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50XX ATM Systems STATUS CODE NOTEBOOK

DIAGNOSTIC

ATMSYSTEMS NCR
DIAGNOSTIC STATUS CODE
NOTEBOOK

INDEX

OES CODES

TCE START UP (LEVEL 0) FAILURE CODES

001XX	CPU/PROM/RAM FAILURE.
005XX	DRAM FAILURE.
008XX	SYSTEM TIMER FAILURE.
00BXX	H/O COMMS (NO DMA) INTERNAL FAILURE.
00CXX	H/O COMMS (DMA) INTERNAL FAILURE.
00FXX	FLEX DISK LOAD FAILURE.
00F00	PASS CODE.
00F01	FLEX DISK CONTROLLER NOT PRESENT.
00F02	ON BOARD DRAM LENGTH INCOMPATIBLE WITH BOARD CONFIGURATION.
00F03	DRIVE NOT READY.
00F04	HEAD DOES NOT RETRACT TO TRACK 0.
00F05	RECORD NOT FOUND.
00F06	CRC ERROR ON DATA FIELD.
00F07	DMA DID NOT RESPOND TO DRQ IN ONE BYTE TIME.
00F08	SUM CHECK FAIL.
00F09	BOOTLOADER I/F ERROR.
00F0A	WRONG TRACK SOUGHT.
00F0B	CRC ERROR ON ADDRESS FIELD.

OES CODES

START UP (LEVEL 0) FAILURE CODES

00F0C	FLEX DISK CONTROLLER REMAINED BUSY.
00F0D	DMA FAILED TO TRANSFER.
00F0E	PARITY ERROR.
00F0F	LOAD IN PROGRESS.

GTV START UP (LEVEL 0) FAILURE CODES

201XX	CPU FAILURE.
202XX	PROM FAILURE.
203XX	DRAM FAILURE.
206XX	DRAM FAILURE.
207XX	DRAM FAILURE.
208XX	TIMER 0 FAILURE.
209XX	TIMER 1 FAILURE.
20AXX	TIMER 2 FAILURE.
20BXX	INTERRUPT FAILURE.
20DXX	8250 FAILURE.
210XX	TOUCH SCREEN CIRCUITRY FAILURE.
211XX	TOUCH SCREEN CIRCUITRY FAILURE.
213XX	VIDEO CONTROL PORT FAILURE.
214XX	GRAPHICS DISPLAY CONTROL CIRCUITRY FAILURE.

OES CODES

GENERAL EXCEPTION CODES (WHERE DEV = X)

DEV	Device
CRD	MCRW
DIS	Dispenser (Cash Handler)
CT1	Currency Handler Cassette Type 1
CT2	Currency Handler Cassette Type 2
CT3	Currency Handler Cassette Type 3
CT4	Currency Handler Cassette Type 4
DEP	Depository
RPT	Receipt Printer
JPT	Journal Printer
CPT	Validation Printer
PHO	Camera
DAS	Door Access System
FD0	Flex Disk 00 (System Flex)
FD1	Flex Disk 01 (Off-line Flex)
TOD	Time of Day clock
SYS	System
HOC	H/o Comms
GRD	Vandal Guard
NSD	Nightsafe Depository
ENC	Encryptor
SPT	Statement Printer
RIB	Statement Printer Ribbon
SGN	Signage Display
CRT	Cardholder Display/Video Disk
TCH	Cardholder Keyboard/Touch Screen

X	Exception
F	Fault
E	Empty
O	Overfill
L	Low (Media)

STATUS REPORTING FORMATS

ERROR LOG REPORTS

LOG NO) DATE TIME DEVMNEM=MSTATUS MDATA

example:–

16) 02/16 12:34 DISPR=04 01,D3,03,03,00,00,00,00,00,00

DIAGNOSTIC REPORTS

DEVMNEM TESTMNEM=MCODEMNEM MSTATUS MDATA RCDATA TDATA

example:–

MCRW READ1=PASS 00 02,01,00,0C R-00 A%123456789ABCDEFGHIJKLMNO PQRSTUVWXYZ1234?

WHERE:–

LOG NO	Log entry number.
DATE	MM/DD
TIME	HH:MM
DEVMNEM	Device mnemonic.
TESTMNEM	Test command executed.
MCODEMNEM	Outcome of test PASS/STATE/FAIL/ EVENT.
MSTATUS	Main error code (1 byte)
MDATA	Data qualifying MSTATUS (varying field length)
RCDATA	Replenishment data (varying field length)
TDATA	Transaction data (varying field length)

STATUS REPORTING FORMATS

IMPORTANT

The MSTATUS and MDATA returned by the "Device Control Driver" may be dependant upon the Application or Diagnostic Command to which it is responding. Ensure that you select the correct definition of MSTATUS/MDATA as identified by the qualifying header.

SYSTEM EXCEPTIONS

MSTATUS

00	POWER DOWN. This is logged on power up.
01	RAM PARITY ERROR.
02	SHORT NMI PULSE.
03	RMX SYSTEM EXCEPTION. This is logged by the RMX System Exception Handler. Note that E$TIME,E$MEM and certain BIOS Flex Disk exception types are not actioned, and may be logged via EXCAPE$RESET.

MDATA BYTES WHERE MSTATUS = 03

0,1	Exception type.
2	Paramater Number.
3,4	Task Token.
5,6	Instruction Pointer

MSTATUS

04	ESCAPE RESET. This is logged by the 50XX system call ESCAPE$RESET.

MDATA BYTES WHERE MSTATUS = 04

0	Exception Code.
1-4	Return address to caller of escape.
5,6	Task Token of caller.
7	Sender code of caller.
8	Sender code of offender.
9,10	Optional free format fields.

SYSTEMS EXCEPTIONS

MSTATUS

05	PERSISTANT RESTART. This is logged at power up/reset by the persistant restart threshold monitor when 5 system recovery restarts are attempted in less than 1 hour and a system freeze is enforced.

HIGH ORDER COMMUNICATIONS

NOTE This is a general list which covers all COMMS drivers. More unique information on specific drivers can be found in other publications.

MSTATUS	ALL COMMANDS
10	No Poll/Select received within specified time frame.
11	Disconnected at link protocol level.
12	No link level connection within specified time frame during OPEN.
13	Logical connection terminated by action from remote station or from the network.
14	Waiting for logical connection establishment (OPEN command).
15	LLC expected frame not received or entry count expired on IBM loop sync loss.
16	LLC disconnected while in ITS.
17	Link protocol reset failed.
20	Polling has resumed.
21	Link level connection has been (re-)established.
22	Link protocol reset (e.g. SNRM while in NRM).
23	Logical connection (network-level) has been (re-)established.
24	X.25 network connection established or IBM loop sync recovery.
25	LLC link protocol reset in disconnect mode.

MSTATUS	ALL COMMANDS
26	LLC link protocol established.
27	LLC link protocol reset in ITS.
28	LLC XID command or TEST/FRMR response sent.
29	FRMR sent.
30	Output abandoned due to frame/message been rejected by remote station a specified number of times (3).
31	RLSD error. RLSD failed to drop when this station wanted to transmit and Carrier Flags indicate that RLSD must be OFF first.
32	Timeout on transmit. Output Complete Interrupt did not occur in time.
33	Output abandoned due to receipt of negative network-level response.
34	High-level (e.g. application-level) Procedure error.
35	Illegal or out of sequence message sent by application during high-level procedure.
36	Network-level response timeout.
37	SEND not possible due to Data Traffic being suspended.
38	SEND (SNA command) invalid.
39	DCE busy (RNR received).
40	Receive abandoned due to timeout (n times) while waiting for a test message from the remote station during an input cycle.

MSTATUS	ALL COMMANDS
41	Receive aborted by remote station (sending EOT or abort).
42	Receive abandoned due to an RLSD drop during reception of a text message.
43	Received text message discarded due to transmission number error.
44	Negative network-level response transmitted.
45	Special network command received.
46	Network diagnostic information.
47	DTE (ATM) busy (RNR transmitted).
48	LLC ATM busy (LRNR transmitted).
50	DSR has failed to switch ON after DTR was switched ON during OPEN.
51	CTS has failed to switch ON after RTS was switched ON.
52	CTS dropped while RTS was still ON or DSR dropped while DTR was still ON.
53	DSR raised by modem.
60	No DSA for logical connection.
61	No DSA available for message segmentation on assembly.
62	Requested Local Network Address not available.
63	Logical connection not closed/ released.

HIGH ORDER COMMUNICATIONS

MSTATUS	ALL COMMANDS
70	X.25 network-level response timeout.
71	LLC output abandoned.
72	LLC host busy (LRNR received).
81	No Data Set Ready detected.
82	No carrier (RLSD) detected.
83	No Clear To Send detected.
84	Timeout on transmit (no characters transmitted).
85	Timeout on receive (no characters received).
86	Parity error on received characters.
87	Receiver overrun error.
88	Data mismatch. The data received was not the same as the test pattern transmitted.
89	No external turnaround detected. The Test Indicator failed to turn ON.
90	Sumcheck error. A sumcheck (BCC,CRC,FCS) error was detected on the received data.

LLC = Logical Link Control

MSTATUS	ALL COMMANDS
00	Successful operation
01	CRC error – a CRC error, either in the ID field or in the disk data, has been detected by the FDD controller.
02	Disk error – The FDD controller was unable to find the desired track, side sector combination.
03	Lost data – The FDD controller did not receive a byte of data within the time expected.
04	Hardware error – The driver has "lost" communication with the FDD controller, or the controller has returned an invalid status or the controller is busy.
05	Not configured – An I/O or diagnostic command has been sent to the offline drive which is not configured.
06	Invalid file format – A file to be read/ written/loaded is not of a valid format.
07	Checksum error in loadfile – One or more of the data records.
08	Disk write protected – An attempt has been made to write to a write protected disk.
09	Operator intervention required – The driver is unable to execute any I/O commands other than reset; depending on the cause of the failure it may or may not be able to perform diagnostic step or diagnostic read. . driver unable to read RMX volume label . driver unable to read root directory

MSTATUS ALL COMMANDS

- driver unable to read system directory
- drive not ready: (no disk present, drive door not closed).

10 Filename not found in directory – The name of a file specified does not exist in the system directory.

11 Invalid entry in fsnode file – The fnode entry for the file specified is invalid.

12 An attempt has been made to load an overlay file which is not a data file.

13 Unclassified error – An error has occurred but not categorised.

MDATA BYTE 0 READ COMMAND

XX Track 0 to 79 = 0 to 4F (Hex)

MDATA BYTES 1-4 READ COMMAND

XX A 32 bit map in hex with one bit giving the status for each sector. Bit 7 of byte 1 corresponds to sector 1 side 0, bit 6 to sector 2 side 0 and so on up to byte 4 bit 0 which corresponds to sector 16 side 1. If the READ test succeeded in reading a particular sector the relevant bit is set to 0, if it failed it is set to 1.

NOTE: On diagnostic command if MSTATUS is greater than 4 then all bytes display FF.

MDATA BYTE 0 SEEK COMMAND

0A Side 0

0B Side 1

MDATA BYTES 1-10 SEEK COMMAND

XX — An 80 bit map in hex with one bit giving the status of one track. Bit 7 of byte 1 corresponds to track 0, bit 6 to track 1 and so on up to byte 10 bit 0 which corresponds to track 79. If the SEEK test succeeded in seeking to a particular track the relevant bit is set to 0, if it failed it is set to 1.

NOTE: On diagnostic commands if M-status is greater than 4 then all bytes display FF.

TDATA DIGIT 0 SEEK COMMAND

A — Side 0
B — Side 1

TDATA DIGITS 1-81 SEEK COMMAND

X — One digit of data is displayed for each track with digit 1 giving the status of track 0, digit 2 track 1 and so on, where:–

0 = Passed
1 = CRC error in ID field
3 = Record not found

TDATA DIGITS 0-31 READ COMMAND

X — One digit of data displayed for each of the sectors on a cylinder with digit 0 giving the status of sector 1, the digit 1 sector 2 and so on up to sector 31 where:–

0 = Passed
1 = CRC error in ID field
2 = CRC error in data field
3 = Record not found
4 = Lost data

TDATA DIGITS 0-23 WRITE COMMAND

X One digit of data is displayed for each sector on the maintenance file with the digit 0 giving the status of sector 1, the digit 1 sector 2 and so on up to sector 24 where:–

0 = Passed
1 = CRC error in ID field
2 = CRC error in data field
3 = Record not found
4 = Lost data
5 = Failed to verify on first pattern
6 = Failed to verify on second pattern

NOTE: On diagnostic command if M-status is greater than 4 then FF is displayed.

5084/85/88 DISPENSER

MSTATUS	ALL COMMANDS
00	No error
01	Dispense requested from a cassette which is not installed or no cassettes installed during DEVICE-FITNESS-TEST or a short dispense was performed (bills dispensed less than bills requested) and no error was reported by the on board firmware.
02	Too many bills being rejected, i.e. undersize, oversize, doubles or extra bills.
03	Pick failure.
04	Pick failure + low (out of bills).
05	Sensor failure or currency jam in bill transport.
06	Reserved for spray dispenser divert gate fault. This code is not generated by the 5084 dispenser firmware.
07	Purge bin not present (unit inoperative)
08	Purge bin overfill sensor blocked (unit inoperative)
09	Communications failure between 5084 dispenser and terminal processor.
10	Operation not attempted because the device or a cassette type is FATAL from a previous operation. A RESET command (CLEAR) must be performed to clear this condition.
11	Operation not attempted due to one of the following conditions:–

MSTATUS **ALL COMMANDS**

1. bills are still stacked in the transport from a previous operation
2. bills may not have been cleared from the transport due to an unrecovered error during a previous operation

A CLEAR or DIAG-CLEAR must be performed to clear this condition.

12 Presenter mechanism failed or jammed.

13 Exit shutter jammed open.

14 Exit shutter jammed closed.

15 Bills observed passing the overfill sensor during the purge operation performed following bills taken after a successful present.

16 Timing disk did not operate correctly.

17 Exit sensor failed clear or blocked.

18 Timing disk did not operate correctly and bills were not seen at exit sensor, or bills not seen passing purge/overfill sensor on a purge operation when bills were in the presenter.

19 Exit sensor blocked initially on next operation after good present. (Bills may not have been taken by cardholder.)

20 Dispenser configured as not present.

21 Operation not attempted because an attempt has been made to change the mode of operation from authorisation mode to non-authorisation mode.

MSTATUS ALL COMMANDS

22	Operation not attempted because current ATM Load Disk has not been authorised.
23	Disk authorisation mode of operation selected on the Mode Indicator Switch Pack BT1 is the authorisation mode.
24	Disk authorisation mode of operation selected on the Mode Indicator Switch Pack BT1 is the non-authorisation mode.

MDATA BYTE 0 ALL COMMANDS EXCEPT CALIB & SENSR TESTS

00	Zero dispense by TYPE 1,2,3,4
01	Dispense bills by TYPE 1,2,3,4
02	Dispense by POSITION TOP-BOTTOM
03	Purge
04	Present from present position
05	Reserved for 5081 dispenser
06	Reserved for 5081 dispenser
07	Rotate to present position
08	Presenter test
09	Exit shutter test
0A	Bill drive test

5084/85/88 DISPENSER

MDATA BYTE 1 WHERE MDATA BYTE 0 = 00,01,02

1 = condition true

Bit 0	Cassette type/position 2 is low on notes
Bit 1	Cassette type/position 1 is low on notes
Bit 2	Not used (always 0)
Bit 3	Fatal malfunction INOP flag set
Bit 4	Pick fail occurred
Bit 5	Not used (always 0)
Bit 6	Cassette type/position 4 is low on notes
Bit 7	Cassette type/position 3 is low on notes

MDATA BYTE 2(type/posit 1) WHERE MDATA BYTE 0 =00,01,02
MDATA BYTE 3(type/posit 2)
MDATA BYTE 4(type/posit 3)
MDATA BYTE 5(type/posit 4)

01 Occurs if the 5084 dispenser firmware receives a non-zero dispense command when the local INOP flag is set. The INOP flag can be cleared by performing a CLEAR,DIAG-CLEAR, or a reset by resetting the on board processor.

02 Occurs if the purge bin is not present on completion of a zero dispense or prior to executing a dispense bills command.

03 Occurs when bills cannot be picked from a cassette. Picking is tried three times after the initial attempt per bill, each attempt being four or five pick cycles. Upon failing with four or five pick cycles, the motor is shut off. After a time period picking is attempted again. The cycle of motor off, pick is repeated (up to three times) until a note is picked. If all attempts fail, this auxiliary status is generated.

NOTE: Where MDATA Byte 0 = 02 pick retries are not attempted.

MDATA BYTE 2(type/posit 1)
MDATA BYTE 3(type/posit 2)
MDATA BYTE 4(type/posit 3)
MDATA BYTE 5(type/posit 4)

WHERE MDATA BYTE 0 =00,01,02

04	Occurs when a note enters the transport from the wrong cassette or one of pick sensors is faulty.
09	Occurs when a note is seen at the count sensor when it is not expected. This may be the result of a faulty pick sensor.
0C	The purge bin overfill sensor is blocked on completion of a zero dispense or initially on receipt of a dispense command.
10	Occurs when the presenter exit shutter is not fully closed when initiating a dispense or on completion of a zero dispense.
11	Occurs on a non-zero dispense when a pick sensor(s) is blocked initially, or on completion of the zero dispense, or Bill did not clear pick sensor. This occurs when a picked bill jams under a pick sensor, or the pick sensor is malfunctioning.
13	Low voltage has been detected. This indicates the count or a pick sensor cannot compensate for dirt built up, the lamp is burnt out, the sensor is faulty, or the sensor is blocked.
14	Occurs when the count sensor is blocked initially upon initiating a dispense command, or on completion of a zero dispense.

MDATA BYTE 2 (type/posit 1) **WHERE MDATA BYTE**
MDATA BYTE 3 (type/posit 2) **0=00,01,02**
MDATA BYTE 4 (type/posit 3)
MDATA BYTE 5 (type/posit 4)

17 Same as auxiliary status 13 except that the count sensor is the cause of the low voltage.

21 A note was picked and scanned at the pick sensor for length and doubles. The note cleared the pick sensor and was not seen at the count sensor within the alloted time. May result if a jam occurs between the pick and count sensors.

22 A note reached the count sensor but did not clear the count sensor in the alloted time. May result if a jam occurs at the count sensor.

27 The presenter unit is determined to be jammed or in the wrong position initially on receipt of a dispense command or on completion of a zero dispense.

40 Occurs when a command is received to pick bills from a cassette which is not installed.

41 Occurs when the presenter exit sensor is blocked initially upon initiating a dispense command or on completion of a zero dispense.

MDATA BYTE 6(type/posit 1) **WHERE MDATA BYTE**
MDATA BYTE 7(type/posit 2) **0 = 00,01,02**
MDATA BYTE 8(type/posit 3)
MDATA BYTE 9(type/posit 4)

Bit 0 A note greatly exceeded the note size for the given cassette

MDATA BYTE 6 (type/posit 1)
MDATA BYTE 7 (type/posit 2)
MDATA BYTE 8 (type/posit 3)
MDATA BYTE 9 (type/posit 4)

WHERE MDATA BYTE 0 = 00,01,02

Bit 1	A note was determined to be at least two notes
Bit 2	A note was under the note size for the given cassette
Bit 3	A note was over the size for the given cassette
Bit 4	An extra note entered the transport. May be caused by the pick solenoid being stuck
Bit 5	A cassette with the correct ID was not found installed in the dispenser unit. May be caused by the cassette installed bit being a logic 1 or the correct ID (three bits) was not found
Bit 6	Not used always 0
Bit 7	Not used always 0

MDATA BYTE 1

WHERE MDATA BYTE 0 =03,04,05,06,07

00	Operation successful
01	Shutter failed to open on present or shutter closed before bills presented
02	Shutter not closed initially or shutter not closed at end of purge
04	Not in correct position initially
06	Jam moving from purge/present to home
07	Jam moving from home to present

5084/85/88 DISPENSER

MDATA BYTE 1	WHERE MDATA BYTE 0 = 03,04,05,06,07
08	Jam moving from present to purge
09	Jam moving towards home, not home initially
0B	Exit sensor blocked initially
0C	Overfill sensor blocked initially
0D	Bill jam – not presented. Timing wheel failed to operate and bills were not seen at exit sensor
0E	Timing wheel fault – bills presented (PRESENT OPERATION). Timing wheel fault (PURGE OPERATION). Timing wheel failed to operate correctly
0F	Exit sensor failed clear – bills presented. Presented bills not seen under exit sensor.
10	Exit sensor failed blocked/bill jam at end of purge operation
11	Overfill sensor blocked at end of purge operation

MDATA BYTE 2	WHERE MDATA BYTE 0 =03,04,05,06,07
00	Bills seen at purge/overfill sensor during the operation
01	No bills seen at purge/overfill sensor during the operation

5084/85/88 DISPENSER

MDATA BYTE 1 WHERE MDATA BYTE 0 = 08

00	Operation successful
01	Failed to reach home from present
02	Failed to move off present towards home
03	Failed to reach present from purge
04	Failed to move off purge towards present
05	Failed to reach purge from present
06	Failed to move off present towards purge
07	Failed to reach present from home
08	Failed to move off home towards present
09	Failed to find home initially

MDATA BYTE 1 WHERE MDATA BYTE 0 = 09

1 = condition true

Bit 0	Always 0
Bit 1	Always 0
Bit 2	Always 0
Bit 3	Shutter closed sensor indicates not closed when it should be closed
Bit 4	Shutter open sensor indicates not open when it should be open
Bit 5	Always 0

MDATA BYTE 1 WHERE MDATA BYTE 0 = 09

Bit 6	Shutter open sensor indicates open when it should be closed
Bit 7	Shutter closed sensor indicates closed when it should be open

MDATA BYTE 2 WHERE MDATA BYTE 0 = 09

00	Presenter mechanism performed correctly.
01	Presenter mechanism failed to move to present position.
02	Presenter mechanism failed to return to the home position.

MDATA BYTE 1 (PRESENT) WHERE MDATA BYTE
MDATA BYTE 2 (PURGE) 0 = 0A

00	OPERATION SUCCESSFUL. The required number of timing wheel sensor interrupts generated occurred within the timing tolerance range.
01	TIMING WHEEL SLOW. The required number of timing wheel sensor interrupts generated took longer than the maximum tolerance level.
02	TIMING WHEEL FAST. The required number of timing wheel sensor interrupts generated took less than the minimum tolerance level.
03	TIMING WHEEL FAILED. No timing wheel interrupts were generated in the maximum allowable time.

MDATA BYTE 0 SENSOR TEST

1 = condition true

Bit 0	Count sensor blocked.
Bit 1	Presenter (purge position) sensor blocked.
Bit 2	Presenter (Present position) sensor blocked.
Bit 3	Low voltage detect line active. This indicates that the count or a pick sensor cannot compensate for dirt build up, the lamp is burnt out, the sensor is faulty, or the sensor is blocked.
Bit 4	Exit shutter closed sensor indicates not closed.
Bit 5	Exit Shutter open sensor indicates not open.
Bit 6	Exit sensor blocked.
Bit 7	Timing wheel sensor blocked.

MDATA BYTE 1 SENSOR TEST

1 = condition true

Bit 0	Top pick module pick sensor blocked.
Bit 1	Second pick module pick sensor blocked.
Bit 2	Third pick module pick sensor blocked.
Bit 3	Bottom pick module pick sensor blocked.
Bit 4	Top pick module media low sensor activated.
Bit 5	Second pick module media low sensor activated.

MDATA BYTE 1 SENSOR TEST

Bit 6	Third pick module low media sensor activated.
Bit 7	Bottom pick module low media sensor activated.

MDATA BYTE 2 SENSOR TEST

XX	A/D Sensor (doubles detect) reading (normally FFH).

MDATA BYTE 3 SENSOR TEST

1 = contact not made (no magnet)

Bits 7,6,5,4	ID of cassette in top pick module (S1,S4,S3,S2)
Bits 3,2,1,0	ID of cassette in second pick module (S1,S4,S3,S2)

MDATA BYTE 4 SENSOR TEST

1 = contact not made (no magnet)

Bits 7,6,5,4	ID of cassette in third pick module (S1,S4,S3,S2)
Bits 3,2,1,0	ID of cassette in bottom pick module (S1,S4,S3,S2)

MDATA BYTE 5 SENSOR TEST

XX	Switch pack BT1 setting (Bit 0=1 is switch BT1-1 ON etc)

MDATA BYTE 6 SENSOR TEST

XX	Switch pack BT2 setting (Bit 0=1 is switch BT2-1 ON etc)

MDATA BYTE 7 SENSOR TEST

XX	ROM sumcheck character (normally 00H)

MDATA BYTE 8 SENSOR TEST

1 = condition true

Bit 0	Purge bin present.
Bit 1	Purge bin overfill.
Bits 2-7	Not used (0)

MDATA BYTE 9 SENSOR TEST

Bit 0	Security switch status
Bits 1-7	Not used

MDATA BYTE 0 CALIBRATION TEST

XX	First A/D converter output reading from selected cassette type

MDATA BYTES 1-16 CALIBRATION TEST

XX	Consecutive A/D converter readings occurring at 5 millisecond intervals after the first.

RC DATA BYTE 0(type/1)
RC DATA BYTE 3(type/2)
RC DATA BYTE 6(type/3)
RC DATA BYTE 9(type/4)

XX	No. of bills moved from cassette type to a position accessible by the customer.

RC DATA BYTE 1(type/1)
RC DATA BYTE 4(type/2)
RC DATA BYTE 7(type/3)
RC DATA BYTE 10(type/4)

XX	No of reject operations from cassette type to reject bin, this includes the number of divert operations performed from cassette type to reject bin by DEVICE-FITNESS-TEST or DIVERT-BILLS-TEST

RC DATA BYTE 2(type/1)
RC DATA BYTE 5(type/2)
RC DATA BYTE 8(type/3)
RC DATA BYTE 11(type/4)

XX	No. of bills from cassette type to an unknown (or more than one) destination.

5070 DISPENSER

MSTATUS	ALL COMMANDS
00	No error
01	Pick requested from a cassette which is not installed, or no cassettes installed during DEVICE FITNESS, or a short dispense was performed (bills dispensed less than bills requested) and no error was reported by the on-board firmware.
02	Too many bills being rejected, i.e. undersize, oversize, doubles or extra bills.
03	Pick failure.
04	Pick failure + low (out of bills).
05	Sensor failure or currency jam in bill transport.
06	Divert gate fault caused by: 1. divert gate in wrong position initially 2. divert gate failed to move to correct position 3. divert gate sensor failure.
07	Reject bin not present (unit inoperative).
08	Reject bin overfill sensor blocked (unit inoperative).
09	Communications failure between 5070 Dispenser and terminal processor.
10	Operation not attempted because the device or a cassette type is FATAL from previous operation. A RESET command (CLEAR) must be performed to clear this condition.

5070 DISPENSER

MSTATUS ALL COMMANDS

11	Operation not attempted because bills may not have been cleared from the transport due to an unrecovered error during a previous operation. A CLEAR or DIAG-CLEAR must be performed to clear this condition.
20	Dispenser not configured.
21	Operation not attempted because an attempt has been made to change the mode of operation from authorisation mode to nonauthorisation mode.
22	Operation not attempted because current ATM Load Disk has not been authorised.
23	Disk authorisation mode of operation selected on the Mode Indicator Switch Pack BT1 is the authorisation mode.
24	Disk authorisation mode of operation selected on the Mode Indicator Switch Pack BT1 is the non-authorisation mode.

MDATA BYTE 0 ALL COMMANDS EXCEPT CALIB & SENSR TESTS

00	Zero dispense by TYPE 1,2,3,4
01	Dispense bills by TYPE 1,2,3,4
02	Divert bills by POSITION TOP-BOTTOM
03	Divert gate test

MDATA BYTE 1 WHERE MDATA BYTE 0 = 00,01,02

1 = condition true

Bit 0	Cassette 2 is low on bills
Bit 1	Cassette 1 is low on bills
Bit 2	Not used (always 0)

5070 DISPENSER

MDATA BYTE 1 WHERE MDATA BYTE 0 = 00,01,02

Bit 3	Fatal malfunction INOP flag set
Bit 4	Pick fail occurred
Bit 5	Not used (always 0)
Bit 6	Cassette 4 is low on bills
Bit 7	Cassette 3 is low on bills

MDATA BYTE 2(type/posit 1) WHERE MDATA BYTE
MDATA BYTE 3(type/posit 2) 0 = 00,01,02
MDATA BYTE 4(type/posit 3)
MDATA BYTE 5(type/posit 4)

00	No fault occurred
01	Occurs if on-board device firmware receives a non-zero dispense command when the local INOP flag is set. The INOP flag can be cleared by performing a CLEAR or DIAG-CLEAR or a reset of the on-board processor.
03	Occurs when bills cannot be picked from a cassette. Picking is tried 3 times after the initial attempt per bill, each attempt being four or five pick cycles. Upon failing with four or five pick cycles the motor is shut off. After a time period pcking is attempted again. The cycle of motor off, pick is repeated (up to three times) until a bill is picked. If all attempts fail this auxiliary/status is generated. NOTE Where MDATA Byte 0 = 02 pick retries are not attempted.
04	Occurs if the reject bin is not present on completion of a zero dispense command or prior to executing a dispense or divert bills command.
05	Occurs when the divert gate is not in the dispense position during a dispense bills operation when an attempt is made to dispense a bill into the note tray.

MDATA BYTE 2(type/posit 1)
MDATA BYTE 3(type/posit 2)
MDATA BYTE 4(type/posit 3)
MDATA BYTE 5(type/posit 4)

WHERE MDATA BYTE 0 = 00,01,02

06	Occurs when the divert gate is not in the reject position on receipt of a dispense or divert command or when an attempt is made to reject (or divert) a bill.
07	Occurs when the total number of bills rejected from one cassette type in a dispense bills operation is greater than eleven.
09	Occurs when a bill was picked and was not seen at the count sensor within the allotted time. May result if a jam occurs between the pick and count sensors or if the count sensor is malfunctioning.
0A	Occurs when a bill reaches the count sensor but did not clear the count sensor in the allotted time. May result if a jam occurs at the count sensor.
0B	Occurs when a diverted bill clears the count sensor and was not seen at the reject sensor within the allotted time. May result if a jam occurs between the count and reject sensors, or if a bill has been dispensed when it should have been diverted, or if the reject sensor is malfunctioning.
0C	Occurs when a bill reaches the reject sensor but did not clear the reject sensor in the allotted time. May result if a jam occurs at the reject sensor or if there is an overfill condition at the reject bin.

5070 DISPENSER

MDATA BYTE 2(type/posit 1)
MDATA BYTE 3(type/posit 2)
MDATA BYTE 4(type/posit 3)
MDATA BYTE 5(type/posit 4)

WHERE MDATA BYTE 0 = 00,01,02

0D	Occurs during a dispense operation when a bill clears the count sensor and was not seen at the exit sensor within the allotted time. May result if a jam occurs between the count and exit sensors or if a bill has been diverted when it should have been dispensed, or if the exit sensor is malfunctioning.
0E	Occurs when a bill reaches the exit sensor but did not clear the exit sensor in the allotted time. May result if a jam occurs at the exit sensor.
1X	These codes occur when a bill is seen at a sensor when it is not expected, or the sensor is faulty. The X can be any of 1,2,4 or 8 where: 1 – Pick 2 – Count sensor 4 – Exit sensor 8 – Reject/overfill sensor
21	Bill did not clear pick sensor – occurs when a picked bill reaches the pick sensor but does not clear it in the allocated time. May result if a jam occurs at the pick sensor. See also blocked sensor code 2X.
2X	These codes occur when any one or more sensors are blocked either during a zero dispense or before the motor is turned on to dispense/divert bills. The X can be any hex value from 1H to FH being any combination of 1,2,4,8 where: 1 – Pick 2 – Count sensor 4 – Exit sensor 8 – Reject/overfill sensor

5070 DISPENSER

MDATA BYTE 2(type/posit 1) **WHERE MDATA BYTE**
MDATA BYTE 3(type/posit 2) **0 = 00,01,02**
MDATA BYTE 4(type/posit 3)
MDATA BYTE 5(type/posit 4)

30	This indicates that a pick sensor cannot compensate for dirt built up, the sensor lamp is burned out, the sensor is blocked, or the sensor is faulty. This code occurs when LVD is active either on completion of a zero dispense or before the motor is turned on to dispense/divert bills.
3X	Occurs when low voltage has been detected and one or more of the pick count, exit, reject sensors are also blocked. These codes occur when detected either on completion of a zero dispense or before the motor is turned on to dispense/divert bills. Th X can be any hex value from 1H to FH being any combination of 1,2,4,8 where:– 1 – Pick 2 – Count sensor 4 – Exit sensor 8 – Reject/overfill sensor
40	Occurs when on-board device firmware is requested to pick bills from a cassette which is not installed.

MDATA BYTE 6(type/posit 1) **WHERE MDATA BYTE**
MDATA BYTE 7(type/posit 2) **0 = 00,01,02**
MDATA BYTE 8(type/posit 3)
MDATA BYTE 9(type/posit 4)

Bit 0	Not used, always 0
Bit 1	A note was determined to be at least two notes

5070 DISPENSER

MDATA BYTE 6(type/posit 1) **WHERE MDATA BYTE**
MDATA BYTE 7(type/posit 2) **0 = 00,01,02**
MDATA BYTE 8(type/posit 3)
MDATA BYTE 9(type/posit 4)

Bit 2	A note was under the note size for the given cassette
Bit 3	A note was over the size for the given cassette
Bit 4	An extra note entered the transport. May be caused by the pick solenoid being stuck
Bit 5	A cassette with the correct ID was not found installed in the dispenser unit. May be caused by the cassette installed bit being a logic 1 or the correct ID (three bits) was not found
Bit 6	Not used always 0
Bit 7	Not used always 0

MDATA BYTE 1 **WHERE MDATA BYTE 0 = 03**

Bits 0-3	Not used, always zero
Bit 4	Reject position sensor state when reject gate solenoid energised (dispense position) = 0 – indicates not at reject position = 1 – indicates at reject position
Bit 5	Dispense position sensor state when reject gate solenoid energised (dispense position) = 0 – indicates at dispense position = 1 – indicates not at dispense position

5070 DISPENSER

MDATA BYTE 1 WHERE MDATA BYTE 0 = 03

Bit 6	Reject position sensor state when reject gate solenoid de-energised (reject position) = 0 – indicates at reject position = 1 – indicates not at reject position
Bit 7	Dispense position sensor state when reject gate solenoid deenergised (reject position)
Bit 7	= 0 – indicates not at dispense position = 1 – indicates at dispense position

MDATA BYTE 0 CALIBRATION TEST

XX	Frist A/D converter output reading from selected cassette type

MDATA BYTES 1-16 CALIBRATION TEST

XX	Consecutive A/D converter readings occurring at 5 millisecond intervals after the first

MDATA BYTE 0 SENSOR TEST

Bit 0	Count sensor blocked
Bit 1	Exit sensor blocked
Bit 2	Reject/overfill sensor blocked
Bit 3	Low voltage line active. This indicates that the count or a pick sensor cannot compensate for dirt build up, the lamp is burnt out, the sensor is faulty, or the sensor is blocked.
Bit 4	Divert gate (reject position) sensor indicates gate not at reject position

5070 DISPENSER

MDATA BYTE 0	SENSOR TEST
Bit 5	Divert gate (dispense position) sensor indicates gate not at dispense position
Bits 6-7	Not used always 0

MDATA BYTE 1	SENSOR TEST
	1 = condition true
Bit 0	Top pick module pick sensor blocked
Bit 1	Second pick module pick sensor blocked
Bit 2	Third pick module pick sensor blocked
Bit 3	Bottom pick module pick sensor activated
Bit 4	Top pick module low media sensor activated
Bit 5	Second pick module low media sensor activated
Bit 6	Third pick module low media sensor activated
Bit 7	Bottom pick module low media sensor activated

MDATA BYTE 2	SENSOR TEST
XX	A/D sensor (doubles detect) reading (normally FFH)

MDATA BYTE 3	SENSOR TEST
	1 = contact not made (no magnet)
Bits 7,6,5,4	ID of cassette in top pick module (S1,S4,S3,S2)

MDATA BYTE 3 SENSOR TEST

Bits 3,2,1,0	ID of cassette in second pick module (S1,S4,S3,S2)

MDATA BYTE 4 SENSOR TEST

1 = contact not made (no magnet)

Bits 7,6,5,4	ID of cassette in third pick module (S1,S4,S3,S2)
Bits 3,2,1,0	ID of cassette in bottom pick module (S1,S4,S3,S2)

MDATA BYTE 5 SENSOR TEST

XX	Bench Test switch pack BT1 setting (on dispenser PIB) (1 = switch bit on)

MDATA BYTE 6 SENSOR TEST

XX	Bench Test switch pack BT2 setting (on dispenser PIB) (1 = switch bit on)

MDATA BYTE 7 SENSOR TEST

XX	ROM sumcheck character (normally 00)

MDATA BYTE 8 SENSOR TEST

1 = condition true

Bit 0	Reject bin present
Bits 1-7	Not used always 0

MDATA BYTE 9 SENSOR TEST

Bit 0	Condition of Security Switch
Bits 1-7	Not used, always 0

RC DATA BYTE 0(type/1)
RC DATA BYTE 3(type/2)
RC DATA BYTE 6(type/3)
RC DATA BYTE 9(type/4)

XX	No. of bills moved from cassette type to a position accessible by the customer.

RC DATA BYTE 1(type/1)
RC DATA BYTE 4(type/2)
RC DATA BYTE 7(type/3)
RC DATA BYTE 10(type/4)

XX	No. of reject operations from cassette type to reject bin, this includes the number of divert operations performed from cassette type to reject bin by DEVICE-FITNESS-TEST or DIVERT-BILLS-TEST

RC DATA BYTE 2(type/1)
RC DATA BYTE 5(type/2)
RC DATA BYTE 8(type/3)
RC DATA BYTE 11(type/4)

XX	No. of bills from cassette type to an unknown (or more than one) destination.

5081 DISPENSER

MSTATUS	ALL COMMANDS
00	No error
01	Dispense requested from a cassette which is not installed or no cassettes installed during DEVICE FITNESS TEST or a short dispense was performed (bills dispensed less than bills requested) and no error was reported by the on-board firmware.
02	Too many bills being rejected, i.e. undersize, oversize or doubles.
03	Pick failure.
04	Pick failure + low (out of bills).
05	Sensor failure or currency jam in bill transport.
06	Reserved for Spray Dispenser Divert gate fault. This code is not generated by the 5081 dispenser firmware.
07	Purge bin not present (unit inoperative).
08	Purge bin overfill sensor blocked (unit inoperative).
09	Communications failure between 5081 dispenser and terminal processor.
10	Operation not attempted because the device or a cassette type is FATAL from a previous operation. A RESET command (CLEAR) must be performed to clear this condition.
11	Operation not attempted due to one of the following conditions: 1. bills are still stacked in the transport from a previous operation 2. bills may not have been cleared from the transport due to an unrecovered error during a previous operation. A CLEAR or diag-CLEAR must be performed to clear this condition.

5081 DISPENSER

MSTATUS	ALL COMMANDS
12	Presenter mechanism failed or jammed.
13	Exit shutter jammed open.
14	Exit shutter jammed closed.
15	BILL DRIVE ERROR. Bills observed passing the overfill sensor on a present operation due to one of the following conditions:– 1. Clutch failure on rotate to present 2. Bill remaining in presenter mechanism following present and cleared on redundant return to home purge.
20	Dispenser not configured.
24	Disk authorisation mode of operation is the non-authorisation mode.

MDATA BYTE 0	ALL COMMANDS EXCEPT CALIB & SENSR TEST
00	Zero Dispense by Type 1,2,3,4
01	Dispense bills by Type 1,2,3,4
02	Divert bills – dispense by POSITION TOP-BOTTOM
03	Purge
04	Present from present position
05	Present from home position
06	Return presenter to home position and purge
07	Rotate to present position
08	Presenter test
09	Exit shutter test

5081 DISPENSER

MDATA BYTE 1 WHERE MDATA BYTE 0 = 00,01,02

1 = condition true

Bit 0	Cassette type/position 2 is low on bills
Bit 1	Cassette type/position 1 is low on bills
Bit 2	Not used (always 0)
Bit 3	Fatal malfunction INOP flat set
Bit 4	Pick fail occurred
Bit 5	Not used (always 0)
Bit 6	Cassette type/position 4 is low on bills
Bit 7	Cassette type/position 3 is low on bills

MDATA BYTE 2(type/posit 1) WHERE MDATA BYTE
MDATA BYTE 3(type/posit 2) 0 = 00,01,02
MDATA BYTE 4(type/posit 3)
MDATA BYTE 5(type/posit 4)

01	Occurs if the 5081 firmware receives a non-zero dispense command when the local INOP flag is set. The INOP flag can be cleared by performing a CLEAR, DIAG-CLEAR, or a reset of the on board processor.
02	Occurs when the purge bin is not present on completion of a zero dispense, or prior to executing a dispense bills command.
03	Occurs when bills cannot be picked from a cassette. Picking is tried three times after the initial attempt per bill, each attempt being four or five pick cycles. Upon failing with four or five pick cycles, the motor is shut off. After a time period picking is attempted again. The cycle of motor off, pick is repeated (up to three times) until a bill is picked. If all attempts fail, this auxiliary status is generated. NOTE Where MDATA byte 0=2 (divert bills) pick retries are not attempted.

5081 DISPENSER

MDATA BYTE 2(type/posit 1) **WHERE MDATA BYTE**
MDATA BYTE 3(type/posit 2) **0 = 00,01,02**
MDATA BYTE 4(type/posit 3)
MDATA BYTE 5(type/posit 4)

04	Occurs when a bill enters the transport from the wrong cassette or if one of the pick sensors is faulty.
09	Occurs when a bill is seen at the exit sensor when it is not expected. This may be the result of a faulty pick sensor.
0C	Purge bin overfill sensor blocked.
10	Occurs when the presenter exit shutter is not fully closed when initiating a dispense, or on completion of a zero dispense.
11	Occurs on a dispense command when a pick sensor(s) is blocked initially, or on completion of a zero dispense.
13	Low voltage has been detected This indicates exit or a pick sensor cannot compensate for dirt built up, the lamp is burned out, the sensor is faulty or the sensor is blocked.
14	Occurs when the exit sensor is blocked initially upon initiating a dispense command, or on completion of a zero dispense.
17	Same as auxiliary status 13 except that the exit sensor is the cause of the low voltage.

MDATA BYTE 2(type/posit 1) **WHERE MDATA BYTE**
MDATA BYTE 3(type/posit 2) **0 = 00,01,02**
MDATA BYTE 4(type/posit 3)
MDATA BYTE 5(type/posit 4)

21	A note was apicked and scanned at the pick sensor for length and doubles. The note cleared the pick sensor and was not seen at the exit sensor within the allotted time. May result if a jam occurs between the pick and exit sensors.
22	A note reached the exit sensor but did not clear the exit sensor in the allotted time. May result if a jam occurs at the exit sensor.
27	The presenter unit is determined to be jammed or in the wrong position initially.
40	Occurs when a command is received to pick bills from a cassette type which is not installed.

MDATA BYTE 6(type/posit 1) **WHERE MDATA BYTE**
MDATA BYTE 7(type/posit 2) **0 = 00,01,02**
MDATA BYTE 8(type/posit 3)
MDATA BYTE 9(type/posit 4)

Bit 0	A bill exceeded the note size for the given cassette.
Bit 1	A bill was determined to be at least two notes.
Bit 2	A bill was under the bill size for the given cassette.
Bit 3	A bill was over the bill size for the given cassette.
Bit 4	An extra bill entered the transport. May be caused by the pick solenoid being stuck.

5081 DISPENSER

MDATA BYTE 6(type/posit 1) **WHERE MDATA BYTE**
MDATA BYTE 7(type/posit 2) **0 = 00,01,02**
MDATA BYTE 8(type/posit 3)
MDATA BYTE 9(type/posit 4)

Bit 5	A cassette with a correct ID was not found installed in the dispenser unit. May be caused by the cassette installed bit being a logic 1 or the correct ID (three bits) was not found.
Bit 6	Not used (always 0)
Bit 7	Not used (always 0)

MDATA BYTE 1 **WHERE MDATA BYTE 0 = 03,04,05,06,07**

00	Operation successful
01	Shutter failed to open on present
02	Shutter not closed initially
03	Bill seen in transport
04	Not in home position initially
05	Shutter did not close on present
06	Jam moving from purge to home
07	Jam moving from home to purge
08	Jam moving from purge to present
09	Jam finding home initially, not home initially
0A	Bill detected at overfill sensor during operation

5081 DISPENSER

MDATA BYTE 1	WHERE MDATA BYTE 0 = 08
00	Operation successful
01	Failed to find home
02	Failed to move off purge position towards home
03	Failed to find purge position from present
04	Failed to find present position
05	Failed to move off purge position towards present
06	Failed to find purge position
07	Failed to move off home position towards purge
08	Failed to find home position initially

MDATA BYTE 1	WHERE MDATA BYTE 0 = 09 1 = condition true
Bit 0	0 always
Bit 1	0 always
Bit 2	0 always
Bit 3	Shutter closed sensor indicates not closed when it should be closed
Bit 4	Shutter open sensor indicates not open when it should be open
Bit 5	0 always
Bit 6	Shutter open sensor indicates open when it should be closed
Bit 7	Shutter closed sensor indicates closed when it should be open

5081 DISPENSER

MDATA BYTE 0 SENSOR TEST

1 = condition true

Bit 0	Exit sensor blocked
Bit 1	Presenter (Present position) sensor blocked
Bit 2	Presenter (purge position) sensor blocked
Bit 3	Low Voltage Detect Line active. This indicates that the count or a pick sensor cannot compensate for dirt build up, the lamp is burnt out, the sensor is faulty, or the sensor is blocked.
Bit 4	Exit shutter closed sensor indicates not closed
Bit 5	Exit shutter open sensor indicates not open
Bit 6	Not used (0)
Bit 7	Not used (0)

MDATA BYTE 1 SENSOR TEST

1 = condition true

Bit 0	Top pick module low media sensor activated.
Bit 1	Second pick module pick sensor blocked
Bit 2	Third pick module pick sensor blocked
Bit 3	Bottom pick module pick sensor blocked
Bit 4	Top pick modules low media sensor activated
Bit 5	Second pick module low media sensor activated

MDATA BYTE 1	SENSOR TEST
Bit 6	Third pick module low media sensor activated
Bit 7	Bottom pick module low media sensor activated

MDATA BYTE 2	SENSOR TEST
XX	A/D Sensor (doubles detect) reading (normally FFH)

MDATA BYTE 3	SENSOR TEST
	1 = contact not made (no magnet)
Bits 7,6,5,4	ID of cassette in top pick module (S1,S4,S3,S2)
Bits 3,2,1,0	ID of cassette in second pick module (S1,S4,S3,S2)

MDATA BYTE 4	SENSOR TEST
	1 = contact not made (no magnet)
Bits 7,6,5,4	ID of cassette in third pick module (S1,S4,S3,S2)
Bits 3,2,1,0	ID of cassette in bottom pick module (S1,S4,S3,S2)

MDATA BYTE 5	SENSOR TEST
XX	Switch pack CAL 1 setting

MDATA BYTE 6	SENSOR TEST
XX	Switch pack CAL 2 setting

MDATA BYTE 7 SENSOR TEST

XX	ROM sumcheck character (normally 00)

MDATA BYTE 8 SENSOR TEST

1 = condition true)

Bit 0	Purge bin present
Bit 1	Purge bin overfill
Bits 2-7	Not used (0)

MDATA BYTE 9 SENSOR TEST

XX	Always 0

MDATA BYTE 0 CALIBRATION TEST

XX	First A/D converter output reading from selected cassette type

MDATA BYTES 1-16 CALIBRATION TEST

XX	Consecutive A/D converter readings occurring at 5 millisecond intervals after the first

RC DATE BYTE 0(type/1)
RC DATA BYTE 3(type/2)
RC DATA BYTE 6(type/3)
RC DATA BYTE 9(type/4)

XX	No. of bills moved from cassette type to a position accessible by the customer.

RC DATA BYTE 1(type/1)
RC DATA BYTE 4(type/2)
RC DATA BYTE 7(type/3)
RC DATA BYTE 10(type/4)

XX	No. of reject operations from cassette type to purge bin, this includes the number of divert operations performed from cassette type to reject bin by DEVICE-FITNESS-TEST or DIVERT-BILLS-TEST

RC DATA BYTE 2(type/1)
RC DATA BYTE 5(type/2)
RC DATA BYTE 8(type/3)
RC DATA BYTE 11(type/4)

XX	No. of bills from cassette type to an unknown (or more than one) destination.

MCRW

MSTATUS	ALL COMMANDS (ALL MODELS)
00	Operations successful
01	Blank Track
02	Track Not supported
03	Read Error
04	Write Error
05	No card in Reader at start of command
06	Card removed by customer during capture
07	Shutter jammed open
08	Shutter switch failure detected
09	Error Recovery successful
10	Shutter jammed closed
11	Card still jammed
12	Card captured after unsuccessful eject
13	Possible customer tampering. Card stuck in throat
14	Too many consecutive read errors on any track.
15	Too many consecutive write errors
16	Too many consecutive card jams
17	Too many consecutive shutter jammed closed
18	Card jam during capture
19	Too many invalid cards

MSTATUS	ALL COMMANDS (ALL MODELS)
20	Device still inoperative
21	No card entered during cleaning cycle test
22	Speed out of spec fast
23	Speed within +3%
24	Speed within + − 1%
25	Speed within −3%
26	Speed out of spec slow
27	Invalid card detected (Diagnostic Only)
28	MM Quality 6, Optical Stripe couldn't be decoded
29	No MM
30	MM Invalid
31	MM Module Defective
32	MM Turnaround Test Failed. Defect in I/F (MM Security Module or MM I/F PCB)
33	MM Service Test failed.
34	MM Communications Failure
35	Error in Track 3 Data

MDATA BYTE 0	ALL COMMANDS (ALL MODELS)
00	Reset command
01	Accept command
02	Read command

MCRW

MDATA BYTE 0	ALL COMMANDS (ALL MODELS)
03	Write command
04	Determine Reader State
05	Eject command
06	Capture command
07	Disable command
08	Speed Test
09	Shutter/Sensor Test
0A	Cleaning Cycle Test
0B	Card Insertion
0C	Card Removal
0D	Card Detection
0E	MM Verify
0F	MM Turnaround Test
10	MM Service Test
11	MM Self Test

MDATA BYTE 1	ALL COMMANDS (ALL MODELS)
	1 = condition true
Bit 0	Track 1
Bit 1	Track 2
Bit 2	Track 3
Bit 3	Read Error (Parity or LRC)
Bit 4	Read Error (Comms Fail)
Bit 5	Read After Write Error
Bit 6	Write Error (Comms Fail)
Bit 7	Write Error (invalid data)

MDATA BYTE 2 ALL COMMANDS (ALL MODELS)

1 = condition true

Bit 0	Shutter jammed open
Bit 1	Shutter jammed closed
Bit 2	Shutter switch malfunction
Bit 3	Card jam in forward direction (towards capture bin)
Bit 4	Card jam in reverse direction (towards shutter)
Bit 5	Card jam during capture
Bit 6	Short card detected (MM Model Only)
Bit 7	Long card detected

MDATA BYTE 3 ALL COMMANDS (ALL MODELS)

1 = condition true

Bit 0	PD1 blocked (shutter)
Bit 1	PD2 blocked (middle)
Bit 2	PD3 blocked (back)
Bit 3	One of the PD Sensors is busy
Bit 4	Shutter switch open
Bit 5	Width switch blocked
Bit 6	Capture Bin overfill
Bit 7	PF4 blocked (CIT/ISO Model Only)

MDATA BYTE 4 ALL COMMANDS (CIT/ISO ONLY)

00	ISO Track
01	CIT Track

MDATA BYTE 4	ALL COMMANDS (MM ONLY)
00	No error or not test card
01	Test card 1
02	Test card 2
03	Test card 3
04	Test card 4
05	Test card 5
06	Test card 6
07	Test card 7
08	Test card 8
09	Test card 9
0A	Test card 10
0B	Test card 11
11-19	Self test error 1-9
40	MM permanently 'error'
41	MM permanently 'busy'
70	Wrap connector attached
71	Comms timeout, or open line
80-C6	Invalid reply
C7	MM load erased
C8-FF	Invalid reply

MDATA BYTE 5	ALL COMMANDS (MM ONLY)
00	Comms error
01	Quality 1
02	Quality 2

MDATA BYTE 5 ALL COMMANDS (MM ONLY)

03	Quality 3
04	Quality 4
05	Quality 5
06	Quality 6
07	No MM
08	MM invalid
09	MM Module defective
0A	Error in track 3 data
50-59	MM Service Test Card dependant stati: See test card for meaning of status

RCDATA BYTE 0 ALL COMMANDS (ALL MODELS)

XX	Number of cards captured

TDATA COMPLETE FIELD WHERE MDATA BYTE 0 = 02

This field reports the read card data including start and end sentinels. In the event of a read error this field contains as much card data as could be read.

MSR

MSTATUS	ALL COMMANDS
00	Operations successful
01	Blank Track
02	Track not supported
03	Read error – Comms Fail, Parity Error, etc (qualified by Byte 2)
05	No data available
09	Recovered OK
14	Too many read errors
20	Device still inoperative

MDATA BYTE 0	ALL COMMANDS
00	RESET command
01	Accept
02	Read
03	Write
04	Determine Reader State
05	Eject
06	Capture
07	Disable
08	Speed test
09	Sensor test
0A	Cleaning test
0B	Card removal
0C	Not used
0D	Card removal

MSR

MDATA BYTE 1 ALL COMMANDS

1 = condition true

Bit 0	Track 1
Bit 1	Track 2
Bit 2	Track 3
Bit 3	Read error (Parity or LRC)
Bit 4	Read error (Comms Fail)
Bits 5-7	Not used

MDATA BYTE 2 ALL COMMANDS

1 = condition true

Bit 0	Rear switch (RVS) blocked
Bits 1-7	Not used

RECEIPT & JOURNAL PRINTERS (EXCEPT 5081)

MSTATUS ALL COMMANDS

00	No error
01	Failed to go busy
02	Failed to go not busy
03	Failed to see black mark
04	Always saw black mark
05	Paper exhausted
06	Printer not configured
08	Communication failure

MDATA BYTE 0 ALL COMMANDS

Image of printer status port. Only bits 0,2,3 are significant.

Bit 0 = 0	Not busy
Bit 0 = 1	Busy
Bit 1 = 0	Paper not low
Bit 1 = 1	Paper low
Bit 2 = 0	No black mark (receipt only)
Bit 2 = 1	Black Mark Present (receipt). No sensor present (journal)
Bit 3 = 0	Paper not exhausted
Bit 3 = 1	Paper exhausted

RCDATA BYTE 0 ALL COMMANDS

00	No movement
01	One receipt moved

5081 RECEIPT & JOURNAL PRINTERS

MSTATUS ALL COMMANDS

00	No error
01	Failed to go busy
02	Failed to go not busy
03	Failed to see black mark
04	Always saw black mark
05	Paper exhausted
06	Printer not configured

MDATA BYTE 0 ALL COMMANDS

Bit 0 = 0	Not busy
Bit 0 = 1	Busy
Bit 1 = 0	Paper not low
Bit 1 = 1	Paper low
Bit 2 = 0	No black mark
Bit 2 = 1	Black mark present (or no sensor)
Bit 3 = 0	Paper not exhausted
Bit 3 = 1	Paper exhausted

RCDATA BYTE 0 ALL COMMANDS

00	No movement
01	One receipt moved

VALIDATION PRINTERS

MSTATUS ALL COMMANDS

00	No error
01	Failed to go busy
02	Failed to go not busy
05	No cheque present
06	Printer not configured
07	Failed to see cheque leave sensor

MDATA BYTE 0 ALL COMMANDS

Bit 0 = 0	Not busy
Bit 0 = 1	Busy
Bit 2 = 0	No form present
Bit 2 = 1	Form present

RCDATA BYTE 0 ALL COMMANDS

00	No movement
01	One cheque validated

SERIAL JOURNAL PRINTER

MSTATUS ALL COMMANDS (EXCEPT RS232

00	No error
01	Failed to go busy (printer not ready at start of command; power off, paper out, jam or not connected).
02	Failed to go not busy (printer becomes not ready while attempting to print)
06	Printer not configured
08	Communication failure (DSR OK but CTS not asserted)

MDATA ALL COMMANDS (EXCEPT RS232)

1 = condition true

Bit 0	Tx ready (Tx empty and CTS)
Bit 1	Not used
Bit 2	Tx empty
Bits 3-6	Not used
Bit 7	DSR (printer power on, no fault)

MSTATUS/MDATA RS232 T.A. Test

See standard RS232 T.A. Test descriptions

STATEMENT PRINTER

MSTATUS	ALL COMMANDS
00	No error
01	Initial error – printer may be off line or the head may be jammed.
02	Busy error – the printer has been switched off, disconnected, or the head has jammed while attempting to print.
03	Not acknowledged – an attempt has been made to strobe data to the printer but the printer has not acknowledged.
04	Black mark error: failed to see black mark on a slew of 13 inches.
05	Exit sensor error – either sensor was blocked before a burst or driver failed to detect paper arriving at the sensor after a burst.
06	Printer not configured.
07	Paper exhausted – the printer has gone out of paper after completion of the last form.
08	Ribbon wear indicated.

MDATA BYTE 0	ALL COMMANDS
Bit 0 = 0	Not busy
Bit 0 = 1	Busy
Bit 1 = 0	No paper at exit sensor
Bit 1 = 1	Paper at exist sensor
Bit 2 = 0	No black mark
Bit 2 = 1	Black mark
Bit 3 = 0	Paper not exhausted
Bit 3 = 1	Paper exhausted

STATEMENT PRINTER

MDATA BYTE 0 ALL COMMANDS

Bit 4 = 0	Paper not low
Bit 4 = 1	Paper low
Bit 5 = 0	Burst mechanism out of paper path
Bit 5 = 1	Burst mechanism in paper path
Bit 6 = 0	No error
Bit 6 = 1	Error

RCDATA BYTE 0 ALL COMMANDS

XX	Number of forms moved

PASSBOOK PRINTER

MSTATUS ALL COMMANDS

00	Operation successful
01	Blank track
02	Not configured, or track not supported
03	Read error
04	Write error
05	No book in reader at start of command
06	Error recovery successful
07	Book jammed
08	Too many consecutive read errors
09	Too many consecutive write errors
10	Too many consecutive book jams
11	Device inoperative
12	Format error
13	Communications error

MDATA BYTE 0 ALL COMMANDS

00	Reset
01	Accept
02	Read
03	Write
04	Determine state
05	Eject
06	Print
07	Disable
08	Define document
09	Scan
0A	Page number
0B	Check line
0C	Report configuration
0D	Report definition
0E	Book detection
0F	Book insertion

PASSBOOK PRINTER

MDATA BYTE 1	ALL COMMANDS (MCRW STATUS)
Bit 0 = 1	For DIN track
Bit 1 = 1	For IBM track
Bit 2 = 1	For ISO track
Bit 3 = 1	For Olivetti track
Bit 4 = 1	For read error
Bit 5 = 1	For read after write error
Bit 6 = 1	For Comms error
Bit 7 = 1	For write error

Note: Bits 4 - 7 will be set for any detected occurrence of the error, independent of successful retries.

MDATA BYTE 2	ALL COMMANDS (USART STATUS)
Bit 0 = 1	Tx ready (Tx empty and printer on)
Bit 1 = 1	Rx ready
Bit 2 = 1	Tx empty
Bit 3 = 1	Parity error
Bit 4 = 1	Overrun error
Bit 5 = 1	Framing error
Bit 6 = 0	Not used
Bit 7 = 1	DSR (printer power on, no overflow)

MDATA BYTE 3	ALL COMMANDS (PRINTER STATUS)
Bit 0 = 1	Almost end of document
Bit 1 = 0	Not used
Bit 2 = 1	Offline
Bit 3 = 1	Document fully inserted
Bit 4 = 1	Document jam
Bit 5 = 1	No document
Bit 6 = 1	Blank track
Bit 7 = 1	Read/write error

VANDAL GUARD

MSTATUS ALL COMMANDS

00	GOOD. There was no errors detected during this command.
01	FAIL-TO-CLOSE. The guard when requested to be closed failed to do so. Its position is indeterminate.
02	FAIL-TO-OPEN. When requested to OPEN the vandal guard failed to attain the "latched" open position. The guard is in the closed position if a normal command was issued. If a diagnostic command was issued then the position of the vandal guard is indeterminate.
03	GUARD-JAMMED. During the operation the vandal guard failed to attain both the closed and the open positions. Its position is indeterminate.

MDATA BYTE 0 ALL COMMANDS

1 = condition true

Bit 0	Door failed to unlock.
Bits 17	Not used.

MDATA BYTE 1 ALL COMMANDS

Bit 0=0	Door locked	LOCKED SWITCH
Bit 0=1	Door not locked	
Bit 0=1	Door closed	CLOSED SWITCH
Bits 1=1	Door not closed	
Bits 2-7	Not used	

NBS ENCRYPTOR

MSTATUS	NON DIAGNOSTIC COMMANDS
00	GOOD. There was no error detected.
01	PARITY. If parity checking has been selected then this error is returned if any byte of key data has wrong parity.
02	HARDWARE-ERROR. This error code is returned if a hardware error is detected during a key or data transmission or during an encryptor operation.
04	NO-KEY. This error code is returned if there has been no key loaded in the DEU prior to requesting an encryption or decryption operation.
05	NOT-CONFIGURED. This error code is returned if the encryptor defined within the command is not configured.

MDATA BYTE 0	NON DIAGNOSTIC COMMANDS
00	GOOD.
01	H/W parity error.
02	Time out error.

MSTATUS	DIAGNOSTIC COMMANDS
00	GOOD. Test performed O.K.
01	ERROR. There was an error in the test.

MDATA BYTE 0	DIAGNOSTIC COMMANDS
XX	No. of keys found to be in error during the test (0-16).

NBS ENCRYPTOR

MDATA BYTE 1 DIAGNOSTIC COMMANDS

XX	No. of 1st key found to be in error (0-16).

MDATA BYTES 2-9 DIAGNOSTIC COMMANDS

XX	Data returned from encryptor if relevant.

NOTE In response to Diagnostic SECUR test if byte 0 = 1 and byte 1 = 0 then the test set-up has failed.

NBS/CIT ENCRYPTORS

The following CIT statuses can occur in addition to those listed for NBS:–

MSTATUS	NON DIAGNOSTIC COMMANDS
00	GOOD
65	HARDWARE ERROR. Hardware error detected during data transmission or during an encryptor operation. See MDATA Byte 1.
66	FUNCTION FAIL. Function not performed due to invalid card data. See MDATA Byte 2.
69	PIN MISMATCH. Unsuccessful PIN – verify.
70	PIN STORE INVALID. No valid PIN held for comparison.

MDATA BYTE 0	NON DIAGNOSTIC COMMANDS **Used for NBS Encryptor**

MDATA BYTE 1	NON DIAGNOSTIC COMMANDS
00	GOOD
01	Communications error on data transfer.
02	Timeout error – no response on function completion

MDATA BYTE 2	NON DIAGNOSTIC COMMANDS
00	GOOD
01	Invalid T3 card data detected
02	Invalid T2 card data detected
03	PIN attempt > 2 detected in card data

NBS/CIT ENCRYPTORS

MSTATUS	DIAGNOSTIC COMMANDS
00	GOOD
65	HARDWARE ERROR. As non-diagnostic commands.
66	FUNCTION FAIL. As non-diagnostic commands.
67	ENCRYPTION PHASE FAIL. Qualified by MDATA BYTE 0:– 00 – Good 01 – Data mismatched 02 – Encryption or decryption function not performed
68	ERROR DETECTION PHASE FAIL. CIT module failed to detect and error in card data sent. Qualified by MDATA Byte 0:– 00 – Good 01 – Invalid T3 card data not deleted 02 – Invalid T2 card data not deleted 03 – PIN attempt > 2 not deleted in card data

NBS/BANCONTACT ENCRYPTORS

The following BANCONTACT statuses can occur in addition to those listed for NBS:–

MSTATUS	ALL COMMANDS EXCEPT RS232
00	GOOD
65	Base key destroyed
66	CMOS corrupted
67	No response received

MSTATUS/MDATA RS232 T.A. TEST

See standard RS232 T.A. test status descriptions.

ATALLA ENCRYPTOR

MSTATUS NON DIAGNOSTIC COMMANDS

00	Good.
01	PARITY. If parity checking has been selected then this error is returned if any byte or key data has wrong parity.
02	HARDWARE ERROR. This error code is returned if a hardware error is detected during a key or data transmission or during an encryptor operation.
04	NO-KEY. This error code is returned if there has been no key loaded in the DEU prior to requesting an encryption or decryption operation.
05	NOT CONFIGURED. This error code is returned if the encryptor defined within the command is not attached.
06	PIN VERIFICATION FAILED. This error code is returned if the verification scheme has failed to validate the PIN.

MDATA BYTE 0 NON DIAGNOSTIC COMMANDS

1 = condition true

Bit 0	H/W parity error	) as read from
Bit 1	Time out error	) the encryptor
		) HARDWARE

MSTATUS DIAGNOSTIC SECUR TEST

00	GOOD. Test performed successfully.
01	ERROR. There was at least one error detected in this test.
05	NOT CONFIGURED. Device has not been configured.

MDATA BYTE 0 DIAGNOSTIC SECUR TEST

XX — Number of errors in subtest 1.

MDATA BYTE 1 DIAGNOSTIC SECUR TEST

XX — Source of first error in subtest 1:–

1) For loading key
2) For encryption
3) For comparison

MDATA BYTE 2 DIAGNOSTIC SECUR TEST

XX — Key used during first error in subtest 1.

MDATA BYTE 3 DIAGNOSTIC SECUR TEST

XX — Number of errors in subtest 2.

MDATA BYTE 4 DIAGNOSTIC SECUR TEST

XX — Source of first error in subtest 2:–

1) For loading key
2) For encryption
3) For comparison

MDATA BYTE 5 DIAGNOSTIC SECUR TEST

XX — Key used during first error in subtest 2.

MDATA BYTE 6 DIAGNOSTIC SECUR TEST

00 — Subtest three was successful.

01 — Identikey derivation failed during subtest three.

02 — Identikey derivation successful but comparison failed during subtest three.

MSTATUS	DIAGNOSTIC ENCRYPT AND LOAD TESTS
00	GOOD. Test performed O.K.
01	ERROR. There was an error in the test.
02	NOT CONFIGURED. The test device has not been configured.

MDATA BYTE 0	DIAGNOSTIC ENCRYP AND LOAD TESTS
XX	No. of keys found to be in error during the test (1-16).

MDATA BYTE 1	DIAGNOSTIC ENCRYP AND LOAD TESTS
XX	No. of 1st key found to be in error (1-16).

MDATA BYTES 2-9	DIAGNOSTIC ENCRYPT AND LOAD TESTS
XX	Data that failed to compare (if relevant).

MSTATUS	DIAGNOSTIC BASIC TEST
00	GOOD. Test performed successfully.
01	ERROR 1. Self test failed.
02	ERROR 2. Communications error.
05	Device not configured.

ATALLA ENCRYPTOR

MDATA BYTE 0	WHERE MSTATUS = 01
01	ROM FAILURE.
02	RAM Failure.
03	UART Failure.
04	DES Failure.
05	Misc. hardware failure.

MDATA BYTE 0	WHERE MSTATUS = 02
01	Transmission failure.
02	Reception failure.

DEPOSITORY (SND & PDD)

MSTATUS	ALL COMMANDS
00	GOOD, no error
01	Transport jam
02	Transport jam and shutter jammed open
03	Transport jam and shutter jammed closed
04	Shutter jammed open
05	Shutter jammed closed
06	Transport sensor failure
07	Communications failure on the PIA link between the terminal and the device (PPD only)
08	Invalid device printhead status (PPD only)
09	Invalid device module status (PPD only)
10	Deposit not done error count exceeded
11	Depository bin overfill
12	Depository not configured

MDATA BYTE 0 ALL COMMANDS

Bits 3 - 5 combine with bits 0 - 2 and indicate when a sensor failure condition occurs whether the sensor failed indicating blocked (indicated something that was not there) or failed indicating clear (failed to detect something that was there) e.g. a value of 19 (Bits 0,3,4 set) indicates that the middle sensor failed to detect an envelope passing beneath it and that the entry sensor failed indicating an envelope is still beneath it.

DEPOSITORY (SND & PDD)

1 = condition true

Bit 0	Entry sensor blocked
Bit 1	Middle sensor blocked
Bit 2	Exit sensor blocked
Bit 3	Entry sensor failed
Bit 4	Middle sensor failed
Bit 5	Exit sensor failed
Bit 6	Bin overfill
Bit 7	Bin absent

MDATA BYTE 1 ALL COMMANDS

1 = condition true

Bit 0	Jammed shut
Bit 1	Jammed open
Bits 2-7	Not used

MDATA BYTE 2 ALL COMMANDS (PPD ONLY)

	Module
Bit 0	Function failed
Bit 1	Invalid command/character
Bit 2	Print buffer overflow
Bit 3	Busy
	Printhead
Bit 4	Ink low
Bit 5	Not ready
Bit 6	Enable error
Bit 7	5070 always 0 5081 PPD – Bin overfill

MDATA BYTE 3 ALL COMMANDS (PPD ONLY)

00	Indicates hardware reset failed
02	Abort
03	Printhead status request

DEPOSITORY (SND & PDD)

MDATA BYTE 3 ALL COMMANDS (PDD ONLY)

04		Module status request
05		Sensor request
06		Print enable
07		Print
13	0D	Sensors disable
14	0E	Sensors enable
15	0F	Open shutter
16	10	Close shutter
17	11	Pulse shutter

RCDATA BYTE 0 ALL COMMANDS

00	No envelope deposited
01	Envelope deposited

ALARMS/TI SENSORS

TDATA DIGITS 0-11 ALL COMMANDS

NOTE Digits 0-4 indicate the sensor states and are always displayed. Digis 5-11 are only displayed if the terminal is secure.

Digit 0=0	Terminal is in normal mode.
Digit 0=1	Terminal is in supervisor mode.
Digit 1=0	Composite alarm sensor(s) inactive.
Digit 1=1	Composite alarm sensor(s) active.
Digit 2=0	Door open/unlocked sensor(s) inactive.
Digit 2=1	Door open/unlocked sensor(s) active.
Digit 3=0	Silent alarm sensor inactive.
Digit 3=1	Silent alarm sensor active.
Digit 4=0	Tamper alarm sensor(s) inactive.
Digit 4=1	Tamper alarm sensor(s) active.
Digit 5=0	TI Depository bin (5081) out.
Digit 5=1	TI Depository bin (5081) in.
Digit 6=0	TI Depository Card Capture (5070) or TI Card Capture (5081) bin out.
Digit 6=1	TI Depository Card Capture (5070) or TI Card Capture (5081) bin in.
Digit 7=0	TI Currency Reject bin out.
Digit 7=1	TI Currency Reject bin in.
Digit 8=0	TI Currency Cassette in pick module 1 out.
Digit 8=1	TI Currency Cassette in pick module 1 in.
Digit 9=0	TI Currency Cassette in pick module 2 out.
Digit 9=1	TI Currency Cassette in pick module 2 in.
Digit 10=0	TI Currency Cassette in pick module 3 out.
Digit 10=1	TI Currency Cassette in pick module 3 in.

ALARMS/TI SENSORS

TDATA DIGITS 0-11 ALL COMMANDS

Digit 11=0	TI Currency Cassette in pick module 4 out.
Digit 11=1	TI Currency Cassette in pick module 4 in.

SECURITY CAMERA

MSTATUS **ALL COMMANDS EXCEPT RS232**

00	Picture taken O.K.
01	NAK received from camera most likely caused by one of the following:– 1. The camera is inoperative or out of film 2. The camera has stayed busy 3. A bad LRC has been sent to the controller – indicative of bad communications
02	No camera fitted
03	Hardware error detected – bad communications

MDATA BYTE 0 **D/A CAMERA ALL COMMANDS EXCEPT RS232**

31	Camera no. 1 on line
32	Camera no. 2 on line
34	Camera no. 3 on line
38	Camera no. 4 on line

MDATA BYTE 1 **D/A CAMERA ALL COMMANDS EXCEPT RS232**

31	Camera no. 5 on line
32	Camera no. 6 on line
34	Camera no. 7 on line
38	Camera no. 8 on line

SECURITY CAMERA

MDATA BYTE 2	D/A CAMERA ALL COMMANDS EXCEPT RS232
31	Camera no. 1 faulty
32	Camera no. 2 faulty
34	Camera no. 3 faulty
38	Camera no. 4 faulty

MDATA BYTE 3	D/A CAMERA ALL COMMANDS EXCEPT RS232
31	Camera no. 5 faulty
32	Camera no. 6 faulty
34	Camera no. 7 faulty
38	Camera no. 8 faulty

MSTATUS/MDATA RS232 T.A. TEST

See standard RS232 T.A. test status descriptions.

DOOR ACCESS

MSTATUS ALL COMMANDS EXCEPT RS232

00	Good.
01	Bad read error.
02	Time out error.
03	Communications error.
05	Device not configured.

MDATA BYTE 0 ALL COMMANDS EXCEPT RS232

00	Good.
01	Parity error.
02	Overrun error.
03	Framing error.

MSTATUS/MDATA RS232 T.A. TEST

See standard RS232 T.A. test status descriptions.

SIGNAGE

MSTATUS ALL COMMANDS

00	No error
01	Format error, an error in the format of C_DATA has been detected.
02	Signage not configured.
03	Communications failure after retries – either no acknowledgement or NAK or parity, framing or overrun errors received from signage.
04	Recovery successful – succesful communications with signage after retries.

MDATA BYTE 0 ALL COMMANDS

1 = condition true

Bit 0	Tx ready (Tx empty and CTS)
Bit 1	RX ready
Bit 2	Tx empty
Bit 3	Parity error
Bit 4	Overrun error
Bit 5	Framing error
Bits 6 & 7	Always 0

STANDARD RS232 TURNAROUND TEST

MSTATUS

00	Good.
01	Timeout error.
62	Communications error

MDATA BYTE 0

00	Good.
01	Parity error.
02	Overrun error.
03	Framing error.
04	DTR, DSR timeout
05	Tx timeout
06	Rx timeout

NIGHT SAFE DEPOSITORY

MSTATUS	ALL COMMANDS
00	Bag drop switch open.
01	Bag drop switch closed.
02	Deposit not done error and the bag switch is open

MSTATUS	ALL COMMANDS
00	No error.
01	A communications fault exists on the RS232 link between the TCE firmware and GTV controller On-board firmware.
02	The video disc player is not ready to accept commands. This may mean that the table has not been inserted or that the video disc is incorrectly inserted.
03	The player is not responding to commands. This may mean that either the RS-232 link between the video player and the GTV Controller board is faulty, or that the player has been powered off and on after it has been activated, but no reset command has been sent to the GTV firmware.
04	Video Player hardware or interface fault. This means that either the interface to the player is down or that the video player returned a hardware error status indicating a problem with the player.
05	Graphics Display Controller fault. This means that the GTV Controller Board is unable to communicate with the Graphics Display Controller board. This status is returned only to RESET, CLEAR SCREEN and RESET SCREEN. In all other instances, if a Graphics Display Controller fault occurs then a soft-reset of the board is initiated.
06	This means that an invalid frame number was detected, either because it was not in the valid range or because the frame does not exist on the video disc.

GTV DISPLAY DEVICE

MSTATUS	ALL COMMANDS
07	This means that either a video command with illegal parameters has been sent or that the command sent is not allowed when a section play command is in progress.
08	This means that the player is rejecting the command it has been sent because it does not recognise the command. This may indicate a transmission error.
09	This means that before a section play could complete, the end of the disc was encountered.
10	This means that the data sent from the video player has been received incorrectly. (Overrun or framing error.)
11	This means that a frame cannot be found due to drop-outs or that a track command exceeds zero address on the disc.
12	This means that the GTV firmware does not recognise the data sent by the player and may indicate that a parity error has occurred on the link between the video disc player and the GTV controller module.
13	This can only be returned in response to an Activate Video Player command and means that the NTSC video signal from the player has not been detected.
14	This means that the video command cannot be performed because the player has not been activated.
15	This means that the GTV firmware has performed a soft reset of the GTV Controller board due to a fatal error condition. (see MDATA(0) and MDATA(1) for exception codes.)

GTV DISPLAY DEVICE

MDATA BYTE 0 WHERE MSTATUS = 15

00 =	iRMX–86 exception occurred. (See MDATA(1) for exception code.)
01 =	Transmit error on the GTV–TCE RS-232 communications link.
02 =	Memory parity error on the GTV controller board has occurred.
03 =	Graphics display controller hardware error detected.

MDATA BYTE 1 WHERE MSTATUS = 15

Contains iRMX–86 operating system exception code when MDATA(0) = 0 otherwise contains zero.

TOUCH SCREEN

MSTATUS

00	Good.
01	Communications fault.
02	No touch detected within time limit
03	Touch screen controller hardware error.
04	Touch screen not calibrated or the touch screen EEPROM has not held the calibration parameters through a power down.

MDATA BYTE 0 WHERE MSTATUS = 03 (EXPECTED STATUS)

1 = condition true

Bit 0	Output buffer full.
Bit 1	Input buffer full.
Bit 2	Busy processing command or data available.
Bit 3	Command/data input flag (1 = command).
Bits 7-4	Present State 0 = convert coordinates 1 = touch coordinates transfer 2 = EEPROM data read 3 = EEPROM data store 4 = set EEPROM location address 5 = set single point operation 6 = set continuous point operation 7 = not used 8 = ramp adjustment mode 9 = level zero test A = echo back test B = not used C = not used D = not used E = not used F = TS controller error report on data output. (See MDATA Byte 2 for detailed error report)

TOUCH SCREEN

MDATA BYTE 1 WHERE MSTATUS = 03 (ACTUAL STATUS)

See MDATA Byte 0

MDATA BYTE 2 WHERE MSTATUS = 03

TS controller error code if MDATA BYTE 1 = ERROR_REPT (FX), otherwise Zero.

Code	(Hex)
00	No error
01	Data received when command expected.
02	Command out of range.
03	Touch data requested when not available.
51	TS controller RAM failure.
52	TS controller ROM failure.
53	Touch input voltage sensed when there should not be one.
54	No test input voltage sensed.
55	External counter not being reset correctly.
56	No pulses sensed from external counter.
57	Internal counter count wrong.
58	Comparitor did not switch off (test voltage too high for ramp).
59	Test ramp conversion count too low**
5A	Test ramp conversion count too high**

**may need ramp adjusted/calibrated