 16 is
working with I/O interrupt 2.	The number is in word
6 (bits 1 to 6)	
5 If the program unit specified	in bits 9 to 16 is
operating centrally, bits 1 to	o 8 specify the
6 priority with which its jobs	are to be entered
in output queue 3 of the job	
7 = 0 = highest priority. Notes	
8	
9	
10	
11 Program unit number allocated	to the module specified
in word 1.	
12	
13	
14	
this module, a too instruction may be on the UF level (JOHAB instruction) 21	
15 ( citiograma   MAROL) level 10 and no	
16	17 not used
17 free	
18	

Weltergabe sowie Verniefaltigung dieser Unterlage, Verwertung und Mittellung hiers heidelt sindig gestattet, sweet nicht auschschich rugsstaden. Zuweiterhadfungen verpflichtes au Abhabemestat. Mie Rebts für des seil die "Patentretellung oder Gebrauchsmusser-Eintagung worbehalten.

Weitergabe sowie Verrieifältigung dieser Unterlage, Verwertung und Kindlium ihre Braitis micht gestattet, soweit nicht ausdrücklich ungestaden. Zuwichzhandungen erpflichten. Zechaderenzatz. Alle Recht für den Fall der Pärkeitellung oder Gebrauchmuster-Eintsgung vorbehalten.

• Word 3 (applies to simultaneously operating program units) \*

Bit		
1		
2		
3		
4	free	
5	4	
6		
7		
8		
9		
10	Gives information on the bell number if Mit inserted in Word 2	it I io
11	Gives information of the bell number if E inserted in Word 2.	
12	This number is allocated to the interrupt address in short time word 5 (instruction	counter 1).
13		
14		
15		
16		N. D. C.
17	free	
18		81

st If the program unit is operating centrally, Word 3 already contains the index.

Copying of this document, and giving it to others and the use or communication the contents thereof are forbidden without express andhority, Ultenders are includen without express andhority, Ultenders are inbise to the apprent of demands. All rights are reserved in the event of the grant of a patent or the registration of a utility model or design.

5.79

49

• Word 4 (applies to simultaneously operating program units)

1		
2		
3		
4	free	
5	· · · · · · · · · · · · · · · · · · ·	
6		
7		
8		
9	Ciusa information on t	he hell number if Bit 2 is
9	inserted in Word 2.	he bell number if Bit 2 is
10	inserted in Word 2. This number is allocat address in short time	ed to the interrupt reference word 6 (instruction counter 2)
10	inserted in Word 2. This number is allocat	ed to the interrupt reference word 6 (instruction counter 2)
10	inserted in Word 2. This number is allocat address in short time	ed to the interrupt reference word 6 (instruction counter 2)
10 11 12	inserted in Word 2. This number is allocat address in short time	ed to the interrupt reference word 6 (instruction counter 2)
10 11 12 13	inserted in Word 2. This number is allocat address in short time	ed to the interrupt reference word 6 (instruction counter 2)
10 11 12 13	inserted in Word 2. This number is allocat address in short time	ed to the interrupt reference word 6 (instruction counter 2)
10 11 12 13 14	inserted in Word 2. This number is allocat address in short time	ed to the interrupt reference word 6 (instruction counter 2)

Wellerphe sowel Vertifialigue dieser Unferlage, Arevertugen der Mitchiel per Behalte nicht gestatet, sowel nicht sanfordlich sugstanden, Zevielchandunge verfilichte an Schauenwalt. Mie Rechte für den Zeit gefähnenfersing oder Gebrauchzmaster-Entragung verbinklich.

Copying of this document, and giving it to others and the use reformulation this boombast based are forbidden without express anthority. Undenders are lable to the symment of emans, All rights are reserved in the vent of they are it about the total of the control of a utility model or design.



Weitergabe sowie Vernieffaltigung dieser Unterlage, Verwerfung und Mittellung These mittalt entir gestatist, sowiet indiv ausforderich zugestanden. Ladich and ungen verpfilchen zu Schaddennesatz, Alle Roche für der Fall der Fabrenterlung oder Gebrauchsmuster-Entragung verbeihalten.

Word 5 (applies to simultaneously operating program units)

Bit		
1		
2	Gives information on I/O interrupt 1 if Bi	+ 3 is
3	inserted in Word 2. The interrupt no. is allocated to the inter	
4	reference address through short time word (instruction counter 1).	5
5	(X same a notion real)	
6		
7		
8		A CONTRACTOR OF THE CONTRACTOR
9		
10		
11		
12	free	
13		
14		
15		
16		
17		
18		O. F

Copyingsof this document, and giving it to others and the use or communication this contents thereof are forbidden without express authority. Usinders are includen without express and and an are reserved in the event of the grant of a patient or the registration of a utility model or design.

5.79

51



Word 6 (applies to simultaneously operating program units)

Bit			
1			
2			
3	Gives information o I/O interrupt 2 if Bi	t 4 is	
4	inserted in Word 2.  The interrupt number is allocated to the interrupt reference address through short time word 6		
5	(instruction counter 2).	- Constitution of the Cons	
6			
7			
8			
9			
10			
11			
12			
13	free		
14			
15			
16			
17			
18		aparati manarat kala	

Veitergabe sowe Verreitätigung disser Unterlaga, pewerting und Natellung in Final handt so ficit gastattet, sowelt richt ausfordelich upgetandenn. Gudich handlung erspflichten so Schalbenestat. Alle Rechte Mr. des Fail der jehnentellung odes Gebrauchsmuster-Eintagung erbeheiten.

Oppying of this document, and giving it to others and the use or communitation the confessionsheet are forbidden without express authors, Offenders are intable to the apprent of damages. A. Ir opts are reserved in the vent of the gant of a patent or the registration of a utility mode, or design.



Weitergabe sowie Vernieifättigung dieser Unterlage. Werenting um Mittelling Thies in Innals in licht gestatiet, sowiel nicht ausdrücktich zugsstanden. Luwiderhandlungen verptlichten zu Schadenersatz. Alle Rechte für den Fall der Patenterteilung oder Gebrauchsmusser-Eintragung vorbeibalten.

Word 7 (index of further parameters)

Bellione at viidasia and dolds to analysis and consumpt edit.

Bit	2016 2313 233 334 344 3 4 4 4 4 4 4 4 4 4 4 4 4
1	Gives the number of sequence parameters from the following word for the program units specified in word 2 (bits 9 to 16)
2	For example: AMG sett to Riedman edt Entaino
3	I/O disk select address, start and end address of the cyclical buffer (in the case of needle printer) or output address of the DMA and DMA feature or start
4	address of the print character output table, etc. This data is transferred into the long-time area.
5	
6	● Word n + 2
7	= 1, the program unit is working with DMA, i.e. this program units logical XX DMA no. is in the first word after the sequence parameters.
8	= 1, a load number has been allocated to the program units (the program unit is operating simultaneously). The load number is to be found in the subsequent data.
9	<pre>= 1, a device number has been allocated to the program unit.</pre>
10	= 1, a device control field has been allocated to the program unit; its length will be shown in the subsequent parameter data.
11	= 1, a second device number has been allocated to the program unit
12	Nord n + 5     This is either word 1 of the next installation par
957	the design that is a second that the contract of the contract
13	Left free for further parameters.
14	
15	
16	
17	
18	

Oppying of this document, and giving it to others and the use or nominalization the contests thereof are forbidden without express authority. Usenders exitable to the syment of demanse. All rights are reserved in the event of the grant of gatest or the registration of a utility model or design.

5.79

53

Word 8

The sequence parameters of which the quantity is specified in the index (bits 1 to 6) are given from this word onwards.

- Word n (word after the sequence parameters) Contains the numbers of the DMA's with which the program and to unit works. The dyara cases ba doales data Oki ceclical buffer (in the case of needle printer) or
  - . I Word n + 11 AMC bas AMC add to saerbos dudduo Contains the system load from which the program unit originates in the system when it is called in.
- Word n + 2 Contains the device number referred to through Bit 9 of hand as the index. at los AMG XX factoof aftau matphing
- ward n + 3 and la made and radeum Sacl Contains the length in bytes of the device control field referred to through Bit 10 of the index.
  - Word n + 4 Contains the second device number, referred to through Bit 11 of the index. This number must be smaller than the first device number.
  - Word n + 5 This is either word 1 of the next installation parameter label or, if its content = 0, indicated the end of the equipment parameters.

Weitergabe sowie Vernielfättigung dieser Unterlage Wewerdung und Mittellung inses Inhalts nicht ge 9 statet, sowiet in chir auscricklich zugestanden. Un widerhandlungen verpflichten zu Schadenersetz. All Rechte für den tätt der Beraterteilung odig de brauchsmisser-Einfragung vorbehalten.

7 Zu-

Weitergabe sowie Verniefättigung dieser Untexdage, Werestrung und Kittellung hiers in Inalia nicht gestattet, sowiel nicht austrickfich zugestaden. Uzwiderhandlungen remflichten. zu Schadenersatz. Alle Rechte für den Fall der Patenterteilung oder Gebrachsmisser-Einfragung verbelatien.

#### 7.2 System Parameters

The equipment parameters are generally followed by the system parameters. They are separated by a single word, the content of which  $=\ 0$ .

• Word 1

This contains the number of additional memory cells, not normally allowed for in the standard version of the system, which have to be kept free. (Reserved on initialisation).

• Word 2

This contains the number of additional bytes not normally allowed for in the standard version of the system, which have to be kept free. (Reserved on initialisation).

Copying, of this document, and giving it to others are the use or communication of the contents thereof are forbidden without express authority. (Differders are itable to the payment of damages, All rights are reserved in the event of the grant of a patent or registration of a utility model or design.

5.79



Word 3

Bit	ANY Seek of pair a or heterater are very a create year.
1	of which e B.
2	Word 1     This contains the number of additional seasory call
3	i to notaray brabhasis and no not besould without of i
4	States how many times the first dynamic short time
5	area is to be created.
6	Sem served isnotitible to readour outs antained state against the motor over the transfer of the first services.
7	have to be kept (tessived on initialisation
8	
9	
10	
11	
12	
13	
14	States how the first short time class is to be recognised.
15	
16	
17	free
18	

Weitergabe sowie Verriefätigung dieser Unterlags, Weitergung out Mitzling in jers hietst nicht, gestattet, sowie in chrausproteiten jugstanden. Luwiderhandlungen septilichen tu Schabenssatz, Ais bench lar der all outgebarterleining obg. Gebrauchsmaser-Einragung verbeisten.

Copying of this document, and giving it to others and the use of remonitaristing the contests instead are forbidden without express author; of Utlenders are indise to the apprent of demanges. A. ir gits are reserved in the earl of the Apprent of a patent or the registration of a utility mobel or design.



Weitergabe sowie Verrieffaltigung dieser Unterlage, werertung und Kittelling Fires habita nolit gestattet, sowiel noth ausdrotickich ugestaden. Zuwiderhandlungen wepflichten, zu Schadeneratz, Alle Rechte für den Fall der Patenterlalung oder Gebrachsbmister-Eintragung vorbelatien.

 Word 4
 Gives information on the length of the first dynamic short time area for the class specified in word 3 (bits 13 to 16).

Word 5

Bit	(nolsemania)	
1		
2		
3	States how often the second dynamic short	time ar
4	is to be created.	
5		
6		
7		
8		
9		
10		
11		
12		01
13		
14	States how the second dynamic short time c	lass is
15	be recognized.	
17	free	LEL

• Word 6

Gives information of the length of the second dynamic short time area for the class entered in word 5 (bits 13 to 16). Up to a maximum of 15 further short time classes may be given through word pairs.

 Word n (first word after the word pairs in the short time class information)

Bit		
1	States how often the second dynamic smort t	
2	is to be created.	
3		
4	States how often a job field is to be created.	
5		
6		
7	- Committee of the Comm	
8		
9		
10	Months (Market )	
11		
12		
13	Secure at second of the control of t	
14	These bits are zero, that is to say the inform	ation
15	in bits 1 to 8 applies to a job field and not short time area.	со а
16	9911	
17	free	
18		

Weitargaba sowie Vervielfaltigung dieser Unterlage, Newtortung und Mittellung hims halbst nicht gestattst. sowell richt austrückfich zugestenden. Auwiderhandlungen verpflichten zu Schadenersatz. Alle ereich Ert, der Id er "Egtensteilung oder, Gebrauchsweiser-Efritzgung worbelalten.

Opp.ng of this document, and giving it to others and not to use or formunation the confusion statement are forbidgen, whost express authority. (Brinders are note to the payment of damages A. rights are reserved in the enter of the and in a part of a nature or the registrat or it at itly model or design.



Weitergabe sowie Verrielfaftigung dieser Unterlage, Wererfung und Mittelium ihre innalts einbitt gestattet, soweit nicht ausdrücklich zugestaden. Undiefnandungen renflichten zu Schadenersatz. Alle Rechte für den Fall der Patenterleiung oder Gebrauchsmisser-Einfragung vorbehalten.

• Word n + 1

Gives information on the length of a jobfield. Information on how often the job field is to be created is given in the preceding word.

The system output table follows from word n+2 onwards. In this, two words represent each value.

- Word n + 2
   Contains an address for an I/O unit.
- Word n + 3
   Gives the output code for the I/O address given above.

The system output table is followed for the I/O address given above.

This table contains data on which combinations may operate simultaneously in the device.

The device combination table is terminated by a word containing zero. This simultaneously indicates the end of the equipment and system parameters.

At present this table is not used.

For notes

to a backli

ives information on the length of a jubileld, information n bow siten the job field is to be drested is given in me preceding word.

The system output table follows from word n \* 2 onwards. In

e Mord n t 2

Contains an address for an 1/0 unit

# # Nord h #

dives the output code for the 1/O address given shows;

The existen output table is followed for the 1/0 saters given above.

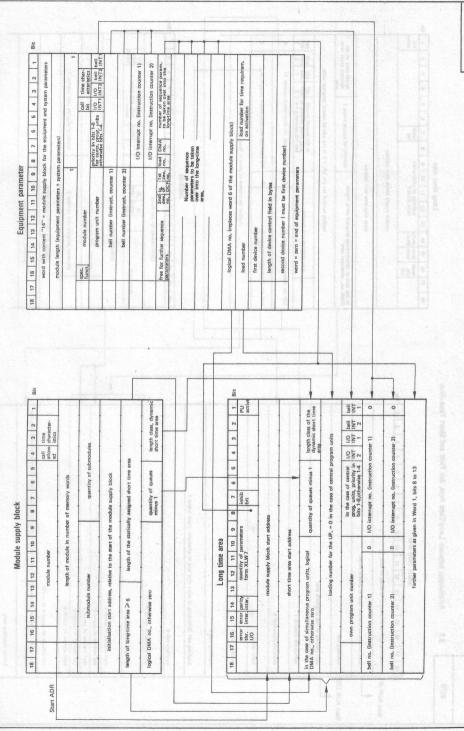
This table contains data on which continuinous easy operate attended in the device. "T

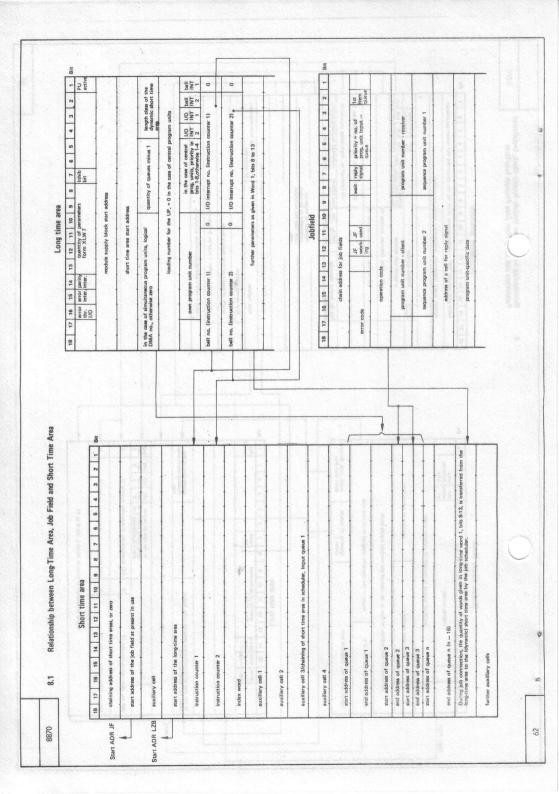
The device combination table is terminated by a word containing rate. This simultaneously indicates the end of the equipment and system parameters.

At present this hable is not used

Weitergabe sowie Vernie/Britigung dieser Unterna Verwertung und Kirtelbung intest habita nicht statet, sowiel nicht ausdrücklich augestanden wichte Andream versiehen zu bechadenserat. Andreamserat. Andreamserat. Recht für den Fait est Parenterlanding oder brauchsmuster-Eintragung vorbehalten.

copying or into conclusion, and syming it to counts and the use of communication of the contents therefore are forbidden without express authority. Offenders are liable to the spannent of damages. Air rights are reserved in the event of the grant of a patent or the registration of a utility model or design.







9 Working Memory Assignment

The working memory is assigned on initialisation.

### 9.1 Assignment in the case of 8870/2/4

. taejwd C	0 - 1.14	Hardware and diagnosis cells.
	0.2.0	I/O Stackpointer (max. 240 cells)
	System warking	Long-time and static short time areas, working area of initial loader.
	2.0.0 - 2. 7.14	Global cells ("Y" cells).
	2.8.0 - 2.13.14	Job scheduler cells initialisation shift cells, and bell working cells.
	2.14.0	Additional global cells according to installation parameters.
SC	YSYSPAR	System output table.
Area	(2.4.2)	
	ХVКОТОВ	Device combination table
	(2.4.4)	(occupies only one cell, as this table is not used).
	YGKFTB	"Program unit to Device Control
	(2.4.6)	Field" table (max. 256 cells).
	YTNLTB	"Program unit to Long-Time Area"
	(2.4.8)	table (max. 256 cells).
	YWTAB	"Bell number to short time area
	(2.5.2)	table (largest bell number times (5) cells).
	YINKTB	"Interrupt no. to short time area" table (max. 240 cells).
	YGERTN	"Device number ot program unit
	(2.4.12)	number" table (128 cells).
		(1 place in table = 8 bits
		l cell = 2 places in the table).
YGTEND		Further long-time and static
(2.4.14)		areas (index and system
		registers).
		Dynamic short time areas.
		Job fields

Copying gf this document, and giving it to others the uge of communication of the occurent behavior are orbidden without express authority. Clindents are labble to the payment of damages. All rights are exercised in the exercist the wester of the grant of a patient or the resistation of a utility model or design.

Weitergabe sowie Vernielfaitgung dieser Unterlige, weverstung und Kittellung Instell mailta heilt gestatte, soweit nicht ausfordeich ungestaden. Luchdnachdungen verpflichten zu Schadenestz. Alle sehts für den Fail der Patenterleiung oder Georauchsmuster-Eintragung verbehatten.

5.79

63



YHSSAS Area Input area keyboard for single Start of (2.5.6) byte area or foreground (83 bytes). Input area keyboard for back-Main Memory ground (83 bytes).
Parameter field for display \$15103 (18 bytes). 2 x screen buffer Hardware and diagnosis of (2 x 960 or 1920 bytes). Device control fields. YHSDAS Common area (2.5.8)Of (326 bytes) XDAS1 Half System working area (X055) (1088 bytes) User area LHSEND MOLDS SELECTION OF THE SECOND (2.5.A)

Weitergabe sowie Vernielfältigung dieser Unterlage, Gewertung und Killeilung hies in Malts indict ge-Adziet, sowiet in oht austrickelich zugstaden. Lurichmachungen erglichten, au Schadenerstit. Alle Rechts für des Asil der Patenereriung den Gebraucherusser-Eintragung geröbelaten.

Copying of this document, and giving it to others and the use or communication followorks thereof are forbidden without express authorit. (Benders are label to the payment of damages, Air rights are reserved in the event of the grant of a patent or the registration of a utility mode or design.

# 9.2 Assignment in the case of 8870/6

The working memory is assigned on initialisation.

These cells are found as working cells in CPU 1501

	Hardware and diagnosis cells
$0. \ 0. \ 0 - 0. \ 1.14$ $0. \ 2. \ 0 - 0. \ 3.14$	Table fo register labels
	(SATZTAB). These contain the
	start address of the oriented
	programs register records of
	transaction.
0. 4. 0 - 0. 9.14	Working cells for the job
	scheduler and the interrupt
	processing.
0.10. 0 - 0.11.14	Working cells for CPU 1501
Parameter Elaid C	(internal).
0.12. 0 - 0.15.14	Working cells of the macro-
	interpreter and the bell
1960 ar 1920 bets	management.
1. 0. 0 - 1. 7.14	System register of the present
afted occas as one;	program unit.
1. 8. 0 - 1.15.14	Index register of the present
A SATE MARKET	program unit.
2. 0. 0 - 2. 8.10	Y global cells (general system
2. 8.12 - 2.10.10	working cells). Global cells for LTG-IOCS.
	(Working cells for BDC line
	control).
2.10.12 - 3.14.14	Working cells for initial loader.
3.15. 0	Additional global cells
3.13. 0	according equipment parameters.
YSYPAR	System output table.
(2.0.10)	by beem output toward.
VKOTB	Device combination table (not
(2.0.12)	used at present).
YGKFTB	"Program unit to Device Control
(2.0.14)	Field" table.
TNLTB	"Program unit to Long-Time Area"
(2.1.0)	table.
WTAB	"Bell number to short time area"
(2.1.8)	table. (Bell no. times 5 cells,
	5 cells per hell).
YINKTB	"Interrupt Number to short time
(0.4.4)	area" table
YGERTN	"Device number to program unit
(2.1.4)	number" table.

Copying of this document, and giving it to others and the documentation the confinishment are forbidden without express authority. Uninders are includent without express authority. Uninders are includent without express and any includent are reserved in the event of the grant of a patent or the registration of a utility model or design.

Weitergabe sowie Verrielfättigung dieser Untragiog, werentung und Rittellung ihres hinalts nicht gestattet, sowiet in nicht ausfrückfich zugestaden. Lurichtandiungen verpflichten, zu Schadenersatz, Alie schie für den Fall der Patenterleilung oder Georauchsmuster-Eintragung vorbehalten.

-	-	_	1
O	O	7	$\boldsymbol{n}$



YGTEND Macro-interpreter static short (2.1.6)time area (13 cells). System register (fore-or background). alamonio ban erawbiell and remains of sleet Index register (fore-or background). (SATSTAR), These contain the Further long-time areas and start address of the orleads static short time areas. Dynamic short time areas. Job fields YHSSAS Input buffer keyboard, foreground Byte area (0.13.12)or single (83 bytes)
Input buffer keyboard, background XSAS (X 32 S) (83 bytes) Parameter field for display (18 bytes) System display buffer (960 or 1920 bytes). Working display buffer (960 or 1920 bytes). Device control fields YHSDAS Common area (2.1.14)(326 bytes) System working area YDAS1 (1088 bytes) (X05S) Beginning of the free user area. YHSEND (2.2.0)

Weltergabe sowie Vervielfaltigung dieser Unterlage, Verwertung und Mittellung Inter Intalia nicht gestattet, soweit nicht ausdrücklier zogstanden. Zu-wiefenhaftungen weltherlichten zu Schadenersatt. Alle Rechte für den Falt der Patreherelung oder Gebrauchsmuster-Eintragungvorbehalten.

Copying of this document, and giving it to others and the use or communication (the conclusion street are forbidden without express author). (Windexs are liable to the payment of damages k.v. rights are reserved in the event of the grant of a patent or the registration of a utility modify or design.



Weitergabe sowie Verrieglätigung dieser Untgriage, Verwertung und Killeilung hiers hinkte micht gestattet, soweit incht ausdrücklich zugestanden. Zu derdenhandlungen verpflichten er Schadenesatz. Alle Bechte für der Fall der Patanterleilung oder Gebrauchsmuster-Eintragung ordenkaten.

### 10 Reference and Working Table in the Working Memory

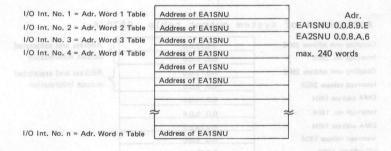
Reference tables are used to locate memory areas such as long-time areas, short time areas, device control fields, and job fields for the program unit, while working tables contain data required from time to time by the system, such as system output tables, device combination tables, and bit assignment tables.

#### 10.1 Reference Tables

#### 10.1.1 I/O Stackpointer (only in the case of 8870/2/4)

The I/O interrupt number is allocated to the entry address of the I/O interrupt routine via the stack pointer. There are two entry addresses, EAISNU and EA2SNU, depending on whether the I/O interrupt number is allocated to instruction counter 1 or 2.

• Table from 0.2.0: I/O stack pointer



An "I/O interrupt no. to I/O interrupt routine entry address" reference table is not necessary in the case of 8870/6, as interrupt evaluation is carried out in CPU 1501.



Zu-

Weitergabe sowie Verniefätligung dieser Unterlage Werwerdung und Mittellung hisse nivalts nicht gestanden. Zu stattet, sowiet nicht auscricklich zugestanden. Zu widerhandlungen verpflichen zu Schabzeneraat. Mit Merben für der Zall der Statteren lang oder Gebrachsten schrieben der den zu der Statteren lang oder Gebrachsten schrieben der den zu der Statteren lang oder Gebrachsten schrieben der den den schrieben verhanten.

#### System Output Table and analysis at a side particular base asserted. 10.1.2

This table is required on initialisation and when re-starting after power failure. The data in the table is identical to that in the system output table in the system parameters.

The table is called via global cell YSYPAR address YSYPSR, 8870/4 2.4.2, 8870/6 2.0.10.

Assignment of system output table 8870/4.

Coupling unit address 2802
Interrupt no. 2802
Coupling unit address 2802
Interrupt release
I/O address 1802
Interrupt no. 1802
I/O address 1802
Interrupt release 1802
End of table

		Annual Association and the Control of the Control o
55.05	0.0.12,0.0	<u> </u>
N. Library	0.0. 0.1.0	
154	0.0.12.0.0	odno }
940	0.0. 8.0.0	iduo
	0.0.10.0.0	AZ , te
1933	0.0. 0.1,1	25 CHISTORY
	0.0.10.0.0	
01)	0.0. 8.0.0	2 01 1
	0.0. 0.0.0	

Address and associated output information

Address and associated output information

Assignment of system output table, 8870/6.

Coupling unit address 2802	0.0.12.0.0
astronom Office, arrows	THE RESERVE OF THE PERSON OF T
Interrupt no. 2802	0.0. 0.0.0
Coupling unit address 2802	0.0.12.0.0
Interrupt release 2802	0.0. 8.0.0
DMA address 1804	0.0.14.0.0
Interrupt no. 1804	0.0. 0.0.8
DMA address 1804	0,0,14.0.0
Interrupt release 1804	0.0. 8.0.0
I/O address 1802	0.0.10.0.0
Interrupt no. 1802	0.0. 0.0.1
I/O address 1802	0.0.10.0.0
Interrupt release	0.0. 8.0.0
End of table	0.0. 0.0.0

Address and associated output information Address and associated output information

Copying of this document, and giving it to others are the uses or commission of the boothests hered are obtided without express authority. Olienders are hable to the payment of damages. All rights are reserved in the exert of the grand of a patient or the resistation of a utility model or design.



Weitergabe sowie Verrieffälligung disser Unt Verwertung und Mittelingen These Inhalts nic statte, sowell nich ausörücklich zugestandt viderhandfungen verpflichten. zu Schadenersa schle für den fäll der Patenterleiung od nrauchsmusser-Enfragung yobbealten. 8870

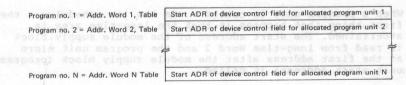
## 10 1 3 Device Combination Table

At the moment, this table is not used. All the peripheral devices at present connected to the computer can interact with one another.

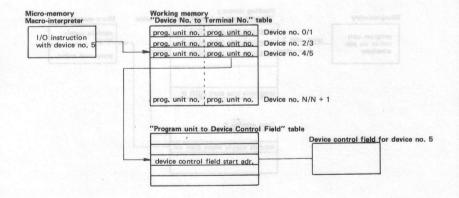
#### 10.1.4 "Program Unit to Device Control Field" Table

This table is used to ascertain the start addresses of the device control fields by first giving the program unit number. It is used when, in the case of XX I/O instructions, the device control field address must be ascertained via the device number.

The start number is in YGKFTB ADR 8870/4 2.4.6, 8870/6 2.0.14



# 10.1.4.1 Relationship between the Device/Program Unit Number and the Device Control Field



Dopying of this document, and giving it to others the design of the design communication follows the content share of orbidden without express authority. (Handars are isbale to the payment of damages. All rights are seered in the event of the grant of a patient or the agistration of a utility mode or design.

5.79

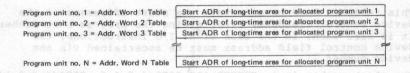
69



#### 10.1.5 Program Unit to Long-Time Area

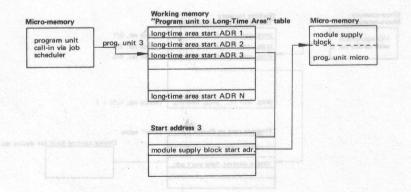
This table serves to allocate the long-time area to the program unit number. It is used when calling a program unit (i.e. activating it).

Start address is YTNLTB ADR 8870/4 2.4.8, 8870/6 2.1.0



When a program unit is called - via the job scheduler - the first thing that happens is that the long-time area is ascertained. The start address of the module supply block is read from long-time Word 2 and the program unit micro at the first address after the module supply block (program unit start address) is called.

## 10.1.5.1 Relationship between Program Unit, Long-Time Area, Module Supply Block and Program Unit Micro



Weitergabe sowe Vernielfältigung disser Unterlage. Wererfung und Wittellung hiese hinslis nicht gelattet, soweit in cht ausdrocklich zugestanden. Zuwiderhand ungen verplichten zu Schadenersatt. Alle Rechte Lur den Tall der Barbenteiblung oder Gebrauchsmissier-Einfragung Wordentlein.

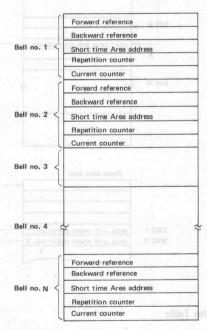
Copying of this document, and giving it to others are the uses of communication of the occurate Recedual to this document of the occurate are included without express authority. Offenders are include to the payment of damages, Air rights are exerted in the exert of the grant of a patient or the resistation of a utility modellor design.



## 10.1.6 "Bell Number to Short Time Area" Table

This table is used to locate the start address of the short time area by first giving the bell number. It is used if the short time active bell has run out and the corresponding program unit micro must therefore be called. (Program unit called via bell).

The start address in is YWTAB Adr. 8870/4 2.5.2, 8870/6 2.1.8



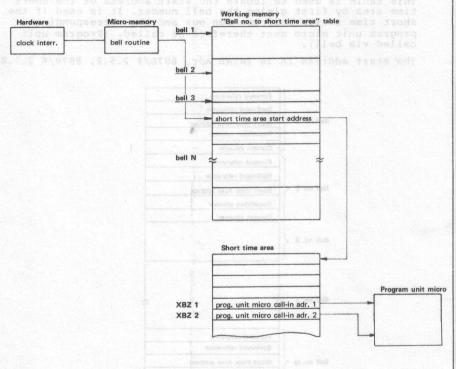
t propent this table is not used. All the peripheral device danacted to the computer dan interact with one another.

Copying of this document and giving it to others and diffe see or namination of the content thereof a re forbidden without express authority. Villenders are lability to the payment of damages. All rights are reserved in the event of the grant of a patent or the registration of a utility model or design.

Weitergabe sowie Verneifätigung disser Unterlage, Werentung und Mittelliufe There in Innia en olieit gestättet, soweit nicht ausofücktich zugestanden. Luwiderhandlungen verpflichten zu Schadenersatz. Alle Rechte für den Fall der Patenterteitung oder Gebrauchsmusster-Eintragum vorbehalten.



## 10.1.6.1 Relationship between Clock Interrupt, Bell Table and Program Unit Micro



10.1.7 Device Combination Table

At present this table is not used. All the peripheral devices connected to the computer can interact with one another.

Weitergabe some Verneifälligung dieser Unterlage, Vernerung und Mittellung inss inhalts nicht ge-Attlet, soweit nicht absolution inch absolution inch absolution inch absolution inch absolution inch absolution inch absolution weiterhalt under Attlete eine Fall der Patenterleiung der Gebrachsmusster-Eintragung-Rochalten.

Copying of this document, and giving it to others are the use or communication of hecoteans thereof are forbidden without express authors, offenders are itable to the payment of damages. At rights are reserved in the event of the gard of a patent or the registration of a utility mode or design.



A116 Ge-

ergaba sowie Averleifättig."; dieser Unterlagenstungen der Averleifättig."; dieser Unterlagenstungen einest gesenstungen der September 2. Schadenersatz. All wir für den Fall der Patanzeleilung oder Gerbannster-Eintragung vorbshalten.

8870

## 10.1.8 "Program Unit to Device Control Field" Table

This table is used to ascertain the start address of the device control field via the program unit number.

The start address is in YGKFTB Adr. 8870/4 2.4.6, 8870/6 2.0.14

Program unit no. 1 = Addr. Word 1 tab. Program unit no. 2 = Addr. Word 2 tab. Program unit no. 3 = Addr. Word 3 tab. Start ADR of device control field for allocated progr. unit 1 Start ADR of device control field for allocated progr. unit 2 Start ADR of device control field for allocated progr. unit 3

Program unit no. N = Addr. Word N tab.

Start ADR of device control field for allocated progr. unit N

#### Interrupt Number to Short Time Area 10.1.9

This table is used to allocate the short time area to the corresponding interrupt number.

The start address of the table is in YJNKTB. Adr. 8870/4 2.5.0, 8870/6 0.4.4.

I/O Int. No. 1 = Addr. Word 1 tab. I/O Int. No. 2 = Addr. Word 2 tab. I/O Int. No. 3 = Addr. Word 3 tab. Start address of short time area for allocated program unit Start address of short time area for allocated program unit Start address of short time area for allocated program unit Start address of short time area for allocated program unit

I/O Int. No. N = Addr. Word N tab. Start address of short time area for allocated program unit

If the program units are not active, the interrupt end routine entry is present in the allocated place in the table. (Short circuit against undesired interrupts).

If a program unit is activated, the start address of the short time area is entered in the corresponding place in the table.

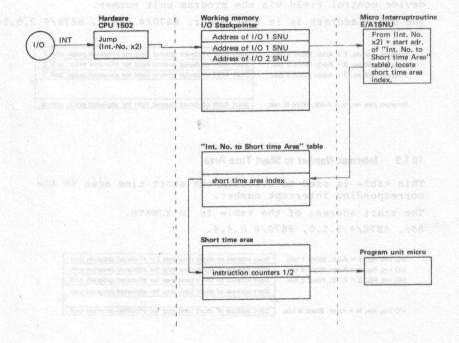
if this document, and giving it to others as or communication of the contrast stategodies without express authority. Oftenders to the payment of damages, Mi rights are in the event of the grant of a patient or the or of a utility model or design. Copying of this and the use or are forbidden vare liable to the reserved in the registration of

5.79

73



## 10.1.9.1 Relationship between I/O Interrupt and I/O Stackpointer



Weitergabe zowie Vernielfaltigung disser Unterlage, Werertung und Kittellung ihre in falls in sind in sätzlet, sowiel in fint austrofelich zugestaden. Zu der zundungen erpflichten zu Schadenserzi. Alle Gebrie für den Fall der Patenterlung oder Gebescherzunsterfüntigung drobeiten.

Copying of this document, and giving it to others and the uses ofcommination of the coordinate Reveal are forbidden without express authority. Ultimotes are included to the payment of damages. Air rights are reserved in the section of the great of its getter of the great of section of section of the great of section of section

Weitergabe sowe Verrigifaligung dieser Ungerlage, Wemertung und Mirtellum ihres innits einelt gestatiet, soweit indik ausdürchlich zugestanden. Luricharhadiungen verplichten be Sobarbenersatz. Alle Rechts für des Fail der Patenteriellung oder Gebrauchsmussier-Eintragung vorbehalten.

#### 11 "Device Number to Program Unit Number" Table

This table is used to allocate the program unit number to the preceding device number. It is used when an I/O instruction is inserted and the associated device control field must be located.

The start address of the table is in YGERTN, Adr. 8870/4 2.4.12, 8870/6 2.1.4.

Two device numbers are allocated to each place in the table.

			18		10			1
Device	No.	0/1	Program	unit	No.	Program	unit	No.
Device	No.	2/3	Program	unit	No.	Program	unit	No.
Device	No.	4/5	Program	unit	No.	Program	unit	No.
Device	No.	6/7	Program	unit	No.	Program	unit	No.
Device	No.	N/N+1	Program	unit	No.	Program	unit	No.

The program unit for the odd device numbers is on bits 1 to 9. That for the even device numbers is on bits 10 to 18.

11.1 Relationship between the "Device Number to Program Unit Number" Table and the "Program Unit Number to Device Control Field" Table

See the description of the "Program Unit to Device Control Field" table.



For notes side? "separational accepted or separation advantage." It

This table is used to ellocate the program unit number to the preceding device number. It is used when an I/O instruction is inserted and the suspensive device control dield must be located.

office numbers are allocated to each piece in the terifo

vice No. 07) Program unit No. Program unit do.

vice No. 2/3 Program unit No. Program unit No.

vice No. 4/5 Program unit No. Program unit No.

vice No. 6/7 Program unit No. Program unit No.

vice No. 6/7

The program unit for the odd device numbers is up bits like

 Relaxionchip between the "Traice Rember to Program Unit Rundler" Table and the "Program Unit Montag on Control Caste Caste Table

See the description of the "program Unit to Device Control Fields table.

Wetergabe sowie Vervielfalligung dieser Unter Verwerfung und Mittellung, ihres Inhalts nich statzer, sweet nocht anscholleble byessander Auferhandlungen erepflichten zu Schazenerser Rechte Bitt der fall der Etenstrettiung oder Prositivemener effortenne Schabenterlung oder

Copying of this document, and giving it to others and the uses open-monitation of the contrast sheed are forbidden without express authors, Uffenders are liable to the payment of damages. At rights are reserved in the gent of a patent or the reserved in the event of the grant of a patent or the registration of a utility modill or design.

Weitergabe sowie Vernießligung dieser Unterlage, Verwertung und Vatteilung inse insells enfoll gestattet, soweit noth ausdrücklich zugestaden. Lesterdenhadlungen verpflichten zu Schadenersatz. Alle Rechte für der Fall der Fatenterleitung oder Gebrauchsmussier-Eintragung verbehatten.

## 12 Description of the SC Memory Cell Assignment in System 8870/4

Symbol	Address	Meaning				
UINTlA	0.0.0	Contains accumulator content when there is an interruption through interrupt level 1 (call address of the I/O interrupt end routine).				
The second second second second second	0.0.2	Index register for indexing of micro-				
XI	0.02	instructions.				
XAHW YINT2A	0.0.4	Accumulator content when there is an interruption through level 2.				
YINTlU	0.0.6	Store for 901 micro-instruction addresses when there is an interruption through interrupt level 1.				
XBZHW YINT2U	0.0.8	As above, interrupt level 2.				
YMIN	0.0. A	Contains constants 3, 15, 15, 15, 15, (required for address modifications).				
YESART	0.0. C	Flag memory for switching-on modes:				
aria fold t	alles te	3.1.0.2.0 System initialisation 3.2.0.0.4 Sermik from disk				
		3.3.4.0.0 SYSTOOL call = (IPL)				
		0.0.0.0.2 no memory test				
roold bill	used to bu	0.0.0.1 do not initial load				
XFE	0.0. E	Flag memory for error or parity				
		interrupt: 0.0.0.0.2 Error interrupt 0.0.0.0.1 Parity interrupt				
	4 2 2 2 2 2 2					
		0.0.0.0 Power failure interrupt				
XDIAU	0.1. 0	Back space address memory for diagnosis routine sub-program.				
XINIU	0.1. 2	Back space address memory for sub- program on initialisation call.				
XDIAl	0.1. 4	Auxiliary cell l Used in initial-				
XDIA2	0.1. 6	2 isation phase,				
XDIA3	0.1. 8	3 loading process				
XDIA4	0.1. A	4 and memory test.				
XEPZG	0.1. C	Address indicator for the error and parity interrupt error handling routine call address.				
XNAZG	0.1. E	Address indicator for power failure interrupt error handling routine call address.				

Oppying of this document and giving it to others and the use rotemulation of the somilarist beared are fortidate without express authority. Ultenders estable to the syment of demanges. All quits are reserved in the sent of the grant of a platfit or the registration of a utility model or design.



## Initial Program Loader Working Area in 8870/4

The initial loader working area is only required for initialisation and restart after power failure. It occupies the upper area of the I/O stack pointer, that is to say, the area from address O.B.C. to 1.F.E.

Since this area must always be kept free for the loader, no interrupt number greater than 5.E = 94 may be used in system 8870/4.

Assignment of initial loader area:

Address	Meaning
0.B.C 0.D.0	Loader working cells
0.D.2	Buffer area to record the instructions
1.F.E	

#### 12.2 Assignment of the Global Cells

interrugh error bandling routing paris

Symbol	Address	Meaning
Y Bit 13	2.0.0	Auxiliary global cells for high bits 13 to 18.
Y Bit 14	2.0.2	on 6.0.0.0.0
Y Bit 15	2.0.4	These bits are used to build block
Y Bit 16	2.0.6	addresses or to amend label addresses
Y Bit 17	2.0.8	with block addresses.
Y Bit 18	2.0.A	54 £.8.0.8.0
YSIMZ	2.0.C	These cells contain the "Change from Simultaneous to Central Running" program routine call address.
YZSIM	2.0.E	Contains the call address of the "Perform System Function" sub-program. System functions, time management, short time area management, etc.
YJBOV	2.1.2	Contains the call address of the "Job Scheduling" sub-program.
		A CONTRACT OF THE PROPERTY OF

198. Zu-Zu-Alle Ge-

Copying of this document, and giving it to others and the uses of communication of the cochests thereof are forbidden without excess authority. Offenders are liable to the nayment of damages. At rights are resemplant he even of the grant of a patient or the registration of a utility mode or design.



Weitergabe sowie Vernieligitigung disser Untgalage, Wewertung und Kritellung Prins in inatia midit gestatus, soweit nicht ausfolderich upgestaden. Lestatus, soweit nicht ausfolderich zu Schadenesatz. Alle Rechts für den Eall der Patentertellung oder Gebrauchsmusster-Eintragung vorbehalten.

Symbol	Address	Meaning
YINTNU	2.1.4	Contains the entry address of the 2nd level interrupt routine.
YZABUP	2.1.6	Contains the call address of the "Central Load Shifting and Signing-Off Sub-Program".
YEZEIT	2.1.8	Contains the present time:  Bits 1 to 6 = seconds from 0 to 59  Bits 7 to 12 = minutes from 0 to 59  Bits 13 to 18 = hours from 0 to 23
YWECK	2.1.A	Contains the call address of the "Bell Activation" sub-program.
YWKANF	2.1.C	Contains the start address of the active bell in the bell table.
YWKEND	2.1.E	Contains the end address of the active bells in the bell table.
	2.2.0	Variable connector 1, Job scheduler c contains either the call address of t routine for job field request or the call address of the "Process Job Scheduler Queues" routine.
XVVAK2	The second secon	Variable connector 2, Job scheduler c required when job fields are connecte (meaning as above).
XWSIM2	2.2.4	Auxiliary bell cell: contains the sta address of the bell which should be t next to be processed.
XUZG1	2.2.6	Contains the call address of the cloc interrupt routine. With clock interru jump to (XUZGI).
XUTAKT	2.2.8	Contains the value 3.15.10.7.1 for th CPU clock 4 ms cycle.
YRESRV	2.2.A	Contains the call address of the cloc interrupt end routine (UHRWR) or zero Used for TACOS.
YOSAD	2.2.C	Cell to distinguish between OSA and OVISAD = 0.0.0.0.2 = OSD.
YDOUBL	2.2.E	States whether the machine is operation singly or doubly.  YDOUBL = 0 = Fore- or single operation of the state of the stat



Symbol Address Meaning 2.3.0 Carry collector for foreground 15.8 min. YFMIN 2.3.2 4 ms counter for foreground. The counter YFNKS continues to operate after 15.8 min. The carry is stored in YFMIN. Carry collector for background is 15.8 YBMIN 2.3.4 min. 4 ms counter for background. The counter 2.3.6 YBMLS. continues to operate after 15.8 min. The carry is stored in YBMIN. Contains the DMA nos. which are at YDSZHZ present occupied by the system. Only used as auxiliary cell. Contains the address of the micro-YFEADR 2.3.A instruction where a parity or time error can be recognized. Frequency reducer 250: 1. Required to YUHILF 2.3.C ascertain the ceconds. 250x4ms = 1 s. 2.3.E Second counter (i.e. counter of YSEK seconds). 2.4.0 Contains the present short time index YISNU if the system is operating simultaneously or zero if it is operating centrally. Contains the start address of the system YSYPAR 2.4.2 output table. Contains the start address of the device 2.4.4 XVKOTB combination table. Contains the start address of the YGKFTB 2.4.6 "Program unit to Device Control Field" table. Contains the start address of the YTNLTB 2.4.8 "Program unit to Long-Time Area" table. XU8 Used in the Sermik as power failure indicator flag. Contains the negated end address of the YETB 2.4.A "Program unit to Long-Time Area" table. XU10 Contains the start address of the 2.4.C YGERTN "Device Number to Program Unit Number" table. Contains the negated end address of the YGTEND 2.4.E "Device Number to Program Unit Number" table. Contains the start address of the YINKTB 2.5.0 "Interrupt Number to Short time Area" table.

Weitergabe sowe Verrieffalligung dieser Unterlagn, Verwerung und Altriefing himes himats nicht gestattet, sowell nicht ausstrückfort zugestanden Uder zu brugen erpflichten Kohadeenssatt. Alle Rechte Int den Fall der Jatenterstelung ode Ge-Erauchssussier-Eintragung vorbehalten.

Oopying of this document, and giving it to others and the use of communication followorders laneed are forbidden without express authority. Offenders are forbidden without express authority. Offenders are as iable in the payment of damages. Air rights are reserved in the esent of the grant of a patent or the registration of a utility mode or design.



Weitergabe sowie Verneifstigung dieser Unterlag, verwerfung und Kitellium (Ries mitst nicht geetztiet, soweit nicht ausfordelche Zugestanden. Zuerbandungen vergifinden zu Schädenenstat. Mie hie für den Fall der Fanneteilung oder Ge-"uchemuster-Eintragung vorbehalten.

Symbol	Address	Meaning
YWTAB	2.4.2	Contains the start address of the "Bel to Short time Area" table.
YWNR	2.5.4	Contains the largest bell number.
YHSSAS	2.5.6	Contains the start address of the main memory.
YHSDAS	2.5.8	Contains the address of the first free byte after the device control fields.
YHSEND	2.5.A	Contains the end address of the lower main memory.
YJFF1	2.5.C	Contains the address of a job field in the job field chain which is still from or zero if no more free job fields are available in the chain.
	2.5.E	Contains the address of a Class 1 shot time area that is still free, or zero if no further short time areas of this class are available.
YKZK2	2.6.0	Contains the address of a class 2 shortime area that is still free, or zero if no further areas of this class are available.
	2.6.2	Means the same as YKZKl, but for class
YKZK4	2.6.4	Means the same as YKZKl, but for class
YKZK5	2.6.6	Means the same as YKZKl, but for class
YKZK6	2.6.8	Means the same as YKZK1, but for class
YKZK7	2.6.A	Means the same as YKZKl, but for class
YKZK8	2.6.C	Means the same as YKZKl, but for class
YKZK9	2.6.E	Menas the same as YKZKl, but for class
YKZK10	2.7.0	Means the same as YKZKl, but for class
YKZK11	2.7.2	Means the same as YKZKl, but for class
YKZK12	2.7.4	Means the same as YKZKl, but for class
YKZK13	2.7.6	Means the same as YKZKl, but for class
YKZK14	2.7.8	Means the same as YKZKl, but for class
YKZK15	2.7.A	Means the same as YKZKl, but for class
XVUSY YAR1	2.7.C	Either contains the rewind address of the program routine which has called system function, or is used as a work



Kundendienst

Symbol	Address	Meaning and I spanned todays
XVUJO YAR2	2.7.E	Either contains the return address of the program routine which schedules a job, or is used as a working cell during simultaneous working.
XNETZA	2.8.0	Contains the accumulator content in the event of recognised power failure.
XNETZU	2.8.2	Contains the address of the micro- instruction where the power failure interrupt can be recognised.
XNETZI	2.8.4	Contains the index register content which was current when power failure was recognised.
XFHZ1	2.8.6	Three auxiliary cells for processing
XFHZ2	2.8.8	parity or time error interrupts.
XFHZ3	2.8.A	
XAW	2.8.C	When bell runs out, contains the accumulator content which was current when the clock interrupt was recognised.
XIW	2.8.E	When bell runs out, contains the index register content which was current when the clock interrupt was recognised.
XBZW	as verel, i	When bell runs out, contains the address of the micro-instruction which was current when the clock interrupt was recognised.
XVBZSW	2.9.2	During job scheduling, contains the instruction address of the program interrupted by clock or I/O interrupt.
XVISW	2.9.4	During job scheduling, contains the index value of the program interrupted by clock or I/O interrupt.
XVASW	2.9.6	During job scheduling, contains the accumulator content of the program interrupted by clock or I/O interrupt.
XVEIN	2.9.8	Job scheduler entry counter. Contains the quantity of jobs to be connected.
XIHW	2.9.A	During interrupt performance, contains the index value of the program inter- rupted by an I/O interrupt.

Weitergabe zowie Vernieifättigung dieser Unterlage, werfung und Kittellung fires halts nicht geittet, sowiet in die ausdrücklich üpgestaden. 25derhandlungen septilichen zu Abbedenssatz, Mie Rechte für den Fall der Egenterelung der Gebrauchsmaster-Eintragung Witchenten.

Copying of this document, and giving it to others and the use or formunation of the confessible end are forbidden without express authors, Offenders are liable to the payment of canapses. A: rights are reserved by the enem of the grant of a patent or the registration of a utility mode 9de lossign.



Weitergabe sowie Verrieffälligung dieser Unterlage, Wewertung und Kittellungflires mitste nicht gestätet, soweit nicht ausdrücklich ugestaden. Jusichte für den Fall der Festenterleiung oder Georauchsmusten-Eintragung vorbahalten.

Symbol	Address	Meaning
		Contains either the table place address of the "Interrupt no. to short time area" table, when I/O interrupt processing is pending, or the index of the program which has called in the job scheduler (at time of job scheduling).
XVAEWl	2.9.E	Start pointer of job scheduler input queue 1.
XVEEW1	2.A.0	End pointer of same.
XVAAWl	2.A.2	Start pointer of job scheduler output queue 1.
XVEAW1	2.A.4	End pointer of same.
XVAEW3	2.A.6	Start pointer of job scheduler input queue 3.
XVEEW3	2.A.8	End pointer of same.
XVAAW3	2.A.A.	Start pointer of job scheduler output queue 3.
XVEAW3	2.A.C.	End pointer of same.
XUWMK	2.A.E	Contains the return address of the program interrupted by clock interrupt while the clock interrupt is being dealt with. Contains zero if the system is operating centrally.
XVFEB	2.B.0	Contains error flags if an error has been discovered in the job scheduler, e.g. absence of operating media.
XVJSTA	2.B.2	Contains the status of the job scheduler.  (XVJSTA) = 0, job scheduler status passive.  (XVJSTA) ≠ 0, job scheduler active.  In the initialisation phase, XVJSTA is used as XMVB. In this case it
		contains the start address of the module supply blocks.
XVAKW	2.B.4	Pointer for present output queue.  Contains the address of the present output queue pointer.
XVDSZ	2.B.6	Contains the number of the DMA currently assigned.



Symbol	Address	Meaning
XVZA	2.B.8	Start pointer of the queue for time request.
XVZE	2.B.A	End pointer of same.
XVSUZG	2.B.C	Device combination table pointer.
XVBAKT	2.B.E	Contains the device combination bits. Not exploited at present.
XVJEA	2.C.0	Start pointer of the queue for job field request.
XVJFE	2.C.2	End pointer of same.
XVH1	2.C.4	Job scheduler auxiliary cell 1.
	. ONES	to remind but . Frank . Dealery
wiel sele	barbs dot la	refelog frate . S.A.S (WEAVE
	•	i suesus
•	9,88,8	to seeming but I a a collingual
XVH11	2.D.8	Job scheduler auxiliary cell 11.
XVH12	2.D.A	Initialisation auxiliary cell.
•		EVERN3 2.A.C End peinter of
1013 10 8	etuto eddres	EGWAR LA.E Contains the r
sambal do	ela yé paton	instal mespose :
XVH14	2.D.E	Initialisation auxiliary cell.

(XVJSTA) # 0. Tob scheduler actions to the initiallustion phase, YVJSTA is used to XMVB. In this case it contains the start address of the.

Contains the number of the DEA

Weitergabe sowie Vernielstlitigung dieser Unterlage, Verwertung und Kitelbrug hiere finnstat einde gejatutet, sowielt nicht ausdrückfelt zugestanden. Ludiefnhaufungen verpflichten aus Schädenenstat. Alle Rechte für den Fäll der Planterteilung odert. Gebrauchsmuster-Entragung/Porbehalten.

Weitergabe sowie Verrießfätigung disser Untgräge, verwertung und Krithellung Nires habitat nellt gestatter, soweit nich ausdrücklich upestanden. Ludicharhollungen verpflichten zu Schadenersätz. Mie Rechte für den Fail der Patenterfellung oder Gebrauchsmuster-Eintragung verbehatten.

# Description of the First 256 Working Cells in 8870/6 (These are located in CPU 1501)

Symbol	CPU	ess 901	Meaning
XINTIA	0.0	0.0.0	Contains the accumulator content at the time of interruption at interrupt level 1.
XI	0.1	0.0.2	Index register for indexing of micro-instructions 901.
XAHW YINT2A	0.2	0.0.4	Accumulator content when there is an interruption through interrupt level 2.
YINTlU	0.3	0.0.6	Store for 901 micro-instruction addresses when there is an interruption through interrupt level 1.
YBZHW YINT2U	0.4	0.0.8	As above, interrupt level 2.
YMIN	0.5	0.0. A	Contains constants 3.15.15.15.15 (required for ADR modifications).
YESART	0.6	assibbs stati	Flag memory for switching on mode 3.1.0.2.0 System initialisation 3.2.0.0.4 Sermik from disk 3.3.4.0.0 SYSTOOL call = (IPL) 0.0.0.0.2 no memory test 0.0.0.0.1 do not initial load
XFE	0.7	0.0. E	Flag memory for error or parity interrupt: 0.0.0.0.2 Error interrupt 0.0.0.0.1 Parity interrupt 0.0.0.0.0 Power failure interrup
XDIAU	0.8	0.1. 0	Return address memory for diagnos routine sub-program.
XINIU	0.9	0.1. 2	Return address memory for sub- program on initialisation call.
XDIA1 XDIA2 XDIA3 XDIA4	0.A 0.B 0.C 0.D	0.1. 4 0.1. 6 0.1. 8 0.1. A	Auxiliary diagnosis cell 1 Used IPL 3 loadi & memor
XEPZG	0.E	0.1. C	Address pointer for the error and parity interrupt error handling routine call address.
XNAZG	0.F	0.1. E	Address pointer for power failure interrupt error handling routine call address.

5.79



Address Washington and the same sent Meaning CPU 901 Symbol contains the start address of the 0.2. SATZTAB foreground register lable of the macro-interpreter or of the TPC, if TACOS is operating. Contains the start address of the 0.2. 2 XIMA01 1.1 background register label. Start address of TVPl foreground 1.2 XIMA02 0.2. 4 register label, when TACOS is operating. 0.2. 6 Start address of TVP2 foreground 1.3 XTMA03 register label, when TACOS is operating. 0.2. 8 Start address of TVP3 foreground XIMA04 register lable, when TACOS is operating. Start address of TVP4 foreground 0.2. A XTMA05 1.5 register lable, when TACOS is operating. Start address of TVP5 foreground XIMA06 1.6 0.2. C register lable, when TACOS is operating. Start address of TVP6 foreground 0.2. E XIMA07 register lable, when TACOS is operating. Start address of TVP7 foreground 1.8 0.3. 0 80AMIX register lable, when TACOS is operating. Start address of TVP8 foreground 1.9 0.3.,2 XIMA09 register lable, when TACOS is operating. Start address of TVP9 foreground 0.3.4 XIMA0A 1.A register lable, when TACOS is operating. ini no ma Start address of TVP10 foreground 0.3. 6 XIMAOB 1.B register lable, when TACOS is operating. Start address of TCP11 foreground 0.3. 8 1.C XIMA OC register lable, when TACOS is operating. Start address of TVP12 foreground 0.3. A 1.D XIMAOD register lable, when TACOS is operating. Start address of TVP13 foreground 0.3. C XIMAOE 1.E register lable, when TACOS is operating.

Whitegabs was faviledizing disser Infertigo, Wenertung und Mittellung ihres infalts nicht gastatte. Swelt in cht ausdrücklich zugesanden gelichen vor Schausensstel. Alle Rechie für den Fall der Patendermitten der Gere brauchsmuter-Eintragu<sup>®</sup> vorbehalten.

opying of this document, and giving it to others the use or communication of the occupacy like each of the content between the folding without express authority, Offenders is liable to the payment of damages. All rights are exampled in the event of the grant of the grant of the damages and a utility make or design.



Weitergabe sowie Vervieligitigung disser Unteglage, Wewertung und Kitklung Meirer haltst noffi gestatte, soweit nicht ausdrücklich zugestaden. Lustatte, soweit nicht ausdrücklich zugestaden. Ludichtandungen werführen zu Schadeneratz. Alle Rechts filt den Fall der Patentenfellung oder Gebrauchamuster-Entragung vorbahalten.

Symbol	CPU	ess 901	Meaning
XIMAOF	1.F	0.3. E	Start address of TVP14 foreground register lable, when TACOS is operating.
XIHW		0.4. 0	Buffer for the present index value of the program interrupt by a I/O interrupt.
YISNU	2.1	0.4. 2	Contains present short time index if the system is operating simultaneously, or zero when it is operating centrally.
YINTB	a doj a	it mareorg	Contains the start address of the "Interrupt no. to short time area" table.
YSIEND	(01)	0.4.6	Memory for simultaneous flags: 1 = bell call 0 = I/O interrupt call
XMAXIN	2.4	0.4.8	Contains the largest I/O interrupt no. which occurs in the system on bits 8 to 18.
XMOVE1	2.5	0.4. A	Auxiliary cell for micro-move. The content of XBZ = SRl is transferred to XMOVEl.
	Denpla	0.4. C	Auxiliary cell for micro-move. The content of XQL = SR6 is transferred to XMOVE2.
XMOVE3	2.7	0.4. E	Auxiliary cell for micro-move. The content of XZA = SR7 is transferre to XMOVE3.
XIII	bbs ilso		Contains the address of the place in the "SATZTAB" table of the micro-program at present active.
XITVP	2.9	0.5. 2	Contains the address of the place in the "SATZTAB" table of the next TVP in the foreground to be called.
			Global cells for following constants:
YBIT13	Station I a	0.5. 4	0.1.0.0.0
YBIT14	2.B	0.5.6	0.2.0.0.0
YBIT15	2.C	0.5.8	0.4.0.0.0
YBIT16	2.D	0.5. A	0.0.0.0.0
YBIT17	2.E	0.5. C	1.0.0.0.0

5.79



Weitergabe sowie Vernielfälligung dieser Untertage, wewertung und Kittellium ihre halbs incht ge-aktitet, soweit incht ausdrücklich zugestaden. Lu-widerhandsungen erpflichten La Chaldeneratz, Alle Rechte für der Fall der Etalenterellung oder Ge-tzrachsmusser-Etringsung verbellten.

	Addr	1	Address		
Symbol	CPU	901	Meaning		
YSIMZ	3.0	0.6.0	Contains the start address of the program routine for changing from simultaneous to central.		
YESIM	3.1	0.6.2	Contains the start address of the program routine for changing from central to simultaneous.		
YSYSV	3.2	0.6.4	Contains the call address of the "Perform System Functions" sub- program.		
YJOBV	3.3	0.6.6	Contains the call address of the sub-program for job scheduling.		
YZABUP	3.4	0.6. 8	Contains the call address of the central contacting and signing off sub-program.		
YWECK	3.5	0.6. A	Contains the call address of the sub-program for bell processing.		
XVVAK1	3.6	0.6. C	Address pointer 1 for the variabl connectors. Contains either the call address for job scheduler		
is transf		ent of XB	or that for the job management routine.		
XVVAK2	3.7	0.6. E	Address pointer 2 for the variable connectors. Assigned as in the case of address pointer 1.		
YINTNU	3.8	0.7. 0	Contains the call address of the program routine for interrupt end processing.		
XWSIM2	3.9	0.7. 2	Auxiliary cell for bell simulatio		
YXIMZ1	3.A	0.7. 4	Contains the call address of the program routine for changing from simultaneous to central, with storage of the return address.		
YWERT10	3.B	0.7. 6	Contains the constants 0.0.0.0.10		
XAW	3.C	0.7. 8	Buffer for the accumulator conten of the program interrupted by clock-interrupt. (XAHW) - XAW.		
XIW	3.D	0.7. A	Buffer for the index value of the program interrupted by clock-interrupt. (XI) — XIW.		
XVBZ	3.E	0.7. C	Buffer for the instruction addres of the program interrupted by clock-interrupt. (XINT2U) - XBZW		

Opping of this document, and giving it to others and the use or formulation of the confinishment are forbidden without express authority, Unitedess are inibial to the syment of deases. All rights are reserved, in the earth of the grant of gatest or the registration of a utility model or design.



89

3ge,	99-	707	¥ B	69	
Jutes	nicht	nden.	rsatz.	oder	
BSBL L	haits	ugesta	adene	ilung	.Bn.
p Bun	res In	lich zu	zu Sch	interte	behall
faltig	of the	drück	hten	r Pate	10 VOF
/ervie	tteilu	nt aus	erpflic	III de	tragur
Weitergabe sowie Vervielfaltigung dieser Unterlage,	nd Mi	it nic	gen v	en Fa	ar-Ein
abe s	ung u	SOWE	Indiur	für d	must
eiterg	FWBrt	attet,	iderha	achte	auchs
×	Ve	st	*	20	0

Curbal	Addr CPU	901	Meaning
Symbol XVBZSW	3.F	0.7. E	Buffer for the instruction address
AVBZSW	3.1	0.7. E	in the job scheduler routine. The
	heduler		instruction address refers to the
	erid no		program interrupted by clock or
			I/O interrupt before job scheduli is called.
XVISW	4.0	0.8.0	Buffer for the index value of the
	0 9860 0	ess in the	program interrupted by clock or
		.amnipolo	I/O interrupt before job scheduli routine is called.
XVASW	4.1	0.8. 2	Buffer for the accumulator conter
	91048 0	er. Used i d addrasse	of the program interrupted by
			clock or I/O interrupt before job scheduler routine is called.
3 6 2 - 0 1 3 6 8	4 2		
	4.2	0.8. 4	Job scheduler entry counter. Contains the quantity of jobs to
		, a sho	be connected.
XII	4.3	0.8. 6	Buffer for the start address of
estine dan	da soft i	toosi of	the short time area of the jobs
	sets on	id-prol ed Fino mer	to be connected. Required in the job scheduler routine.
		. 500801	
XVAEW1	4.4	0.8.8	Start of job scheduler input queue 1.
XVEEW1	4.5	0.0.8	End of same.
XVAAWl	4.6	0.8. C	Start of job scheduler output
	E 3-0, 9, 7.7.5	1000	queue 1.
XVEAW1	4.7	0.8. E	End of same.
XVAEW3	4.8	0.9. 0	Start of job scheduler input
	4.0	0.0.0	queue 3.
XVEEW3	4.9	0.9. 2	End of same.
XVAAW3	4.A	0.9. 4	Start of job scheduler output
aria addre	301 063	e to store	queue 3.
XVEAW3	4.B	0.9.6	End of same.
XUWMK	4.C	0.9.8	Flag for the clock interrupt routine. Contains the instruction
		nolisation	address of the program interrupte
	deed bay	nastes gr	by clock interrupt. Contains zero
	and the	1015361-0	when the system is operating
		rens rear area.	centrally.
YEANR	4.D	0.9. A	Memory for the I/O interrupt no. which was processed last.
	visite	us na da-l	
XMVB	4.E	0.9. C	Start address of the module supple block of the present program unit
XVISTA		un ns es l	or memory for the job scheduler
			status.

5.79



Kundendienst

1	Addr	ess	
Symbol	CPU	901	Meaning
XMODNR XVAKAW	4.F	0.9. E	Contains the present module number or is used as a pointer for the present job scheduler output que
хн1	5.0	0.A. 0	Working cell for the macro-interpreter.
XU1	5.1 d be von	0.A. 2	Working cell for the macro-interpreter. Used to store the return address in the case of stage l sub-programs.
	5.2	0.A. 4	Working cell for the macro-interpreter. Used to store source field addresses.
XOP	ио узапа	0.A. 6	Working cell for the macro-interpreter. Used to store the device number or micro-instruction OP-codes.
XI3	Area di 6. Requi routine	0.A. 8	Macro-interpreter working cell. Used to record the start address of the long-time area of a program unit which is to be processed.
XHGK	5.5	0.A. A	Macro-interpreter working cell. Used as an auxiliary cell.
XUPUP	5.6	0.A. C	Macro-interpreter working cell. Used as an auxiliary cell.
XU2	5.7 isluosdo	0.A. E	Macro-interpreter working cell. Used to store the return address in the case of stage 2 subprograms.
XHA	5.8	0.B. 0	Macro-interpreter working cell. Used as an auxiliary cell.
XU3	5.9	0.B. 2	Macro-interpreter working cell. Used to store the return address in the case of stage 3 subprograms.
YTEST1 YTEST2 YTEST3	5.A 5.B 5.C	0.B. 4 0.B. 6 0.B. 8	Communications cell between item being tested and test machine.
XH14	5.D	0.B. A	Macro-interpreter working cell. Used as an auxiliary cell.
хн15	5.E	0.B. C	Macro-interpreter working cell. Used as an auxiliary cell.

Weitergabe zonie Vernielfätigung disser Unterlage, Greedfung und Kittellion in Frei halte nicht ge-jattet, soweit nicht ausfolicklich zugestaden. Zu-derhandungen werfünken zu Schadensstz, Ale Rechts für den Eall der Zementellung oder Ge-brauchsmusten-Eintragung Verbehalten.

Opping of this document, and giving it to others and the use or communication the contents interest are forbidden without express authority. Offsigles are includen without express authority. Offsigles are reserved in the every express to decampas. At rights are reserved in the event of the grant of a patent or the registration of a utility modelour lessign.

XH16 5.F

0.B. F

Macro-interpreter working cell. Used as an auxiliary cell.



Weitergabe sowie Verrieifätigung dieser Unterjage, Wewertung und Kitteling Minist mittell meil gestatte, soweit in det austricklich zugestanden. Luderhandungen verpflichten, zu Schadenestz. Alle echte für den Fail der Patentertellung oder Georauchsmuster-Eintragung vorbehalten.

- 1 7	Addr		Meaning
sha fiele Wites to	Guantíty	901 0.C.0	Working cell for the macro-inter- preter. Contains zero if the call phase is to be called; otherwise contains the call address of the MATABO program routine (to check out whether a program change should be effected).
XAD  Midd sass  -olosu  Js si ff  ,bo	6.1 bbs noid to the yte which georgess	0.C.2	Working cell for the macro-inter- preter. Contains data on the history of address generation (if bits 12 = 1, register address characters; if bit 1 = 1, dual address characters) or the status of the optional CPU flags when the macro-interpreter is called.
XIR3	6.2	0.C.4	Working cell for the CPU micro. Contains return address for interrupt processing.
YEZEIT	6.3	0.C.6	Memory for real time.
YAR1 XVUSY	6.4	0.C.8	Global simultaneous working cell. Used on the occasion of job scheduling and interrupt processing.
YAR2 XVUJO	6.5		Global simultaneous working cell. Used on the occasion of job scheduling and interrupt processing.
	6.6	0.0.0	Cell for program allocation: 0 = foreground 1 = background
	6.7	0.C.E	Foreground time counter for CPU time calculation. Counter for the time that the 4 ms counter exceed 15.8 mins.
YFMLS	king ce lag sta	1 3000000	Foreground time counter for CPU time calculation. Goes up 1 every 4 ms. Max. reading 15.8 mins. The excess is counted in YFMIN.
YBMIN		address a	Background time counter for CPU time calculation. Meaning as YFMIN.
YBMLS	6.A	0.D.4	Background time counter for CPU time calculation. Meaning as YFMLS.
YUHILF	6.B	0.D.6	Frequency reducer 250 : 1. Require to ascertain the seconds. 250 x 4 ms = 1 s.

5.79

XAR

XZAN

XOL

XZA



198-20-70-68dieser Unterla Inhalts nicht zugestanden. chadenersatz. Weitergabe sowie Verrielfältigung dieser Verwertung und Mittellung ihres inhalts stattet, soweit nicht ausfrücklich zugest widerhandlungen verpflichten zu Schaden Rechte Urr den Fail ere Ptakentreilung frauchsmussier-Einfragung Mohalten

Address Meaning 901 CPII Symbol 0.D.8 Second counter (i.e. counter of YSEK 6.C seconds). Flag cell for wish change. 0.D.A XPWD 6.D 6. E O.D.C Contains macro-memory start address XHSSAS Contains the quantity of peripheral XFORE 6.F O.D.E devices operating in the foreground. Macro-instruction address pointer. 7.0 0.E.0 XBZ Always points to the macroinstruction byte which is at present being processed. 7.1 0.E.2 Contains the current N-address of XLF the macro-instruction being processed. CEC WEEK

7.2

7.3

7.5

7.6

7.7

aloulation. Counter for a XZAM 7.8

ground t me counter for CFU YRINT 7.9 0.F.2

.anim 8.81 pmlbsby .sem

YRRU 7.A 0.F.4

around t me counter for CPU

7.B

an is downted in YFWIN.

ram allocations

me counter for CPU

as princes indi-

the seconds, 250

YRAKKU

0.E.4

0.E.6

0.E.8

0.E.A

O.E.C

O.E.E

0.F.0

slumiss

0.F.6

Used as a buffer for the macroinstruction pre-code character.

Used as an auxiliary cell for macro-instruction processing.

Used as an auxiliary cell for macro-instruction processing.

Contains the full N-address 1 of the macro-instruction at present being processed.

Contains the full M-address of the macro-instruction at present being processed.

States the length of the M-field for VS, Vl, VF, VSL, VlL and VFL pre-code character instructions.

Contains the code of the end character for VU, VUL, VA and VAL pre-code character instructions.

CPU micro working cell. Contains the present flag status for the CPU internal interrupt inhibit register.

CPU micro working cell. Contains the address of whichever jump instruction was last carried out in the 901 micro.

CPU micro working cell. Contains the outcome of this 901 microinstruction (= accumulator content).

opying of this document, and giving it to others the use accommunication of the conclusis breed the includes without express authority. Offenders in einbale to the payment of damages. A. r. ghis are serred, in the event of the grant of a patent or the gistration of a utility model or design. Copy and are are i



Weitergabe sowie Verneifäligung disser Unterjage, Verwerfung und Kiltellung Pinse inntit melut gestatist, soweit inch ausfordische zugestaden. Lerichtandiungen erpfilichten zu Schadeneratz. Alla achte für den Fall der Patenterliung oder Geurauchsmuster-Eintragung vorbehalten.

Symbol	Addr	ess 901	Meaning
YRBZMI	7.C	0.F.8	Working cell for the CPU micro. Instruction counter for micro 901.
YRCEFE	7.D	0.F.A	Working cell for the CPU micro. Contains the constant 0.0.15.15.14. Required when processing 901 micro-instruction in order to be able to mask the OP part.
YRCFFF	7.E	0.F.C	Working cell for the CPU micro. Contains the constant 0.0.15.15.15. Required when processing 901 micro- instructions in order to be able to mask the OP part.
YRINT	7.F	0.F.E	Working cell for the CPU micro. Contains the constant 0.2.0.1.5. Required in order to be able to insert the status register when defined.



For notes

DRIMBM

DRI

Weitergabs sowie Verneitättigung disser Unterlage. Biererbung on Wittellung ihris mikatis mich gelatte, seveti nicht sugkrichtellungssaden, üsderhandungen septilichten schädesensatz. Mis Rechte Lit Gan Fall der Mattenterlung oder Ge-Urachömsser-Chrisquing Wittellung.

Copying of this document, and giving it to others and during and the user or momination (the confusit shereof are forbidged without express author). (Binders are in either to the agyment of damages, All rights are reserved, to be event of the grant of a patent or the registratible of a cutility modespin design.



Weitergabe sowie Verrielfälligung dieser Unterlea, werenfung und Kiltelium Pires immlas nicht geetattet, sowiel in ich ausdrödelich zugelanden. Luchandungen serglichten zu Schädenersatz. Alle schie für den Fall der Fannerteilung oder Ge-"auchsmuster-Eintragung vorbehalten.

14 Description of the System and Index Registers

14.1 System Registers

		Addr		
Nr.	Symbol XOS	8. 0	901	Meaning System registers X05 to X315 are
1	X1S	8. 1	1.0. 2	with the corresponding index
2	X2S	8. 2	1.0. 4	registers each time there is a
3	x3s	8. 3	1.0.6	change of level.
4	XBPS	8. 4	1.0. 8	35 KEND A. 3 S.A. B CO
5	XDAS	8. 5	1.0. A	Contains the start address of the
6	XMAS	8. 6	1.0. C	system working area.
7	XICS	8. 7	1.0. E	36 X9K Ac 4 1.4. 8 Co
8	XMKS	8. 8	1.1. 0	97
9	XFLS	8. 9	1.1. 2	37 XBW A. 5 1.4. 8 0
10	XRAS	8. A	1.1. 4	E   E   E   E   E   E   E   E   E   E
11	XLCS	8. B	1.1. 6	39 X889A A. 6 L.4. C Co
12	XSCS	8. C	1.1. 8	SO S A E C A SUB SE
13	XIOCSS	8. D	1.1. A	35 XSUS A. 7 1.4. E Co
14	XB1S	8. E	1.1. C	oo a . a . a l a soom last
15	XB2S	8. F	1.1. E	00
16	X16S	9. 0	1.2. 0	41 Apreu A. 9 1.5. 2 Cc
17	X16S	9. 1	1.2. 2	3.5
18	XBP1S	9. 2	1.2. 4	42 XOVE A. A. 1.5. 4 Co
19	XICLS	9. 3	1.2. 6	to _
20	XBP2S	9. 4	1.2. 8	41 XTST 1 A. B 1.5, 6 Cd
21	XIC2S	9. 5	1.2. A	44 XYST 2 A. C 11.5. B Co
22	XBP3S	9. 6	1.2. C	12 TO ACAD IN ART IN FREE, THE
23	XIC3S	9. 7		45 STEE A. D. 1.S. A. Co
24	XBP4S	9.8	1.3. 0	46 EFTOS A. E 1.8. c 00
25	XIC4S	9. 9	1.3. 2	
26	XBP5S	9. A	1.3. 4	o s s.i s.a Ason ta
27	XICS5	9. B	1.3. 6	48 X10 1 2.011.5.8 Cc
28	XBP6S	9. C	1.3. 8	14
29	XIC6S	9. D	1.3. A	149 XIO 2 01 3 31.61 2 CC

No.

Symbol



1.3. A XBP7S Always contains the present program 30 9. E 31 XIC7S 9. 1.3. E reference number and the subprogram return address. 32 XSAS A. Start address of the byte memory. 0 1.4. 0 33 XSLB A. 1.4. Start address of the free user area. 34 XLAD A. 2 1.4. 4 Loading address for the user program. Contains the address of the loading 35 XEND A. 3 1.4. 6 instruction which occupies the last 7 bytes of the core memory. XEND + 6 = XSUBContains the program interrupt 36 XPW A. 4 1.4. 8 request bits. 37 Contains the program status: XSW A. 5 1.4. A = system level 3.15.15.15.15 = user level 38 Contains the address part in the XSUPA 6 1.4. C A. case of PRG instruction. 39 XSUK A. 7 1.4. E Contains the subsequent character in the case of PRG instruction. 1.5. 0 Contains the start address of the 40 **XCOM** 8 common area. 41 1.5. 2 Contains the start address of the XDIBU A. file assignment list with associated disc buffer. A. A Contains the start address of the 42 XOVL 1.5. overlay area. 43 1.5. Contains the register number for XTST 1 A. B 6 the test stop. 1.5. 8 Contains the comparative data 44 XTST 2 A. C for XSTS1. 45 1.5. A Contains the test stop address. XTXT 3 A. D 1.5. C Ouantity of devices operating 46 **XFJOB** A. E

Meaning

Address

901

CPU

Weitergabe sowie Verrieifaltigung disser Unterlage, weretung und Attei ung Theis Rinalis nicht gelattet, sowielt nicht ausdrückfer zugestaden. Luricht had ungen erpflichten, Abbadenessatz, Alle Rechte für den Fall der Patenterlaung oder<sub>ag</sub>bebrauchsmuster-Eintragung forbelatien.

Oopying of this document, and giving it to others and the use of communication of the footbacks it are of the control of the property of the control of the

in the foreground (excluding

Contains the OSD call address.

Contains the start address for the IOCS routines GET and PUT.

Contains the start address for the IOCS routines OPEN and CLOSE.

and line).

47

48

49

XOSA

XTO 1

XIO 2

A. F

D. 0

D. 1

1.5. E

1.6. 0

1.6. 2



Weitergabe sowie Verneifältigung dieser Untgräge. Wewertung und Kittellingfähren habta midtig gestatut, soweit in dra uasdrödich zugestaden. Lusterhandlungen reprifichten zu Schadeneratz. Alle Rechte für den Fall der Patenterlelung oder Gebrachsunsen-Eintragum verbekten.

50 to 56: these system registers are assigned and managed by the loading program.

	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	722-	ess	
No.	Symbol	CPU	901	Meaning
50	XD	B. 2	1.6. 4	Contains the address of the working and I/O area for the first phase of the user program.
51	XDH	в. 3	1.6. 6	Contains the address of the working and I/O area for the main phase just loaded.
52	XDB	B. 4	1.6. 8	Contains the address of the working and I/O area for the secondary phase just loaded.
53	XLH	в. 5	1.6. A	Contains the loading address of the main phase just loaded.
54	XLB	в. 6	1.6. C	Contains the loading address of the secondary phase just loaded.
55	XCSH	в. 7	1.6. E	Contains the start address of the loaded constant segment for the main phase.
56	XCSB	в. 8	1.7. 0	Contains the start address of the loaded constant segment for the secondary phase.
57	XTST4	в. 9	1.7. 2	Auxiliary register for the test system.
58	XTST5	в. А	1.7. 4	Auxiliary register for the test system.
59	XSUB	в. в	1.7. 6	Contains the start address of the last byte in the system transfer area - end of the core memory.
60	XDOUB1	в. с	1.7. 8	Contains the start address of the entry point for various system functions in double.
61	XDOUB2	B. D	1.7. A	Auxiliary register for double module.
62	XDISK	В. Е	1.7. C	Contains the call address of the IOCS board.
63	XDAWF	B. F	1.7. E	XDAWF = XDA = Start address of the data area.
			1.0	[ [ [ [ [ ] ] ] ] ] [ [ ] [ ] [ ] [ ] [



### 14.2 Index Registers

		Addr	ess I	rangers of englishment and
No.	Symbol	CPU	901	Meaning
0	x0	C.0	1.8.0	Contains the start address of the last object field of data field instructions.
1	x1	C.1	1.8.2	Contains the start address of the next object field for data field instructions.
2	X2	C.2	1.8.4	Contains the start address of the last source field of data field instructions.
3	х3	C.3	1.8.6	Contains the start address of the next source field of data field instructions.
4	XBP	C.4	1.8.8	Contains the currently valid program reference point address (= start address of the corresponding program routine).
5	XDA	C.5	1.8.A	Contains the start address of the data area.
6	XMA	C.6	1.8.C	Contains the start address of the mask area.
7	XIC	C.7	1:8.E	Contains the start address of the current macro-instruction.
8	XMK	C.8	1.9.0	Flag register, flag assignment from bit 1 to 16.
9	XFL	C.9	1.9.2	Contains the length of the sliding point field for sliding point arithmetic.
10	XRA	C.A	1.9.4	Contains the address of the loop start for repeat loop instruction.
11	XLC	C.B	1.9.6	Contains the number of times the loop is to be run through in the case of repeat loop or loop instructions.
12	XSC	C.C	1.9.8	Sub-program stage counter = Program stage number.
13 14 15 16 17 18	XIOCS XB1 XB2 X16 X17 XBP1	C.D C.E C.F D.0 D.1 D.2	1.9.A 1.9.C 1.9.E 1.A.0 1.A.2	Work register for IOCS.  Free for the user (except in the case of TACOS).  Contains the start address of program stage 0 (= main program
				when sub-program stage l is called in).

Weltergabe sowie Vernieffältigung disser Unterlage, Verwerfung und Kittellion, in ihre haltst nicht gestattet, sowiet in chr ausdrocklich zugestanden. Auwiderhandklungen nerft inchen zu Schadensetzti. Alle Rachte für der Fall der Patenerteilung oger debrauchsmuster-Einstagung vorbankten.

Oppying of this document, and giving it to others and the use or formulation the confusion sheeped are forbidden without expess author ty. (Vietadars are includen without expess author ty. (Vietadars are includen without expess and an expension of an experience in the event of the grant of a patent or the registrat on of a utility mode or design.

Weitergabe sowie Verrieifältigung disser Unterlige, Verwertung und Kittleilung Weise haltst nicht fügstätte, soweit nicht ausdrücklich upgestanden. Luchter der vergrinchen zu Schadenersätz. Alle chte filt den Fall der Peneinterligung oder Geauchennaster-Eintragung vorbehalten.

Nr. Symbol CPU 901 Meaning  Contains the return address into program stage 0 when calling subprogram stage 1.  NR. Symbol D.3 1.A.6 Contains the start address of subprogram stage 1 when calling subprogram stage 1 when calling subprogram stage 2.  NR. Symbol D.4 1.A.8 Contains the start address of subprogram stage 2 when calling subprogram stage 3.  NR. Symbol D.6 1.A.C Contains the start address of subprogram stage 2 when calling subprogram stage 3.  NR. Symbol D.5 1.A.A Contains the start address of subprogram stage 3.  NR. Symbol D.6 1.A.C Contains the start address of subprogram stage 3 when calling subprogram stage 3.  NR. Symbol D.6 1.B.C Contains the return address into program stage 4.  NR. Symbol D.6 1.B.C Contains the start address of subprogram stage 4.  NR. Symbol D.6 1.B.C Contains the start address of subprogram stage 5.  NR. Symbol D.6 1.B.C Contains the start address of subprogram stage 5.  NR. Symbol D.6 1.B.A Contains the start address of subprogram stage 5.  NR. Symbol D.6 1.B.A Contains the start address of subprogram stage 5.  NR. Symbol D.6 1.B.A Contains the start address of subprogram stage 5.  NR. Symbol D.6 1.B.A Contains the start address of subprogram stage 5.  NR. Symbol D.6 1.B.A Contains the start address of subprogram stage 5.  NR. Symbol D.6 1.B.A Contains the start address of subprogram stage 6.  NR. Symbol D.6 1.B.A Contains the start address of subprogram stage 6.  NR. Symbol D.6 1.B.B. Contains the return address into program stage 6.  NR. Symbol D.6 1.B.B. Contains the start address of subprogram stage 6.  NR. Symbol D.6 1.B.B. Contains the start address of subprogram stage 6.  NR. Symbol D.6 1.B.B. Contains the start address of subprogram stage 6.  NR. Symbol D.6 1.B.B. Contains the start address into program stage 6.  NR. Symbol D.6 1.B.B. Contains the start address into program stage 6.  NR. Symbol D.6 1.B.B. Contains the start address of subprogram stage 6.  NR. Symbol D.6 1.B	1			Addr	000	
19 XIC1 D.3 1.A.6 Contains the return address into program stage 1 when calling subprogram stage 2.  20 XBP2 D.4 1.A.8 Contains the start address of subprogram stage 1 when calling subprogram stage 2 when calling subprogram stage 2.  21 XIC2 D.5 1.A.A Contains the return address into program stage 2 when calling subprogram stage 2 when calling subprogram stage 2 when calling subprogram stage 3.  21 XIC3 D.7 1.A.E Contains the return address of subprogram stage 2 when calling subprogram stage 2 when calling subprogram stage 3.  22 XBP4 D.8 1.B.0 Contains the return address of subprogram stage 3 when calling subprogram stage 3.  23 XIC4 D.9 1.B.2 Contains the return address of subprogram stage 3 when calling subprogram stage 4.  24 XBP4 D.8 1.B.4 Contains the return address into program stage 3.  25 XIC4 D.9 1.B.2 Contains the return address into program stage 4.  26 XBP5 D.A 1.B.4 Contains the start address of subprogram stage 4.  27 XIC5 D.B 1.B.6 Contains the start address of subprogram stage 5.  28 XBP6 D.C 1.B.8 Contains the start address into program stage 5.  29 XIC6 D.D 1.B.A Contains the return address into program stage 5 when calling subprogram stage 5.  29 XIC6 D.D 1.B.A Contains the return address into program stage 5.  20 Contains the start address of subprogram stage 5.  21 XIC7 D.F 1.B.C Contains the start address of subprogram stage 6.  22 XIC6 D.D 1.B.A Contains the return address into program stage 6.  23 XIC7 D.F 1.B.C Contains the return address into program stage 6.  24 XIC7 D.F 1.B.E Contains the return address into program stage 6.  25 XIC6 D.D 1.B.A Contains the return address into program stage 6.  26 XIC7 D.F 1.B.E Contains the return address into program stage 6.  27 XIC7 D.F 1.B.E Contains the return address into program stage 6.  28 XIC7 D.F 1.B.E Contains the return address into program stage 6.  29 XIC7 D.F 1.B.E Contains the return address into program stage 6.  20 XIC7 D.F 1.B.E Contains the return address into program stage 6.  28 XIC7 D.F 1.B.E Contains the return address into		Nr.	Symbol			Meaning
program stage 1 when calling subprogram stage 2.  21 XIC2 D.5 1.A.A Contains the return address into program stage 1 when calling subprogram stage 2 when calling subprogram stage 2.  22 XBP3 D.6 1.A.C Contains the start address of subprogram stage 2 when calling subprogram stage 3.  23 XIC3 D.7 1.A.E Contains the return address into program stage 2 when calling subprogram stage 3 when calling subprogram stage 3 when calling subprogram stage 4.  24 XBP4 D.8 1.B.O Contains the start address of sulprogram stage 4.  25 XIC4 D.9 1.B.2 Contains the return address into program stage 4 when calling subprogram stage 4.  26 XBP5 D.A 1.B.4 Contains the start address of sulprogram stage 4 when calling subprogram stage 4 when calling subprogram stage 5.  27 XIC5 D.B 1.B.6 Contains the return address into program stage 4 when calling subprogram stage 5.  28 XBP6 D.C 1.B.8 Contains the start address of sulprogram stage 5 when calling subprogram stage 6.  30 XBP7 D.E 1.B.C Contains the return address into program stage 6 when calling subprogram stage 7.  31 XIC7 D.F 1.B.E Contains the return address into program stage 6 when calling subprogram stage 7.  32 X32 E.0 1.C.0 These registers remain freely available to the user.						Contains the return address into program stage 0 when calling subprogram stage 1.
21 XIC2 D.5 1.A.A Contains the return address into program stage 1 when calling subprogram stage 2.  22 XBP3 D.6 1.A.C Contains the start address of subprogram stage 2 when calling subprogram stage 2 when calling subprogram stage 3.  23 XIC3 D.7 1.A.E Contains the return address into program stage 2 when calling subprogram stage 3.  24 XBP4 D.8 1.B.O Contains the start address of sulprogram stage 3 when calling subprogram stage 4.  25 XIC4 D.9 1.B.2 Contains the return address into program stage 4 when calling subprogram stage 4.  26 XBP5 D.A 1.B.4 Contains the start address of sulprogram stage 4.  27 XIC5 D.B 1.B.6 Contains the return address into program stage 5.  28 XBP6 D.C 1.B.8 Contains the start address of sulprogram stage 5 when calling subprogram stage 5 when calling subprogram stage 6.  29 XIC6 D.D 1.B.A Contains the return address into program stage 6.  30 XBP7 D.E 1.B.C Contains the return address into program stage 6 when calling subprogram stage 7.  31 XIC7 D.F 1.B.E Contains the return address into program stage 6 when calling subprogram stage 7.  32 X32 E.O 1.C.O These registers remain freely available to the user.		20			3.07.0 3.1.1.1	Contains the start address of sub- program stage 1 when calling sub-
program stage 1 when calling subprogram stage 2.  22 XBP3 D.6 1.A.C Contains the start address of subprogram stage 2 when calling subprogram stage 2 when calling subprogram stage 2 when calling subprogram stage 3.  23 XIC3 D.7 1.A.E Contains the return address into program stage 2 when calling subprogram stage 3.  24 XBP4 D.8 1.B.O Contains the start address of sulprogram stage 4.  25 XIC4 D.9 1.B.2 Contains the return address into program stage 4.  26 XBP5 D.A 1.B.4 Contains the start address of sulprogram stage 4.  27 XIC5 D.B 1.B.6 Contains the start address of sulprogram stage 5.  28 XBP6 D.C 1.B.8 Contains the return address into program stage 5 when calling subprogram stage 5.  29 XIC6 D.D 1.B.A Contains the start address of sulprogram stage 6.  30 XBP7 D.E 1.B.C Contains the return address into program stage 6.  31 XIC7 D.F 1.B.E Contains the start address of sulprogram stage 6.  32 X32 E.O 1.C.O These registers remain freely available to the user.			531480	INGT BU	3 30 88	program stage 2.
program stage 2 when calling subprogram stage 3.  23 XIC3 D.7 1.A.E Contains the return address into program stage 2 when calling subprogram stage 3.  24 XBP4 D.8 1.B.O Contains the start address of sulprogram stage 3 when calling subprogram stage 4.  25 XIC4 D.9 1.B.2 Contains the return address into program stage 3 when calling subprogram stage 4.  26 XBP5 D.A 1.B.4 Contains the start address of sulprogram stage 4 when calling subprogram stage 5.  27 XIC5 D.B 1.B.6 Contains the return address into program stage 5.  28 XBP6 D.C 1.B.8 Contains the start address of sulprogram stage 5 when calling subprogram stage 6.  29 XIC6 D.D 1.B.A Contains the return address into program stage 6.  30 XBP7 D.E 1.B.C Contains the return address into program stage 6.  31 XIC7 D.F 1.B.E Contains the start address of sulprogram stage 7.  32 X32 E.O 1.C.O These registers remain freely available to the user.		21	XIC2		1.A.A	Contains the return address into program stage 1 when calling subprogram stage 2.
program stage 2 when calling subprogram stage 3.  Contains the start address of sulprogram stage 4.  End when calling subprogram stage 4 when calling subprogram stage 4.  End when calling subprogram stage 3 when calling subprogram stage 4.  End when calling subprogram stage 4 when calling subprogram stage 5.  End when calling subprogram stage 5 when calling subprogram stage 5.  End when calling subprogram stage 5 when calling subprogram stage 5.  End when calling subprogram stage 6 when calling subprogram stage 6.  End when calling subprogram stage 6 when calling subprogram stage 6 when calling subprogram stage 6.  End when calling subprogram stage 6 when calling subprogram stage 6 when calling subprogram stage 7.  End when calling subprogram stage 6 when calling subprogram stage 7.  End when calling subprogram stage 6 when calling subprogram stage 7.  End when calling subprogram stage 6 when calling subprogram stage 7.  End when calling subprogram stage 7.  End when calling subprogram stage 6 when calling subprogram stage 7.  End when calling subprogram stage 7.		22	XBP3	D.6	1.A.C	Contains the start address of sub- program stage 2 when calling sub- program stage 3.
24 XBP4 D.8 1.B.0 Contains the start address of subprogram stage 3 when calling subprogram stage 4.  25 XIC4 D.9 1.B.2 Contains the return address into program stage 3 when calling subprogram stage 4.  26 XBP5 D.A 1.B.4 Contains the start address of sulprogram stage 4 when calling subprogram stage 5.  27 XIC5 D.B 1.B.6 Contains the return address into program stage 5.  28 XBP6 D.C 1.B.8 Contains the start address of sulprogram stage 5 when calling subprogram stage 6.  29 XIC6 D.D 1.B.A Contains the return address into program stage 6.  30 XBP7 D.E 1.B.C Contains the return address of sulprogram stage 6.  31 XIC7 D.F 1.B.E Contains the start address of sulprogram stage 6 when calling subprogram stage 6 when calling subprogram stage 7.  31 XIC7 D.F 1.B.E Contains the return address into program stage 6 when calling subprogram stage 7.  32 X32 E.0 1.C.0 These registers remain freely available to the user.		23				Contains the return address into program stage 2 when calling sub- program stage 3.
25 XIC4 D.9 1.B.2 Contains the return address into program stage 3 when calling subprogram stage 4.  26 XBP5 D.A 1.B.4 Contains the start address of sulprogram stage 4 when calling subprogram stage 5.  27 XIC5 D.B 1.B.6 Contains the return address into program stage 5.  28 XBP6 D.C 1.B.8 Contains the start address of sulprogram stage 5 when calling subprogram stage 6.  29 XIC6 D.D 1.B.A Contains the return address into program stage 6.  30 XBP7 D.E 1.B.C Contains the return address of sulprogram stage 6.  31 XIC7 D.F 1.B.E Contains the start address of sulprogram stage 6 when calling subprogram stage 7.  32 X32 E.O 1.C.O These registers remain freely available to the user.		24		D.8		Contains the start address of sub- program stage 3 when calling sub- program stage 4.
program stage 4 when calling subprogram stage 5.  27 XIC5 D.B 1.B.6 Contains the return address into program stage 4 when calling subprogram stage 5.  28 XBP6 D.C 1.B.8 Contains the start address of sulprogram stage 5 when calling subprogram stage 6.  29 XIC6 D.D 1.B.A Contains the return address into program stage 5 when calling subprogram stage 6.  30 XBP7 D.E 1.B.C Contains the start address of sulprogram stage 6.  31 XIC7 D.F 1.B.E Contains the start address of sulprogram stage 6 when calling subprogram stage 7.  32 X32 E.O 1.C.O These registers remain freely available to the user.		25	XIC4		1.B.2	Contains the return address into program stage 3 when calling subprogram stage 4.
27 XIC5 D.B 1.B.6 Contains the return address into program stage 4 when calling subprogram stage 5.  28 XBP6 D.C 1.B.8 Contains the start address of sulprogram stage 5 when calling subprogram stage 6.  29 XIC6 D.D 1.B.A Contains the return address into program stage 5 when calling subprogram stage 6.  30 XBP7 D.E 1.B.C Contains the start address of sulprogram stage 6 when calling subprogram stage 7.  31 XIC7 D.F 1.B.E Contains the return address into program stage 6 when calling subprogram stage 6 when calling subprogram stage 6.  32 X32 E.O 1.C.O These registers remain freely available to the user.		26		D.A	s erull	Contains the start address of sub- program stage 4 when calling sub- program stage 5.
program stage 5 when calling subprogram stage 6.  29 XIC6 D.D l.B.A Contains the return address into program stage 5 when calling subprogram stage 6.  30 XBP7 D.E l.B.C Contains the start address of suprogram stage 6 when calling subprogram stage 7.  31 XIC7 D.F l.B.E Contains the return address into program stage 6 when calling subprogram stage 6 when calling subprogram stage 7.  32 X32 E.O l.C.O These registers remain freely available to the user.		27			1.B.6	Contains the return address into program stage 4 when calling subprogram stage 5.
program stage 5 when calling sub program stage 6.  30 XBP7 D.E l.B.C Contains the start address of su program stage 6 when calling sub program stage 7.  31 XIC7 D.F l.B.E Contains the return address into program stage 6 when calling sub program stage 7.  32 X32 E.O l.C.O These registers remain freely available to the user.						Contains the start address of sub- program stage 5 when calling sub- program stage 6.
30 XBP7 D.E l.B.C Contains the start address of surprogram stage 6 when calling subprogram stage 7.  31 XIC7 D.F l.B.E Contains the return address into program stage 6 when calling subprogram stage 7.  32 X32 E.O l.C.O These registers remain freely available to the user.			i stock i	di dodi	ма) зозі	Contains the return address into program stage 5 when calling subprogram stage 6.
program stage 6 when calling sub program stage 7.  32 X32 E.0 1.C.0 These registers remain freely available to the user.		30		D.E	1.B.C	Contains the start address of sub- program stage 6 when calling sub- program stage 7.
available to the user. ANSWY		31	XIC7			Contains the return address into program stage 6 when calling subprogram stage 7.
YEZES 2.3.6 Short time class pointer 8.		32	X32			
YEZES 2.3.6 Short time class pointer 8.				aditio	a saafn	WESK7 2.3.6 Short cime
보고 있다면 하면 없었다면 하면						
		63	x63	F.F	1.C.E	2000 - 10

Copying of this document, and giving it to others and the direct communication (the becomen in leaved and the direct control are toriciden without express authority. Climiters are chibit to the payment of diameter. All rights are reserved in the event of the grant of galant or the registration of a utility model or design.

Symbol .

YWKANF

Address

2.0.0

2.3.0

2.3.2

2.3.4

2.3.6

2.3.8

Meaning



End of the bell chain. 2.0.2 YWKEND 2.0.4 Cell for time cycle. XUTAKT 2.0.6 Auxiliary cell for DMA assignment. YDSZHZ Error address of the last parity or error 2.0.8 YFEADR interrupt. Start of the system output table. SYSPAR 2.0.A Start of the device combination table. XCKOTB 2.0.C Start of the "Program unit to Device YCKETB 2.0.E Control Field" table. Start of the "Program unit to Long-Time 2.1.0 YTNLTB Area" table. 2.1.2 Negated end address of same. YETB Start of the "Device Number to Program YGERTN 2.1.4 Unit" table. 2.1.6 Negated end address of same. YGTEND Start of the "Bell to Short time Work YWTAB 2.1.8 Area" table. 2.1.A Highest bell number. YWNR Internal failure switch. XINTER 2.1.C 2.1.E First free byte after the device control YHSDAS fields. 2.2.0 End of main storage (last byte). YHSEND Auxiliary cell for processing parity or 2.2.2 XFHZ1 error interrupt. Auxiliary cell for processing parity or 2.2.4 XFHZ2 error interrupt. 2.2.6 Time indicator (switch in clock interrupt). XUZG1 Indicator of first free job field. 2.2.8 UJFF1 Short time class pointer 1. YKZK1 2.2.A Short time class pointer 2. 2.2.C YKZK2 Short time class pointer 3. 2.2.E YKZK3

Short time class pointer 4. Short time class pointer 5.

Short time class pointer 6.

Short time class pointer 7.

Short time class pointer 8.

Start of the bell chain.

Vaitergabe sowie Verrieifaltigung dieser Unterlage, versrings und Kittelling, hier kinalts eicht gekattet, soweit nicht ausdrücklich zugstanden. Luendrahadiungen verpflichten zu Schädenersatz Alle Rechte für den Fall der Papanterteilung oder Gebrauchsmuster-Eintragung vochehalten.

YKZK4

YKZK5 YKZK6

YKZK7

YKZK8



Weitergabe sowie Verrieifälligung dieser Unterlage, Verwertung und Kulteilung Weiter Bindla beilung gestatet, soweit nicht ausdrückfeln trugsstanden. Ludichandulungen septilichen zu Schädennsatz, Alle sehs für den Fall der Petanterteilung oder Gezrauchsmuster-Eintragung vorbehalten.

Symbol	Address	Meaning
YKZK9	2.3.A	Short time class pointer 9.
YKZK10	2.3.C	Short time class pointer 10.
YKZK11	2.3.E	Short time class pointer 11.
YKZK12	2.4.0	Short time class pointer 12.
YKZK13	2.4.2	Short time class pointer 13.
YKZK14	2.4.4	Short time class pointer 14.
YKZK15	2.4.6	Short time class pointer 15.
XU8	2.4.8	Sermik flag/"N/A" indicator (N/A = power failure).
XU10	2.4.A	<pre>Sermik flag/"N/A" indicator (N/A = power failure).</pre>
YGZUHR	2.4.C	TONS global cell.
XIAR XVDSZ	2.4.E XIAR	3 auxiliary cells for initialisation. Present DMA assignment.
XIAR2 XVZA	2.5.0 XIAR2	Start of the queue for time request.
XIAR3 XVZE	2.5.2 XIAR3	End of same. dot
XUI1 XVSUZG	2.5.4 XIU1	UP store l initialisation. Device Combination Table indicator.
XIU2 XVBAKT	2.5.6 XIU2	UP store 2 initialisation.  Present device combination.
XAPE2 XVJFA	2.5.8 XAPW2	Word 2 of an UP lable. Start of queue for job field request.
XIZAEL XVJFE	2.5.A XIZAEL	Auxiliary cell 2 initialisation. End of queue for job field request.
XAP XVH1	2.5.C XAP	Installation parameter pointer. Job scheduler auxiliary cell.
XHW XVH2	2.5.E XHW	Auxiliary cell for initialisation.  Job scheduler auxiliary cell.
XBITZ	2.6.0	Auxiliary cell for determining the quantity of sequence parameters.
XVH3	XBITZ	Job scheduler auxiliary cell.
XINIF XVH4	2.6.2 XINIF	Error on initialisation. Job scheduler auxiliary cell.



Address Meaning Symbol 2.6.4 Terminal number. XTNNR XTNNR XVH5 Job scheduler auxiliary cell. XUNTEN 2.6.6 Auxiliary cell: "engage area below". XINTNR XUNTEN Interrupt number. XVH6 XUNTEN Job scheduler auxiliary cell. XAP2 2.6.8 Installation parameter reserve pointer. XAP2 XVH7 Job scheduler auxiliary cell. 2.6.A XAPR UP reserve indicator. Job scheduler auxiliary cell. XVH8 XAPR 2.6.C XGERNR Device number. Job scheduler auxiliary cell. XVH9 XGERNR XI.Z. 2.6.E Mark indicator. XVH10 XLZ Job scheduler auxiliary cell. XMVB2 2.7.0 Module start address. XVH11 XMVB2 Job scheduler auxiliary cell. XTAR4 2.7.2 Initialisation working cell. XVH12 XIAR4 Job scheduler auxiliary cell. 2.7.4 Initialisation UP store. XTII3 XVH13 XTII3 Job scheduler auxiliary cell. 2.7.6 Initialisation UP store. XIU4 XIU4 Job scheduler auxiliary cell. XVH14 2.7.8 Internal error number. XINTE XPRG 2.7.A Start address of the operating system. Start address of the GK 904 micro or zero. 2.7.C **XMAGK** 2.7.E Start address of the test module, or zero. XMATST XVFEB 2.8.0 Flag for "absence of operating media". XTONS 2.8.2 Start address of TONS-UP or zero. Start address of SYSARB-1 to be transferred YSAB 2.8.4 Flag cell for CPU error (for FE); in the 2.8.6 YPRUEF event of failure (YPRUEF) = 2.0.0. TONS index global cell. 2.8.8 XITONS Auxiliary cell for processing parity or XFHZ3 error interrupt.

. Flac vvailizon refuterios dol.

Weltergabe sonie Vervielfaltigung dieser Unterlage, Settlet, soweit in die Auftellung hiere Inhalts erücht gestattet, soweit in die auschrichten zugsstanden. Luretrehandungserverpflichten aus Schauererstr. Alle Rechts für den Fall der Patenderteilung oder Gabrauchsmusser-Eintragun, Worbelaiten.

Copying of this document, and giving it to others the use of communication of the cochesis thereof are forbidden without express authority, directors are forbidden without express authority, directors are isble to the payment of damages. Air rights are reserved in the permit of the grant of a patient or the registration of a utility model or design.



Weitergabe sowie Verrieifältigung dieser Unterlage, wevertung und Kittelium (Neise hinklät knicht stattet, sowiet in chr ausfordich zugestanden. Lucharhadiugen verpflichten zu Schadenersätz. Alle Alte für den Fall der Patentertellung oder Geauchsmuster-Eintragung vorbehalten.

ymbol	Address	Meaning
Q1	2.8.C	Global cell for IOCS line.
Q2	2.8.E	Global cell for locs line.
(Q3	2.9.0	Global cell for IOCS line.
Q4	2.9.2	Global cell for IOCS line.
Q5	2.9.4	Global cell for IOCS line.
(Q6	2.9.6	Global cell for IOCS line.
(Q7	2.9.8	Global cell for IOCS line.
8Q8	2.9.A	Global cell for IOCS line.
(Q9	2.9.C	Global cell for IOCS line.
(Q10	2.9.E	Global cell for IOCS line.
(Q11	2.A.0	Global cell for IOCS line.
Q12	2.A.2	Global cell for IOCS line.
(Q13	2.A.4	Global cell for IOCS line.
Q14	2.A.6	Global cell for IOCS line.
Q15	2.A.8	Global cell for IOCS line.
Q16	2.A.A	Global cell for IOCS line.
KDIA5	2.A.C	Setup point "Above"
RESRV	2.A.E	TONS auxiliary cell
TMERK	2.B.0	TONS global cell
CHGA	2.B.2	MP device type
СНСС	2.B.4	Cylinder number
KCHSK	2.B.6	Sector number
KCHHD	2.B.8	Kop number
KCHVER	2.B.A	Trial indicator
KCH 1	2.B.C	Working cell 1
CH 2	2.B.E	Working cell 2
CH 3	2.C.0	Working cell 3
PUFF	2.C.2	12 bytes header for disk
KULAD	2.C.A	Working cell
XUCNT	2.C.C	Working cell

5.79



Address Meaning Symbol Block address XADDR 2.C.E Start of bits 17 to 18. ANF 1 2.D.0 ANF1+1.1.E Last line of the system nucleus. ZMZEND ZMZEND+2 Contains the entry address for signing YZGRA off SP. YZASTP ZMZEND+4 Contains the entry address for the job limit time test program. YZASXI ZMZEND+6 ZAS index Return address from devices to ZAS. YZASRT ZMZEND+8 Present buffer pointer. YZASPZ ZMZEND+10 Present buffer length. YZASPL ZMZEND+12 Error messages or addition value for the ZMZEND+14 YZASCO job limit time. Start of the device module global cells. **IOGLOB** ZMZEND+16 Output table 2 E/A 1801 (assigned by card IOGLOB+0 IOGLO00 reader 0090 and paper tape reader). Output table 1 E/A 1801 (assigned by SS). IOGLOO1 IOGLOB+2 "Assigned" flag line (TC 400). IOGLOB+4 IOGLO02 TOGT-003 TOGLOB+6 Flag for console change, Not Close (DRY). Global cell for disk drive TOGLOO4 IOGLOB+8 Global cell for disk drive TOGLOO5 TOGLOB+10 Global cell for disk drive IOGLO06 IOGLOB+12 Global cell for disk drive IOGLOB+14 IOGLO07 Clobal cell for disk drive TOGLOB+16 IOGLO08 Global cell for disk drive IOGLO09 IOGLOB+18 Global cell for disk drive IOGLOB+20 IOGLO10 Global cell for disk drive TOGLOB+22 IOGLO11 Global cell for disk drive TOGLOB+24 IOGLO12 Global cell for disk drive TOGLO13 IOGLOB+26 Global cell for magnetic tape transport IOGLO14 IOGLOB+28 Global cell for magnetic tape transport TOGLO15 TOGLOB+30 IOGLOB+32 Global cell for magnetic tape transport IOGLO16 Global cell for magentic tape transport IOGLO17 IOGLOB+34 Global cell for magnetic tape transport IOGLOB+36 TOGLO18 Global cell for magnetic tape transport TOGLO19 TOGLOB+38 IOGLO20 IOGLOB+40 Global cell for magnetic tape transport Global cell for magnetic tape transport IOGLO21 IOGLOB+42

Weitergabe owie Verreifättigung dieser Unterlage, Vernesting und Mittellung hiers in halbs nicht gestellte voweich nicht ausgeschocklich zugestanden. Luddensoulingen verpflichten abbadenersatz. Alle Rechte für die Fall der Petentereliung oder Gebrie für der Fall der Petenterelium oder Fall der Fall der Petenterelium oder Fall der Petenterelium oder Fall der Petenterelium oder Fall der Fall der Petenterelium oder Fall der Fall der Petenterelium oder Fall der Fa

Odpying of this document, and giving it to others are the confinishment the confinishment are forbidden without express authority. (Veneders and the confinishment of damages. All rights are reserved in the event of the grant of a patent or the registration of a utility mode or design.



Weitergabe sowie Vervielfätigung dieser Unterjage, werenting und Kitkling miter in mitals midt gestattet, sowiel nicht austricktich zugestaden. Luviderhandlungen wepflichten. zu Schädeneratz. Alle sohte für den Fall der Patenterfellung oder Georauchsmusser-Eintragung verbehalten.

### 15 File Assignment List of bepares at dall anampless all and

The file assignment list occupies 321 bytes, so that up to 32 files may be entered. Each file entry occupies 10 bytes (32 x 10 = 320 bytes).

Arrangement of the file assignment list

Byte	
ı	Contains the quantity of files that have so far been entered (i.e. opened).
2 3 4 5 6	These six bytes contain the name of the first file opened.
7 8 9 10	These three bytes contain the address of the file control block allocated to the first file which has been opened.  This byte states how often the first file has been opened. Required for TACOS
12 13 14 15 16	These six bytes contain the name of the second file opened.
18 19 20 21	These 3 bytes contain the address of the assign file control block (FCB) for the second file opened.  This byte states how often the second file has been opened. Required for TACOS.
312 313 314	These six bytes contain the name of the 32nd file opened.

These six bytes contain the name of the 32nd file opened.

314
315
316
317
318
These three bytes contain the address of the file control block for the 32nd file.

319
320
321
This byte states how often the 32nd file has been opened End of file assignment list.

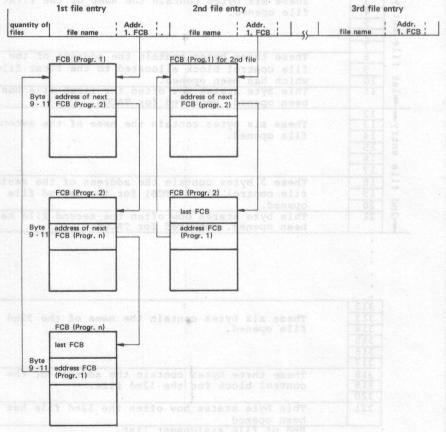


The file assignment list is managed by OPEN and CLOSE. Each file is entered once only.

If more than one program addresses a file at the same time, the file control blocks for the file in question are chained to one another. The chaining address is in bytes 9 to 11 of the appropriate FCB. The chaining address of the last FCB points to the start address of the first (ring chain).

Example:

#### File Assignment list



FCB chain from the first file

Weitergabe sowie Verrielfälligung dieser Unterlage, Andererung und Mittellung misse Minalis nicht gestättet, seweit nicht austrücklich zugesanden. Zudich and unger verpflichten zu Schadenersatt. Alle Rechts für den Fai. der Zeienterelung oder Gebrauchsmuster-Eintragung-norbeitlen.

Copying of this document, and giving it to others and the use rotemomication of the teochtests blaeed are forbidden without express authority (dienders are itable to the payment of damages. All rights are respected the event of the grand of a patient or the registration of a utility mode or design.

Weitergabe sowie Verrieifätigung dieser Untegage, Verwertung und Kitkeling Mires habitat neibi ge-statte, sowiel noch ausfolicklich zugestaden. Lu-dichtenballungen weitlichten zu Schadenerstz. Mie (sebhe für den Fall der Petenberteilung oder Ge-brachsmissie-Eintragung vorbehalten.

# 16 FCB Assignment List Rectal Category & Sport Rectal

The FCB is assigned as follows:

<ul> <li>Presen</li> </ul>	t data	byte no. of bytes Content
		Total Committee
Current	Quantity	TO STREET A STREET AND ASSESSMENT
Byte No.	of bytes	Content
1	ed englance to	Test byte
2	1	Program recognition
3 - 5	3	Archive number
6 - 8	3 1 0 0 0 1	AA FILLAB 3 dual address characters
9 - 11	3	AA fo the FCB in the other program
12 - 14	3	AA of the device control field
15 - 17	3.14111	Error address 3 dual address chars
18 - 20	3	AA user 1) AREA 3 dual address chars
21 - 23	M 93 43 1 - 0 - 16	AA 13 block in the user area 3 dual
. on erva	L-D Endade Li	address characters
24 - 26	190103 1/41[-1	AA ACC-AREA 3 dual address characters
27 - 29	3	AA IKE field 3 dual address chars
30 - 32	37 83 3638 1	AA WORKAREA 3 dual address characters
33	NOO Risks El	Flag byte I
34	loog polities	Flag byte II
35 - 40	6	Present data record address CC/H/R/ZZ
41 - 46	59786 1 1	Present 13 overflow address CC/H/R/ZZ
47 - 49	3	Present record no. 3 dual ADR chars
50	1	Access mode
51	1	Bit mask
52	1	Free

#### File label

Current Byte No.	Quantity of bytes	Content
53 - 58	6	File identifier
59	011911100	File record disk address, H/R
60	913913131	File record disk address (keyed)
61	113011130	Orga-byte I
62	inshilife to	Orga-byte II
63 - 64	2	Quantity of records per track
65	All nisdo to	Quantity of records per block
66	1	Quantity of sectors per block
		(data file)
67 - 68	0 10 2108619	Record length in bytes
69 - 70	2 2	Block length in bytes
71 - 73	3 0 3	AA Data file CC/H
74 - 76	3	EA Data file CC/H
77 - 82	6	Largest written data record CC/H/R/ZZ
83 - 86	4	Error bytes
87 - 89	3	Release date
90 - 92	3	Creation identification

5.79



Index sequential files

Current	Quantity			
byte no.	of bytes	Content state transaction		
93 - 94	2	Quantity of indices per track 13		
95	1	Quantity of indices per block 13		
96 - 97	2	Quantity of indices per block 12		
98	l mai i nonno	Quantity of sectors per 13-block (SF 1-6)		
99	1	OB length		
100 - 101	2	I 3 block length		
102 - 104		AA Il area 0-1/Byte no.		
105 - 106	mes Zorves	AA I2/I3 area CC		
107 - 112	(am 6   amax	AA of the first delete label, CC/H/R/ZZ		
113 - 115	3	EA Il area 0-1/Byte no.		
116 - 118	3	Largest Il status 0-1/Byte no.		
119 - 120	2	AA of the limit order term in byte 9.		
121 - 122	2	Largest Il status ZZ		
123 - 128	6	Largest I3 status CC/H/R/ZZ		
129 - 134	6	Largest overflow pool status CC/R/H/ZZ		
135 - 137	3	EA of the I2/I3 area CC/H		

#### With CONNECT (chaining)

Current byte no.	Quantity of bytes	Content
138 - 143	6	File identifier 1
144 - 149	6	File identifier 2
150 - 155	6	File identifier 3
156 - 161	6	File identifier 4
162 - 167	6 6	File identifier 5
168 - 173	6	File identifier 6
174 - 179	6	File identifier 7
180 - 182	3 II a	Chaining of all identical opened files
183 - 185	2 661 <b>3</b> 001 10	Chaining of chain files within one

This data must be protected against erasure or overwriting. Furthermore, no alterations should be made by the user, as this could give rise to discrepancies and errors in the disk processing.

Weitergabe sowie Verrielfältigung dieser Unterlage, fewertung und Kittellung hates finalis erhört ge-Aratte, soweit nicht ausdrücklich zugestaden. Luderhandungen erpflichten zu Schädenersatz, Kile Rechte für den Eil der Patenterteilung ause Gebrauchsmuster-Entragung Vorbehalten.



Waitergabe sowie Verrielfältigung disser Unterlagewererbung und Mittalium Binses innalse nicht gestättlet, sowiel nicht ausdrücklich zugestanden. Zusiderhandfungen verpflichten zu Schadenersalz. Alle stehte für den Fall der Patentertellung oder Gebrauchsmusster-Einfragung vorbeitalten.

#### 17 Display Parameter Field

The correspondence between the operating system and the "Display" channel program is not achieved by means of general I/O instructions, but by the handling of system and user parameters which is necessary similarly to a device control field, 18 bytes long, located in the byte area.

The parameter field is loaded by the operating program and the jobs that have been entered are scanned by the channel program at every bell call (every 8 ms).

The first leader byte contains the start add

#### 17.1 Assignment of the Parameter Field

Byte	Meaning			
0 (0013583)	Left-hand flag byte Bit 8 (M15) = 1, New S-job pending or being processed.			
	Bit 8 (M15) = 0, S-job ended, or no job currently pending.			
1 - 2	not used			
3	I/O code **			
4 - 6	not used			
7 - 9	M-address *			
10 - 11	N value (without taking account of the preliminary byte)			
N value				
	256 = Value of byte 10			
12 - 13	Address of the global cell for Not Close			
14 - 17	not used			

#### \* M address

The M address indicated the start address of the source field.

Arrangement of the source field:

The source field consists of both the preliminary bytes and the text. The length of the text is specified by the N value.

lines 0 - 10   columns 0 - 79   The length is	lst preliminary byte	2nd preliminary byte	Text
specified by N	lines 0 - 10	columns 0 - 79	The length is specified by N.

Copying of this document, and giving it to others and the use or nominication file sortius tableved are forbidden without express authority. (Vienders are liable to the payment of damages, All rights are reserved in the event of the grant of a platent or the registration of a utility model or design.



\*\* I/O Codes

The following I/O codes are used in the parameter field.

Code	Meaning a 10 Meaning and Meani
	N character display on the screen and in the S buffers. These are only displayed if the console position is in the system status. The address above which the characters are to be shown is to be found in the preliminary bytes.
0.1	Roll over: N characters are moved upwards or downwards. A maximum of 80 N characters are transferred to the line that has thus become free (this line = the M address of the first leader byte). The first leader byte contains the start address of the movement, the second its end address. <vbl> &gt; VBl&gt;= Roll up  <vbl> &lt; VB2&gt;= Roll down  <vbl> \rightarrow VB2&gt;= No movement (dummy instruction)</vbl></vbl></vbl>
DE CHEE	Example: $VB1 = 5$ , $VB2 - 2$
ingan, an ay sarban in Saran ay saran an ay Saran ay saran an an	Operation: <line 3=""> — Line 2 <line 4=""> — Line 3 <line 5=""> — Line 4 N-Character — Line 5</line></line></line>
	Roll over only takes place when the console position is in the system status.
0.2	Clear the screen. No interpretation of M address, N value or leader bytes. From line 0, column 0 880 or 1840 blanks are always transferred into the S-buffer and on to the screen. This only works when the console position is in the system status.
0.3	Change console. The operating system informs the console by means of this instruction that another display is to become console. The device number of the new display console is codified as an N value in the parameter field.
0.4	Not close. The program is aborted, either because of a PRG 21 applied by the user program or on the instructions of the operating program. The device number is codified in the N value. This instruction interrupts current GET instruction and the screen and A-buffer are cleared.
0.5	Not close. Same function as I/O instruction 0.4, except that the "clear" function is not performed. The device number is codified in the N value.

Weitergabe sowie Vernielfätigung dieser Untertage, wewertung und Kittelliug in Sindlis einfür gestättet, sowiet in die austrocklich zugestaden. Zudefathandungen verpflichten, zugestaden. Zudefathandungen verpflichten, zu Schadeneratt, AlleRechte für den Fall der Patenterellung oder Gebrauchsmusten-Entragun/Prochektien.

Copying of this document, and giring it to others and the use rotemination follow contentials therefore are forbidden without express authority. Utenders exilable to the syment of damages. All rights are reserved, in the event of the grant of a jatent or the registration of a utility model or design.



111

#### "Operating System" Common Area 18

The Common Area, covering 326 bytes, operates as a communications area for the system between foreground and background.

#### 18.1 Arrangement of the Common Area

Symbol	Absol.	169			
addr.	addr.	Meaning			
CMATYP		Description of machine type /2 = 3.2, /4 = 3.4, /6 = 3.6, /5 = 3.5 (reset /4).			
CPARDI	2	Start ADR of parameter field display.			
CFGXDA	30115 add) 1 (asaoo19 b	Memory area for the content of XDA (X5), foreground.			
ilde on an	8 of the distribution of t				
	and value	deteid			
COBEME	14	2 byte flag field for user common area. For flag assignment see section 18.2			
COMER 1	16	2 byte flag field for various system messages. For flag assignment see section 18.3.			
COMRE 1	18	Not used at present.			
COMERLO	22	2 byte flag field for the logic file. For flag assignment see section 18.4.			
CFCBL 0	24	FCB for the logic file.			

Oppying of this document, and giving it to others and he see for namenicalidative confusions heaven as the forders without express authority. Unindex are inchie to the apprent of damases. All rights are reserved in the event of the grant of galant or the registration of a utility model or design.

Weitergabe sowie Verzielfältigung dieser Unterlage, Wewertung und Kittelingsfrähes händla heiff ge-statter, sowiet in der ausfrücklich rugestaden. Lu-denhandlungen erpflichten zu Schädenersatz. Alle schie für den Fail der Pananteilung oder Ge-rzuchsmuster-Eintragung vorbehalten.

5.79



Symbol Absol. Meaning addr. addr. IKE Field for the log file. CIKEFE communications area for the system be-86 87 IO-AREA (buffer) for the log file. CIOARE . 169 170 Archive number of the disk on which CARCH the log file is to be found. IO-CODE (Start of the IO field over-173 COVERL lay loader). I flag byte for the overlay loader. COVMER 175 For flag assignment see section 18.5. Error code (the error code refers to COVFEL 176 the loading process). Start address of the device control COVAAG 180 field of the disk station on which the overlay phases are located. Target address in the memory, above COVZIL which the overlay phase is to be entered. Block length of the overlay phase to COVLNG 186 be loaded. 188 Disk address of the overlay phase to COVPLA be loaded. BAR BEST Code byte/Sector factor. COVRST 192

Weltergabe sowie Vernielfältigung dieser Unterlage, Werentroug und Kittleinen Diese hinalis einich ge-Stättet, soweit nich austrichtlich zugestaden, Zewiderhandlungen verpflichten as Schädeneratz. Alle Rechte Lir den Fall der gatenterleinen der Gebrauchsmisser-Eintsgung vorbehäten.



113

Weitergabe sowie Vervielfältigung dieser Unterlage	Verwertung und Mitteilung ihres Inhalts nicht ge	stattet, soweit nicht ausdrücklich zugestanden. Zu	viderhandlungen verpflichten zu Schadenersatz. All	echte für den Fall der Patenterteilung oder Ge	prauchsmuster-Eintragung vorbehalten.
		J			

1					
Symbol	Absol.	TREE COREME Flag Aniquement			
addr.	addr.	Meaning May S. A. M. A. Managaria			
COVPGN	194	Device number of the system disk.			
COVPGA	195	Device type of system disk DA 0/1 =			
		2, DA 3 = 4.			
COVBJT	196	Control byte for overlay loader, see			
		section 18.6.			
CANZPA	197	Total number of available overlay			
		partitions in the overlay storage			
GT6 COMMON D	di le pel	area (1 partition = 512 bytes).			
CLABYT	198	The partition from which the search			
metro poteri		for free paritions begins is alway			
61 2004		in this byte.			
PARMAT	1.9	Partition group - 1			
	*17.7	1 byte is assigned per partition.			
orth manager a		Entries are only made in the byte of			
	di la sep	the first partition required by the			
COAT of Design	ed fon hi	"N"s in a module.			
	, and 50 and	187654321 <sub>1</sub> Bit			
*0 * = 1 #18	bas *0* =				
11.00 01	t points for vera	Module no.			
out and as	helfitme	"1", the overlay			
or of year at	is common	module is operating			
istrianten va	a inchile	in BG.			
	evecotisdy	"1", the overlay			
		module is operating			
	230	in FG.			
MODMAP	231	Module parameter group			
	202160 81	2 bytes are assigned per module. Each			
	- Chik berm	time a system is opened, the number			
ni si indme	s 997, and	of partitions necessary for each			
	od I adld -	module is calculated and entered in			
	913 •93 to 12 magni	the MODMAP. If a module is called,			
ed at seas n	er angele en en en en en en en en	the number of the first partition			
.09 ev		assigned by the module is entered.			
		Quantity of   No. of the			
	20 Th a -m	required first partition			
of al agent	Samos an'T .	A   Proceed   1980년 1987년 1			
NE DC.	yd toeu	partitions assigned			
		This byte is the			
	1 2 2 7 mg	criterion for			
ad al cosa d		determining			
DAT to offer	and pean	whether the			
	STA STATE	module is trans-			
et area in be	parrico end	ient or			
	098290038	resident. If			
		byte ≠ 0, the			
		module is still			
on all seas of	291	resident.			
ana nam					
CPARET	292	Save field for PARMAP, if overlay			
	•	is too small.			
		되는 가는 문화가는 어떻게 보는 얼마나 사람들 이번째 사람들은 어린 생생님은 가게 하다면 나가가 먹니?			
	201	이 집에 그는 내가 하는 사람이 하는 아름이 아니는 아름이 되었다. 그는 사람들에게 되었다면 하는 사람들이 되었다면 하는 것이다.			
COMLNG	324 325	Length of the common area (326 bytes)			

5.79



Kundendienst

18.2 COBEME Flag Assignment (Common Area 2 bytes flag field)

8 7 6 5 4 3 2 1 8 7 6 5 4 3 2 1

n this byte.

vino ese meiadri

COBEME 0 COBEME 1
Adr. SYX Adr. SYX
XCOM, 14 XCOM, 15

or free paritions begins is always

the fitting particing required in the

2 bytes are assigned per module, fig.

fine a system is opened, the maker of partitions not essary for each

module is calculated and entered to the the called the number of the first partition

Sesigned by the goddle is entered

Cuantity of Line of the

required . | fix pertition

888 1

. Erestines ved tenoices a privi

Then a west deside not not?

ter which only on obser-

"1" the overlaw

The seve only . "I'

adve elnt.

or tree ton kent

an interest of

ent tentraniw

11 Innivisor

paines en el efuber

salitatace at alones

= "l", Use of the common area is barred to TACOS and FG. (It is also possible to inhibit TACOS in signle).

= "0", Use of the common area is not barred to TACOS or to BG.

= "0" and Bit 1 = "0", Any program unit entitled to use the common area may do so without any restriction whatsoever.

# "0" and bit 1 = "1",
Use of the common area
is barred to TACOS and
only permitted for TRP;
the TRP number is in
bits 1 to 8.

= "0 1",

The common area is being used by the FG.

= "1 0",

The common area is being used by the BG.

= 1 1",

The common area is being used by Single or TACOS.

= "1",

The common area is being processed (is active).

= "0",

The common area is not being processed.

Weitergabe sowie Verveidätigung dieser Unterlage, warenfrog und Kitteling hitze Inhalts nicht gelattet, soweit nicht ausdrücklich ungestanden. Zuwiderhandlungen ertil Chan tu Shaderestatt. Mie anderhandlungen ertil Chan tu Shaderestatt. Mie anderhandlungen ertil Certa ander sowie Gebrauchsmusser Einfragung Worbeatten. Wa



Weitergabe sowie Verrielfätigung dieser Unterlage. Verwartung und Mittellung Theire Inhalts nicht gestattet, soweit nicht ausdrückfich zugestanden. Usiderhandfungen verflichten. zu Schadenersatz. Alle sichte für den Fall der Patentertellung oder Geurauchsenusser-Eintragung vorbelatten.

18.3 COMER 1 and COMER 1.1 Assignment
(2 byte flag field for various system functions)

COMER 1 Adr. SYX XCOM, 16 COMER 1,1 Adr. SYX XCOM, 17

Not assigned at present

"1", a semi-conductor memory in the system.

"1", two semi-conductor memories in the system.

"1", CPU defective.

Copying of this document, and giving it to others and a fish as document, and the contents thereof are forbidden without express authority. (Unenders are liable to the payment of damages. All rights are reserved in the event of the grant of a patent or the registration of a utility mode or design.

erlage, tht geen. Zuntz. Alle er Ge-

18.4 CMERL 0 and CMERL 0.1 Flag Assignment
(2 byte flag field for the logic file)

CMERL 0 CMERL 0,1
Adr. SYX, Adr. SYX,
XCOM, 22 XCOM, 23

Adr. SYX, XCOM, 23

8 7 6 5,4 3 2 1 8 7 6 5,4 3 2 1 "0", system disk is o.k. "l", system disk is defective (set by the overlay loader). "0", log. file output possible. "1", logic file inhibited. "0", possible to read in text from text file. "1", text file inhibited. This bit is used in the "system opening" overlay phase, and subsequently remains freely available. "l", the log. file must be evaluated. "1", logbook 66% full. Message sent to operator. "1", Open performed for log. -"1", log file being processed at the moment. "l", logbook paging running. -"1", logbook output ready for display. "l", Swapping to be carried out. -"1", BG cannot load as overlay area is too small. "1", FG cannot load as overlay area is too small. "1", switching off bit set. "0", system is o.k. "1", check sum error found.

Excepting of this decement, and giving it to others and the saw or communication of the contest threed and the saw or communication of the contest threed saw or for cheften without propres and this to the payment of damages. All rights are assembled in the energlet file ground of a patent or the register file on of a utility model or design.

"0", system disk o.k.
"1", system disk defective
(set by readiness stop).



Weitergabe sowie Verrielfätigung dieser Untgräge, Weiterlung und Kittellung filmes immits midt gestattet, soweit nicht ausfrücklich zugestaden. Luwiderhandlungen wepflichten zu Schadeneratz. Alle Rechte für den Fail der Patentertellung oder Gebrachsmuser-Eintragung verbehötten.

18.5 COVMER Flag Assignment (1 flag byte for the overlay loader)

COVMER Adr. SYX, XCOM, 175 8 7 6 5 4 3 2 1

18.6 COVBIT Flag Assignment (Control byte for overlay loader)

COVBIT
Adr. SYX,
XCOM, 196

8 7 6 5 4 3 2 1

"1", Overlay loader is active.

"1", loading or unloading of the
14 overlay area partitions
(Swapping).

"1", FG parked.

"1", BG parked.

NIXDORF COMPUTER Kundendienst

For notes

COVERER Fire Assignment (1 fine overlay loader)

COVMER Adr. SYK, XCOM, 175

COVERT Flag Assignment

0.81

COMPLE ACC BYX, KCOM, 156

to paidant .

(Briggsw8)

magazani naga sata

Weitergabe sowie Verwieffaltigung dieser Unterlage, Verwerfung won Uttellung hier in halts eine Abig gestatter, sowief nicht ausdrücklich zugestenden. Zu eichnaftlichung ergelicheine Schadenersatz, Alle Reche ist, der Zatenterstellung oder Gebrachsmusster-Eintsquing, worbeitelten. D

Opping of this document, and giving it to others and the use or formunitation followorkers thereof are forfolden without express authority. Offenders exilable to the syment of demages. All rights are reserved in the event of the grant of a plant of a pl



Weitergabe sowie Verrielfätigung dieser Unterlage, Verentung und Wittelium ihres Inhalts einding er stattet, sowiel nicht ausdrücklich zugestanden. Zu "defnhandlungen renflichten zu Schadeneraatz. Alle sehte itst den Fall der Patanterleiung oder Georauchsemster-Einfragung vorbehalten.

#### 19 Overlay Area

Certain transient operating programs are kept in a particular storage area of the main memory — the overlay area — for as long as they are required.

This has a size of 8 k bytes. Its start address in in X425.

Normally, that is to say when TIOCS is not being used, the overlay area occupies H.A. blocks 3.B and 3.C. When TIOCS is being used it moves downwards.

#### 19.1 Partitioning of the Overlay Area

The overlay area is split into partitions of 512 bytes. This means that 16 partitions each fo 512 bytes are available to receive program modules.

Copying of this document, and giving it to others and he save communication the confusit shared are forbidden without express authority. Ultenders are liable to the payment of demapes, All rights are reserved in the event of the grant of a patent or the registration of a utility model or design.



## 19.1.1 Available Program Modules

	odule hase no.	Module no.	Function
9	500 510 520	0	System opening. These modules are not based in the overlay Job control. area. They are loaded
	dr ,best Den 11009	s now being and l.C.	in the user area, i.e. they are positioned in the memory relative to XLAD.
9	530	3	Free
42.4	540	4 18 to and as add	Receive the following operating instructions, 1: CANCEL, TEST, MS, ASSGN, RELSE, LOAD, TEST KOMMAND)
9	550	5	Receive the following operating instructions, 2: DEFINE, SET, LOADCL, UNLOAD)
9	560	6	Receive the following operating instruction, 3: DISPLAY.
9	570	7	Device control printing.
9	580	8	Loading program
9	590	9	PRG
9	600	10	TST 1
9	610	11	TST 2
9	620	12	IOC (IOCS OPEN/CLOSE).
9	630	13	OWF
9	640	14	IFB (IOCS error handling)
9	650	15	Core dump
9	660	16	BK4 (user communication 4)
9	670	17	BK5 (user communication 5), turn over sheets in log book.
9	680	18	CD 8 (CLOSE 8870)
9	690	19	OD 8 (OPEN 8870)
9	700	20	TACOS OP/C (OPEN/CLOSE)
9	710	21	RAP LOADER
	:		
	790 800		
			Future RAP phases
9	990		

Weitergabe son's Verneifältigung dieser Unterlage, Vernertung und Kitellung hiere in Inhalts enhalt geneit der die stedenderlich zugestanden. Lie wich and underspreighteinen zu Schadenenstätt. Alle Rechts litt den Still der Plateitstellung dest Gebrauchsmusster-Entragung Wichehalten.

Oppying of this document, and giving it to others and the use or formunication (the contents takenot are forbidden without express author). (Menders existable to the appeared of damages A.l. ingits are reserved in the event of the grant of a patent or the registration of a utility mode, or design.

Weitergabe sowie Verrieifältigung dieser Untorlage, wewerdung und Rittellung fines inhalts nicht gestatter, soweit nicht ausdrickfich zugestanden. Zuviderhandlungen verpflichter zu Schadeneraatz. Alle schle für den Fall der Patanterleiung oder Geurauchsmusser-Einfragung vorbehalten.

## 19.2 Loading the Overlay Modules and years to not reduced yourself

The modules to be loaded are entered consecutively in the overlay area. When it is proposed to load a module, its length must first be ascertained and divided by 512, to find out how many partitions it occupies in the overlay area. Next, a check is made to see whether enough partitions are still available in the overlay area. The whole area is searched once to find this out.

If a free area is found anywhere, the new phase is entered there and processed. If insufficient space is available, there is either a change of level (only possible with double operation), or 7 k bytes are transferred from the overlay area to the disk so as to obtain enough storage space for the new phase to be accepted (single operation). Once the new overlay phase has been processed the phases transferred to the disk are loaded back into the overlay area and processed further.

In the case of double operation, there is first a change of level, in the hope that the other level will be in a position to process the overlay phase. If, however, the other level calls in a further overlay module, which has to be loaded, 7 k bytes are once again transferred to the disk to provide room for the new overlay module. A flashing asterisk in the status line indicates that the appropriate level is waiting for a free space in the overlay area.

#### 19.3 Ascertaining the Overlay Module Number in the event of a Failure

Example: The system continues to process only those

instructions in overlay area 3.C.2.5.6 to 3.C.2.15.8.

Task: To find out in which overlay module the system is

working.

Method: To locate the module, its number must first be ascertained. This is always in the first partition of the module, at the start address of the partition + 1.15. As the size of a partition is always 512 bytes, the address gap between two partitions is always 2.0.0. Thus, the address of the module number will always be found at one of

the following addresses.



## 19.3.1 Memory Distribution of an Overlay Partition of Agreement and Agre

	Byte	of at been	lay area. When it is prop
Address	address	Quantity	Meaning
3.B.0.0.0	0	Limbo $\mathbf{I}_{\mathrm{Sdd}}$ .	These bytes are used by
	1 1 2 2 3	2 0	IOCS. They contain the disk
	some bedon	rea is sea	address of the loaded over-
			lay module.
	11		
3.B.0.0.B	12	la of last	Index ADR = relative start
	13		ADR of the loaded module.
	14	June't ers	Blank bytes
		dimone al	Blank bytes
	1,0	763991 314	REST RESIDENCE SERVICE SERVICE
		3 3 3 3 3 3 3 3 3	
			ere leaded back into the
Sec. according to the	1,3	4	Date = creation date of the
	1 1	5	the sale of the second
	1,5	And the second second second second	do valvevo esta assencia do
	1,6	7 9	calls in a further overla
	1,7	8	cent miscs some bys saried
			Version no. of the loaded
			overlay module.
	1,10	2	Length of the loaded over-
	1,11	1	lay module.  Module name = module
	1,13	2	abbreviation
	1,13	monuta slube	abbleviation
3.B.0.1.F	1,15	1 1	Module number
J.B.U.I.I	2,0	r sa lanci	Disk address for DA 0 and 1
	2,1	2	Byte 1 = head; byte 2 =
			sector cylinder always zero
	2,2	1	Free
	2,3	2	
	2,4	adl ,alubo	Disk address for DA 3. 1st
	2,5	MH 10 21 21	byte, bits 1 to 5 = head,
252 35	maribbs 1:	at the ste	bits 6, 7 and 8 = cylinder.
2 0 0 1 15	e in original	963 88 40	2nd byte = sector no.
3.B. 0.1.15 3.B. 2.1.15	1 960 3691 1 State 1	240 and 1240.	a strompterons
3.B. 4.1.15		is lily 35	Address where a module
3.C. 0.1.15	A	242542	
3.C. 2.1.15			
3.C.14.1.15			

Weitegabs sowie Verneißligung dieser Unterlage, Grewching und Kittelfung ihres inhalts eint gejatte, soweit nicht usschrächen zugestaden. Lureichandingen verpfichten Schädenensatz, Mie Sichte illt den Eul der Patenterleiten der Gebraucksmuster-Eintzagung fürbekalten.

Oppying of this document, and giving, it to others and the use or formulation of the conducts thereof are forbidden without express authority. Ulterders are sibble to the opyment of damages. All rights are reserved in the event of the grant of a patent or the registration of a utility modes or design.



Weitergabe sowie Vernielfätigung dieser Unteglage. Verwerdung und kittellung ihres inmäts nicht gestatte, soweit nicht ausdrücklich zugestaden. Uswiderhandiungen verflichten. Zabadenessatz Alle Gesche für den Fall der Patenterleiung oder Gebrauchsmaster-Eintragung rorbehalten.

With reference to the example on page 121:

As only macro-instructions are processed at addresses 3.C.2.5.6 to 3.C.2.15.8, addresses 3.C.2.0.13 to 3.C.2.0.15 (3 blank bytes) are the first places to look to see whether any zeros have been entered.

If none have, the search must continue in the next partition down (3.C.0.0.12 to 3.C.0.0.15). If there are no blank bytes here either, the search must be continued back as far as is necessary to find the three being sought.

Let us say, for the sake of this example, that the 3 blank bytes are at 3.C.0.0.12 to 3.C.0.0.15. To be able to find the module number, 0.1.15 must be added to the start address of the partition in question (3.C.0.0.0). There must be a module number between 0 and 30 at this address (3.C.0.1.15). If there is no value between 0 and 30, the start of the module being sought is not in this partition. The search must then be continued by repeating the procedure described above.

Once a module number has been found, it can be used to find out which module has been allocated that number. If the absolute address is required, 3.C.O.1.12 (= index address of the overlay module) is to be subtracted from addresses 3.C.2.5.6 to 3.C.2.15.8.

Thus:

3.C.2.5. 6

 $\frac{-3.C.0.1.12}{0.0.2.3.10} = \text{absolute address in the relevent}$ overlay module.



For notes

s only mayro-instructions are propertied at addresses 1.0.3 of 3.0.2.0.15 (? black) vol. 3.0.2.0.2.00 vol. 3.0.2.00 vol. 3

Ef more have, the search wast continue in the most partholist does (3,0.0.0.13 to 1.0.0.0.15). If there are no black byles have either, the search must be continued back as (at by indecember to find the three being sought.

Once a sudvie number has been found, it can be used to find out the which module has been allowated that hamber. It the absolute address is required, 1.0.0.1.12 := index address the overlay module) is to be subtracted from addresses. 3.0.2.5.8 to 3.0.2.15.8

1.C.1.1.1.2 3.C.1.1.1.2 3.C.1.1.1.2 \* absolute address to the releven Weitergabe sowie Vervielfälligung dieser Unterlage, Verwerding und Riffelliug in Nes Inhalts in eicht gefallte zweit (nicht ausdrücklich zugelstanden. Lut Aufderhandungen verpflichte zu Schädemerstat. Mie Rechts für den Fall der Patenterstellung oder Gebrauchsmusster Eintragung sochehalten.



# **Change Report**

Mile Bechte aus dieser Untertige und ihrem inhalt behatten wir nas vor (8GB, UMG, LittinG, Patant-luing, Scharbensteininghang), Verwerfung, Weitergabe oder Verritättigeng ohne unsere vorherige Zustimmung verpflichtet zu Schadenersatz.

To: From:

NIXDORF COMPUTER AG
TKD - Ausbildung und Information

Fürstenallee

4790 Paderborn

Title of Manual:

Order Number:

Changes requested/errors noted:

Ve reserve all rights arising from this docume of its contents (civil code, copyright and comp tition act, literary property act, granting of patent opistration of designs). Use, transmission or reduction without our previous authorization was

Ä.M. eingegangen am:

Bearbeiter:

Ä,M, erledigt am:



Kundendienst

Please note:

This change report enables you to report any errors, required changes, or corrections.

You will help both yourself and us when making use of this form.

Detach the change report from your manual and forward it to the given address if required.

If possible, attach the incorrect page(s), with errors marked, to the change report.

Please contact the above address for further forms.

When a manual is corrected or changed, the edition number and the date of issue printed on the cover sheet is also changed. In addition, any changed page is given the same date of issue as printed on the cover sheet.

Alle Rechts are dieser Unterlage und ihrem Inhair behalten wir ums vor (BBB, UMC, Littlich, Patenterteinung, Behandensenistragung), Verwertung, Weitergabe oder Versteilstitigeng ohen umsern wer-Meitergabe oder Versteilstitigeng ohen umsern wer-herige Zustümmung verpflichet zu Schadenseatz.

We reserve all rights arising from this docume and its contents (civil code, copyright and comtibles act, fibrary property act, granting of pate registration of designs). Use, transmission or sprinction without our previous authoritation make judge to are channous.