



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

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Table with 2 columns: Description and Page. Includes sections for Description, Parts Lists (Low Power, High Power, European Power), Schematic Diagrams (Low Power, European Power), and Outline Diagrams (European Power, Low Power, High Power).

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



Ericsson GE Mobile Communications Inc.
Mountain View Road • Lynchburg, Virginia 24502

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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	NOTE: Parts listed are for reference only. Refer to	Ceramic: 1000 pF ±10% 50 VDCW, temp coef ±15%.
C1020	Service Section for serviceable parts.	Ceramic: 100 pF ±5% 50 VDCW, temp coef 0±60PPM.
C1021 thru C1040		Ceramic: 1000 pF ±10% 50 VDCW, temp coef ±15%.
		----- CONNECTORS -----
J1003		Connector.
P1001 and P1002		Connector: RF.
		--- PRINTED CIRCUIT BOARD ---
PC1001		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)**

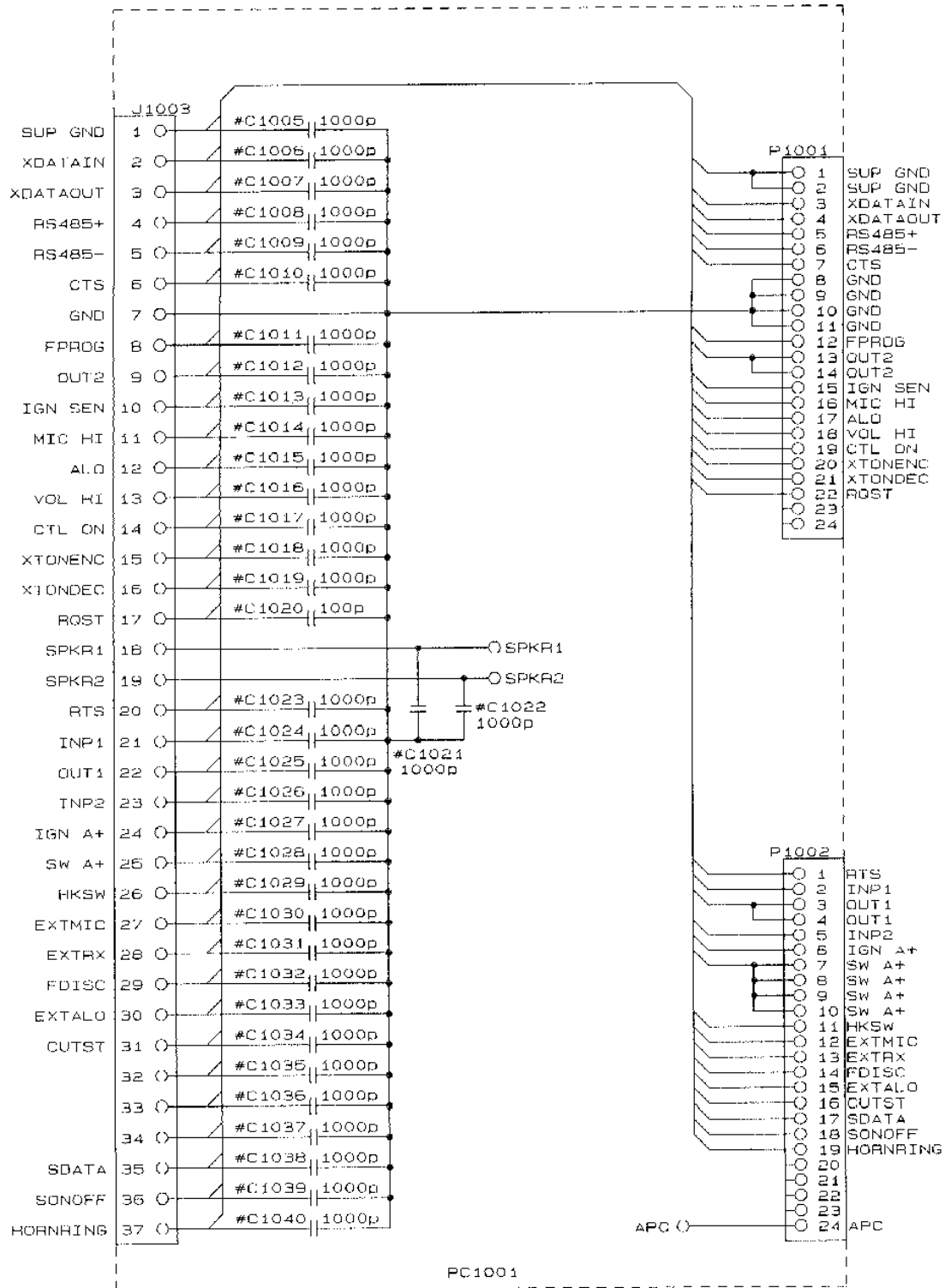
SYMBOL	PART NO.	DESCRIPTION
		----- CAPACITORS -----
C1005 thru C1019	NOTE: Parts listed are for reference only. Refer to	Ceramic: 1000 pF ±10% 50 VDCW, temp coef ±15%.
C1020	Service Section for serviceable parts.	Ceramic: 100 pF ±5% 50 VDCW, temp coef 0±60PPM.
C1021 thru C1040		Ceramic: 1000 pF ±10% 50 VDCW, temp coef ±15%.
		----- CONNECTORS -----
J1003		Connector.
P1001 and P1002		Connector: RF.
		--- PRINTED CIRCUIT BOARD ---
PC1001		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)**

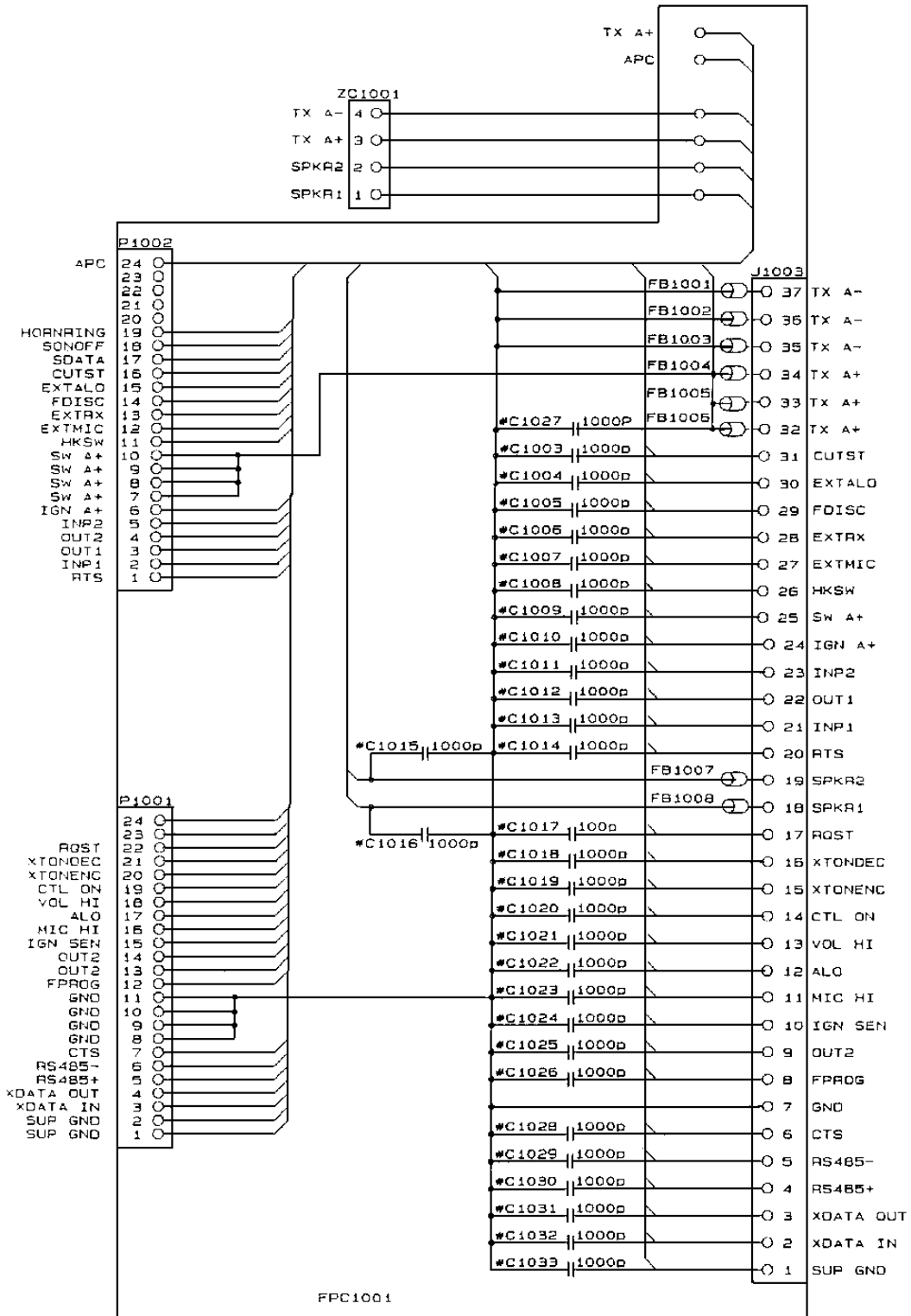
SYMBOL	PART NO.	DESCRIPTION
		----- CAPACITORS -----
C1003 thru C1016	NOTE: Parts listed are for reference only. Refer to	Ceramic: 1000 pF ±10% 50 VDCW, temp coef ±15%.
C1017	Service Section for serviceable parts.	Ceramic: 100 pF ±5% 50 VDCW, temp coef 060PPM.
C1018 thru C1033		Ceramic: 1000 pF ±10% 50 VDCW, temp coef ±15%.
		----- FERRITE BEAD -----
FB1001 thru FB1008		Ferrite Bead: B-20F-28.
		---- FLEXIBLE PRINTED ---- CIRCUIT BOARD
FPC1001		H-6PCLD00320B
		----- CONNECTORS -----
J1003		Connector.
P1001 and P1002		Connector: RF.
		----- COAXIAL CABLE -----
ZC1001		H-6ZCLD00128

*COMPONENTS, ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES



PA INTERFACE

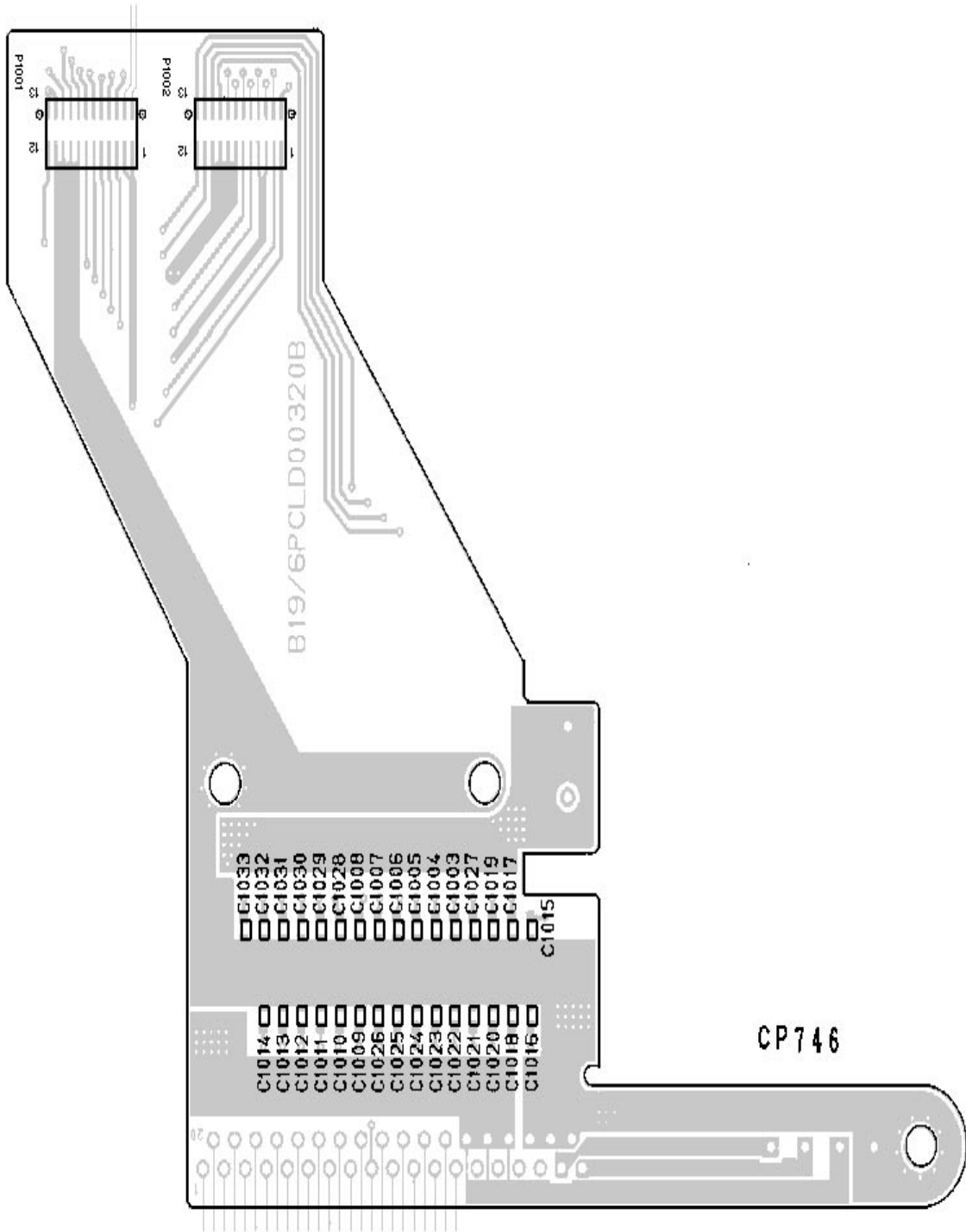
(DD00-CMH-1231L/H)



EUROPEAN PA INTERFACE

(DD00-CMH-1231E)

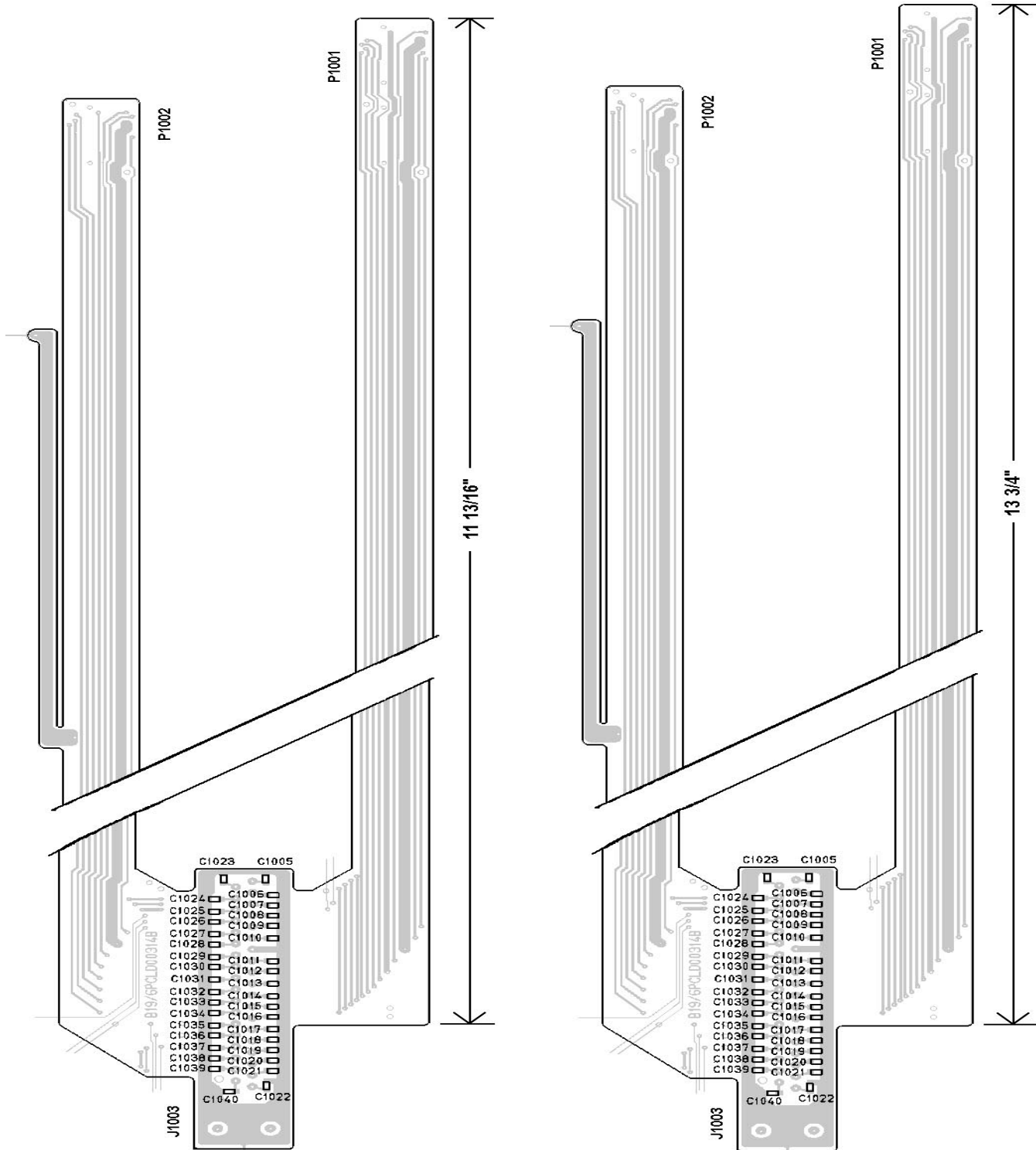
COMPONENT SIDE



EUROPEAN POWER
EUROPEAN

(B19/6PCLD00320B)

COMPONENT SIDE



LOW POWER PA INTERFACE

HIGH POWER PA INTERFACE

(B19/6PCLD00327, Rev. 0)

(B19/6PCLD00314, Rev. 0)