



E-Series EDA and RLX MiniFlex Super Distribution Amplifiers 1002 MHz

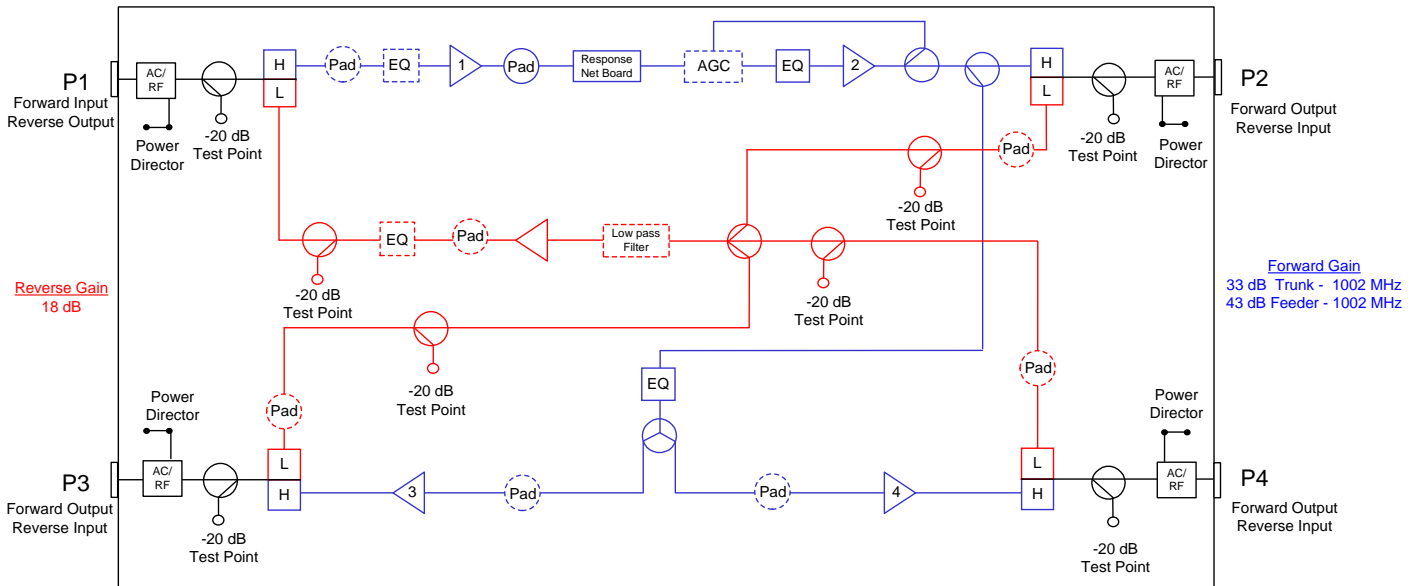
The EDA & RLX 1002 MHz 15 amp series of broadband RF amplifiers provide high quality RF distribution for fiber to fiber, HFC (hybrid fiber coaxial), or PDN (power domain node) architectures. EDA amplifiers can be installed outdoors in either aerial/pedestal or wall-mounted configurations. An AC power source (40 to 90 VAC, quasi-square wave capable of supplying a maximum of 15 amps through current) provides operating power to the amplifier's active components via the coaxial cable. All amplifiers support two-way operation at the various standard frequency splits available (42/53, 65/85 and 85/105 MHz).

Features

- ◆ 1002 MHz may be dropped into the 750 or 870 MHz spacing
- ◆ Availability of an 85/105 MHz option that will double the reverse bandwidth
- ◆ Common 1002 MHz housing platform
- ◆ AGC or thermal or manual options
- ◆ 5 to 42, 55, 65 or 85 MHz reverse path
- ◆ Pad Adjustable equalizers (optional)
- ◆ Test points for each reverse path
- ◆ 20 dB directional coupler test points
- ◆ Test point for each reverse path
- ◆ Plug-in attenuator JXP pads for style each reverse path

Block Diagrams

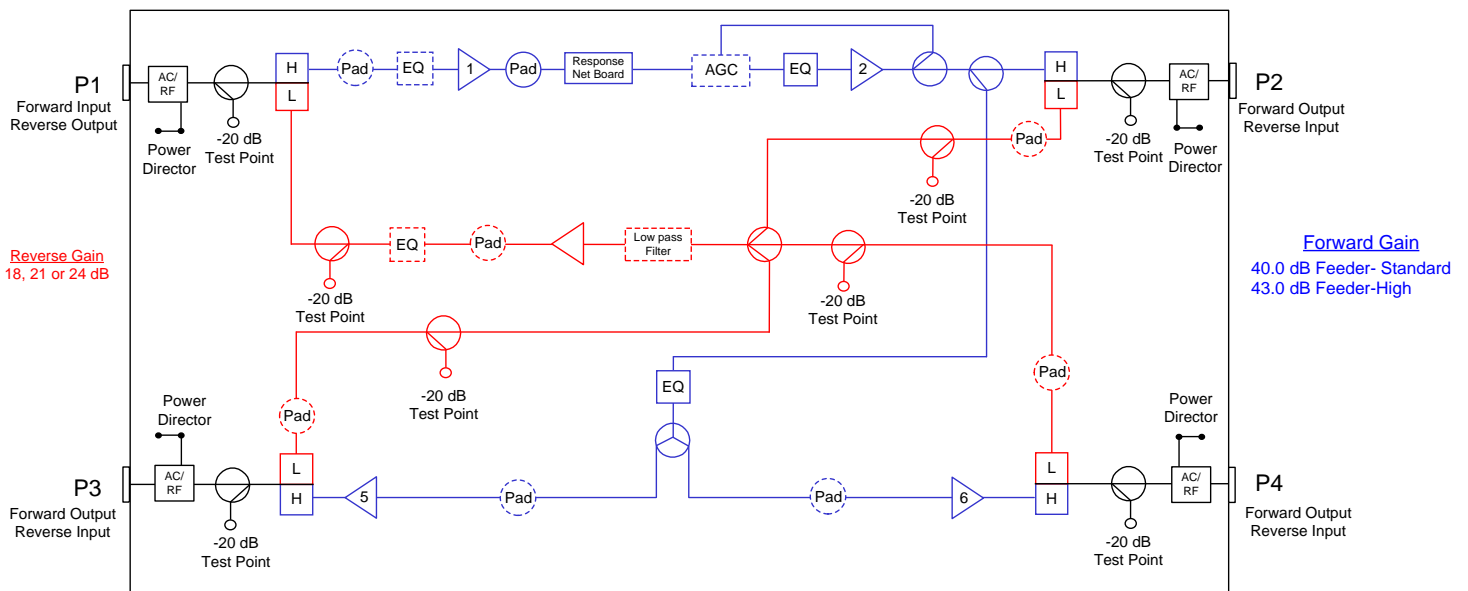
EDAT (Type 1A, 1T & 1M) 1002 MHz Amplifier Block Diagram



Note:

1. Forward gain stated at 1002 MHz with AGC. Reverse gain stated at 40 MHz.

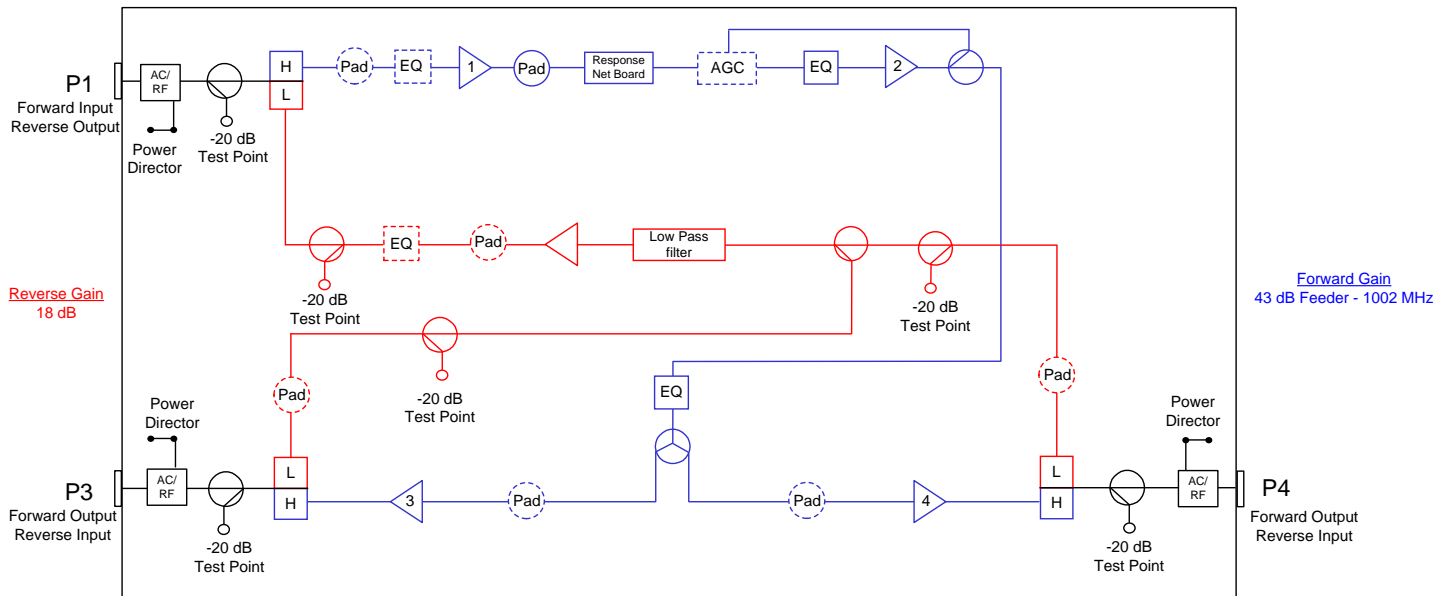
EDBT (Type 6A, 6T & 6M) 1002 MHz GaN Amplifier Block Diagram



Note:

1. Forward gain stated at 1002 MHz with AGC. Reverse gain stated at 40 MHz.

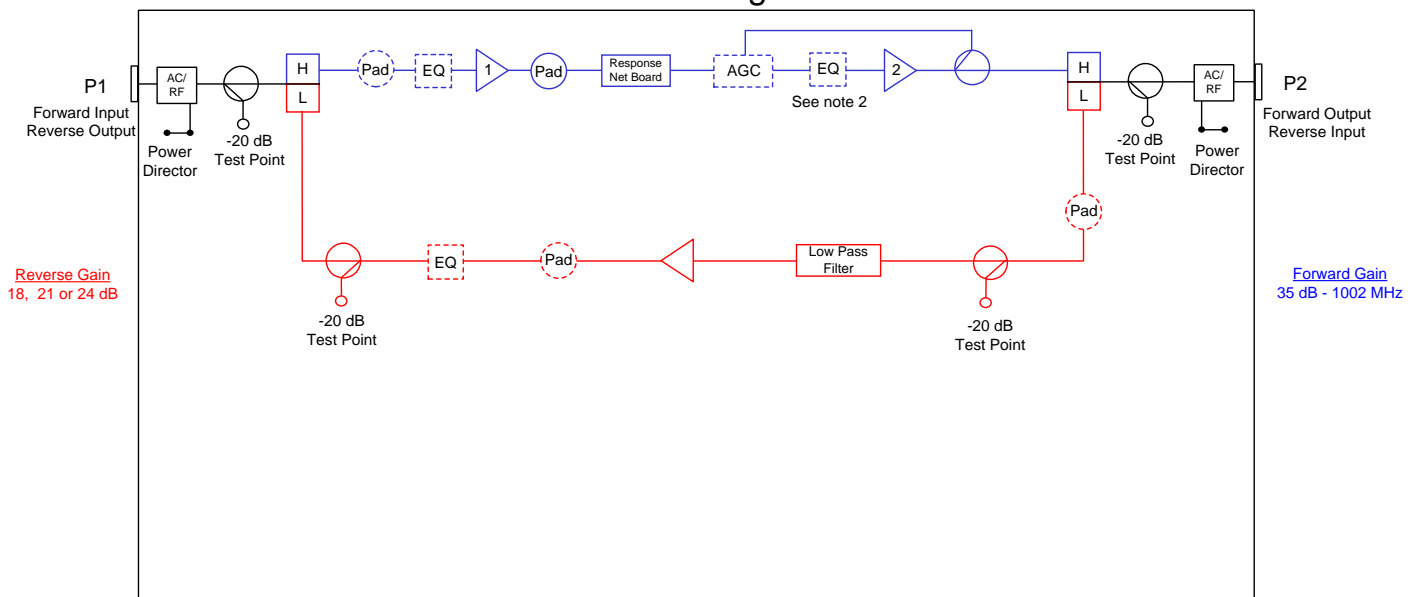
EDAB (Type 2A, 2T & 2M) 1002 MHz Amplifier Block Diagram



Note:

1. Forward gain stated at 1002 MHz with AGC. Reverse gain stated at 40 MHz.

EDLE & RLX High Performance (Type 3A, 3T, & 3M) 1002 MHz Amplifier Block Diagram



Note:

1. Forward gain stated at 1002 MHz with AGC. Reverse gain stated at 40 MHz.
2. The interstage EQ is not present in the ALX amplifiers.

Station Specifications

STATION PARAMETERS: 1002 MHz 42-53 MHz Split			EDA & RLX 1002 MHz 15.0 dB Forward Slope @ 1002 MHz				
	CONDITIONS	UNITS	SPECIFICATIONS				
Housing passband		MHz	5 to 1002				
Input current capacity	Any port, worst case	Amp	15				
Hum modulation	Time domain @ rated current above	-dBc	65 @ 5-40 MHz 69 @ 54-1002 MHz				
Return loss	Any port, worst case	dB	16.0				
Test Points							
Frequency range		MHz	5 to 40 (Reverse) / 54 to 1002 (Forward)				
Test point type	Directional coupler	N / A					
Test point level	Forward & reverse	-dB	20.0				
Test point accuracy	Forward & reverse	±dB	0.75				
Test point accuracy	Reverse Injection	±dB	0.50				
Station Slope							
Operational slope - trunk & feeders	@ 54 / 550 / 1002 MHz	dB	0 / 7.9 / 15.0				
Slope control type	Cable equalizers	dB	Plug-in EQ's				
Slope control range	Includes cable equivalent	dB	-12.0 to +30.0				
Slope control steps	Equalizer value steps	dB	0 - 18.0 (1.0 steps) & 20.0-30.0 (2.0 steps) -1.0 to -15.0 (1.0 steps)				
Station Group Delay							
Group delay	Channel 2 (Std)	nSec / 3.58 MHz	40 (35 Typical)				
Group delay	Channel 3		16				
Group delay	Channel 4		10				
Group delay	Channel 5 & >		3				
AGC							
Pilot Channel Type		N / A	DSIM-A Single Pilot Channel AGC NTSC Analog or QAM				
Compensation Range		dB	System compensation input change +3/-6 @ 1002 MHz				
Accuracy		±dB	0.5				
Nominal loss	@ 77 °F (25 °C)	dB	6.25				
Center frequency bandwidth			6 (MHz)				
Configuration			EDAT (Type 1)	EDBT (Type 6)	EDAB (Type 2)	EDLE (Type 3)	RLX (Type 3)
Operational Specifications							
Station passband		MHz	54 to 1002				
Station flatness - trunk out	Normalized w / 0 dB slope	±dB	0.50	-	-	-	-
Station flatness - feeder out		±dB	0.75	0.75	0.75	0.75	0.75
Gain - Port 2 (AGC / Manual)		+0.5 / -0 @ 1002 MHz (Temperature stabilized)	dB	33 / 38	40 / 43	-	35 / 40
Gain - Port 3 (AGC / Manual)	dB		43 / 48	40 / 43	43 / 48	-	-
Gain - Port 4 (AGC / Manual)	dB		43 / 48	40 / 43	43 / 48	-	-
Gain control type		N / A	Plug-in pads				
Gain control steps	Pad value steps	dB	0.5				
550 MHz analog channel loading, 79 channels +450 MHz digital channel loading, 256 QAM at -6 dBc relative to its associated visual carrier							
Station Output Levels			EDAT (Type 1)	EDBT (Type 6)	EDAB (Type 2)	EDLE (Type 3)	RLX (Type 3)
Port 2	@ 54 / 550 / 1002 MHz	dBmV	27 / 36.1 / 42	37 / 46.1 / 52	-	37 / 46.1 / 52	37 / 46.1 / 52
Port 3			37 / 46.1 / 52	37 / 46.1 / 52	37 / 46.1 / 52	-	-
Port 4			37 / 46.1 / 52	37 / 46.1 / 52	37 / 46.1 / 52	-	-
Station Noise Figure							
Noise figure (w / 1 dB for input EQ loss)	Typ. @ 54 MHz	dB	11.9	11.6	15.2	7.0	11.3
	Typ. @ 550 MHz	dB	7.9	10.1	6.9	9.5	6.9
	Typ. @ 1002 MHz	dB	8.5	11.6	8.3	7.5	8.3
Station Distortions (Worse Case)							
			Trunk / Feeder	Feeder	Feeder	Feeder	Feeder
Composite Triple Beat (CTB)		-dBc	72 / 72	69	67	70	73
Cross Modulation (XMOD)		-dBc	76 / 69	61	72	70	68
Composite Second Order (CSO-)	(Vc +0.75 & -1.25 MHz)	-dBc	75 / 76	63	70	74	75
Composite Second Order (CSO+)	(Vc +1.25 MHz)	-dBc	71 / 69	67	65	74	69
Carrier-to-Intermodulation Noise (CIN)		-dBc	75 / 63	67	53	68	69

Station Specifications (Continued)

REVERSE SPECTRUM:								
REVERSE - CHANNEL LOADING - Typically 23 each, 1.5 MHz wide QPSK channels.								
Reverse - General		CONDITIONS	UNITS	SPECIFICATION				
Station passband			MHZ	5 to 42				
Station flatness		Normalized w / 0 dB slope	±dB	0.5				
Reverse - Station Gain								
Gain		+0.5 / -0 @ 40 MHz (Temperature stabilized)	dB	18 for EDA 18, 21 or 24 for EDLE & RLX				
Gain control type				Plug-in pads				
Gain control range			dB	12.0				
Gain control steps		Pad value steps	dB	0.5				
Reverse - Station Slope								
Slope control type		Cable equalizers	N / A	Plug-in EQs				
Slope control range			dB	0 to 12.0				
Slope control steps		Equalizer value steps	dB	1.5				
Reverse - Station Output Levels								
@ Forward input port		Average	dBmV	35.0				
REVERSE - STATION DISTORTIONS								
Composite Second Order (CSO)		6 channel loading	-dBc	82.0				
Composite Triple Beat (CTB)				90.0				
Cross Modulation (XMOD)				80.0				
Reverse - Station Group Delay								
Group delay		5 MHz	nSec / 1.5 MHz	36				
Group delay		7 MHz		16				
Group delay		10 MHz		4				
Group delay		35 MHz		10				
Group delay		38.5 MHz		25				
Configuration				EDAT (Type 1)	EDBT (Type 6)	EDAB (Type 2)	EDLE (Type 3)	RLX (Type 3)
Reverse - Noise Figure								
Station noise figure (w / EQ)		Across the bandwidth	dB	15.5	14.2	13.0	10.0	10.0
Power Requirements:								
DSIM-A / SPAGC		Includes reverse (Worst case)	W	46.2	44.7	44.1	27.7	27.4
Thermal			W	44.5	43.1	42.5	26.0	25.7
Manual			W	44.0	42.6	42.1	25.5	25.2
AC Voltage								
Input ranges			VAC	40-90				
Current Draw (with AGC)								
@ 40 VAC		Maximum	A	1.37	1.38	1.28	0.80	0.76
@ 50 VAC			A	1.18	1.17	1.08	0.69	0.64
@ 60 VAC			A	1.09	1.03	0.95	0.59	0.58
@ 70 VAC			A	0.98	0.92	0.85	0.55	0.54
@ 80 VAC			A	0.91	0.83	0.78	0.50	0.51
@ 90 VAC			A	0.84	0.75	0.72	0.45	0.47
Weight				SDAT	SDBT	SDAB	SDLE	ALX
Weight			lbs. (kg)	16.0 (7.26)	16.0 (7.26)	16.0 (7.26)	14.5 (6.58)	11.0 (4.99)
Physical								
Dimensions		(H X W X D)	In. (cm)	6.75 X 14.25 X 9.00 (17.1 X 36.2 X 22.9)			4.00 X 14.25 X 9.00 (10.2 X 36.2 X 22.9)	
Environmental								
Operating temperature			°F (°C)	-40 to +140 (-40 to +60)				

Part Number Configuration Sheet

EDA & RLX 15 Amp Product Configuration Worksheet

Customer: _____

Created By: _____ Order Date: _____

ORDERING MATRIX

January 25, 2017

Position	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
PART NUMBER															

1 STATION TYPE

M = EDAT 3 Output Trunk N = EDAB 2 Output Feeder H = EDBT 3 Output Feeder G = EDLE 1 Output LE
R = RLX 1 Output Low Profile LE

2 BANDWIDTH FREQUENCY

1 = 1002 MHz Upper Frequency

3,4 STATION GAIN (Forward)

Station Type	TYPE 1	TYPE 2	TYPE 6	TYPE 3	TYPE 3
Amplifier Model	EDAT	EDAB	EDBT	EDLE	RLX
Frequency	1002	1002	1002	1002	1002
Max gain w/ AGC/ Thermal	33	43	40	35	35
Max gain w/ AGC bypass	38	48	43	40	40

5,6 GAIN CONTROL TYPE

D2 = Digital Station Intelligence Manger (DSIM) M1 = Manual (AGC Bypass) T0 = Thermal Bode

7 CURRENT PASSING CAPACITY 15A (Continuous on all ports)

8 STATION SLOPE

	550	650	750	870	900	1002
E=	9.0	10.8	12.6	14.8	15.3	17.2
F=	7.9	9.4	11.0	12.9	13.4	15.0
*K=	4.1	5.0	5.8	6.8	7.1	7.9

*Slope option "K" is only available on the EDLE & RLX 1002 MHz stations

9 HOUSING OPTIONS

0 = No housing or power pack B = EDA - Chromate without TP
1 = Module upgrade kit with power supply and seizure screws G = RLX - Standard low profile line extender with TP
E = EDA - Standard with TP H = RLX - Chromate low profile line extender with TP
F = EDA - Chromate with TP K = RLX - Chromate low profile line extender without TP

10 DIPLEX FREQUENCY SPLIT

4 = 42 / 53 6 = 65 / 85 8 = 85 / 105

11 STATION GAIN (Reverse)

0 = None 4 = 18 dB min (EDAT, AB, & BT) R = 21 dB min (EDLE & RLX only)
1 = Passive H = 18 dB min (EDLE & RLX only) U = 24 dB min (EDLE & RLX only)

12 SURGE PROTECTION

A = Plug-in sidactor (Included in the RLX amplifiers & recommended for EDA)
C = Triac (Included in all EDA power supplies)

13,14 TEST SPECS (Determined by ACI engineering)

15 SPECIAL/CUSTOMER: LABELS, FUNCTIONS, (Determined by Product Management)

9 = JXP Structure GaAs Hybrids 1002 MHz Only A = JXP Structure, Pad Adjustable EQ's & GaAs Hybrids

Generic Order Form: Not all configurations are available

Accessory Ordering Information:

The EDA & RLX ordering matrix provides the part number information to order the configured stations. This page contains the ordering information for the required accessories that will be needed to make the stations functional in the field or the optional accessories that can be ordered separately.

Required Accessories

Description	Part Numbers (Where XX.X = dB value)
JXP style attenuator pads <ul style="list-style-type: none"> 1 Required for forward input 1 Required for reverse output (if active) 	JXP1.38-XX.X (0 to 20 dB in 0.5 dB steps)
Forward equalizers <ul style="list-style-type: none"> 1 Required forward input 	EQDA1G/XX (1.0 to 18.0 dB in 1.0 dB steps) (20.0 to 30.0 dB in 2.0 dB steps) CEQ1G/XX (1.0 to 15.0 dB in 1.0 dB steps)
Reverse equalizers <ul style="list-style-type: none"> 1 Required reverse output (if active) 	REQDA42/XX (0 to 12.0 dB in 1.0 dB steps) REQDA85/XX (1 to 12.0 dB in 1.0 dB steps)

Note: For using the pad adjustable EQ's, increase the JXP138 pads by 2 times

Optional Accessories

Description	Part Numbers
Digital Station Intelligence Manager - Single Pilot AGC Module (Analog or Digital)	DSIM-A-MDL-02
Digital Station Intelligence Manager -Controller	DSCT-xxx-yyy xxx = Pilot Channel Number yyy = Channel Type IRC = Analog IRC Spacing DIG = Digital / QAM
Digital Station Intelligence Manager - Cable Assembly For Computer Interface	240327-01
DSIM Bluetooth Dongle (Android)	DSIM-DONGLE-03
DSIM Bluetooth Dongle (Apple iOS)	DSIM-DONGLE-02
Thermal Bode AGC	T-BODE-1G
Manual AGC (Bypass plug-in)	080842
Test Probe (5.5" Long)	100685-01
Test Probe (1.57" / 4 cm Long)	TP-7504
Test Adapter for Test Probe to Seizure Screw (RF Connector)	100677
Thru-housing Test Cable. Allows reading of internal test points with the housing closed.	240310
AC Power Director	100818-01
Alignment Tool 5-3/16" (Tweaker Stick)	130315
EQ Puller Tool	130311

Optional Accessories (Continued)

Description	Part Numbers
Power Supply (40-90 VAC) Version 2	SDA90VSP-V2
Replacement SDA Housing (Standard)	HSG03/00
Replacement SDA Housing (Chromate)	HSG04/00
Replacement ALX Housing (Standard)	HSG15/00
Replacement ALX Housing (Chromate)	HSG16/00
Metal 5/8" Port Housing Caps	H5/8PLUG
Housing Port Dielectric Insert	030770-01
Seizure Screw / RF Connector 15A	100633-01



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