PDXIB1 INDENTED BILL OF MATERIALS BY COMPONENT ID

DATES: ALL

ASSEMBLY ID / LEVEL / COMPONENT ID	DESCRIPTION START / END	DWG	SIZE	ECN	EFF DATE	UM	ABC	COMM PENDING	CLASS CATG	TYPE TOTAL	ST REQD	PLNR BILL	BUYER OPER	MRP KIT	MPS LTO	YIELD SCRAP
ASM: 649496 00265 7	MERLIN CDPD OEM (SYMBOL TECH)					EA	C	6494		M	A			Y	N	0.0
	2			00040						QTY:		1				
1..... 01016863	0002 PC CARD MODULE (MERLIN CDPD OEM)					EA				M	A	EP	0		0	0.0
	1			00040								1.000000				
.2..... 01016632	0006 PCB MECH. ASSY (MERLIN)					EA				M	A	EP	0		0	0.0
	2			00044								1.000000				
..3..... 01016582	0001 PCB ASSY PCMCIA CARD (MERLIN)					EA				M	A	EP	0		0	0.0
	3											1.000000				
...4..... 01016603	0001 FLASH ASSY INCLUDING BOOTLOADER(MERLIN)					EA				M	A	EP	0		0	0.0
	1											1.000000				
....5..... 20416383	0002 SW, HEX FILE, MERLIN-EMLV, TRL-07					EA				B	A	EP	0		0	0.0
	TRL0											1.000000				
....5..... 31323916	0006 IC 29LV200BT FLASH 90 NS (TSOP-48)					EA				B	A	EP	0		0	0.0
	REF: U101											1.000000				
....5..... DP-01016603	0002 FLASH ASSY INCLUDING BOOTLOADER (MERLIN)					EA				P	A	EP	0		0	0.0
	1											0.000000				
....5..... SWI-20416383	0004 SW WORK INSTRUCTIONS HEX FILE TRL-07					EA				P	A	EP	0		0	0.0
												0.000000				
...4..... 01016742	0002 LABEL SERIAL NUMBER PCB ASSY					EA				M	A	EP	0		0	0.0
	1											1.000000				
....5..... 25015458	0006 LABEL BLANK KEYED 12.2MM X 12.2MM					EA				B	A	EP	0		0	0.0
	1											1.000000				
....5..... 32123001	0010 RIBBON PRINTER RESIN 60MM X 450M					MM				B	A	EP	0		0	0.0
												15.200000				
....5..... DA-01016742	0002 LABEL SERIAL NUMBER PCB ASSY					EA				P	A	EP	0		0	0.0
	1											0.000000				
....5..... DM-25015458	0008 LABEL BLANK KEYED 12.2MM X 12.2MM					EA				P	A	EP	0		0	0.0
	1											0.000000				

PDXIB1 INDENTED BILL OF MATERIALS BY COMPONENT ID
DATES: ALL

ASSEMBLY ID / LEVEL / COMPONENT ID	DESCRIPTION / START / END / DWG / SIZE / ECN / EFF	UM / DATE	ABC / PENDING	COMM / CLASS / CATG	TYPE / TOTAL	ST / REQD	PLNR / BILL	BUYER / OPER	MRP / KIT	MPS / LTO	YIELD / SCRAP
ASM: 649496 00265 7	MERLIN CDPD OEM (SYMBOL TECH) 2 00040	EA	C	6494	M QTY:	A	1		Y	N	0.0
....5..... DP-01016742	0004 LABEL SERIAL NUMBER PCB ASSY 1	EA		P	A	EP	0.000000	0		0	0.0
...4..... 15423001	0002 CAP FEEDTHROUGH FILTER NFM41P 0.2 UF SMD	EA		B	A	EP	1.000000	0		0	0.0
	REF: L408										
...4..... 15723084	0003 CAP TANT CHIP 10UF 10% 10V 3216	EA		B	A	EP	2.000000	0		0	0.0
	REF: C130 REF: C132										
...4..... 15723085	0004 CAP TANT CHIP 3.3 UF 10% 16V 3216	EA		B	A	EP	3.000000	0		0	0.0
	REF: C282 REF: C287 REF: C332										
...4..... 15923182	0005 CAP CHIP 1.0UF 10% 16V X7R 1206	EA		B	A	EP	12.000000	0		0	0.0
	REF: C280 REF: C281 REF: C283 REF: C284 REF: C290 REF: C131 REF: C330 REF: C333 REF: C331 REF: C501 REF: C505 REF: C278										
...4..... 15990038	0007 CAP CHIP 0.1 UF +80-20 25V Y5V 0603	EA		B	A	EP	1.000000	0		0	0.0
	REF: C324										
...4..... 15A102J0	0008 CAP CHIP 1000 PF 5% 50V COG 0805	EA		B	A	EP	1.000000	0		0	0.0
	REF: C204										

PDXIB1 INDENTED BILL OF MATERIALS BY COMPONENT ID
DATES: ALL

ASSEMBLY ID / LEVEL / COMPONENT ID	DESCRIPTION / START / END / DWG / SIZE / ECN / EFF DATE	UM / ABC / COMM / CLASS / TYPE / ST / PLNR / BUYER / MRP / MPS / YIELD PENDING / CATG / TOTAL / REQD / BILL / OPER / KIT / LTO / SCRAP
ASM: 649496 00265 7	MERLIN CDPD OEM (SYMBOL TECH) 2 00040	EA C 6494 M A Y N 0.0 QTY: 1
...4..... 15B104K1	0010 CAP CHIP 0.1 UF 10% 25V X7R 0805 REF: C212	EA B A EP 0 0 0.0 1.000000
...4..... 15C010C0	0011 CAP CHIP 1PF 0.25PF 50V COG 0402 REF: C216 REF: C220 REF: C232	EA B A EP 0 0 0.0 3.000000
...4..... 15C020C0	0012 CAP CHIP 2PF 0.25PF 50V COG 0402 REF: C215 REF: C226 REF: C293	EA B A EP 0 0 0.0 3.000000
...4..... 15C030C0	0013 CAP CHIP 3PF 0.25PF 50V COG 0402 REF: C211 REF: C213 REF: C221	EA B A EP 0 0 0.0 3.000000
...4..... 15C040C0	0014 CAP CHIP 4PF 0.25PF 50V COG 0402 REF: C222 REF: C223 REF: C250	EA B A EP 0 0 0.0 3.000000
...4..... 15C0R5C0	0016 CAP CHIP 0.5PF 0.25PF 50V COG 0402 REF: C214	EA B A EP 0 0 0.0 1.000000
...4..... 15C100D0	0017 CAP CHIP 10PF 0.5PF 50V COG 0402 REF: C225 REF: C292 REF: C300 REF: C219	EA B A EP 0 0 0.0 4.000000

PDXIB1 INDENTED BILL OF MATERIALS BY COMPONENT ID
DATES: ALL

ASSEMBLY ID / LEVEL / COMPONENT ID	DESCRIPTION / START / END / DWG / SIZE / ECN / EFF	UM / DATE	ABC / COMM / PENDING	CLASS / CATG	TYPE / TOTAL	ST / REQD	PLNR / BILL	BUYER / OPER	MRP / KIT	MPS / LTO	YIELD / SCRAP
ASM: 649496 00265 7	MERLIN CDPD OEM (SYMBOL TECH) 2 00040	EA	C 6494		M QTY:	A	1		Y	N	0.0
...4..... 15C101J0	0018 CAP CHIP 100PF 5% 50V COG 0402	EA		B	A	EP 8.000000		0		0	0.0
	REF: C230 REF: C242 REF: C243 REF: C244 REF: C247 REF: C304 REF: C208 REF: C209										
...4..... 15C102K1	0019 CAP CHIP 1000PF 10% 50V X7R 0402	EA		B	A	EP 9.000000		0		0	0.0
	REF: C237 REF: C251 REF: C252 REF: C253 REF: C210 REF: C233 REF: C202 REF: C504 REF: C218										
...4..... 15C120J0	0020 CAP CHIP 12PF 5% 50V COG 0402	EA		B	A	EP 1.000000		0		0	0.0
	REF: C235										
...4..... 15C121J0	0021 CAP CHIP 120PF 5% 50V COG 0402	EA		B	A	EP 4.000000		0		0	0.0
	REF: C206 REF: C245 REF: C295 REF: C307										
...4..... 15C150J0	0022 CAP CHIP 15PF 5% 50V COG 0402	EA		B	A	EP 1.000000		0		0	0.0
	REF: C100										
...4..... 15C151J0	0023 CAP CHIP 150PF 5% 50V COG 0402	EA		B	A	EP 1.000000		0		0	0.0
	REF: C246										

PDXIB1 INDENTED BILL OF MATERIALS BY COMPONENT ID
DATES: ALL

ASSEMBLY ID / LEVEL	COMPONENT ID	DESCRIPTION / START	END	DWG	SIZE	ECN	EFF DATE	UM	ABC	COMM PENDING	CLASS CATG	TYPE TOTAL QTY	ST REQD	PLNR BILL	BUYER OPER	MRP KIT	MPS LTO	YIELD SCRAP
ASM: 649496 00265 7		MERLIN CDPD OEM (SYMBOL TECH)						EA	C	6494		M	A			Y	N	0.0
		2				00040						QTY:		1				
...4.....	15C180J0	0025 CAP CHIP 18PF 5% 50V COG 0402						EA				B	A	EP 2.000000	0		0	0.0
		REF: C227																
		REF: C254																
...4.....	15C1R5C0	0024 CAP CHIP 1.5PF 0.25PF 50V COG 0402						EA				B	A	EP 1.000000	0		0	0.0
		REF: C289																
...4.....	15C220J0	0026 CAP CHIP 22PF 5% 50V COG 0402						EA				B	A	EP 3.000000	0		0	0.0
		REF: C101																
		REF: C224																
		REF: C303																
...4.....	15C221K1	0027 CAP CHIP 220PF 10% 50V X7R 0402						EA				B	A	EP 1.000000	0		0	0.0
		REF: C248																
...4.....	15C270J0	0028 CAP CHIP 27PF 5% 50V COG 0402						EA				B	A	EP 2.000000	0		0	0.0
		REF: C228																
		REF: C234																
...4.....	15C330J0	0029 CAP CHIP 33PF 5% 50V COG 0402						EA				B	A	EP 1.000000	0		0	0.0
		REF: C236																
...4.....	15C470J0	0030 CAP CHIP 47PF 5% 50V COG 0402						EA				B	A	EP 1.000000	0		0	0.0
		REF: C229																
...4.....	15C471K1	0031 CAP CHIP 470PF 10% 50V X7R 0402						EA				B	A	EP 18.000000	0		0	0.0
		REF: C249																
		REF: C305																
		REF: C306																
		REF: C308																
		REF: C309																
		REF: C310																
		REF: C311																
		REF: C313																
		REF: C314																
		REF: C315																
		REF: C316																
		REF: C317																
		REF: C318																
		REF: C319																

ASSEMBLY ID / LEVEL	COMPONENT ID	DESCRIPTION / START	END	DWG	SIZE	ECN	EFF DATE	UM	ABC	COMM / PENDING	CLASS / CATG	TYPE / TOTAL	ST / REQD	PLNR / BILL	BUYER / OPER	MRP / KIT	MPS / LTO	YIELD / SCRAP
ASM: 649496 00265 7		MERLIN CDPD OEM (SYMBOL TECH)						EA	C	6494		M	A			Y	N	0.0
		2				00040						QTY:	1					
...4.....	15C471K1	0031 CAP CHIP 470PF 10% 50V X7R 0402						EA				B	A	EP	0		0	0.0
													18.000000					
		REF: C320																
		REF: C205																
		REF: C207																
		REF: C321																
...4.....	15C820J0	0032 CAP CHIP 82PF 5% 50V COG 0402						EA				B	A	EP	0		0	0.0
													3.000000					
		REF: C240																
		REF: C241																
		REF: C294																
...4.....	15D103K1	0033 CAP CHIP 0.01UF 10% 16V X7R 0402						EA				B	A	EP	0		0	0.0
													48.000000					
		REF: C119																
		REF: C120																
		REF: C121																
		REF: C122																
		REF: C123																
		REF: C124																
		REF: C125																
		REF: C127																
		REF: C128																
		REF: C272																
		REF: C203																
		REF: C255																
		REF: C256																
		REF: C257																
		REF: C258																
		REF: C259																
		REF: C260																
		REF: C261																
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		REF: C267																
		REF: C268																
		REF: C269																
		REF: C270																
		REF: C271																
		REF: C273																
		REF: C279																
		REF: C296																
		REF: C297																
		REF: C298																

PDXIB1 INDENTED BILL OF MATERIALS BY COMPONENT ID
DATES: ALL

ASSEMBLY ID / LEVEL	COMPONENT ID	DESCRIPTION START	END	DWG	SIZE	ECN	EFF DATE	UM	ABC	COMM PENDING	CLASS CATG	TYPE TOTAL	ST REQD	PLNR BILL	BUYER OPER	MRP KIT	MPS LTO	YIELD SCRAP
ASM: 649496 00265 7		MERLIN CDPD OEM (SYMBOL TECH)						EA	C	6494		M	A			Y	N	0.0
		2				00040						QTY:		1				
...4.....	15D103K1	0033 CAP CHIP 0.01UF 10% 16V X7R 0402						EA				B	A	EP	0		0	0.0
													48.000000					
		REF: C326																
		REF: C327																
		REF: C328																
		REF: C329																
		REF: C102																
		REF: C401																
		REF: C402																
		REF: C403																
		REF: C404																
		REF: C405																
		REF: C406																
		REF: C407																
		REF: C408																
		REF: C502																
		REF: C217																
...4.....	15E222K1	0034 CAP CHIP 2.2 NF 10% 50V X7R 0603						EA				B	A	EP	0		0	0.0
													1.000000					
		REF: C276																
...4.....	15E270J0	0035 CAP CHIP 27 PF 5% 50V COG 0603						EA				B	A	EP	0		0	0.0
													1.000000					
		REF: C239																
...4.....	15E332K1	0036 CAP CHIP 3.3 NF 10% 50V X7R 0603						EA				B	A	EP	0		0	0.0
													1.000000					
		REF: C275																
...4.....	15E680J0	0037 CAP CHIP 68 PF 5% 50V COG 0603						EA				B	A	EP	0		0	0.0
													1.000000					
		REF: C238																
...4.....	15H682K1	0039 CAP CHIP 6800PF 10% 25V X7R 0402						EA				B	A	EP	0		0	0.0
													2.000000					
		REF: C322																
		REF: C323																

PDXIB1 INDENTED BILL OF MATERIALS BY COMPONENT ID
DATES: ALL

ASSEMBLY ID / LEVEL	COMPONENT ID	DESCRIPTION START / END	DWG	SIZE	ECN	EFF DATE	UM	ABC	COMM PENDING	CLASS CATG	TYPE TOTAL	ST REQD	PLNR BILL	BUYER OPER	MRP KIT	MPS LTO	YIELD SCRAP
ASM: 649496 00265 7		MERLIN CDPD OEM (SYMBOL TECH)					EA	C	6494		M	A			Y	N	0.0
		2			00040						QTY:		1				
...4.....	15I622J0	0040 CAP CHIP 6200PF 50V COG 1206					EA				B	A	EP	0		0	0.0
												3.000000					
		REF: C274															
		REF: C277															
		REF: C288															
...4.....	15J683K1	0041 CAP CHIP 68NF 10% 25V X7R 1206					EA				B	A	EP	0		0	0.0
												1.000000					
		REF: C291															
...4.....	15L106K4	0042 CAP CHIP 10 UF 10% 6.3V X5R 1206					EA				B	A	EP	0		0	0.0
												1.000000					
		REF: C285															
...4.....	15L225K1	0044 CAP CHIP 2.2 UF 10% 1206 X7R					EA				B	A	EP	0		0	0.0
												1.000000					
		REF: C286															
...4.....	17016582	0045 PC BOARD PCMCIA CARD (MERLIN)					EA				B	A	EP	0		0	0.0
		1										1.000000					
...4.....	17416582	0046 PANEL PCB PCMCIA CARD (MERLIN)					EA				B	A	EP	0		0	0.0
		1										0.000000					
...4.....	18523172	0048 INDUCTOR 1.2 UH 10% 1008					EA				B	A	EP	0		0	0.0
												1.000000					
		REF: L221															
...4.....	18523188	0049 INDUCTOR CHIP 3.3UH SHIELDED 10% 1008					EA				B	A	EP	0		0	0.0
												1.000000					
		REF: L222															
...4.....	18523189	0050 INDUCTOR CHIP 1.0UH SHIELDED 10% 1008					EA				B	A	EP	0		0	0.0
												1.000000					
		REF: L223															
...4.....	18523190	0051 INDUCTOR CHIP 10NH 5% 0603 LL1608					EA				B	A	EP	0		0	0.0
												2.000000					
		REF: L210															
		REF: L212															

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ASSEMBLY ID / LEVEL / COMPONENT ID	DESCRIPTION / START / END / DWG / SIZE / ECN / EFF DATE	UM	ABC	COMM / PENDING	CLASS / CATG	TYPE / TOTAL	ST / REQD	PLNR / BILL	BUYER / OPER	MRP / KIT	MPS / LTO	YIELD / SCRAP
ASM: 649496 00265 7	MERLIN CDPD OEM (SYMBOL TECH) 2 00040	EA	C	6494		M QTY:	A 1			Y	N	0.0
...4..... 18523192	0053 INDUCTOR CHIP 5.6NH 5% 0603 LL1608	EA				B	A 1.000000	EP	0		0	0.0
	REF: L225											
...4..... 18523194	0055 INDUCTOR CHIP 47NH 5% 0603 LL1608	EA				B	A 1.000000	EP	0		0	0.0
	REF: L220											
...4..... 18523196	0057 INDUCTOR CHIP 12NH 5%0603 LL1608	EA				B	A 3.000000	EP	0		0	0.0
	REF: L204 REF: L209 REF: L215											
...4..... 18523198	0059 INDUCTOR CHIP 100UH SHIELDED 3% 1210	EA				B	A 1.000000	EP	0		0	0.0
	REF: L224											
...4..... 18523200	0061 INDUCTOR CHIP 100NH 5% 0603 LL1608	EA				B	A 3.000000	EP	0		0	0.0
	REF: L218 REF: L226 REF: L227											
...4..... 18523201	0062 INDUCTOR CHIP 6.8NH 5% 0603 LL1608	EA				B	A 2.000000	EP	0		0	0.0
	REF: L201 REF: L203											
...4..... 18523202	0063 INDUCTOR CHIP 15NH 5% 0603 LL1608	EA				B	A 2.000000	EP	0		0	0.0
	REF: L200 REF: L211											
...4..... 18523204	0064 INDUCTOR CHIP 33NH 3% 0805 PTL2012	EA				B	A 1.000000	EP	0		0	0.0
	REF: L208											
...4..... 18523206	0065 INDUCTOR CHIP 27NH 5% 0603 LL1608	EA				B	A 1.000000	EP	0		0	0.0
	REF: L202											

PDXIB1 INDENTED BILL OF MATERIALS BY COMPONENT ID
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ASSEMBLY ID / LEVEL	COMPONENT ID	DESCRIPTION / START	END	DWG	SIZE	ECN	EFF DATE	UM	ABC	COMM PENDING	CLASS CATG	TYPE TOTAL QTY	ST REQD	PLNR BILL	BUYER OPER	MRP KIT	MPS LTO	YIELD SCRAP
ASM: 649496 00265 7		MERLIN CDPD OEM (SYMBOL TECH)						EA	C	6494		M	A			Y	N	0.0
		2				00040						QTY:		1				
...4.....	185BK390	0066 INDUCTOR CHIP 39NH 10% 0603						EA				B	A	EP	0		0	0.0
														1.000000				
		REF: L216																
...4.....	20223055	0067 VCO MQE916-926 2MM HEIGHT						EA				B	A	EP	0		0	0.0
														1.000000				
		REF: U203																
...4.....	20223057	0068 TCXO 14.85MHZ TCO-555W 1PPM, -20/+70C						EA				B	A	EP	0		0	0.0
														1.000000				
		REF: U208																
...4.....	21323131	0069 CONNECTOR PC CARD 68 PIN						EA				B	A	EP	0		0	0.0
														1.000000				
		REF: J401																
...4.....	21723103	0071 CONN COAX MMCX JACK EDGE MOUNT						EA				B	A	EP	0		0	0.0
														1.000000				
		REF: J200																
...4.....	23023052	0072 CRYSTAL 24.576MHZ SMD (TGX-A1)						EA				B	A	EP	0		0	0.0
														1.000000				
		REF: Y100																
...4.....	25323014	0074 BEAD FERRITE X4 ARRAY, 1206 120 OHM SMD						EA				B	A	EP	0		0	0.0
														7.000000				
		REF: L401																
		REF: L402																
		REF: L403																
		REF: L404																
		REF: L405																
		REF: L406																
		REF: L407																
...4.....	25615071	0075 EMI CHANNEL (MERLIN						EA				B	A	EP	0		0	0.0
		2												2.000000				
...4.....	27023089	0077 FILTER CRYSTAL 45MHZ TS2-45A03						EA				B	A	EP	0		0	0.0
														1.000000				
		REF: XF200																

PDXIB1 INDENTED BILL OF MATERIALS BY COMPONENT ID
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ASSEMBLY ID / LEVEL	COMPONENT ID	DESCRIPTION START	END	DWG	SIZE	ECN	EFF DATE	UM	ABC	COMM PENDING	CLASS CATG	TYPE TOTAL QTY:	ST REQD	PLNR BILL	BUYER OPER	MRP KIT	MPS LTO	YIELD SCRAP
ASM: 649496 00265 7		MERLIN CDPD OEM (SYMBOL TECH)						EA	C	6494		M	A			Y	N	0.0
		2				00040							1					
...4.....	27023092	0080 FILTER CERAMIC 450 KHZ LOW PROFILE						EA			B		A	EP	0		0	0.0
													2.000000					
		REF: CF201																
		REF: CF200																
...4.....	27023093	0081 FILTER SAW LIL 869-894 MHZ						EA			B		A	EP	0		0	0.0
													1.000000					
		REF: FL200																
...4.....	27023094	0082 FILTER SAW LIL 824-849 MHZ						EA			B		A	EP	0		0	0.0
													1.000000					
		REF: FL201																
...4.....	31323679	0083 IC TA31132FN FM DEMODULATOR(SSOP24)						EA			B		A	EP	0		0	0.0
													1.000000					
		REF: U211																
...4.....	31323680	0084 IC TC4S66F BI SWITCH ANALOG (SSOP5)						EA			B		A	EP	0		0	0.0
													1.000000					
		REF: U215																
...4.....	31323853	0085 IC MX589 GMSK MODEM (TSSOP-24)						EA			B		A	EP	0		0	0.0
													1.000000					
		REF: U301																
...4.....	31323872	0087 IC LMX1601 DUAL PLL (16-PIN TSSOP						EA			B		A	EP	0		0	0.0
													1.000000					
		REF: U210																
...4.....	31323873	0088 IC LMV822 8-PIN MSOP OP-AMP DUAL						EA			B		A	EP	0		0	0.0
													2.000000					
		REF: U204																
		REF: U302																
...4.....	31323874	0089 IC UPC2771TB MED PWR SI MMIC AMP SOT-363						EA			B		A	EP	0		0	0.0
													1.000000					
		REF: U206																
...4.....	31323876	0090 IC UPC8106TB UPCONVERTER SOT363						EA			B		A	EP	0		0	0.0
													1.000000					
		REF: U207																

PDXIB1 INDENTED BILL OF MATERIALS BY COMPONENT ID
DATES: ALL

ASSEMBLY ID / LEVEL	COMPONENT ID	DESCRIPTION START	END	DWG	SIZE	ECN	EFF DATE	UM	ABC	COMM PENDING	CLASS CATG	TYPE TOTAL	QT REQD	PLNR BILL	BUYER OPER	MRP KIT	MPS LTO	YIELD SCRAP
ASM: 649496 00265 7		MERLIN CDPD OEM (SYMBOL TECH)						EA	C	6494		M	A			Y	N	0.0
		2				00040						QTY:	1					
...4.....	31323880	0091 IC AM186EM CPU 25MHZ 3.3V (TQFP-100)						EA				B	A	EP	0		0	0.0
													1.000000					
		REF: U100																
...4.....	31323885	0093 IC MAX 1111 ADC 8 BIT 4CH (QSOP-16)						EA				B	A	EP	0		0	0.0
													1.000000					
		REF: U304																
...4.....	31323890	0094 IC TQ9223C LNA DOWNCONVERTER						EA				B	A	EP	0		0	0.0
													1.000000					
		REF: U202																
...4.....	31323891	0095 IC FMM5512ZE PA 800MHZ GAAS (SSOP-16)						EA				B	A	EP	0		0	0.0
													1.000000					
		REF: U205																
...4.....	31323893	0097 IC DIGITAL POT 100K QUAD (TSSOP-24)						EA				B	A	EP	0		0	0.0
													1.000000					
		REF: U300																
...4.....	31323895	0098 IC MIC5205 3.0V REGULATOR (SOT-23-5)						EA				B	A	EP	0		0	0.0
													3.000000					
		REF: U212																
		REF: U213																
		REF: U303																
...4.....	31323897	0100 IC MMIC 1GHZ LOW CURRENT AMPLIFIER						EA				B	A	EP	0		0	0.0
													1.000000					
		REF: U201																
...4.....	31323904	0103 IC ADP3309-3.3 LDO VOLT REG (SOT-23-5						EA				B	A	EP	0		0	0.0
													1.000000					
		REF: U102																
...4.....	31323906	0104 IC KM616V1000 SRAM 3.3V 85NS TSOP						EA				B	A	EP	0		0	0.0
													1.000000					
		REF: U104																
...4.....	31323915	0105 IC ASIC PCIC (TQFP-100)						EA				B	A	EP	0		0	0.0
		1											1.000000					
		REF: U401																

PDXIB1 INDENTED BILL OF MATERIALS BY COMPONENT ID
DATES: ALL

ASSEMBLY ID / LEVEL	COMPONENT ID	DESCRIPTION START / END	DWG	SIZE	ECN	EFF DATE	UM	ABC	COMM PENDING	CLASS CATG	TYPE TOTAL REQD	ST BILL	PLNR OPER	BUYER	MRP KIT	MPS LTO	YIELD SCRAP
ASM: 649496 00265 7		MERLIN CDPD OEM (SYMBOL TECH) 2			00040		EA	C	6494		M QTY:	A 1			Y	N	0.0
...4.....	31323917	0106 IC EEPROM X25170 2.5V 2KX8 SOIC-8					EA				B	A 1.000000	EP	0		0	0.0
		REF: U103															
...4.....	34023014	0106 DUPLEXER - SAW (700 TO 1000MHZ					EA				B	A 1.000000	EP	0		0	0.0
		REF: FL203															
...4.....	40423004	0107 COUPLER WITH LOW PASS FILTER (PCMCIA)					EA				B	A 1.000000	EP	0		0	0.0
		REF: DC200															
...4.....	47AF1002	0108 RES CHIP 10K 1% 1/10W 0805					EA				B	A 1.000000	EP	0		0	0.0
		REF: R506															
...4.....	47AF4752	0109 RES CHIP 47.5K 1% 1/10W 0805 100PPM					EA				B	A 2.000000	EP	0		0	0.0
		REF: R502															
		REF: R507															
...4.....	47AF6812	0110 RES CHIP 68.1K 1% 1/10W 0805					EA				B	A 2.000000	EP	0		0	0.0
		REF: R503															
		REF: R508															
...4.....	47BJ0000	0111 RES CHIP 0 OHM 5% 1/16W 0603					EA				B	A 1.000000	EP	0		0	0.0
		REF: R319															
...4.....	47CJ0000	0112 RES CHIP 0 OHM 5% 1/20W 0402					EA				B	A 19.000000	EP	0		0	0.0
		REF: R100															
		REF: R101															
		REF: R102															
		REF: R204															
		REF: R209															
		REF: R217															
		REF: R220															
		REF: R221															
		REF: R225															
		REF: R226															
		REF: R228															
		REF: R229															
		REF: R230															
		REF: R231															
		REF: R300															
		REF: R301															

PDXIB1 INDENTED BILL OF MATERIALS BY COMPONENT ID
DATES: ALL

ASSEMBLY ID / LEVEL / COMPONENT ID	DESCRIPTION / START / END / DWG / SIZE / ECN / EFF	UM / DATE	ABC / COMM / PENDING	CLASS / CATG	TYPE / TOTAL	ST / REQD	PLNR / BILL	BUYER / OPER	MRP / KIT	MPS / LTO	YIELD / SCRAP
ASM: 649496 00265 7	MERLIN CDPD OEM (SYMBOL TECH) 2 00040	EA	C 6494		M QTY:	A	1		Y	N	0.0
...4..... 47CJ0000	0112 RES CHIP 0 OHM 5% 1/20W 0402	EA		B	A	EP 19.000000		0		0	0.0
	REF: R302 REF: R303 REF: R124										
...4..... 47CJ0100	0113 RES CHIP 10 OHM 5% 1/16W 0402	EA		B	A	EP 5.000000		0		0	0.0
	REF: R206 REF: R213 REF: R214 REF: R216 REF: R227										
...4..... 47CJ0101	0114 RES CHIP 100 OHM 5% 1/16W 0402	EA		B	A	EP 2.000000		0		0	0.0
	REF: R238 REF: R239										
...4..... 47CJ0102	0115 RES CHIP 1K OHM 5% 1/16W 0402	EA		B	A	EP 2.000000		0		0	0.0
	REF: R247 REF: R250										
...4..... 47CJ0103	0116 RES CHIP 10K OHM 5% 1/16W 0402	EA		B	A	EP 11.000000		0		0	0.0
	REF: R254 REF: R259 REF: R260 REF: R264 REF: R269 REF: R271 REF: R320 REF: R321 REF: R323 REF: R505 REF: R263										
...4..... 47CJ0104	0117 RES CHIP 100K OHM 5% 1/16W 0402	EA		B	A	EP 9.000000		0		0	0.0
	REF: R125 REF: R127 REF: R270 REF: R326 REF: R421 REF: R207 REF: R333 REF: R334										

PDXIB1 INDENTED BILL OF MATERIALS BY COMPONENT ID
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ASSEMBLY ID / LEVEL	COMPONENT ID	DESCRIPTION START	END	DWG	SIZE	ECN	EFF DATE	UM	ABC	COMM PENDING	CLASS CATG	TYPE TOTAL	ST REQD	PLNR BILL	BUYER OPER	MRP KIT	MPS LTO	YIELD SCRAP
ASM: 649496 00265 7		MERLIN CDPD OEM (SYMBOL TECH) 2				00040		EA	C	6494		M QTY:	A	1		Y	N	0.0
...4.....	47CJ0104	0117 RES CHIP 100K OHM 5% 1/16W 0402						EA				B	A	EP 9.000000	0		0	0.0
		REF: R424																
...4.....	47CJ0121	0118 RES CHIP 120 OHM 5% 1/16W 0402						EA				B	A	EP 2.000000	0		0	0.0
		REF: R215																
		REF: R237																
...4.....	47CJ0122	0119 RES CHIP 1.2K OHM 5% 1/16W 0402						EA				B	A	EP 15.000000	0		0	0.0
		REF: R253																
		REF: R304																
		REF: R305																
		REF: R306																
		REF: R307																
		REF: R308																
		REF: R310																
		REF: R311																
		REF: R313																
		REF: R314																
		REF: R315																
		REF: R316																
		REF: R317																
		REF: R318																
		REF: R322																
...4.....	47CJ0123	0120 RES CHIP 12K OHM 5% 1/16W 0402						EA				B	A	EP 1.000000	0		0	0.0
		REF: R266																
...4.....	47CJ0151	0121 RES CHIP 150 OHM 5% 1/16W 0402						EA				B	A	EP 1.000000	0		0	0.0
		REF: R240																
...4.....	47CJ0153	0122 RES CHIP 15K OHM 5% 1/16W 0402						EA				B	A	EP 1.000000	0		0	0.0
		REF: R267																

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ASSEMBLY ID / LEVEL	COMPONENT ID	DESCRIPTION START	END	DWG	SIZE	ECN	EFF DATE	UM	ABC	COMM PENDING	CLASS CATG	TYPE TOTAL	ST REQD	PLNR BILL	BUYER OPER	MRP KIT	MPS LTO	YIELD SCRAP
ASM: 649496 00265 7		MERLIN CDPD OEM (SYMBOL TECH)						EA	C	6494		M	A			Y	N	0.0
		2				00040						QTY:		1				
...4.....	47CJ0180	0123 RES CHIP 18 OHM 5% 1/16W 0402						EA				B	A	EP 4.000000	0		0	0.0
		REF: R224																
		REF: R234																
		REF: R223																
		REF: R277																
...4.....	47CJ0183	0125 RES CHIP 18K OHM 5% 1/16W 0402						EA				B	A	EP 2.000000	0		0	0.0
		REF: R501																
		REF: R504																
...4.....	47CJ0202	0126 RES CHIP 2K OHM 5% 1/16W 0402						EA				B	A	EP 4.000000	0		0	0.0
		REF: R246																
		REF: R249																
		REF: R251																
		REF: R255																
...4.....	47CJ0203	0127 RES CHIP,20K OHM 5% 1/16W 0402						EA				B	A	EP 2.000000	0		0	0.0
		REF: R268																
		REF: R272																
...4.....	47CJ0242	0131 RES CHIP 2.4K OHM 5% 1/16W 0402						EA				B	A	EP 2.000000	0		0	0.0
		REF: R219																
		REF: R256																
...4.....	47CJ0270	0132 RES CHIP 27 OHM 5% 1/16W 0402						EA				B	A	EP 2.000000	0		0	0.0
		REF: R233																
		REF: R236																
...4.....	47CJ0271	0133 RES CHIP 270 OHM 5% 1/16W 0402						EA				B	A	EP 1.000000	0		0	0.0
		REF: R241																
...4.....	47CJ0272	0134 RES CHIP 2.7K OHM 5% 1/16W 0402						EA				B	A	EP 1.000000	0		0	0.0
		REF: R248																

ASSEMBLY ID / LEVEL / COMPONENT ID	DESCRIPTION START / END	DWG	SIZE	ECN	EFF DATE	UM	ABC	COMM PENDING	CLASS CATG	TYPE TOTAL	ST REQD	PLNR BILL	BUYER OPER	MRP KIT	MPS LTO	YIELD SCRAP
ASM: 649496 00265 7	MERLIN CDPD OEM (SYMBOL TECH) 2			00040		EA	C	6494		M QTY:	A	1		Y	N	0.0
...4..... 47CJ0274	0135 RES CHIP 270K OHM 5% 1/16W 0402					EA				B	A	EP 3.000000	0		0	0.0
	REF: R273 REF: R274 REF: R276															
...4..... 47CJ0334	0138 RES CHIP 330K OHM 5% 1/16W 0402					EA				B	A	EP 2.000000	0		0	0.0
	REF: R275 REF: R335															
...4..... 47CJ0392	0139 RES CHIP 3.9K OHM 5% 1/16W 0402					EA				B	A	EP 2.000000	0		0	0.0
	REF: R200 REF: R211															
...4..... 47CJ0393	0140 RES CHIP 39K 1/16W 5% 0402					EA				B	A	EP 1.000000	0		0	0.0
	REF: R325															
...4..... 47CJ0472	0141 RES CHIP 4.7K OHM 5% 1/16W 0402					EA				B	A	EP 5.000000	0		0	0.0
	REF: R258 REF: R261 REF: R205 REF: R257 REF: R218															
...4..... 47CJ0473	0142 RES CHIP 47K OHM 5% 1/16W 0402					EA				B	A	EP 1.000000	0		0	0.0
	REF: R312															
...4..... 47CJ0510	0144 RES CHIP 51 OHM 5% 1/16W 0402					EA				B	A	EP 2.000000	0		0	0.0
	REF: R235 REF: R242															
...4..... 47CJ0560	0145 RES CHIP 56 OHM 5% 1/16W 0402					EA				B	A	EP 1.000000	0		0	0.0
	REF: R201															

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ASSEMBLY ID / LEVEL	COMPONENT ID	DESCRIPTION START	END	DWG	SIZE	ECN	EFF DATE	UM	ABC	COMM PENDING	CLASS CATG	TYPE TOTAL	ST REQD	PLNR BILL	BUYER OPER	MRP KIT	MPS LTO	YIELD SCRAP
ASM: 649496 00265 7		MERLIN CDPD OEM (SYMBOL TECH)						EA	C	6494		M QTY:	A			Y	N	0.0
		2		00040										1				
...4.....	47CJ0682	0146 RES CHIP 6.8K OHM 5% 1/16W 0402						EA				B	A	EP 1.000000	0		0	0.0
		REF: R252																
...4.....	47CJ0821	0149 RES CHIP 820 OHM 5% 1/16W 0402						EA				B	A	EP 2.000000	0		0	0.0
		REF: R244																
		REF: R245																
...4.....	47CJ0913	0150 RES CHIP 91K OHM 5% 1/16W 0402						EA				B	A	EP 1.000000	0		0	0.0
		REF: R324																
...4.....	48022384	0151 TRANSISTOR MMBT2222A NPN (SOT-23)						EA				B	A	EP 2.000000	0		0	0.0
		REF: Q502																
		REF: Q503																
...4.....	48023143	0152 TRANSISTOR 2SC4251 NPN VHF SOT-2EIA						EA				B	A	EP 3.000000	0		0	0.0
		REF: Q200																
		REF: Q201																
		REF: Q202																
...4.....	48023181	0153 TRANSISTOR NDS8434A P-CH FET SO-8						EA				B	A	EP 1.000000	0		0	0.0
		REF: Q501																
...4.....	48090017	0154 TRANSISTOR RN4602-TE85L (PTR-850)						EA				B	A	EP 1.000000	0		0	0.0
		REF: U307																
...4.....	48223122	0156 DIODE 1SV232 TUNING VARACTOR						EA				B	A	EP 2.000000	0		0	0.0
		REF: CR201																
		REF: CR202																
...4.....	48223167	0157 DIODE HSMS-2800 SCHOTTKY (SOT-23)						EA				B	A	EP 1.000000	0		0	0.0
		REF: CR200																

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ASSEMBLY ID / LEVEL	COMPONENT ID	DESCRIPTION START	END	DWG	SIZE	ECN	EFF DATE	UM	ABC	COMM PENDING	CLASS CATG	TYPE TOTAL	ST REQD	PLNR BILL	BUYER OPER	MRP KIT	MPS LTO	YIELD SCRAP
ASM: 649496 00265 7		MERLIN CDPD ORM (SYMBOL TECH)		2		00040		EA	C	6494		M QTY:	A	1		Y	N	0.0
...4.....	53023020	0159 THERMISTOR CHIP 22K 0603						EA				B	A	EP 1.000000	0		0	0.0
		REF: RT201																
...4.....	DA-01016582	0160 PCB ASSY PCMCIA CARD (MERLIN)		2				EA				P	A	EP 0.000000	0		0	0.0
...4.....	DC-17416582	0161 PANEL PCB PCMCIA CARD (MERLIN)		1				EA				P	A	EP 0.000000	0		0	0.0
...4.....	DDMP-17416582	0164 DESIGN DATA MFG.PKG PCMCIA CARD (MERLIN)		2				EA				P	A	EP 0.000000	0		0	0.0
...4.....	DDVP-17416582	0165 DESIGN DATA VEN.PKG PCMCIA CARD (MERLIN)		1				EA				P	A	EP 0.000000	0		0	0.0
...4.....	DF-17016582	0162 PC BOARD PCMCIA CARD (MERLIN)		1				EA				P	A	EP 0.000000	0		0	0.0
...4.....	DM-25615071	0076 EMI CHANNEL (MERLIN)		2				EA				P	A	EP 0.000000	0		0	0.0
...4.....	DS-01016582	0163 PCB ASSY PCMCIA CARD (MERLIN)		1				EA				P	A	EP 0.000000	0		0	0.0
..3.....	01016677	0002 LABEL EID (MERLIN)		1				EA				B	A	EP 1.000000	0		0	0.0
...4.....	25015435	0003 LABEL BLANK EID (MERLIN)		1				EA				B	A	EP 1.000000	0		0	0.0
...4.....	DA-01016677	0001 LABEL EID (MERLIN)		1				EA				P	A	EP 0.000000	0		0	0.0
...4.....	DM-25015435	0004 LABEL BLANK EID (MERLIN)		1				EA				P	A	EP 0.000000	0		0	0.0
...4.....	DP-01016677	0002 LABEL EID (MERLIN)		1				EA				P	A	EP 0.000000	0		0	0.0

ASSEMBLY ID / LEVEL / COMPONENT ID	DESCRIPTION / START / END	DWG	SIZE	ECN	EFF DATE	UM / PENDING	ABC	COMM	CLASS / CATG	TYPE / TOTAL	ST / REQD	PLNR / BILL	BUYER / OPER	MRP / KIT	MPS / LTO	YIELD / SCRAP
ASM: 649496 00265 7	MERLIN CDPD OEM (SYMBOL TECH) 2			00040		EA	C	6494		M QTY:	A 1			Y	N	0.0
..3..... 14215025	0003 END BRACKET (MERLIN) 1					EA				B	A 1.000000	EP	0		0	0.0
..3..... 28315064	0005 EMI GASKET TOP (MERLIN) 2					EA				B	A 1.000000	EP	0		0	0.0
..3..... 28315065	0007 EMI GASKET BOTTOM (MERLIN) 2					EA				B	A 1.000000	EP	0		0	0.0
..3..... 28315066	0009 EMI GASKET FRONT (MERLIN) 2					EA				B	A 1.000000	EP	0		0	0.0
..3..... 28315068	0011 EMI GASKET BOTTOM RIGHT (MERLIN) 2					EA				B	A 1.000000	EP	0		0	0.0
..3..... 28315069	0013 EMI GASKET BOTTOM MMCX (MERLIN) 2					EA				B	A 1.000000	EP	0		0	0.0
..3..... 28523002	0015 SCREW M2 X 3MM MACHINE FLAT HEAD					EA				B	A 2.000000	EP	0		0	0.0
..3..... 31015019	0016 INSULATOR BOTTOM SHIELD (MERLIN) 2					EA				B	A 1.000000	EP	0		0	0.0
..3..... 31015020	0018 INSULATOR TOP SHIELD (MERLIN) 2					EA				B	A 1.000000	EP	0		0	0.0
..3..... DA-01016632	0004 PCB MECH. ASSY (MERLIN) 1					EA				P	A 0.000000	EP	0		0	0.0
..3..... DM-14215025	0004 END BRACKET (ROADRUNNER) 1					EA				P	A 0.000000	EP	0		0	0.0
..3..... DM-28315064	0006 EMI GASKET TOP (MERLIN) 2					EA				P	A 0.000000	EP	0		0	0.0
..3..... DM-28315065	0008 EMI GASKET BOTTOM (MERLIN) 2					EA				P	A 0.000000	EP	0		0	0.0

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ASSEMBLY ID / LEVEL / COMPONENT ID	DESCRIPTION START / END	DWG	SIZE	ECN	EFF DATE	UM	ABC	COMM PENDING	CLASS CATG	TYPE TOTAL QTY	ST REQD	PLNR BILL	BUYER OPER	MRP KIT	MPS LTO	YIELD SCRAP
ASM: 649496 00265 7	MERLIN CDPD OEM (SYMBOL TECH)					EA	C	6494		M	A			Y	N	0.0
	2			00040						QTY:		1				
..3..... DM-28315066	0010 EMI GASKET FRONT (MERLIN)					EA				P	A	EP	0		0	0.0
	2											0.000000				
..3..... DM-28315068	0012 EMI GASKET BOTTOM RIGHT (MERLIN)					EA				P	A	EP	0		0	0.0
	2											0.000000				
..3..... DM-28315069	0014 EMI GASKET BOTTOM MMCX (MERLIN)					EA				P	A	EP	0		0	0.0
	2											0.000000				
..3..... DM-31015019	0017 INSULATOR BOTTOM SHIELD (MERLIN)					EA				P	A	EP	0		0	0.0
	2											0.000000				
..3..... DM-31015020	0019 INSULATOR TOP SHIELD (MERLIN)					EA				P	A	EP	0		0	0.0
	2											0.000000				
..3..... DP-01016632	0004 PCB MECH. ASSY (MERLIN)					EA				P	A	EP	0		0	0.0
	1											0.000000				
..3..... STP-01016486	0021 S/W TEST PLAN PCB ASSY(MODEM) EXPEDITE					EA				P	A	EP	0		0	0.0
	3,			00044								0.000000				
.2..... 01016633	0008 TOP COVER ASSY (MERLIN)					EA				M	A	EP	0		0	0.0
	1											1.000000				
..3..... 14223001	0002 COVER TOP, MERLIN					EA				B	A	EP	0		0	0.0
												1.000000				
..3..... 28315070	0005 GASKET CONDUCTIVE ADHESIVE TOP 2 (MERLIN					EA				B	A	EP	0		0	0.0
	1											1.000000				
..3..... 70023001	0007 BRACKET 68 PIN CONNECTOR ADAPTOR					EA				B	A	EP	0		0	0.0
												1.000000				
..3..... DA-01016633	0001 TOP COVER ASSY (MERLIN)					EA				P	A	EP	0		0	0.0
	1											0.000000				
..3..... DM-28315070	0006 GASKET CONDUCTIVE ADHESIVE TOP 2					EA				P	A	EP	0		0	0.0
	1											0.000000				

ASSEMBLY ID / LEVEL COMPONENT ID	DESCRIPTION START END	DWG SIZE ECN	EFF DATE	UM ABC COMM PENDING	CLASS CATG	TYPE TOTAL	ST REQD	PLNR BILL	BUYER OPER	MRP KIT	MPS LTO	YIELD SCRAP
ASM: 649496 00265 7	MERLIN CDPD OEM (SYMBOL TECH)	2 00040		EA C 6494		M QTY:	A 1			Y	N	0.0
..3..... DP-01016633	0001 TOP COVER ASSY (MERLIN)	1		EA		P	A 0.000000	EP	0		0	0.0
.2..... 01016634	0010 BOTTOM COVER ASSY (MERLIN)	1		EA		M	A 1.000000	EP	0		0	0.0
..3..... 14223002	0001 COVER BOTTOM, MERLIN			EA		B	A 1.000000	EP	0		0	0.0
..3..... 28315061	0002 GASKET CONDUCTIVE ADHESIVE BOTTOM	1		EA		B	A 1.000000	EP	0		0	0.0
..3..... DA-01016634	0003 BOTTOM COVER ASSY (MERLIN)	1		EA		P	A 0.000000	EP	0		0	0.0
..3..... DM-28315061	0003 GASKET CONDUCTIVE ADHESIVE BOTTOM	1		EA		P	A 0.000000	EP	0		0	0.0
.2..... 01016677	0011 LABEL EID (MERLIN)	1		EA		B	A 1.000000	EP	0		0	0.0
..3..... 25015435	0003 LABEL BLANK EID (MERLIN)	1		EA		B	A 1.000000	EP	0		0	0.0
..3..... DA-01016677	0001 LABEL EID (MERLIN)	1		EA		P	A 0.000000	EP	0		0	0.0
..3..... DM-25015435	0004 LABEL BLANK EID (MERLIN)	1		EA		P	A 0.000000	EP	0		0	0.0
..3..... DP-01016677	0002 LABEL EID (MERLIN)	1		EA		P	A 0.000000	EP	0		0	0.0
.2..... 01016864	0012 LABEL ASSY TOP COVER (MERLIN CDPD OEM)	1 00040		EA		M	A 1.000000	EP	0		0	0.0
..3..... 25015433	0006 LABEL TOP COVER (MERLIN)	1		EA		B	A 1.000000	EP	0		0	0.0

PDXIB1 INDENTED BILL OF MATERIALS BY COMPONENT ID
DATES: ALL

ASSEMBLY ID / LEVEL / COMPONENT ID	DESCRIPTION START / END	DWG	SIZE	ECN	EFF DATE	UM	ABC	COMM PENDING	CLASS CATG	TYPE TOTAL	ST REQD	PLNR BILL	BUYER OPER	MRP KIT	MPS LTO	YIELD SCRAP
ASM: 649496 00265 7	MERLIN CDPD OEM (SYMBOL TECH)					EA	C	6494		M	A			Y	N	0.0
		2		00040						QTY:		1				
..3..... AW-01016864	0002 LABEL ASSY TOP COVER (MERLIN CDPD OEM)					EA				P	A	EP	0		0	0.0
		1		00040								0.000000				
..3..... DA-01016864	0002 LABEL ASSY TOP COVER (MERLIN CDPD OEM)					EA				P	A	EP	0		0	0.0
		1		00040								0.000000				
..3..... DM-25015433	0010 LABEL TOP COVER (MERLIN)					EA				P	A	EP	0		0	0.0
		1										0.000000				
.2..... 01016865	0014 LABEL ASSY BOTTOM COVER MERLIN CDPD OEM					EA				M	A	EP	0		0	0.0
		2		00040								1.000000				
..3..... 25015434	0006 LABEL BOTTOM COVER (MERLIN)					EA				B	A	EP	0		0	0.0
		1										1.000000				
..3..... AW-01016865	0002 LABEL ASSY BOTTOM COVER MERLIN CDPD OEM					EA				P	A	EP	0		0	0.0
		1		00040								0.000000				
..3..... DA-01016865	0002 LABEL ASSY BOTTOM COVER MERLIN CDPD OEM					EA				P	A	EP	0		0	0.0
		1		00040								0.000000				
..3..... DM-25015434	0010 LABEL BOTTOM COVER (MERLIN)					EA				P	A	EP	0		0	0.0
		1										0.000000				
.2..... 14623039	0016 BAG, BUBBLE WRAP (MERLIN)					EA				B	A	EP	0		0	0.0
												1.000000				
.2..... 20416419	0018 SW HEX FILE TR01-02					EA				B	A	EP	0		0	0.0
												1.000000				
.2..... DA-01016863	0002 PC CARD MODULE (MERLIN CDPD OEM)					EA				P	A	EP	0		0	0.0
												0.000000				
.2..... TP-01016863	0004 PC CARD MODULE (MERLIN CDPD OEM)					EA				P	A	EP	0		0	0.0
												0.000000				
1..... 01016879	0004 BOX MASTER CARTON (OEM)					EA				M	A	EP	0		0	0.0
		1		00040								1.000000				

PDXIB1 INDENTED BILL OF MATERIALS BY COMPONENT ID
DATES: ALL

ASSEMBLY ID / LEVEL	COMPONENT ID	DESCRIPTION START	END	DWG	SIZE	ECN	EFF DATE	UM	ABC	COMM PENDING	CLASS CATG	TYPE TOTAL	ST REQD	PLNR BILL	BUYER OPER	MRP KIT	MPS LTO	YIELD SCRAP
ASM: 649496 00265 7		MERLIN CDPD OEM (SYMBOL TECH)		2		00040		EA	C	6494		M QTY:	A	1		Y	N	0.0
.2.....	14323029	0004 BOX CARTON OEM 100 PCS BULK						EA				B	A 0.010000	EP	0		0	0.0
.2.....	DA-01016495	0002 BOX MASTER CARTON (MINSTREL AND SAGE)		2				EA				P	A 0.000000	EP	0		0	0.0

1 ASSEMBLIES PRINTED
0 COMPONENTS PRINTED WITH SHORTAGES

Test Procedure

for

PC Card Module

TP- 01016602

Novatel Wireless Technologies Ltd. Calgary, Alberta	TITLE: **Test Procedure for PC Card Module**		
	DOCUMENT NO.: **TP-01016602**	SHEET: **1 of 15**	REV: **1**

NOVATEL WIRELESS

REVISION HISTORY

REV#	ER/C#	EFF. DATE	DESCRIPTION	PREPARED	APPROVED
0	**99007**		Vesba - Unreleased	S. Smilar	
1		April 15, 1999	Modified for PC Card	G. May	

RESTRICTED PROPRIETARY INFORMATION

NOVATEL WIRELESS

Table of Contents

1. INTRODUCTION

This document describes the manufacturing tests and alignments required for the PC Card Module (01016602).

2. FIRMWARE UPLOAD

2.1 Description

The bootstrap loader will be programmed in the FLASH before they are placed on the board. The product software will be programmed at this point using the ENGPROG utility. It is necessary to use ENGPROG to program the units rather than programming the complete program in FLASH because ENGPROG is used to program the serial numbers. All PC Card modules will be programmed with the same firmware. The personality of the modem is set in the automated test by changing a parameter. The firmware upload takes approximately 1 minute per PC Card.

2.2 Equipment

Personal Computer or Notebook PC with a PC Card (PCMCIA) slot

Novatel Wireless supplied Engprog program and .cfg file

Novatel Wireless supplied .inf file

2.3 Procedure

1. Insert the PC Card into the PC's PC Card slot. If this is the first time a Novatel Wireless PC Card has been used on the PC; insert the disk with the .inf file and configure the PC to use the driver on the floppy disk.
2. Go to the directory with the programming software and product software. Type the command:

   engprog -F product.cfg

   where product.cfg is the name of the configuration file. The configuration file may need to be changed depending on the COM port used and the speed of the COM port.
3. ENGPROG will respond with :

   Press Enter or Escape to continue
4. Press the ENTER key.
5. ENGPROG will respond with a default EID. Enter the appropriate EID and press enter.
6. ENGPROG will respond with status messages and dots (...) when it is programming.
7. If on completion there are no error codes and the response is "device programming complete" then the module is properly programmed. ENGPROG is then ready to program the next module. Do not hit ESCAPE if you wish to program another module. Remove the module, insert a new module and start at step 3.

For more information on ENGPROG refer to the document NRM Series Flash Blaster User Guide.

2.4 Limits

ENGPROG will generate error codes if the programming has failed. Record the error code if present.

3. AUTOMATED ALIGNMENT AND TEST

The automated test uses software supplied by Novatel Wireless. The description of the hardware setup and test procedure is included below. The automated test and alignment takes approximately 5 minutes per module.

3.1 Equipment

The following pieces of test equipment are necessary for performing the alignment and manufacturing tests of the PC Card Module.

Description	Qty	Part Number	Manufacturer	Alternate Part Number	Alternate Manufacturer
RF Signal Generator	1	HP-8656B	Hewlett Packard		
Power Meter	1	HP-8901B	Hewlett Packard	HP-437B*	Hewlett Packard
Modulation Analyzer		HP-8901B	Hewlett Packard	HP-8901A*	Hewlett Packard
BERT Jig (New)	1		Novatel		
Power Sensor	1	HP-8482A	Hewlett Packard		
HPIB Card	1	HP-82335B	Hewlett Packard		
5 or 6 dB SMA Attenuator	1				
20 dB Attenuator	2				
10 dB Attenuator	1				
IEEE-488 bus cables	3				
Serial/power cable	1		Novatel		
			Novatel		
Power supply (6V, 1 Amp)	1				
Isolator	1	Si-30	Nippon Microwave Co.		
Power Splitter	1	15542	Mini Circuits		
Dual Directional Coupler	1	HP 775D	Hewlett Packard		
50 ohm Coax terminator	1	HP 908A	Hewlett Packard	Any 50 ohm terminator	
Banana Jack cable	2				
Banana Jack / alligator clip cable	2				
Digital Multimeter	1	HP 3784A	Hewlett Packard		
N- type Cables	2				
SMA type cable	1				
BNC type cable	2				
PC	1				
PC extender card	1	PCCextend 100	SYCARD		

			Technology		
PC Card Bay	1	PCMRDWR	Linksys		
SMA to N adapter	1				

* An HP-8901B Modulation Analyzer contains a power sensor input and can be used for accurate power measurements. Extra components may be required if these two pieces of equipment are used.

3.2 Test Description

The following tests are performed in the automated test stage:

- RSSI calibration
- Transmitter power level calibration
- Transmit modulation gain calibration
- TCXO Calibration
- RSSI accuracy
- Receiver RF sensitivity
- Transmitter frequency error
- Current consumption

3.3 Hardware Configuration

The hardware configuration is shown below.

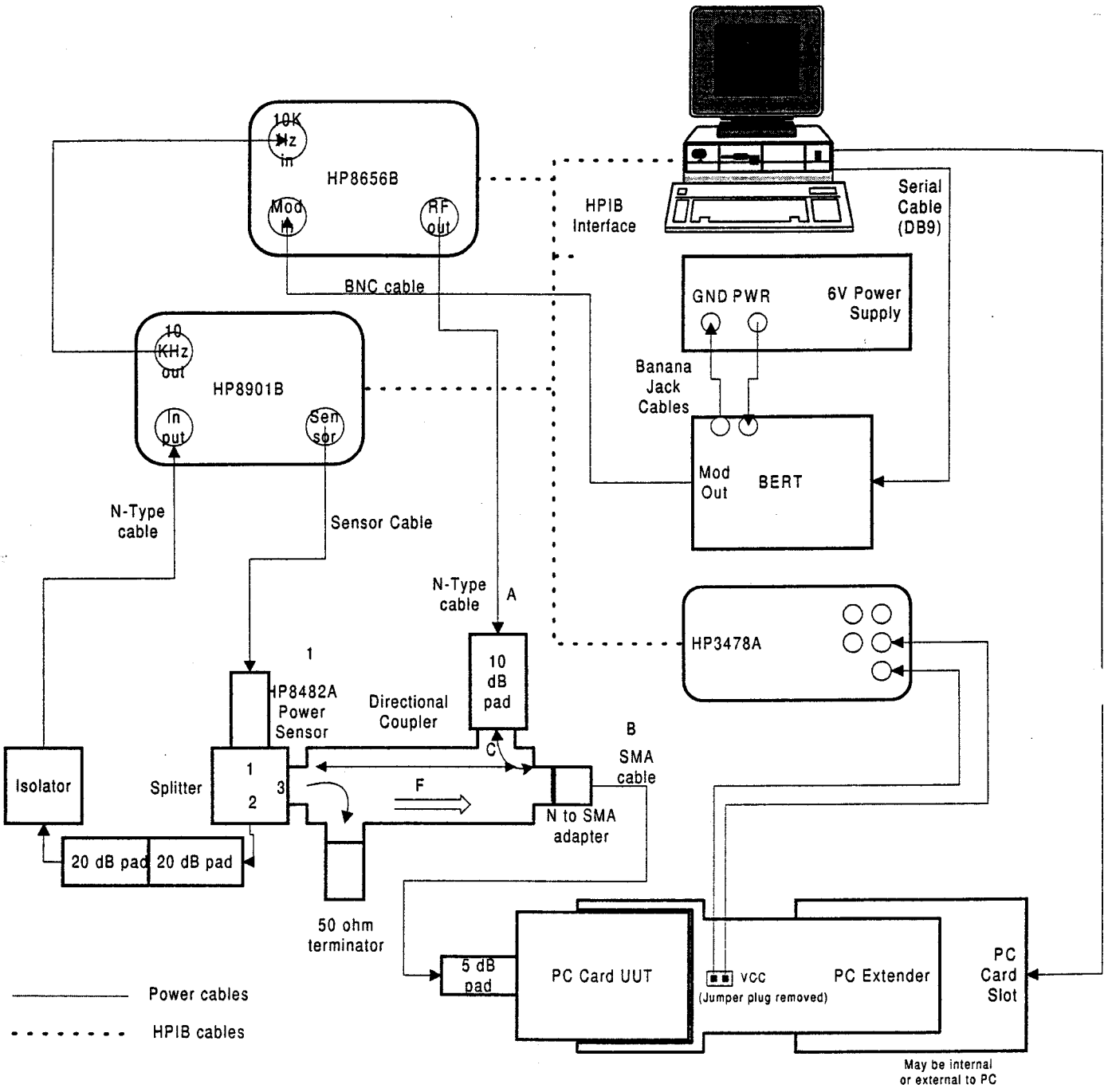

Figure 3: Equipment configuration for automated test

3.3.1 BERT Jig

The BERT jig is used to perform the Receive Sensitivity test. There is a 26 pin cable which is not connected. The BNC Mod Out should be connected to the External Modulation input of the signal generator. The DB-9 connector should be connected with a 9 pin cable to the COM1 port of a PC. The GND banana jack should be connected to the GND of the power supply. The PWR banana jack should be connected to the PWR of the power supply.

3.4 Software Configuration

The software is configured using configuration files which saves the need for recompiling when equipment or test limits are changed. The format of the test configuration file is shown below.

TESTNAME
test on/off
number of channels
channel values list
begin level value, end level value, intermediate level value, step value
initial value filename
upper measlimit, lower measlimit
upper dpotlimit array - for rssi limits = 2.5*x +110 +upper measlimit
lower dpotlimit array - for rssi limits = 2.5*x +110 - lower measlimit
accuracy - for tcxo,txmcal&powcal-tune meas to +/-(upmeslim-lowmeaslim)*acc/200
relative tolerance allowed - for rssitest only or current temp in celcius for tempcalibration
debug - 1 means turn debug info on, 0 means turn it off
end of parameters indicator

The format of the equipment configuration file is shown below.

EQUIPNAME
equipment type
address
calibration factor 1
calibration factor 2

For example:

SIGGEN
hp8656b
707
2
.002

The equipment name is the name used to identify the piece of equipment. The equipment type is the part number of the equipment. Valid part numbers are given in section 2. The address is the HPIB address of the equipment. The calibration factors are used to calibrate out deviations in the equipment and cable losses. This should be done before running the tests. The calibration factors are different for each piece of equipment. The table below shows the assignments.

Equipment	Cal factor 1	Units	Cal factor 2	Units
Signal Generator	RF Amplitude	dB	RF Frequency	MHz
Power Meter*	RF Power	dB		
Audio Analyzer	Amplitude	V	Frequency	KHz
Modulation Analyzer	Frequency			
Digital Transmission Analyzer				
Switch Control Unit				
Digital Multimeter	Current of test jig for Vespa testing, 0 for PC Card testing.	A		

* If the 8901B is used as a power meter then the cal factors have to be set up under the Power Meter configuration

3.5 Calibration of Test Stack

After the individual pieces of equipment are calibrated it is necessary to calibrate out cable losses in the test stack. The results of the calibration are entered in the equip.cfg file. Each piece of equipment has two calibration factors. The table below gives a description of each calibration factor for each piece of equipment.

Equip	Cal Factor 1	Cal Factor 2
Signal Generator	Amplitude in dB - gives the total loss from the antenna port to the signal generator RF output, includes losses in cables and attenuators	Frequency in KHz - the difference between the signal generator frequency and the actual measured frequency.
Modulation Analyzer		Frequency in Hz - the difference between the modulation analyzer frequency and the actual input frequency.
Power Meter	Amplitude in dB - gives the total loss from the antenna port to the power meter sensor input, includes losses in cables and attenuators	
Digital Multimeter	PC Card current	

The basic assumption is that the signal generator power output is accurate. The specification is +/- 1dB, but the results from calibration of the test stack in Calgary showed the HP sig gen to be within 0.5 dB. Any errors in this assumption will effect receive sensitivity numbers. If there is any doubt about the signal generator's absolute power or linearity, it should be sent out to HP to obtain calibration data and then the RF levels can be adjusted accordingly.

3.5.1 Method

1. Establish a reference by directly connecting the 8482A power sensor to the type N connector on the signal generator. Set the signal generator to the mid band of the AMPS cellular receive frequency of 881 MHz. Set the signal generator to +15 dBm. This is out of the calibrated range of the signal generator, but it will not effect the measurement, because the measurement will be relative not absolute. Using a higher RF level on the signal generator will improve the accuracy, of measurement taken with the HP 8482A power sensor, because it is most linear in the range of +20 dBm to +10 dBm. To zero the reference, use the "rel" function on the modulation analyzer.

2. First measure the N-type cable (A) and the directional coupler in the RX path by inserting it between the signal generator and the power sensor. All other terminals on the directional coupler should be terminated with 50 ohm. Measure the attenuation. The attenuation can be read directly from the modulation analyzer display, because it is in "rel" mode.

3. Remove the directional coupler and connect the SMA cable (B) and the 5 dB attenuator. By using a blank PCB with a coaxial SMA pig tail, the test jig cables and barrel connector can be factored into the total attenuation of the receive path. Measure the attenuation of the SMA cable and the test jig cables.

4. The total attenuation in the receive path is A+B+C.

5. The transmit path attenuation is measured in the same manner but with the signal generator set to 836 MHz. Make sure any unused terminals are terminated with 50 ohm.

6. The DMM should be checked as follows. The test jig is connected and power is applied. No unit is inserted in the PC Card slot. The power switch is moved to the ON position. The current on the DMM should be 0.0 Amps, and this is recorded and entered in the equip.cfg file in Amps.

3.6 Running The Test And Alignment Program

Files needed to run the program are stored in the directory c:\6832test. The files should be copied to the network as the directory the program is run from is the directory used to store results. The program should be started once each day or every time the type of module being assembled is changed. The files are:
a.bat: batch file which runs the test with the necessary configuration files.
nts.exe: the executable program file
equip.cfg: equipment configuration file
test.cfg: test configuration file

The following steps are taken to run the program:
1. Type the command 'a'
2. Select a number for the unit configuration
3. Plug unit in to PC Card slot
4. Plug antenna connector in to unit

5. Press Enter
6. Test will run and display tests which have failed
7. Repeat steps 3 through 6 for each unit

3.7 Output Files

The NTS system produces two types of output files. The first is a file for each unit tested with results of each test and alignment. The format of this file is *xxxxxx*.out, where *xxxxxx* is the last 6 digits (hex) of the serial number of the unit. The second is a file for each test with results for each unit tested. The format of the second file is *xxxxxx*.txt where *xxxxxx* is the name of the test or calibration performed.

3.8 Error Messages

3.8.1 Equipment Failures

100: Unknown error
101: Invalid selector code or device address
102: Command parameter out of range
103: Timeout error
104: HPIB card is not active controller

Result: Test will exit for this unit for any of these failures.

3.8.2 NRM Fatal Errors

200: Power Up Failure
Description: The unit is not responding with a '9' on power up. This can be caused by a number of things. Serial communications may not be working, which is not likely if the unit has been programmed. The more likely cause of the failure is the VHF synthesizer not locked. A third possibility is that the module has been set to communicate at a different baud rate than the 9600 or 19200 the test program uses.
Result: Test will exit for this unit

201: Serial Communications Failure
Description: The unit does not respond to a serial communications command sent to the unit. The test should be repeated for this unit. If the problem persists debugging is necessary.
Result: Test will exit for this unit

202: FSU lock failure
Description: One of the synthesizers is not locked due to a problem on the board
Result: Test will exit for this unit

203: NVM Failure
Description: The module is unable to store the calibration factors in NVM, likely due to a problem with the serial EEPROM on the board
Result: Test will exit for this unit

3.8.3 Test or Alignment Failures

300: RSSI Calibration Failure

301: Rx Demod Calibration Failure
302: Tx Power Calibration Failure
303: Tx Modulation Calibration Failure
304: RSSI Test Failure
305: Rx Sensitivity Test Failure
306: Tx Freq Test Failure
307: Tx Power Test
308: Rx Demod Test Failure
309: Tx Modulation Test
310: Current Test Failure

Result: The results of the test will be recorded as usual.

4. REGISTRATION TEST

The functional test consists of connecting the unit under test to a CDPD base station emulator, and performing a registration procedure. Successful registration indicates that the unit is indeed functional.

4.1 Equipment Required

1. IFR-uCell-100 with CDPD option
2. PC or notebook PC with a type II PC Card slot and with terminal utility (Hyperterminal or Procomm Communications)
3. MMCX interface cable
4. PC Card (UUT) to be tested.

The equipment will be wired as indicated:

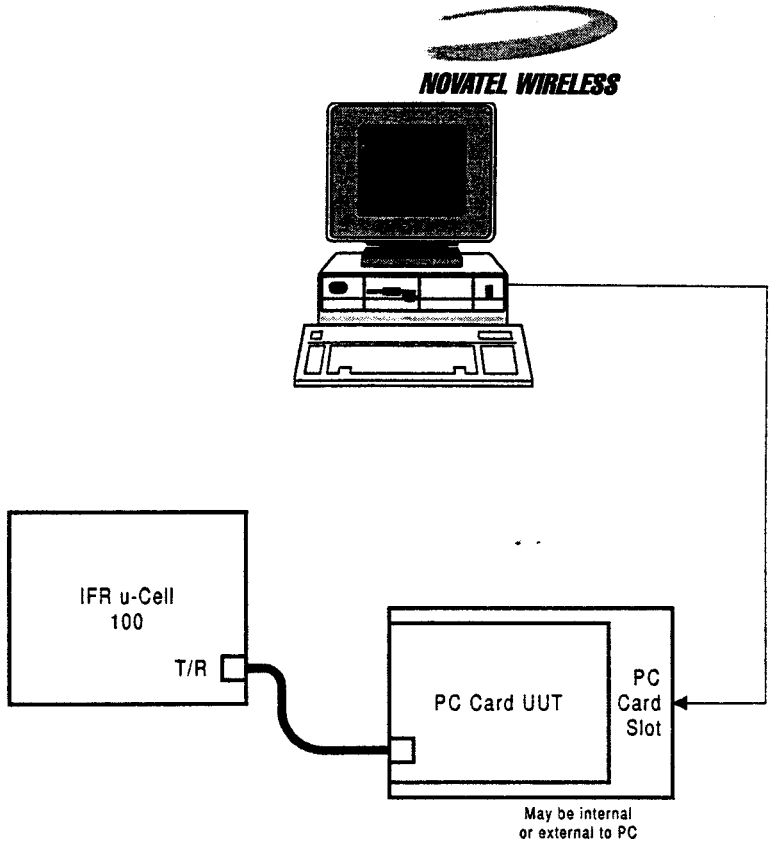

Figure 9.2.1. Functional Test Connection Diagram.

4.2 Test Procedure

The IFR should be set-up as follows: (This set-up will only have to be performed once at the start of testing and not before each unit is tested)

1. Power up the IFR
2. From the Menu press 9 CDPD TESTS
3. Press 2 MANUAL. The settings for the MANUAL screen should be:

SEND MESSAGE	ICMP PING	RF LEVEL	-40
CHANNEL	991	MAX POWER	2
TEST MODE	BURST	POWER PRODUCT	39
CDPD SPEC	1.1	PING MODE	AUTOMATIC

4. Press CABLE
5. Attach the cable to be used between the T/R connector and the CABLE TEST connector
6. Press START
7. Press MANUAL, and add 0.5 dB to the measured cable loss to compensate for the NRM antenna cable
8. Insert the PC Card into the PC Card slot and attach the cable to the PC Card.
9. Start the terminal session to the PC Card.
10. Press START on the IFR. Within 30 seconds the IFR should indicate that registration has taken place. Once the unit responds with an ABCDE on the terminal the unit passes. Record a PASS/FAIL for the registration test
11. Record the modulation index for the unit. Unit passed if between 0.45 and 0.54. Record the Frequency error for the unit.

12. Check that the EID on the label matches the EID displayed on the IFR.
13. Perform test **5. RSSI Test**
14. Close the terminal session to the PC Card

Repeat steps 8 to 11 for each module tested.

5. RSSI TEST

The purpose of this test is to check the RSSI to confirm that the antenna connector and antenna matching components were properly placed.

5.1 Equipment Required

1. IFR-uCell-100 with CDPD option
2. PC or notebook PC with a type II PC Card slot and with terminal utility (Hyperterminal or Procomm Communications)
3. MMCX interface cable
4. PC Card (UUT) to be tested.

5.2 Test Procedure

While still connected to the IFR enter the following commands in the terminal:
ats202?

Record the result. The unit has passed if the result is between 62 and 66. Enter the command *ath4* and press the STOP button on the IFR.