

CONFIGURATION SPECIFICATIONS Q64


NOTES: UNLESS OTHERWISE SPECIFIED

REV.	DESCRIPTION	DATE	DATE	DATE	DATE
1	ER-0382-14	B.B. 1/19/83	-	RGB 1/20/83	-
2	PPR-0382-21	WP 1/24/83	WP 3/10/83	LAD 5/8/83	WP 3/13/83
A	PR-0382-27	WP 4/14/83	-	-	-

S. M.

MAY 31 1983

"PRODUCTION RELEASE"

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	APPROVALS					DATE
	DRFTS	<i>3. Bergman</i>	<i>1/19/83</i>	<p style="margin: 0;">CONFIGURATION SPECIFICATION</p> <p style="margin: 0;">- SYS... 64</p>		
	CHK	<i>H.W.W.</i>	<i>4/18/83</i>			
	PROJ ENGR	<i>R. Fisher</i>	<i>5/16/83</i>			
	MFG ENGR	<i>JOS</i>	<i>4/26/83</i>			
PROJ MGR	<i>R. Fisher</i>	<i>5/16/83</i>				
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0 MODEL NUMBER AND DESCRIPTION

THE SYSTEM 64 HAS A CPU (Q64) WHICH CONSISTS OF FOUR SEPARATE P.C BOARDS. THEY ARE THE ALU BOARD, AUXILIARY BOARD, MEMORY ADDRESS BOARD AND MEMORY DATA BOARD. THE SYSTEM 64 ALSO HAS A MINIMUM OF 512 KILOBYTES (KB) OF MEMORY, A HUB UNIT (MODEL 4831), A 75 MEGABYTE (MB) HARD DISK (MODEL 3505), A 1/2 INCH STREAMING TAPE DRIVE (MODEL 5241). THE SYSTEM 64 ENCLOSURE IS A STANDARD "RETMA" 19 INCH RACK MOUNTING ENCLOSURE.

2.0 REQUIRED MODELS

VIDEO TERMINAL M26013

3.0 TOP ASSEMBLY DRAWING

SYSTEM 64 M21077

4.0 INCORPORATED ASSEMBLIES

N/A

5.0 REFERENCE DOCUMENTS

POWER USAGE SPECIFICATION A30166
 INTERCONNECTION DIAGRAM D32128
 IOU390 CABLING SPECIFICATION A30935
 IOU 44 CABLING SPECIFICATION A52090-

6.0 SYSTEM OPTIONS

- 6.1 MEMORY IS EXPANDABLE FROM 512 KB TO 4012 KB (4.012 MB) IN 512 KBYTE INCREMENTS.
- 6.2 MATRIX, CHARACTER AND LINE PRINTERS HAVING NON-DMA CONTROLLERS WHICH INTERFACE WITH THE Q64 PROCESSOR, INCLUDED ARE THE 51XX MATRIX PRINTER, THE 42XX CHARACTER PRINTER, THE 50XX LINE PRINTER, ETC.
- 6.3 ANY NON-DMA CONTROLLER WHICH INTERFACES WITH THE Q64 PROCESSOR MAY BE USED IN THE SYSTEM 64.

6.4 ANY UPGRADE TO A SYSTEM 64 MUST INCLUDE A CABINET CHANGE OF THE CPU CABINET, HOWEVER ANY EXISTING PERIPHERALS WHICH HAVE NON-DMA CONTROLLERS MAY REMAIN IN THEIR RESPECTIVE CABINETS.

6.5 MASS STORAGE DEVICE CAPACITY IS A MINIMUM OF 75 MB, A MAXIMUM OF 2800 MB (2.8 GIGA BYTES) USING UP TO SIX NON-DMA SMD DISK CONTROLLERS IS CONFIGURABLE.

7.0 ENVIRONMENTAL RESTRICTIONS

7.1 TEMPERATURE

AMBIENT ROOM TEMPERATURE ALLOWED DURING OPERATION IS FIFTY TO EIGHTY-FIVE DEGREES F (TEN TO THIRTY DEGREES C). THE INTERNAL AIR HAS A MAXIMUM RISE OF EIGHTEEN DEGREES F (TEN DEGREES C) PER HOUR. THE HEAT OUTPUT, OF THE BASIC SYSTEM, UNDER NORMAL OPERATING CONDITIONS IS 10250 BTU'S PER HOUR. THE ADD ON DISK CABINET GENERATES APPROXIMATELY 8500 BTU'S PER HOUR. THE TOTAL SYSTEM HEAT OUTPUT IS 18,750 BTU'S PER HOUR. SHIPPING AND STORAGE TEMPERATURES ARE -40 TO 140 DEGREES F (-40 TO 60 DEGREES C). WHEN INSTALLED AFTER STORAGE, AT LOWER THAN OPERATING TEMPERATURES, ALLOW 24 HOURS TO STABILIZE SYSTEM BEFORE OPERATING.

7.2 HUMIDITY

THE LOWER LIMIT ON THE RELATIVE HUMIDITY DURING OPERATION IS TWENTY PERCENT, AND THE UPPER LIMIT DURING OPERATION IS EIGHTY PERCENT. THE LOWER AND UPPER LIMITS DURING SHIPPING OR STORAGE ARE FIVE TO NINETY-FIVE PERCENT. NO CONDENSATION AT ANY TIME.

7.3 ALTITUDE

OPERATING ALTITUDE IS FROM 1000 FEET BELOW TO 6000 FEET ABOVE (305 METERS BELOW TO 1830 METERS ABOVE) SEA LEVEL. A HARD DISK MODIFICATION IS NECESSARY FOR OPERATING AT ALTITUDES OF OVER 6000 FEET AND UP TO 10,000 FEET (3050 SHIPPING AND STORAGE ALTITUDES ARE 1000 FEET BELOW TO 10,000 FEET ABOVE SEA LEVEL.

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BEST 408-1.03 is being released for use only on certain configurations. It has been tested on and support will be provided for the following:

- Processors Q29, Q30, Q64
- Terminals CRT2, VT3, VT4
- Printers Current product line only
- Discs 20/40 MB (IOU-42/52)
 25/70 MB (IOU-42/52)
 75/150 MB (IOU-42/52)
 400 MB (IOU-54; System 64 only)
- Magnetic tapes 1/2-in. reel-to-reel
 1/4-in. cartridge
 1/2-in. streamer (System 64 only)
- Network BEST/NET™ (IOU-44)
- Software options QANTEL/COBOL

Testing of other configurations and other features such as IPC is currently under way, and BEST 408 will be released for such configurations as testing is successfully completed.

The QANTEL/COBOL Language Reference Manual will be provided shortly under separate cover.

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8.0 PHYSICAL REQUIREMENTS

8.1 ENCLOSURE DIMENSIONS AND INSTALLATION GUIDELINES

THE OUTSIDE DIMENSIONS AND ACCESS OR SERVICING AREA ARE SHOWN IN FIGURE 1 ON SHEET 10. WHEN THE SYSTEM IS INSTALLED ON CARPETED FLOORS, A MINIMUM CLEARANCE IS NECESSARY TO PROVIDE FOR ADEQUATE AIR CIRCULATION. THIS MINIMUM CLEARANCE IS 1/2 INCH (1.3 CENTIMETERS) BETWEEN THE FLANGES (SKIRTS) ON THE CABINET BOTTOM AND THE TOP SURFACE OF THE CARPETING.

8.2 CABINET INTERCONNECTION AND ARRANGEMENT

WHEN ROUTING CABLES TO THE CPU FROM PERIPHERAL CABINETS, UTILIZE THE CABLE TROUGH PROVIDED ON THE CPU CABINET.

8.3 CARD CAGE SPACE

THERE ARE TWENTY SIX CARD SLOTS PROVIDED ON THE CARD CAGE FOR INTERFACE TO THE THE BACKPLANE. TWO SLOTS ARE PROVIDED FOR ERROR DETECTION AND CORRECTION, FOUR SLOTS ARE PROVIDED FOR MEMORY, FOUR SLOTS ARE PROVIDED FOR THE CPU AND SIXTEEN SLOTS ARE PROVIDED FOR I/O CONTROLLERS. TO MAINTAIN COMPATIBILITY WITH EXISTING QANTEL SOFTWARE, THE CPU ADDRESS LIMIT ADDRESS IS FIFTEEN I/O CONTROLLERS.

8.4 WEIGHT

THE SYSTEM WEIGHT IS @ 665 POUNDS (302 KILOGRAMS).
THE DISK CABINET WEIGHT IS @ 830 POUNDS (377 KILOGRAMS).

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9.0 ELECTRICAL REQUIREMENTS

9.1 ALTERNATING CURRENT (A.C.)

9.1.1 VOLTAGE AND TOLERANCE

100 VOLTS ± 10%	200 VOLTS ± 10%
115 VOLTS ± 10%	220 VOLTS ± 10%
127 VOLTS ± 10%	230 VOLTS ± 10%
	240 VOLTS ± 10%

9.1.2 FREQUENCY AND TOLERANCE

50 HERTZ ± 0.5 HERTZ
 60 HERTZ ± 0.5 HERTZ

9.1.3 MAXIMUM CURRENT DRAWN

100 TO 127 VOLTS EQUALS 24 AMPS: 3050 VA MAX
 200 TO 240 VOLTS EQUALS 12 AMPS: 2900 VA MAX

CURRENT SURGE AT START-UP AND START-UP DURATION

100 TO 127 VOLTS EQUALS 100 AMPS FOR 1 CYCLE
 200 TO 240 VOLTS EQUALS 50 AMPS FOR 1 CYCLE

9.2 DIRECT CURRENT (D.C.)

9.2.1 VOLTAGE AND TOLERANCE

-12 VOLTS ± 5%	+12 VOLTS ± 5%
+ 5 VOLTS ± 5%	

9.2.2 MAXIMUM CURRENT AVAILABLE

-12 VOLTS EQUALS 1.2 AMPS
 + 5 VOLTS EQUALS 150 AMPS
 +12 VOLTS EQUALS 1.2 AMPS

10.0 INTERCONNECTION INFORMATION

10.1 CONNECTOR IDENTIFICATION

N/A

10.2 CABLE LENGTH LIMITS

THE VIDEO TERMINAL CABLE IS FIFTY FEET (15.2 METERS).
 THE PRINTER CABLE IS 55 FEET (17 METERS).
 THE A.C. POWER CORD IS EIGHT FEET (2.4 METERS).

10.3 INTERCONNECTION DIAGRAM

THE TABLE LISTS THE VARIOUS LENGTHS OF THE CABLES USED IN INTERCONNECTING THE COMMUNICATIONS DEVICES.

CABLE AND WIRE LENGTHS		
PART NO.	MODEL NO.	LENGTHS, IN FEET
44105-	4833-	6, 12, 25, 50
** 42851-	4834-	100, 500, 1000, 5000, 10,000
44164	TBD	9.5
42728-	4838	12, 18, 30, 55

** THE LENGTHS LISTED ARE STANDARD LENGTHS, THE ACTUAL INSTALLATION LENGTH MAY BE SHORTER THAN A STANDARD LENGTH. THE WIRE MUST BE CONTINUOUS, NO SPLICES OR CONNECTORS.

11.0 DEVICE ADDRESS OR OPTION JUMPERS

NONE OTHER THAN THE NORMAL DEVICE SELECTIONS ON I/O CONTROLLERS.

12.0 COMMUNICATIONS CONTROLLERS

THE CONTROLLERS LISTED BELOW ARE THE COMMUNICATIONS CONTROLLERS THAT MAY BE CONFIGURED IN THE SYSTEM 64.

NAME	DESCRIPTION	COMMENTS
IOU 39R-Q	TERMINAL CONTROLLER	SEE DESCRIPTION 1 BELOW
IOU 40	LOW SPEED COMMUNICATIONS CONTROLLER	SEE DESCRIPTION 2 BELOW
IOU 44	HIGH SPEED COMMUNICATIONS CONTROLLER	SEE DESCRIPTION 3 BELOW

1. THE IOU 39R-Q COMMUNICATIONS NETWORKS ARE DETAILED IN A30935. THERE IS ONE ADDITIONAL CONFIGURATION AVAILABLE, A MASTER-SLAVE DISTRIBUTED NETWORK CONFIGURATION USING THE SOFTWARE PACKAGE STAR REMOTE (* REMOTE). A SINGLE SLAVE IOU 39R-Q CABLED A MAXIMUM OF 50 FEET FROM THE MASTER IOU 39R-Q USING A RS-232/V.24 CABLE (PART NO. 42055; MODEL NO. 4833).
2. THE IOU 40 WILL SUPPORT ONE OR TWO FULLY INDEPENDANT NON-QANTEL DEVICES, WHICH ARE RS-232C COMPATABLE, IN A LOCAL OR REMOTE CONFIGURATION. IT OPERATES FROM 300 TO 19,200 BAUD, THE CABLE LENGTH FROM THE IOU 40 TO THE RS-232C COMPATABLE DEVICE OR MODEM IS 50 FEET USING A RS-232/V.24 CABLE (PART NO. 42055; MODEL NO. 4833).
4. THE IOU 44 IS USED FOR HIGH SPEED DISTRIBUTED NETWORKS. THE CPU'S OF UP TO SIXTEEN SYSTEMS MAY BE DAISY CHAINED. THE IOU 44 OPERATES AT A DATA TRANSFER RATE OF 500,000 BITS PER SECOND. A SINGLE IOU 44 IS ALLOWED PER SYSTEM, WITH A MAXIMUM OF 3000 FEET (915 METERS) BETWEEN FIRST AND LAST SYSTEM. SEE THE IOU 44 PRODUCT SPECIFICATION (A50026) FOR FURTHER DETAIL.

13.0 MISCELLANEOUS CONFIGURATION CONSTRAINTS

THE SYSTEM 64 SUPPORTS FROM ONE TO ONE-HUNDRED OUTPUT STATIONS. SOFTWARE LIMITATIONS REDUCES THE ACCEPTABLE PERFORMANCE CRITERIA WHEN MORE THAN SIXTEEN VIDEO DISPLAY TERMINALS ARE CABLED TO ONE MODEL 4804 COMMUNICATIONS CONTROLLER. MDS QANTEL'S OPERATING SYSTEM SOFTWARE KNOWN AS "BEST 408" MUST BE USED WITH THE 64. FOR A COMPLETE LIST OF THE HISTORICAL I/O CONTROLLERS THAT "BEST 408" OPERATES SEE THE FUNCTIONAL SPECIFICATION.

14.0 MISCELLANEOUS CLARIFYING INFORMATION

THE IOU 39R-Q COMMUNICATIONS CONTROLLER (MODEL 4804) SUPPORTS A MAXIMUM OF 31 VIDEO DISPLAY TERMINALS (MODEL 4031) AND/OR QSP NETWORK PRINTERS (RDI BOX REQUIRED, MODEL 4805). EACH OF THE FOLLOWING TYPES OF COMMUNICATION NETWORKS MUST HAVE ITS OWN UNIQUE CONTROLLER. EACH TYPE OF REMOTE NETWORK ALSO MUST HAVE ITS OWN UNIQUE CONTROLLER. ALL OF THE COMMUNICATION NETWORKS ARE CONFIGURABLE TOGETHER IN THE SYSTEM WITH DEDICATED IOU 39R-Q'S.

1. DIRECT TERMINAL NETWORKS

- A. NO TERMINAL IS OVER 250 FEET (76.2 METERS) CABLE DISTANCE FROM THE MAIN SYSTEM.

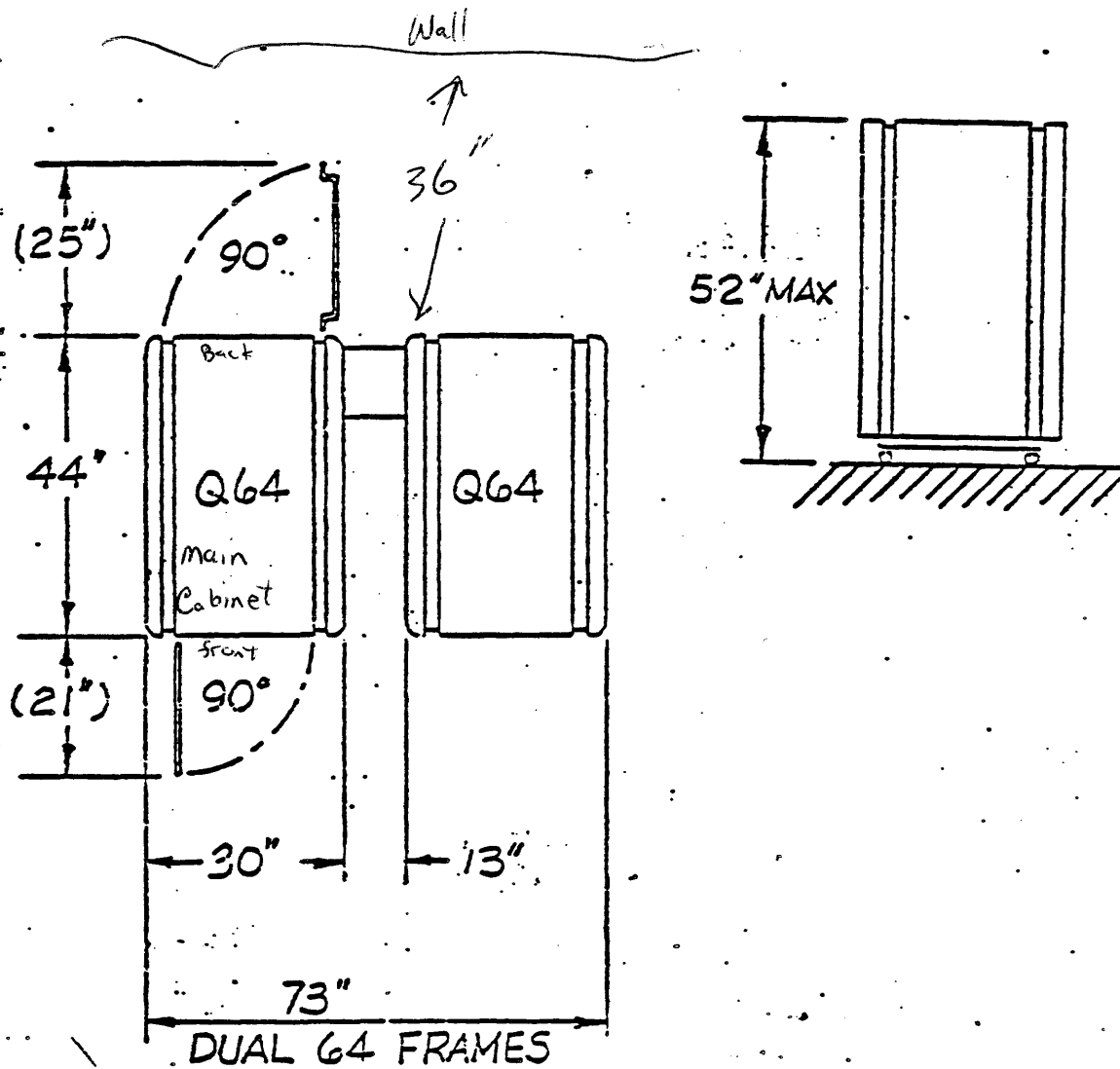
2. LOCAL TERMINAL NETWORKS (WITH HUB UNIT AND LINE DRIVER)

- A. NO TERMINAL IS OVER 10,000 FEET (3050 METERS) CABLE DISTANCE FROM THE MAIN SYSTEM.

3. REMOTE TERMINAL NETWORKS (WITH PUBLIC TELEPHONE LINES)

- A. POINT-TO-POINT LEASED LINES
- B. MULTI-POINT (MULTI-DROP) LEASED LINES
- C. POINT-TO-POINT, DIAL-UP (SWITCHED NETWORK) LINES

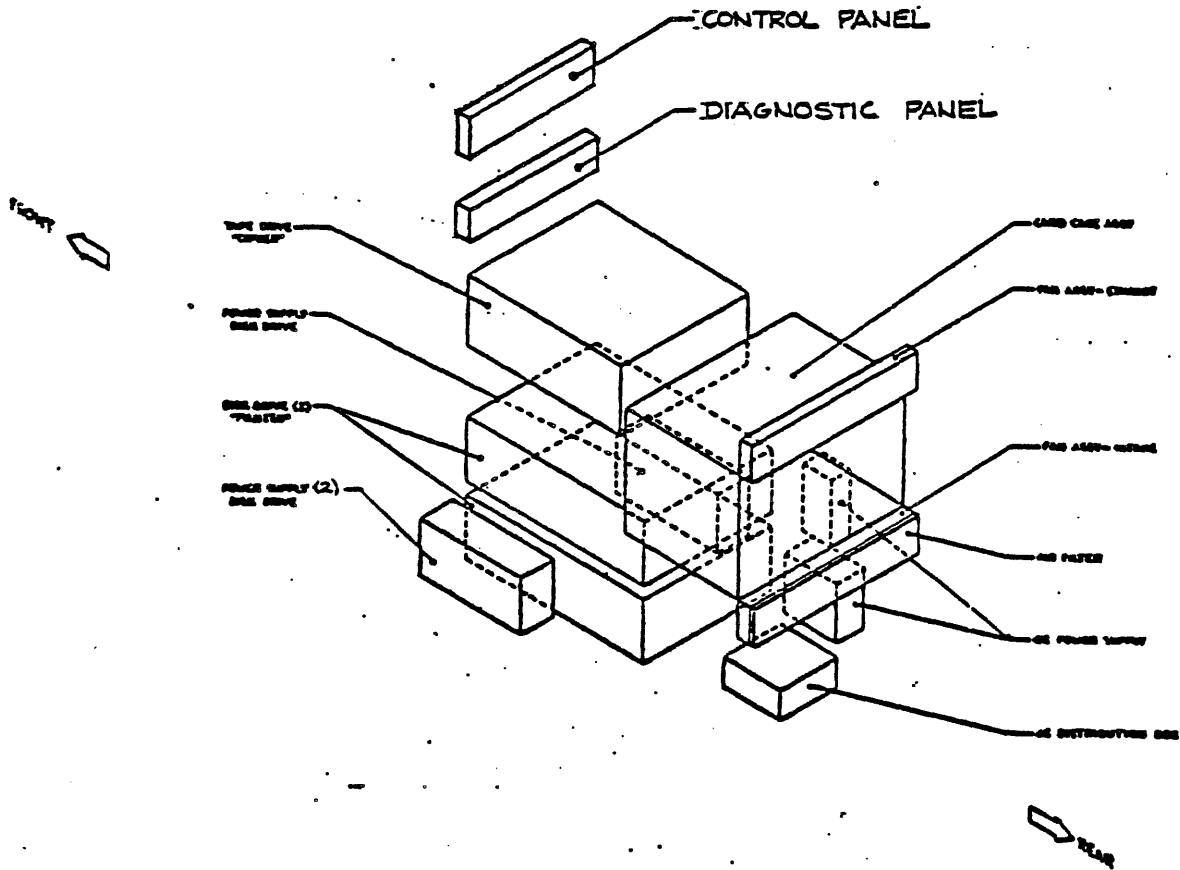
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one Hubble 30 Amp for
each cabinet

Temp below 85° room

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