

MAINTENANCE MANUAL
ORION™
PA INTERFACE BOARDS
CMH-1231L/H
CMH-1231E

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DESCRIPTION

PA Interface boards CMH-1231L/H and CMH-1231E interface power connections, speaker connections, PA module connections and most all other interconnection of the ORION mobile radio. Interface boards consists two twenty-

four pin, RF connectors P1001 and P1002 and one thirty-seven pin connector J1003.

Signals interfaced are defined in Table 1.

Table 1 - Interface Lead Definitions

CONNECTOR J1003 PIN NUMBER	LEAD LABEL	SOURCE	DEFINITION
1	SUP GND	Radio	Supply GND for accessories
2	XDATAIN	External	MDT Serial Data 9.6 kbd maximum RS-232C compatible Specs.
3	XDATAOUT	Radio	MDT Serial Data 9.6 kbd maximum RS-232C compatible Specs.
4	RS485+	Bidirectional	Data signal between Radio Unit and Control Unit
5	RS485-	Bidirectional	Second line of Radio Unit-Control Unit data bus
6	CTS	Radio	Clear-To-Send signal for MTD RS-232C compatible Specs.
7	GND	Radio	Ground return for DC and data (2 amp. Max)
8	FPROG	Control Unit	Field Programming Input Active=+12V, Inactive =0V Sink 50 ma
9	OUT2	Radio	Accessory switch Active=0V, Inactive=O.C. Relay Driver Sink 500 ma
10	IGN SEN	Radio	Active=0V, Inactive=O.C.
11	MIC HI	Control Unit	Microphone Audio 600 Ohm Load Carries 9 Vdc for Microphone Power
12	ALO	Radio	Ground return for MIC HI
13	VOL HI	Radio	Low Power De-emphasized, volume controlled audio Drives 600 Ohm Load
14	CTL ON	Control Unit	On/Off Control Active (0V)=0Vdc
15	XTONENC	External	External tone input (non-preemphasized) to ASP TBD
16	XTONDEC	Radio	External tone output (non-deemphasized) >=500 mv RMS
17	RQST	Bidirectional	REQUEST Signal for RS-485 Data Bus Active=0V, Inactive=O.C.
18	SPKR1	Radio	Speaker Output Pins 18 and 19 are a balanced Pair Driving a 4 ohm speaker
19	SPKR2	Radio	Speaker Output Pins 18 and 19 are a balanced Pair Driving a 4 ohm speaker
20	RTS	External	Request -To- Send signal from MDT RS-232C compatible specs.
21	INP1	External	Accessory Input Active=0V, Inactive=O.C. Source 10 ma Maximum

Continued

Table 1 - Interface Lead Definitions (cont'd)

CONNECTOR J1003 PIN NUMBER	LEAD LABEL	SOURCE	DEFINITION
22	OUT1	Radio	Same Spec as Pin 9
23	INP2	External	Same spec as Pin 21
24	ING A+	External	Input from Ignition Switch Connected to IGN SEN in Radio
25	SW A+	Radio	Switched A+ Power 700 ma Maximum
26	HKSW	External	External Hookswitch Input Active=0V, Inactive=O.C.
27	EXTMIC	External	External Microphone Input For VRPT only Same spec as Pin 11
28	EXTRSX	External	Input from receiver on 2nd radio Driven by VOL HI source 2.2 k Ohms load AC coupled, 10 Hz minimum frequency
29	FDISC	Radio	Filtered Discriminator Output Used in VRPT applications only Must drive a 600 ohm load AC coupled, 300-3000 kHz
30	EXTALO	Radio	Analog GND For 2nd radio and VRPT
31	CUTST	2 Function	Signal Control Unit to self test
32	A+/SPARE	2 Function	EUROPEAN MODELS Power A+ USA MODELS -Future Use
33	A+/SPARE	2 Function	EUROPEAN MODELS Power A+ USA MODELS -Future Use
34	A+/SPARE	2 Function	EUROPEAN MODELS Power A+ USA MODELS -Future Use
35	A-/SDATA	2 Function	EUROPEAN MODELS Power A- USA MODELS 1200 Baud data for Siren/Light Control
36	A-/SONOFF	2 Function	EUROPEAN MODELS Power A- USA MODELS ON/OFF Signal for Siren/Light Control



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ORION INTERFACE
CMH-123L
 (Used in 344A4572P3, P4, P5) (VHF)
 (Used in 344A4573P3, P4, P5) (UHF)

SYMBOL	PART NO.	DESCRIPTION
		----- CAPACITORS -----
C1005 thru C1019	B19/5CAAD00838	Ceramic: 1000 pF $\pm 10\%$ 50 VDCW, temp coef $\pm 15\%$.
C1020	B19/5CAAD01614	Ceramic: 100 pF $\pm 5\%$ 50 VDCW, temp coef 0 ± 60 PPM.
C1021 thru C1040	B19/5CAAD00838	Ceramic: 1000 pF $\pm 10\%$ 50 VDCW, temp coef $\pm 15\%$.
		----- CONNECTORS -----
J1003	B19/5JBAH00334	Connector.
P1001 and P1002	B19/5JWAV00161	Connector: RF.
		--- PRINTED CIRCUIT BOARD ---
PC1001	B19/6PCLD00327	H-6PCLD00327.

*COMPONENTS, ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES

ORION INTERFACE
CMH-1231H
 (Used in 344A4572P6, P7, P8) (VHF)
 (Used in 344A4573P6, P7, P8) (UHF)

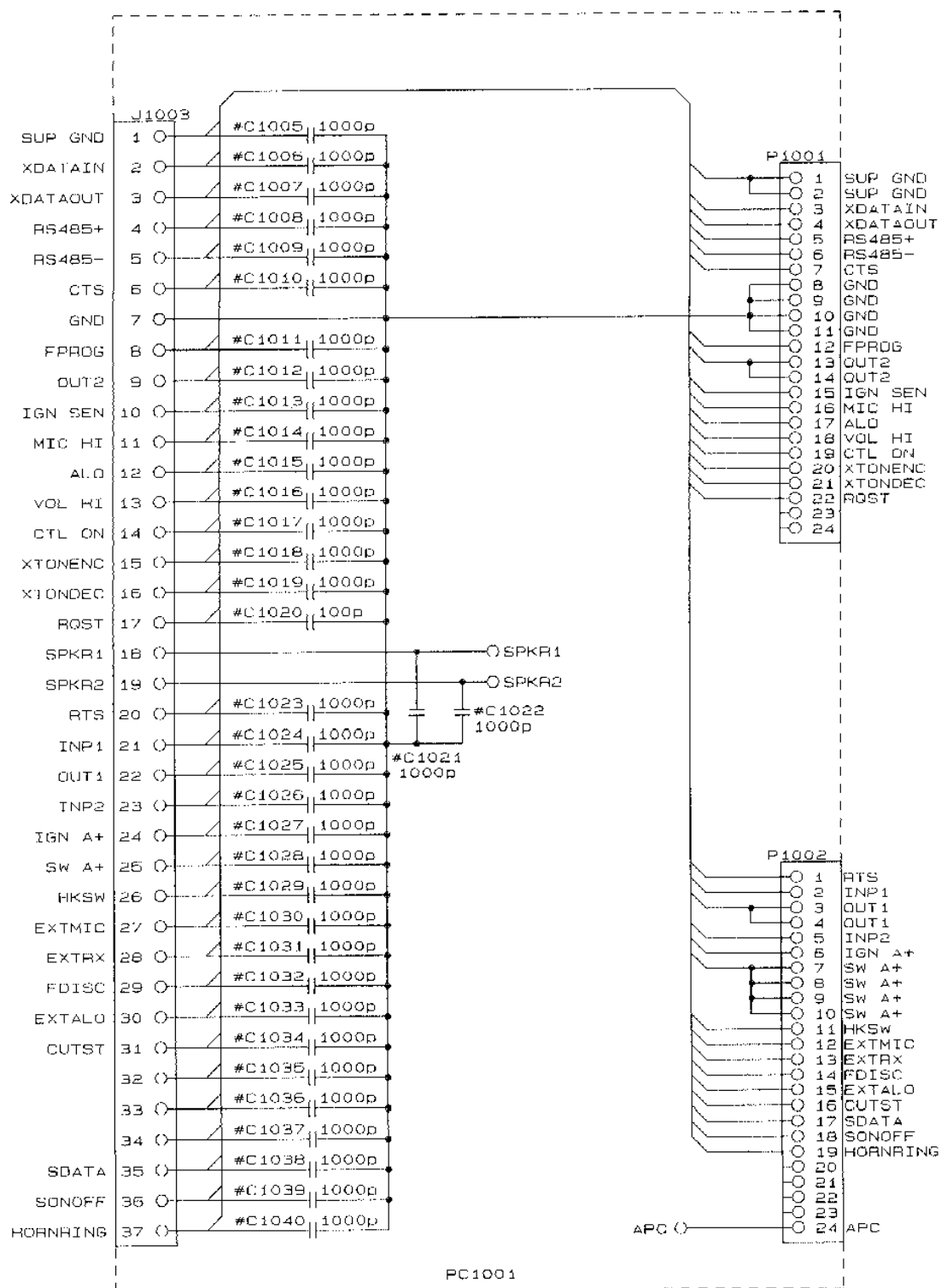
SYMBOL	PART NO.	DESCRIPTION
		----- CAPACITORS -----
C1005 thru C1019	B19/5CAAD00838	Ceramic: 1000 pF $\pm 10\%$ 50 VDCW, temp coef $\pm 15\%$.
C1020	B19/5CAAD01614	Ceramic: 100 pF $\pm 5\%$ 50 VDCW, temp coef 0 ± 60 PPM.
C1021 thru C1040	B19/5CAAD00838	Ceramic: 1000 pF $\pm 10\%$ 50 VDCW, temp coef $\pm 15\%$.
		----- CONNECTORS -----
J1003	B19/5JBAH00334	Connector.
P1001 and P1002	B19/5JWAV00161	Connector: RF.
		--- PRINTED CIRCUIT BOARD ---
PC1001	B19/6PCLD00314	H-6PCLD00314B.

*COMPONENTS, ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES

ORION INTERFACE
CMH-1231E
 (Used in 344A4572, P1, P2) (VHF)
 (Used in 344A4573P1, P2) (UHF)

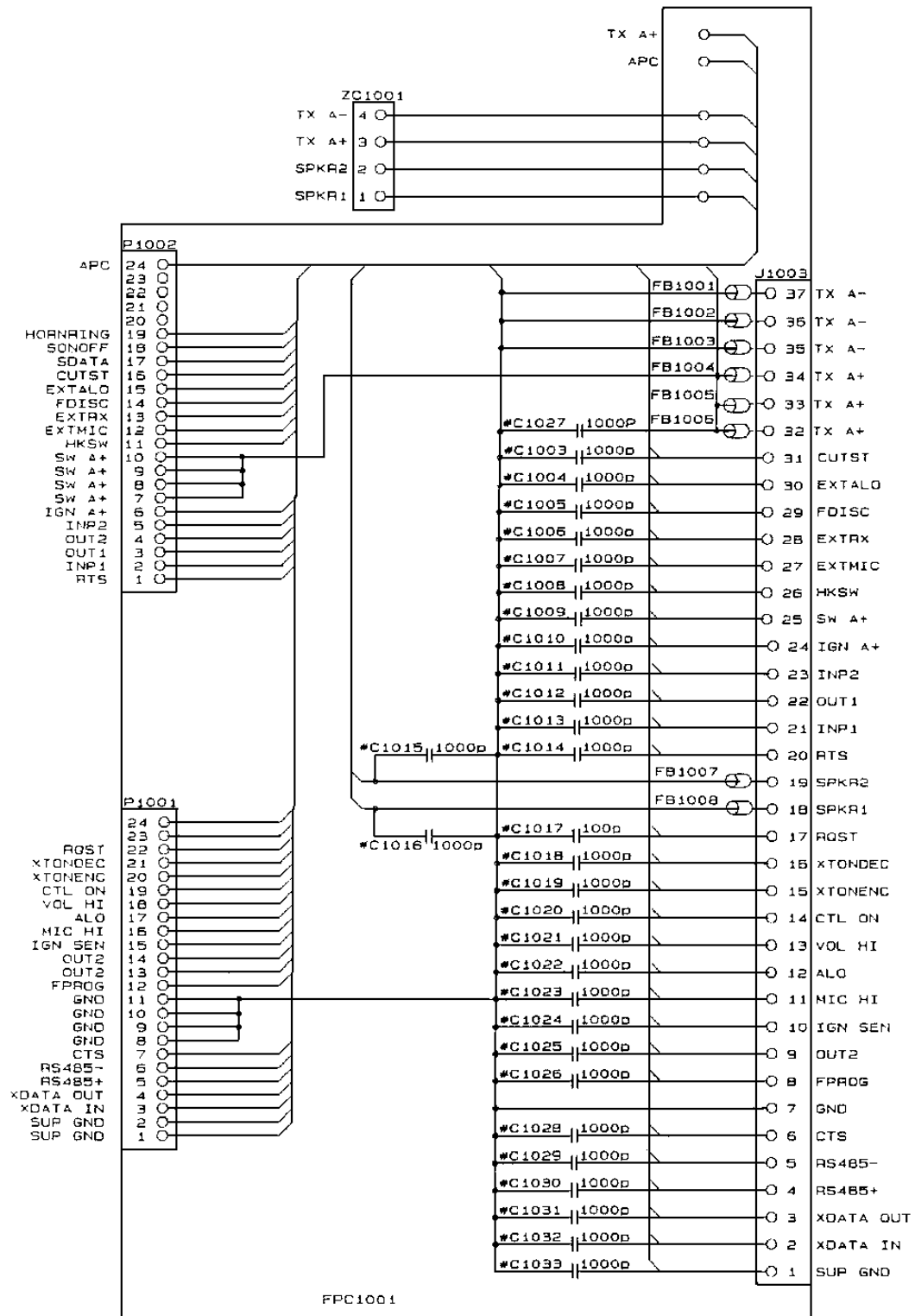
SYMBOL	PART NO.	DESCRIPTION
		----- CAPACITORS -----
C1003 thru C1016	B19/5CAAD00838	Ceramic: 1000 pF $\pm 10\%$ 50 VDCW, temp coef $\pm 15\%$.
C1017	B19/5CAAD01614	Ceramic: 100 pF $\pm 5\%$ 50 VDCW, temp coef 0 ± 60 PPM.
C1018 thru C1033	B19/5CAAD00838	Ceramic: 1000 pF $\pm 10\%$ 50 VDCW, temp coef $\pm 15\%$.
		----- FERRITE BEAD -----
FB1001 thru FB1008	B19/5MZAC00022	Ferrite Bead: B-20F-28.
		---- FLEXIBLE PRINTED ---- CIRCUIT BOARD
FPC1001	B19/6PCLD00320B	H-6PCLD00320B
		----- CONNECTORS -----
J1003	B19/5JBAH00339	Connector.
P1001 and P1002	B19/5JWAV00161	Connector: RF.
		----- COAXIAL CABLE -----
ZC1001	B19/6ZCLD00128	H-6ZCLD00128

*COMPONENTS, ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES



PA INTERFACE

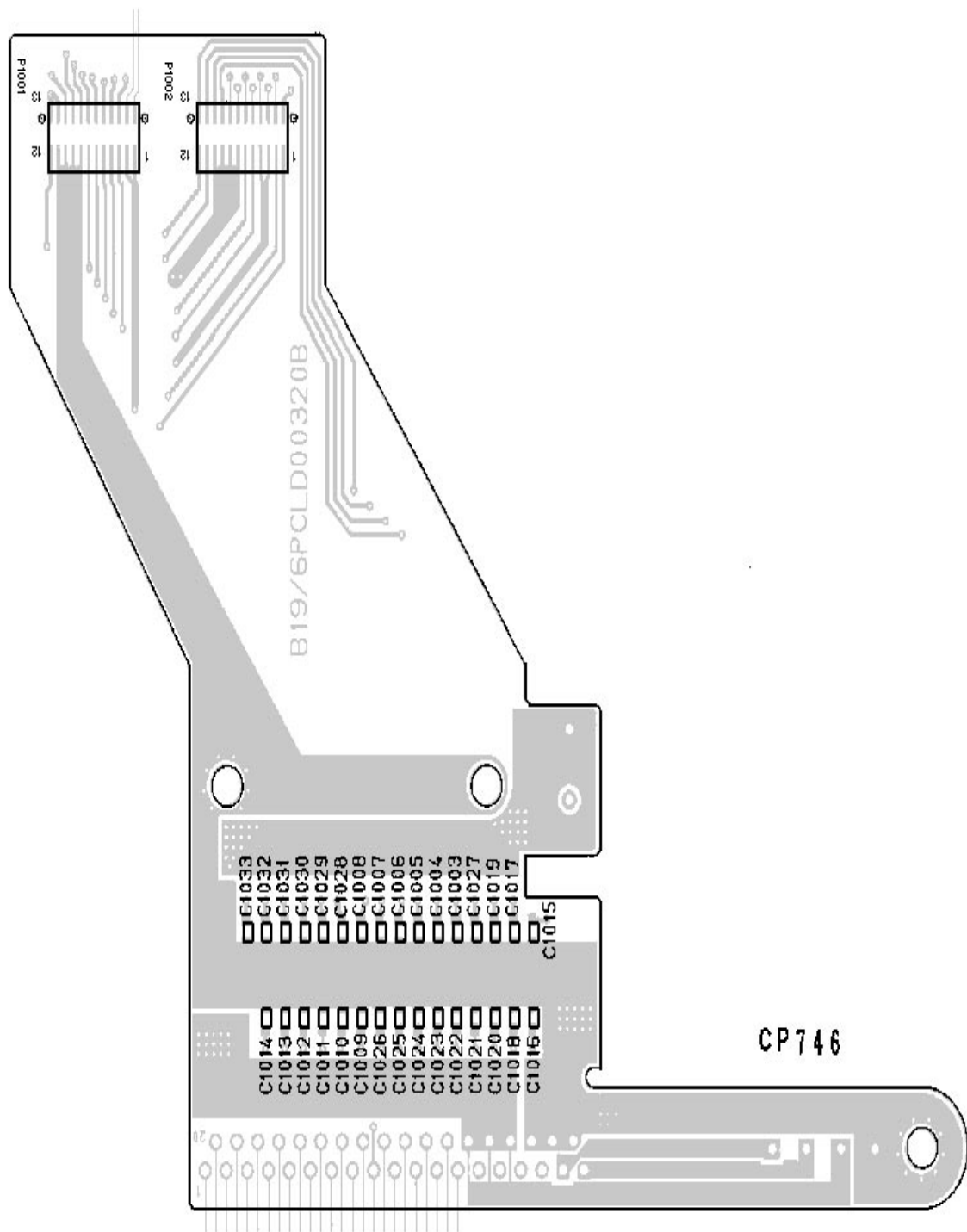
(DD00-CMH-1231L/H)



EUROPEAN
PA INTERFACE

(DD00-CMH-1231E)

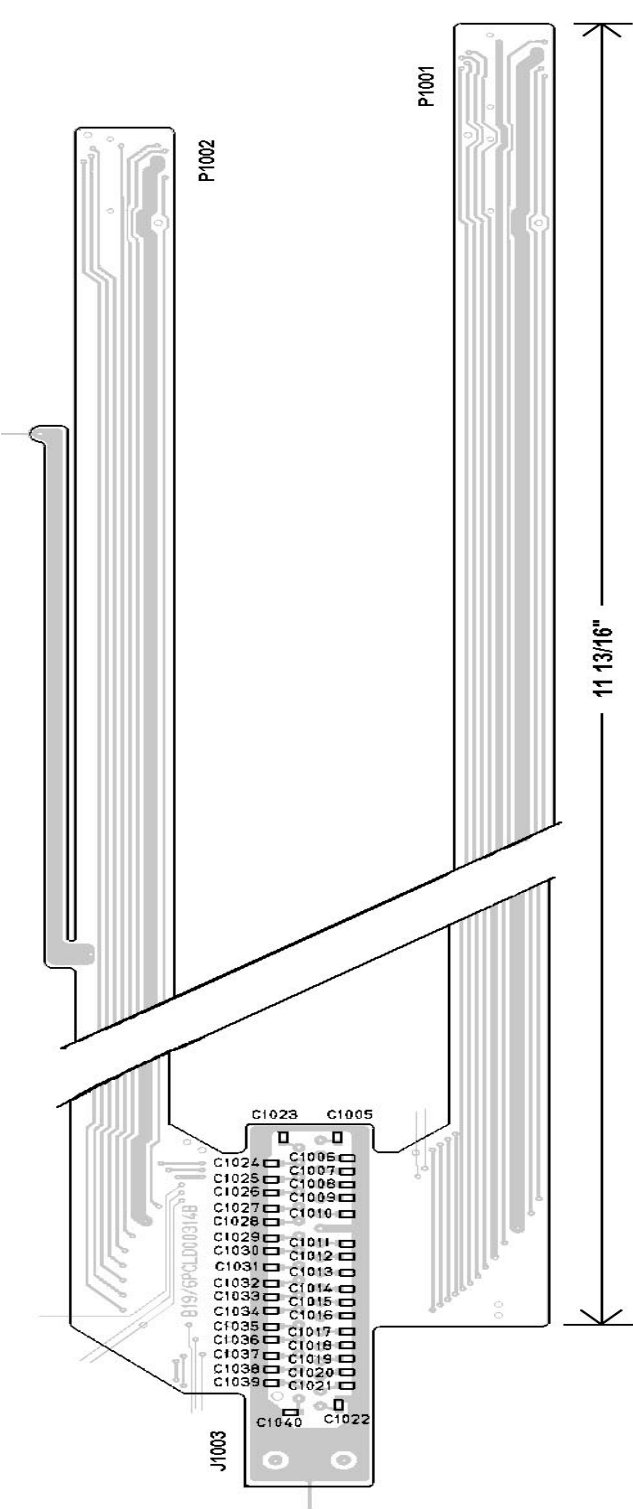
COMPONENT SIDE



EUROPEAN POWER
EUROPEAN

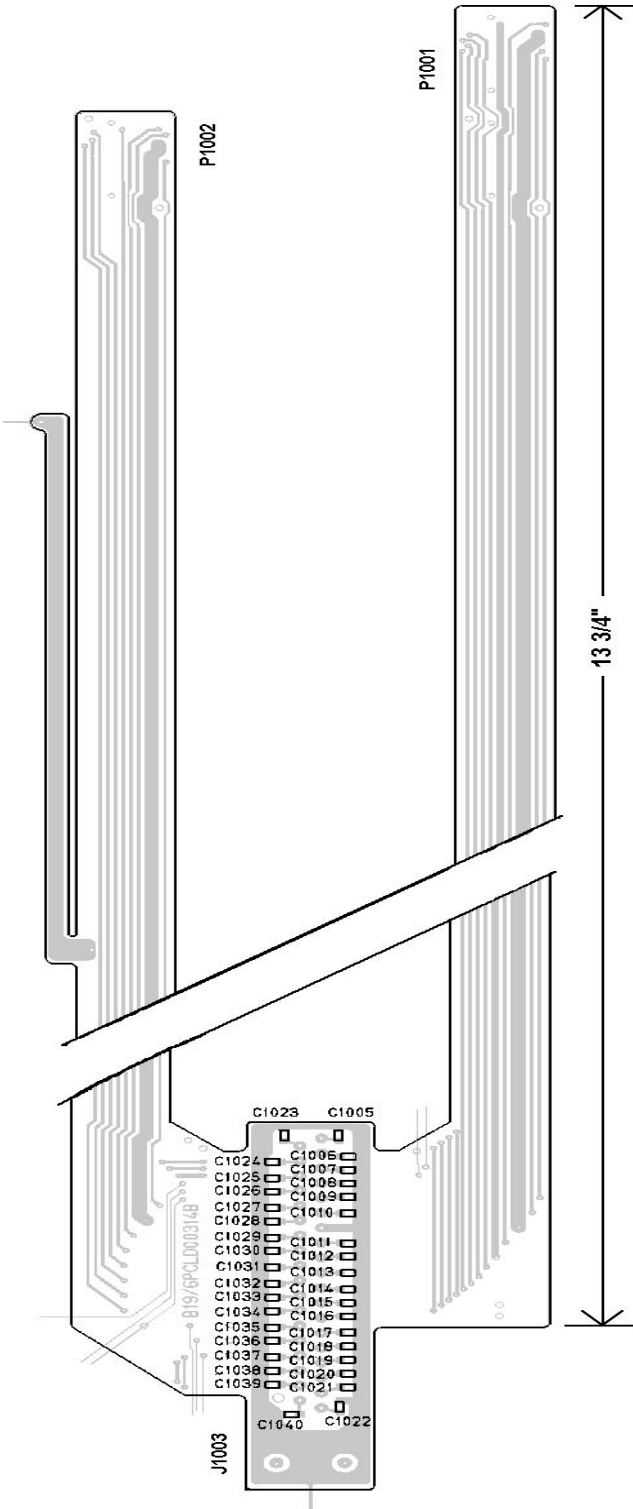
(B19/6PCLD00320B)

COMPONENT SIDE



LOW POWER PA INTERFACE

(B19/6PCLD00327, Rev. 0)



HIGH POWER PA INTERFACE

(B19/6PCLD00314, Rev. 0)