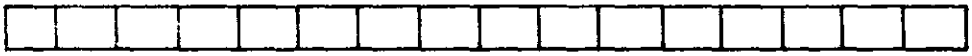
APPENDIX B : EXTENDED STATUS CODES

This appendix explains the various status codes which may be returned to the application by the XSTAT instruction.
The general form of the extended status word is shown below. Some bits have a standard meaning.

Format of the status word:



bitnr. 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Bit	Meaning
0	Illegal request
1–2	Not used/device dependent
3	End of file
4–8	Not used/device dependent
9	Timeout/Hardware error
10	Device dependent
11	Illegal order sequence
12	Incorrect length
13	Data fault (Parity/CRC/LRC/code)
14	Throughput error
15	Device not operable

Further information concerning standard bits and details of non standard bits are given for each device (driver) on the following pages.

The table below shows which driver belongs to which peripheral device.

Peripheral device	Drivers
Card reader	DRCR01
Cassette recorder	DRTC01
Console typewriter	DRTW01
Data communication – HDLC multipoint	DRDC07
Data communication – BSC multipoint	DRDC15
Data communication – BSC point-to-point	DRDC17
Data communication – Univac 100 -200 synchronous	DRDC22
Data communication – SDLC master driver	DRDC81
Data communication – HDLC master driver	DRDC82
Disk	DRDU01
Flexible disk	DRFD01
General terminal printer	DRGP01
Intertask communication	DRIC01
Keyboards – general – only PTS6236/6271/6272	DRKB01 DRKB03
Line Printer	DRLP01
Magnetic tape recorder	DRMT01
Signal displays, keyboard lamps	DRDI01
SOP	DRSOP1
Teller terminal printer	DRTP02, 3
Video and plasma displays	DRDY01

DRCR01 *Card reader* **DRCR01**

This status code is valid for a PTS6885 card reader.

The following bits may be set by this driver:

Bit	Meaning
0	Illegal request
3	End-of-File detected
10	Input hopper empty or Output stacker full
12	Incorrect length
13	Data fault
14	Throughput error
15	Not operable

Bit 12 is set if the requested number of characters is greater than 80, or if there is more information on the card than has been specified by the requested number of characters.

Bit 13 is set if a character is read, which cannot be converted.

Bit 14 is set if the card reader offers a new character, before the previous one has been taken care of by the driver.

Bit 15 card reader not operable (e.g. power off).

DRDC07 *Data communication HDLC multipoint data link* **DRDC07**

The following bits may be set by this driver:

Bit	Meaning	Read	Write	Transfer Parameters	Set Timeout
0	Illegal request	x	x	x	x
2	Status change	x			
9	Timeout/Poll timeout	x	x		
10	Carrier off	x	x		
14	Throughput error	x	x		
15	Modem not operable	x	x	x	

The following bits may be set by this driver:

Bit	Meaning	Read	Write	Transfer Parameters	Set Status	Set Time out
0	Illegal request	x	x	x	x	x
2	Status change	x				
5	Calling indicator	x				
9	Time out	x	x			
10	Carrier off	x				
13	Code check error	x	x			
14	Throughput error	x	x			
15	Not operable	x				

The following bits may be set by this driver:

Bit	Meaning	Read	Write	RVI	Accept Call	Connect Line	Disconnect Line	Set Time out
4	WACK count out		x					
7	ETB received	x						
8	End of Transmission	x	x	x				
9	Time out*	x	x	x	x			
10	RVI received		x					
11	See below*		x	x	x			
12	Incorrect length	x		x				
14	Throughput error		x					
15	Not operable	x	x	x	x	x		

The reasons for these bits being set varies according to the instruction that was issued, as follows:

Bit 9 – Read
No message block has been received within the specified time.
– Write
This bit is set at unsuccessful DIB or when there has been no acknowledgement on a message block following several ENQ's
– RVI
No response has been received to WACK within a specified time.

Bit 11 – Write
ENQ received: this bit is set at BID collision or when the driver is in receive mode.
– RVI
Sequence error: set when the driver is in write mode or a block containing ETX has already been received.
– Accept call
Modem already connected.

The following bits may be set by this driver:

Bit	Meaning	Read	Write	Transfer Parameters	Set Status	Set Time Out
0	Illegal request	x	x	x	x	x
2	Status change	x	x			
5	Bell message received	x	x			
9	Time out/Poll Time out	x	x			
10	Carrier off	x	x			
14	Throughput error	x	x			
15	Modem not operable	x	x			

DRDI01 *Signal displays and lamps on keyboards* **DRDI01**

This status code is valid for signal displays PTS6241 and 6242, lamps on the keyboards PTS6232, 6233, 6234, 6236, 6271 and 6272 and the lamp functions of the badge card reader PTS6261.

The following bits may be set by this driver:

Bit	Meaning	Set Lamps On	Set Lamps Off	Flash Lamps
0	Illegal request	x	x	x
13	Code check error			
15	Not operable	x	x	x

DRDY01 *Video and plasma displays* **DRDY01**

This status code is valid for video display PTS6344, or the plasma displays PTS6351 or PTS6386 or the alphanumeric display PTS6385.
All alphanumeric characters within the range /20–/5F are sent from the buffer to the display, codes /60–/7F are reduced by /20, giving /40–/5F.

The following bits may be set by this driver:

Bit	Meaning	Test Status	Write	Set Cursor	Erase Line
0	Illegal request	x	x	x	x
13	Code check error		x	x	
14	Throughput error				
15	Not operable	x	x	x	x

DRGP01 *General printer* **DRGP01**

All alphanumeric characters in the range /20–/5F, in the user buffer, are sent to the printer. Codes /60–/7F are reduced by /20, giving /40–/5F.

The following bits may be set by this driver:

Bit	Meaning	Test Status	Write
0	Illegal request	x	x
13	Code check error		x
14	Throughput error		
15	Not operable	x	x

The following bits may be set by this driver:

Bit	Meaning	Read	Write	Random Read	Random Write	Set Time Out
0	illegal request	x	x	x	x	x
9	Time out	x	x	x	x	
12	Incorrect length	x	x	x	x	

DRKB01 *Keyboard* **DRKB01**

This status code is valid for the keyboards PTS6231, 6232, 6233, 6234, 6331 and 6342 and the PTS6261 badge card reader with PIN keyboard.

The following bits may be set by this driver:

Bit	Meaning	Read	Skip Buffer
0	Illegal request	x	x
9	Time out	x	
12	Incorrect length	x	
13	Undefined key	x	
14	Throughput error	x	

Bit 14 is set if circular input buffer overflow occurs.
Bit 12 is set if overflow in the user buffer occurs.

DRKB03 *Keyboard* **DRKB03**

This status code is valid for the keyboards PTS6236, 6271 and 6272 and for the PTS6261 badge card reader with PIN keyboard.

The following bits may be set by this driver:

Bit	Meaning	Read	Skip Buffer
0	Illegal request	x	x
9	Time out	x	
12	Incorrect length	x	
13	Undefined key	x	
14	Throughput error	x	

Bit 12 is set if the user buffer overflow occurs.
Bit 14 is set if circular input buffer overflow occurs.

DRLP01 *Line printer* **DRLP01**

This status code is valid for the line printer PTS6881.
The following bits may be set by this driver:

Bit	Meaning	Test Status	Write
0	Illegal request	x	x
15	Not operable	x	x

DRMT01	*Magnetic tape*	DRMT01

This status code is valid for the 1/2" magnetic tape recorders PTS6872 or 6164.
The following bits may be set by this driver.

Bit	Meaning	Test Status	[illegible]	Write	Write Tape Mark	Rewind	Step Reverse	Step Forward	Load	Unload	Recover
0	Illegal request	x		x	x	x	x	x	x	x	x
2	Rewinding	x	x	x	x	x	x	x	x		
3	Tape mark		x		x		x	x			
4	No data		x	x	x		x	x			
5	BOT					x	x		x		x
6	Write protected	x	x	x	x	x	x	x	x		x
9	Hardware error		x	x	x	x	x	x	x	x	x
10	EOT	x	x	x	x		x	x			x
11	Sequence error		x								
12	Incorrect length		x								
13	Data error		x	x			x	x			x
14	Throughput error		x	x							
15	Not operable	x	x	x	x	x	x	x	x	x	x

Bit 4 is set if data is not found within two seconds.
Bit 11 is set if the block sequence counter is found incorrect (if in use).
Bit 12 is set if the [illegible] number of characters was less than the actual length.

Only bit zero of the extended status code is used, and this bit is set if any error is detected.

The following bits may be set by this driver:

Bit	Meaning	Test Status	Read	Write	Write Tape Mark	Erase	Lock	Rewind	Reverse	Load	Unload
0	Illegal request	x	x	x	x	x	x	x	x	x	x
1	Leader	x	x	x	x	x	x		x		
2	BOT missing							x		x	
3	Tape mark		x		x				x		
4	BOT/EOT hole		x	x	x	x			x		
6	Write protected	x	x	x	x	x	x	x	x	x	x
7	B Side	x	x	x	x	x	x	x	x	x	x
9	Rewind time out							x		x	
11	Sequence error	x	x	x	x	x	x	x	x	x	x
12	Incorrect length		x								
13	CRC error		x	x	x						
14	Throughput error		x	x	x						
15	Not operable	x	x	x	x	x	x	x	x	x	x

DRTP02 *Teller Terminal Printer* **DRTP02**

This status code is valid for teller terminal printers PTS6221, 6222 or 6223.
The following bits may be set by this driver:

Bit	Meaning	Test Status	Write	Position Voucher	Cut Journal Tape	Perforate	Grasp	Release Voucher
0	Illegal request	x	x	x	x	x	x	x
8	Recovery on request		x	x				
10	End of journal tape or Voucher out	x	x	x	x	x		x
13	Code check error		x	x				
15	Not operable	x	x	x	x	x	x	x

DRTP03 *Teller Terminal Printer* **DRTP03**

This status code is valid for teller terminal printer PTS6371.
The following bits may be set by this driver:

Bit	Meaning	Test Status	Write	Position Document	Open Document	Set Printer Parameters	Set Document Parameters	Release Document
0	Illegal request		x	x	x	x	x	
10	End of journal/document out	x	x	x				
13	Code check error		x					
15	Not operable	x	x	x	x	x		x

DRTW01 *Console Typewriter* **DRTW01**

This status code is valid for typewriter PTS6862. Alphanumeric characters in the range /20—/5F are sent from the user buffer to the printer. Codes /60—/7F are reduced by /20 giving /40—/5F.

The following bits may be set by this driver:

Bit	Meaning	Read	Write
0	Illegal request	x	x
9	Time out	x	
12	Incorrect length	x	
13	Code check error	x	x
14	Throughput error		

This status code is valid for files which are held on PTS6875 or 6876 diskdrives and flexible disks.

Bit	Meaning	Sequential Read	Sequential Write	Release Exclusive Access	Random Read	Random Write	Random Delete	CLOSE file	Indexed random read	Indexed rewrite	Indexed delete	Indexed insert	Indexed read next	Get current data record number	Get current index record number
0	Request error	x	x	x	x	x	x	x	x	x	x	x	x	x	x
1	Key no found								x	x	x		x		
2	Record protected	x	x		x	x	x		x	x	x	x	x		
3	End of File	x			x	x	x		x	x	x	x	x		
4	No Data	x			x				x	x	x		x		
5															
6	Next key same								x		x	x	x		
7	Retries performed	x	x		x	x	x	x	x	x	x	x	x		
8	New Volume loaded	x	x		x	x	x	x	x	x	x	x	x		
9															
10	End of medium		x		x	x	x		x	x	x	x	x		
11															
12	Incorrect length	x			x				x				x		
13															
14	Disk I/O error	x	x		x	x	x	x	x	x	x	x	x		
15	Disk not operable	x	x		x	x	x	x	x	x	x	x	x		

Detailed information per access method. Only those bits are mentioned which need some more explanation.

GENERAL

Bit 0	Request error Set for request errors such as illegal order, unknown file code etc.
Bit 1	Key not found Set if the symbolic key required for indexed random instructions was not found in the index file.
Bit 2	Record protected Set if the accessed record is under "exclusive access" at the time of the read request, or the record is not under "exclusive access" and the record status indicates "USED" at the time of a write request.
Bit 3	End of file Set if the accessed record has a logical record number greater than the "last record number" (LRN) in the VTOC. In case of random read/write, the instruction is not aborted.
Bit 4	No data Set if the record status character indicates "free" at a read-request.
Bit 5	Not used
Bit 6	Next key same Set if the symbolic key in the next used index record is the same as in the current index record.
Bit 7	Retries performed The driver has retried an I/O action that was in error.
Bit 8	New volume loaded Set at the first request after a new volume has been loaded.
Bit 9	Not used
Bit 10	End of medium Set if the requested record is outside the physical space reserved for the file at creation time.
Bit 11	Not used
Bit 12	Incorrect length Set if the requested length is less than the record length at read request.
Bit 13	Not used
Bit 14	Disk I/O error Set for hardware errors, e.g. seek error, CRC-error, throughput error.
Bit 15	Disk not operable

ATTACH
DETACH

ATTACH
DETACH

The following bits may be set by this driver:

Bit	Meaning	Attach	Detach
0	Illegal request	x	x
9	Device not available	x	