INFORMATION DISPLAY DIVISION

4052/4054 VERSION 4.3 FIRMWARE

Version 4.3 firmware is now being shipped in 4052s and 4054s.   Listed
below are the problems that were corrected to the 4.2 firmware that
rolls the firmware level to 4.3.

1. System Error Message Writer

PROBLEM: The System Error Writer routine in the 4054 prints the same
           data on the screen no matter what the error was or what caused
           it. The routine works correctly in the 4052.

COMMENT: The system message is very useful in making a determination of
           a problem that causes "System Errors".

2. Memory Over-Write Problem

PROBLEM: Memory is being over-written.   Picture composition Plot 50
           software fails sometimes with system errors, line numbers with
           invalid error messages, or system hangs and line numbers with
           meaningless characters and a lot of parentheses in them.

3. Memory Compress

PROBLEM: A status bit was being lost during a memory compress.

COMMENT: This memory compress failure was difficult to program around.
           But if all forced memory compress functions were performed
           outside of the User Definable Keys, System Errors were usually
           avoided.

4.   4054 Random Vector on Break-Break

PROBLEM: A vector would be drawn if an immediate halt is forced by
           break-break while running a program.

5. 4052/54 Hang on Call Header

PROBLEM: The 4052 or 4054 will hang and lockup if header is called when
           the tape is at file 0 (rewound) or if no tape is present.

6. 4054 Emulating 4014 Inquiry Response

PROBLEM: When in Terminal Mode and prompted with ESC-ESC by the host,
           the 4054 responds too fast.

7. 4054 12 Bit Graphics in Terminal Mode

PROBLEM: The 4054 in Terminal Mode had graphic capabilities of 10 bit
           resolution only.   This caused distortion in vectors when a
           host was sending 12 bit graphics.

8. 4054 Opt 30 Hardcopy Bloom

PROBLEM: The 4054 operating system processor advances to the next item
for processing if the Opt 30 hand shakes the previous display
command. This sequence was supposed to be preceded by a test
to determine if the display controller or display is busy.

9. Print @40,31: Does Not Clear CR Count

PROBLEM: The CR count does not continue to decrement as data is
pulled from the buffer after the buffer is disabled. It
worked as long as the buffer was enabled.

10. Call BLKCHR, Wrong Numbers

PROBLEM: Call BLKCHR will allow 0 thru 127 ASCII to be entered as par-
ameters. However, the functions only use 0 thru 31 ASCII.
Call PRLIST displays 0 thru 31 ASCII if 0 thru 31 are entered,
or 0 thru 31 ASCII if 32 thru 63 are entered, etc.

COMMENT: 4.3 firmware tests the numbers passed with the CALL, and sets
an error code if the values are greater than ASCII 31.

Listed in Figure 1 is a table showing the ROM checksums using the Diag-
nostic ROM PACK for all firmware levels previously and currently shipped
in 4052s and 4054s.

To check system ROM checksums without the patches, remove the even and
odd FPLAs -- U485 and U863.

The serial number breaks for level 4.3 firmware are:

    4052 -- B024078 and up
    4054 -- B011753 and up

The MAS board changes from a 670-6030-04 to a 670-6030-06 with 32K RAM
memory and from 672-0799-03 to 672-0799-05 with 64K RAM memory.

The part numbers for version 4.3 kits are:

    050-1402-01 to upgrade from 4.1 or 4.2 to 4.3
    050-1282-03 to upgrade from 2.1, 3.1, or 3.2 to 4.3

This is not a Service Update Program; customers that are on maintenance
agreement, warranty or rental will not be charged for the upgrade. All
other customers will be charged as follows:

    If the MAS board is exchanged, the upgrade is included in the ex-
    change price. If the customer wants the upgrade, the customer pays
    the 050 kit price plus labor and travel.

-- --Darrell McGiverin
63/503, Ext. 3786

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IC	PART NUMBER	V2.1			V3.1			V3.2			V4.1			V4.2			V4.3		
		P/N LEVEL	WITH PATCH	WITHOUT PATCH	P/N LEVEL	WITH PATCH	WITHOUT PATCH	P/N LEVEL	WITH PATCH	WITHOUT PATCH	P/N LEVEL	WITH PATCH	WITHOUT PATCH	P/N LEVEL	WITH PATCH	WITHOUT PATCH	P/N LEVEL	WITH PATCH	WITHOUT PATCH
U810	160-0260	01	BB83	BB83	01	4A4E	BB83	01	4A4E	BB83	02	5B67	267D	02	5B67	267D	02	5B67	267D
U820A	160-0261	01	E396	E396	01	E396	E396	01	E396	E396	02	3EAB	3EAB	02	3EAB	3EAB	02	3EAB	3EAB
U820B	160-0261	01	8C00	0684	01	E306	D684	01	E306	D684	02	E7CB	9BBE	02	12A0	9BBE	02	00F1	9BBE
U825	160-0262	01	A091	1AF1	01	0468	1AF1	01	0468	1AF1	02	D098	8BA8	02	D098	8BA8	02	7403	8BA8
U835	160-0263	01	75A8	000E	02	E810	D515	02	E810	D515	03	0CA2	9254	03	27B0	9254	03	241B	9254
U870A	160-0264	01	C1FA	C1FA	01	C1FA	C1FA	01	C1FA	C1FA	02	7132	7132	02	7132	7132	02	7132	7132
U870B	160-0264	01	LC8B	4383	01	C509	4383	01	C5D9	4383	02	04C8	43B3	02	026A	43B3	02	95BC	43B3
U880	160-0265	01	876A	9E7B	01	92BB	9E7B	01	92BB	9E7B	02	E7F0	AF39	02	E7F0	AF39	02	3FE5	AF39
U885	160-0266	01	641A	030C	02	1344	593F	02	1344	593F	03	2E15	7369	03	9C6	7369	03	026F	7369
U893	160-0267	01	FABF	FABF	01	0613	FABF	01	0613	FABF	02	CB18	CB18	02	1F38	CB18	02	1F38	CB18
U805A	160-0340	00	1E52	XXXX	01	5DD7	XXXX	03	B9D1	XXXX	02	9407	XXXX	04	98AC	XXXX	05	68D3	XXXX
U805B	160-0340	00	XXXX	XXXX	01	XXXX	XXXX	03	XXXX	XXXX	02	XXXX	XXXX	04	XXXX	XXXX	05	XXXX	XXXX
U897A	160-0341	00	97F7	XXXX	01	B742	XXXX	01	B742	XXXX	02	F080	XXXX	03	C7CD	XXXX	04	4A20	XXXX
U897B	160-0341	00	XXXX	XXXX	01	XXXX	XXXX	01	XXXX	XXXX	02	XXXX	XXXX	03	XXXX	XXXX	04	XXXX	XXXX
U845	160-0379	00	XXXX	XXXX	01	XXXX	XXXX	01	XXXX	XXXX	02	XXXX	XXXX	03	XXXX	XXXX	04	XXXX	XXXX
U863	160-0380	00	XXXX	XXXX	01	XXXX	XXXX	01	XXXX	XXXX	02	XXXX	XXXX	03	XXXX	XXXX	04	XXXX	XXXX

XXXX NOT APPLICABLE

Editor ROMPAK 4052/54 R06
U1 160-0268-00 2D58   Level 1.0

SPS ROMPAK #1 4052/54 R07
U1 160-0278-00 B6B3   Level 1.0

SPS ROMPAK #2 4052/54 R08
U1 160-0348-00 FF43   Level 1.0

Real Time Clock ROMPAK 4052/54 R09
U21 160-0762-00 B257   Level 1.0
U21 160-0762-01 968D   Level 2.0

4907 File Manager ROMPAK
U1 160-0279-00 C5C4   Level 1.0

4052/54 Option 10 Printer Interface
U100 160-0342-01 F578 (PROM)   Level 1.0
U100 160-0342-01 IECA (ROM)   Level 1.0

4042/54 Tapesend Enhancement ROMPAK
U100 160-0870-00 72FF   Level 1.0

4052/54 Diagnostic ROMPAK
U101 160-0381-00
U111 160-0382-00 C08A (ICRC for both)   Level 1.0

U101 160-0381-01
U111 160-0382-01 D4B6 (ICRC for both)   Level 1.4

FIG. 1   -20-