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REVISIONS				
LTR	ECO	DESCRIPTION	DATE	APPROVED
A		SEE DCN	10/29/81	JD

SIGNATURE		DATE
PROD TEST	7.20.81	7/20/81
ENGINEERING	Ron Blair	7/14/1
QUAL CONTROL	L Kamiman	7/21/81

TITLE: MC370AD-Q2 (Less Plug-In Cards)

NUMBER: ATP464 REV: A

SHEET 1 OF 7

8626 WILBUR AVENUE • NORTHRIDGE, CA 91324 • (213) 886-8488 • Telex No. 65-1303

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1.0 SCOPE

This document defines the Acceptance Test Procedure (ATP) for the MC370AD-Q2 Module Case. The tests herein will determine the functional integrity of the module case wiring, including the fan function and insulation resistance between isolated circuits. These tests are performed on module cases which are being shipped without plug-in circuit cards. A sample of the Test Report to be used with this ATP is contained in Appendix A.

2.0 EQUIPMENT REQUIRED

DESCRIPTION	MANUFACTURER	MODEL OR PART NBR	ALTERNATE
Insulation Resistance Megohmmeter	General Radio	GR1864	Commercial Equivalent
Digital Multimeter	Data Precision	DP248	Commercial Equivalent
MC370AD Continuity Test Board	Validyne	(Fig.2) (T1106)	None
Jumpered Connector for Input Channel & J103	Validyne	(Fig.1)	None
Power Supply	Validyne	PS171	None
Power Supply	Validyne	PS294	None
Analog Board	Validyne	AB295	None
Digital Board	Validyne	AD296	None
Extender Card for AB295	Validyne	------	None
Extender Card for AD296	Validyne	------	None

3.0 EXAMINATION OF EQUIPMENT

3.1 Inspection

3.1.1 The Module Case traveler shall be verified for completed in-process inspection sign-offs.

3.1.2 A visual inspection of the completed unit will be made to verify conformance to the applicable engineering drawings. Verify that the Model ID and Serial Number label is installed.

4.0 PERFORMANCE TESTS

The tests contained herein verify the MC370AD wiring continuity, insulation resistance, and cooling fan operation.

4.1 Insulation Resistance Tests

(MC370AD without plug-ins installed.) Test the insulation resistance using the GR1864 megohmmeter, with a test potential of 500 Vdc, between the circuits listed. The insulation resistance in every test shall exceed 100 MΩ.

A. TB101, all pins (1-7) to chassis (one at a time)
B. Power Line (H1) to chassis (J101A-C)
C. Power line (LO) to chassis (J101B-C)
D. Each channel input connector, pins A thru H, to chassis (25 connectors, 8-pins at a time.)
E. Digital output connector, J102, Pins A, B, or C to chassis.

4.2 Continuity Tests

Use the DP248 DMM to measure the continuity between the points listed. The continuity shall be as listed below. Insert the PS171 power supply.

	Continuity
A. Power connector J101, Pin C to chassis.	1.0 Ω or less
B. PS171 "Ground" test point to TB101, Pin 3.	1.0 Ω or less
C. PS171 "Ground" test point to TB101, Pin 4.	10 M Ω or greater
D. Digital connector J102, Pin D to chassis.	1.0 Ω or less

4.3 Fan Test

Connect the 115 Vac, 60 Hz power cord at J101. Apply power to the MC370AD by depressing the PS171 power switch. Observe that the fan rotates efficiently and exhausts air out the right side of the module case.

4.4 Functional Tests

4.4.1 Connect the equipment as shown in Figure 1. The (A1) "MC370AD Continuity Test Board" and mating jumper plug for the "Channel Input Connector" will be positioned at channel 1 and then moved through each of the 25 input channels during this test. The DP248 shall be connected between the "Continuity Test Board" (TP1) and the various test points of the AB295, (as listed in the data sheet.)

4.4.2 The J103 mating jumper plug shall be connected as shown in Fig. 1. These jumpers connect channel 1 analog output to channel 26, channel 2 to channel 27, etc., through channel 25 to channel 32.

4.4.3 With the "Continuity Test Board" at a given channel input position, the voltage differential between the TP1 and output test points (listed in data sheet) shall be 0 ±0.030 Vdc.

4.4.4 In the first channel position, the CAL mode shall momentarily be applied via a jumper between pins 1 and 2 of TB101. During momentary application of this jumper the "CAL COMMAND" LED labeled "F" on the "Continuity Test Board" shall illuminate. In all subsequent channel positions this CAL COMMAND mode shall be momentarily applied by pressing the CAL COMMAND push button switch at the front of the AD296.

4.4.5 At each channel position observe that all five LED's labeled "A" thru "E" on the "Continuity Test Board" are illuminated.

4.5 Digital Output Connections

4.5.1 Remove power from the MC370AD. Measure continuity of 1Ω maximum between points listed:

J102	Mother Board
A (RED)	HI
B (BRN)	LO
C (BLK)	D GND
D (GRN)	C GND

4.5.2 If access to mother board is obscured by top cover, perform continuity test as listed below. Use AD296 extender card for access to AD296 connector pins.

J102-A	to	AD296-4
J102-B	to	AD296-3
J102-C	to	AD296-5
J102-D	to	Chassis

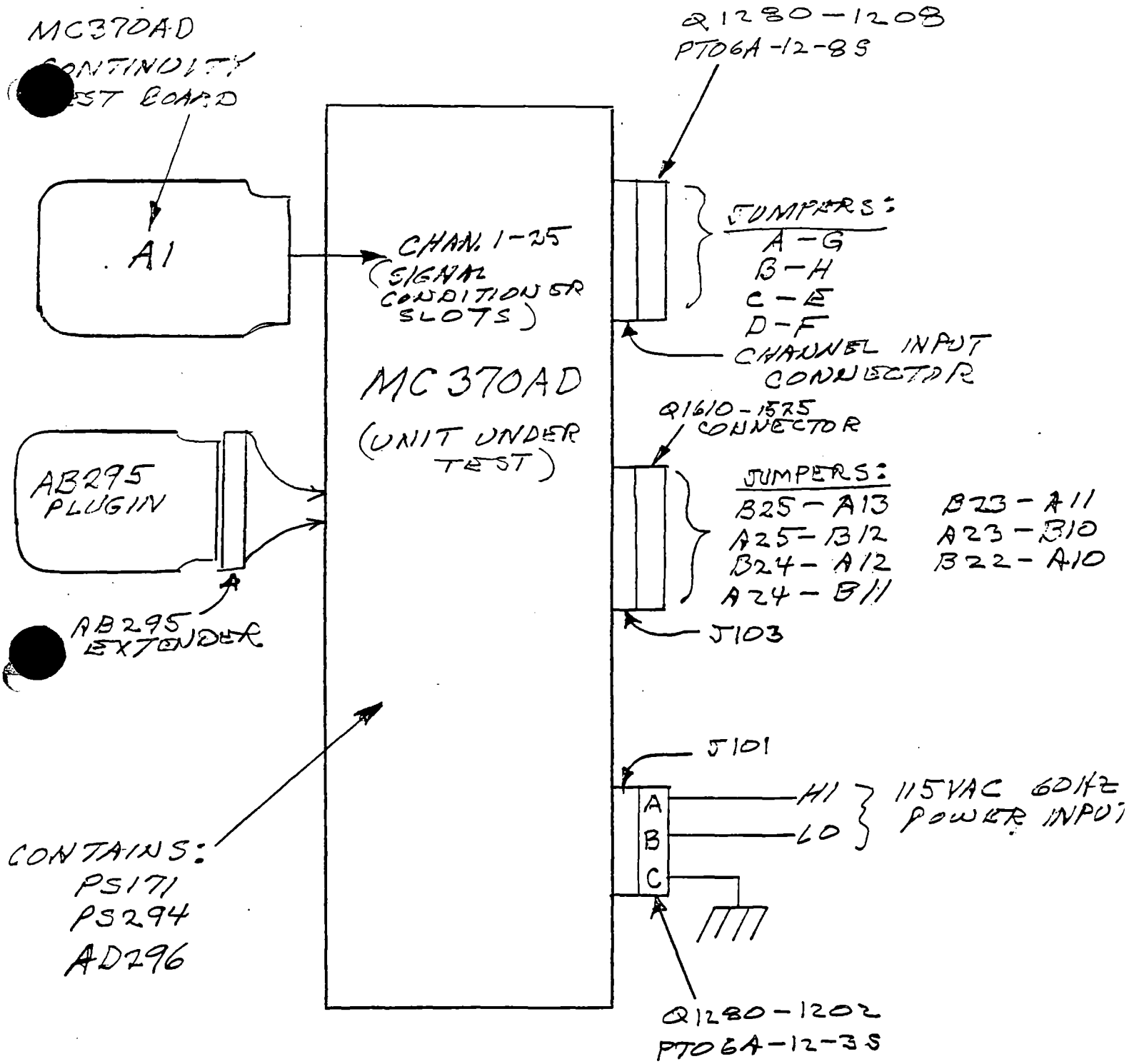
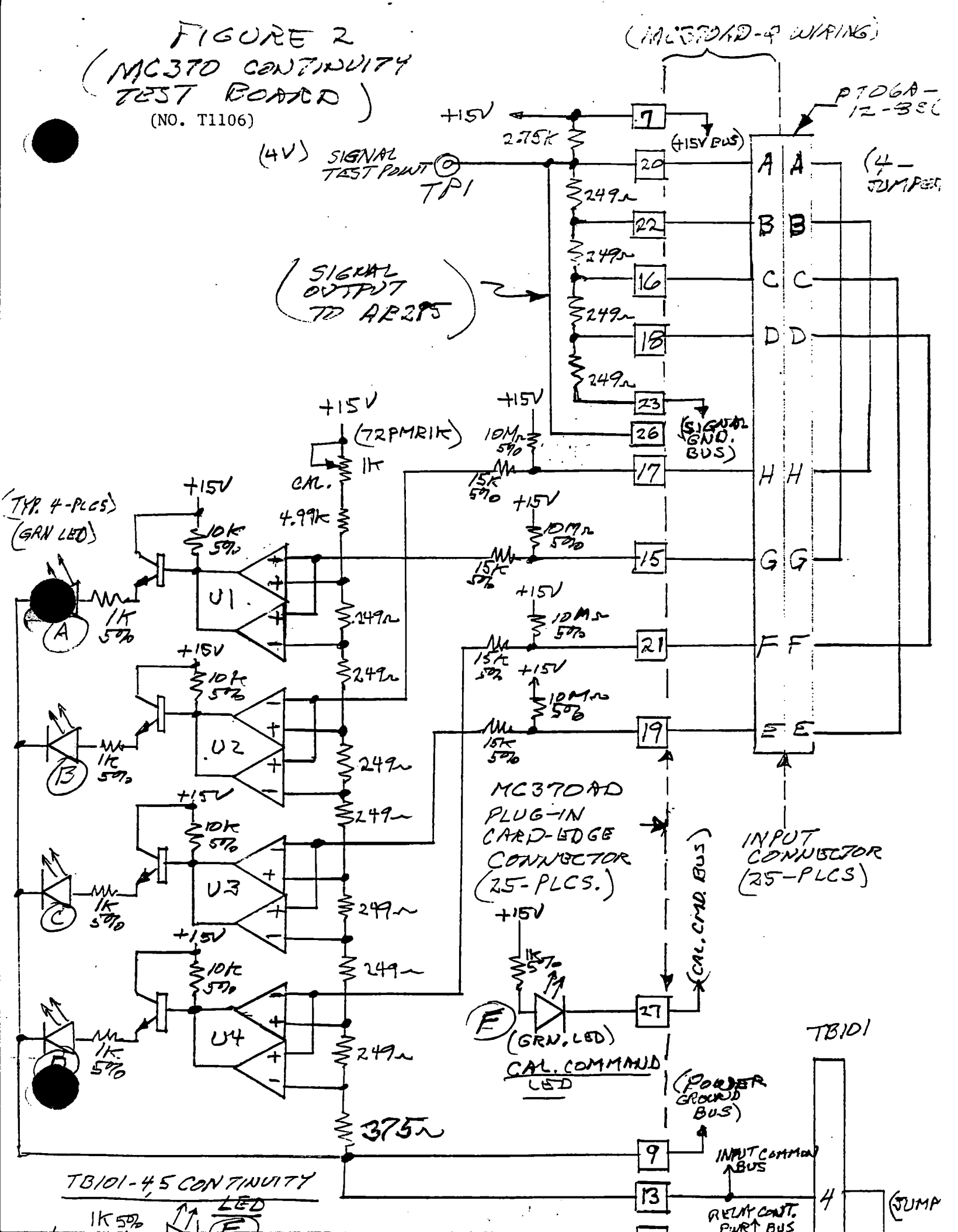


FIGURE 1 - TEST CONNECTIONS - MC370AD

FIGURE 2
(MC370 CONTINUITY TEST BOARD)
(NO. T1106)



APPENDIX A

SAMPLE TEST REPORT

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TEST REPORT

ASSY MC370AD-Q2 (Less Plug-In Cards)

S/O _____ CUSTOMER _____

W/O _____ SERIAL NO. _____

TESTED BY _____ DATE _____

Paragraph/Step		Accepted	Specification
4.1	Insulation Resistance @ 500 Vdc		
	(a) TB101 PIN to chassis		
	1	_____	
	2	_____	
	3	_____	
	4	_____	
	5	_____	
	6	_____	Greater Than 100 MΩ
	7	_____	
	(b) J101A to C	_____	
	(c) J101B to C	_____	
	(d) Channel Input Connectors: (Pins A thru H to Chassis) CH-1	_____	
	CH-2	_____	
	CH-3	_____	
	CH-4	_____	
	CH-5	_____	
	CH-6	_____	
	CH-7	_____	
	CH-8	_____	
	CH-9	_____	
	CH-10	_____	
	CH-11	_____	
	CH-12	_____	
	CH-13	_____	
	CH-14	_____	
	CH-15	_____	
	CH-16	_____	
	CH-17	_____	
	CH-18	_____	
	CH-19	_____	
	CH-20	_____	
	CH-21	_____	
	CH-22	_____	

QC _____

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TEST REPORT

ASSY MC370AD-Q2 (Less Plug-In Cards)

S/O _____ CUSTOMER _____

W/O _____ SERIAL NO. _____

TESTED BY _____ DATE _____

Paragraph/Step		Accepted	Specification
4.1 (d) Continued	CH-23	_____	
	CH-24	_____	
	CH-25	_____	Greater Than 100 MΩ
(e) Digital Output Connector J102 PIN A-D		_____	
B-D		_____	
C-D		_____	
4.2 Continuity Tests			
(a) J 101 Pin C to Chassis		_____	1.0 Ω or less
(b) PS171 "GND" TP to TB101 Pin 3		_____	1.0 Ω or less
(c) PS171 "GND" TP to TB101 Pin 4		_____	10 M Ω or greater
(d) J102 Pin D to Chassis		_____	1.0 Ω or less
4.3 Fan Test			
Fan rotates normally and air exhausts at side		_____	

QC _____

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TEST REPORT

ASSY MC370AD-Q2 (Less Plug-In Cards)

S/O _____ CUSTOMER _____

W/O _____ SERIAL NO. _____

TESTED BY _____ DATE _____

Paragraph/Step			Accepted	Specification
4.4	Functional Tests			
	Channel No.	AB295 Test Point		In Each Position (CH-1 thru -25)
	1, 26	A1-A A7-B	_____	a) LED A-E lit
	2, 27	-B -C	_____	b) LED F lit in CAL MODE
	3, 28	-C -D	_____	c) ΔV=0±0.03 Vdc
	4, 29	-D A8-A	_____	
	5, 30	A2-A -B	_____	
	6, 31	-B -C	_____	
	7, 32	-C -D	_____	
	8	-D	_____	
	9	A3-A	_____	
	10	-B	_____	
	11	-C	_____	
	12	-D	_____	
	13	A4-A	_____	
	14	-B	_____	
	15	-C	_____	
	16	-D	_____	
	17	A5-A	_____	
	18	-B	_____	
	19	-C	_____	
	20	-D	_____	
	21	A6-A	_____	
	22	-B	_____	
	23	-C	_____	
	24	-D	_____	
	25	A7-A	_____	

QC _____

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TEST REPORT

ASSY MC370AD-Q2 (Less Plug-In Cards)

S/O _____ CUSTOMER _____

W/O _____ SERIAL NO. _____

TESTED BY _____ DATE _____

Paragraph/Step				Accepted	Specification
4.5	Continuity				
	J102	4.5.1 Mother Board	4.5.2 (Alternate)		
	A (RED)	HI	AD296-4	_____	Less than or equal to 1.0Ω
	B (BRN)	LO	AD296-3	_____	
	C (BLK)	D GND	AD296-5	_____	
	D (GRN)	C GND	Chassis	_____	

QC _____

NUMBER	REV
ATP464	A