



ALX and SDA

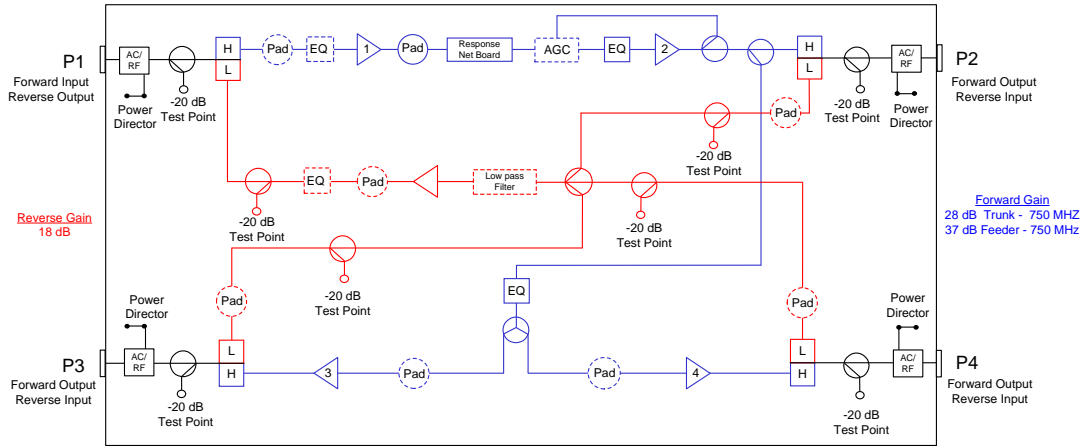
MiniFlex Super Distribution Amplifiers 750 MHz

The ACI MiniFlex super distribution RF amplifiers provided high quality RF distribution for fiber-to-feeder, HFC (hybrid fiber coaxial), or PDN (power domain node) architectures..

Features

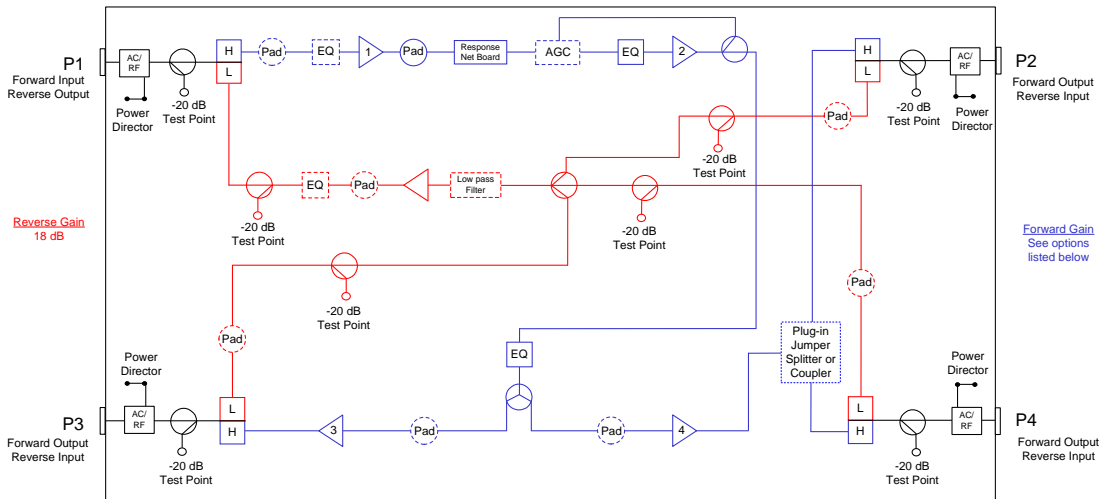
- ◆ 750 MHz
- ◆ Common 1002 MHz housing platform
- ◆ 15 amp power passing
- ◆ Optional, plug-in surge protection (SDA)
- ◆ CE qualified (SDA)
- ◆ -20 dB directional coupler test points
- ◆ AGC or thermal or manual options
- ◆ 5 to 42, 55, or 65 MHz reverse path
- ◆ Plug-in attenuator pads for each reverse path
- ◆ Plug-in equalizers
- ◆ Test point for each reverse path

SDAT (Type 1A, 1T & 1M) 750 MHz Amplifier Block Diagram



Note:
1. Forward gain stated at 750 MHz with AGC. Reverse gain stated at 40 MHz.

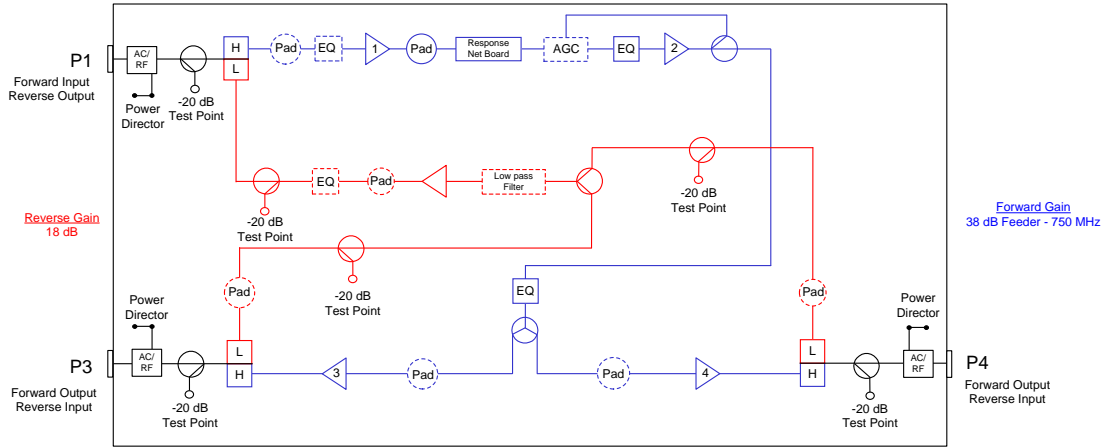
SDAF (Type 2A-TRI, 2M-TRI, 2T-TRI) 750 MHz Amplifier Block Diagram



Notes:
1. Forward gain stated at 750 MHz with AGC. Reverse gain stated at 40 MHz.
2. Amplifiers are configured at the factory with jumper in Position #2.
Splitters and couplers are sold separately.

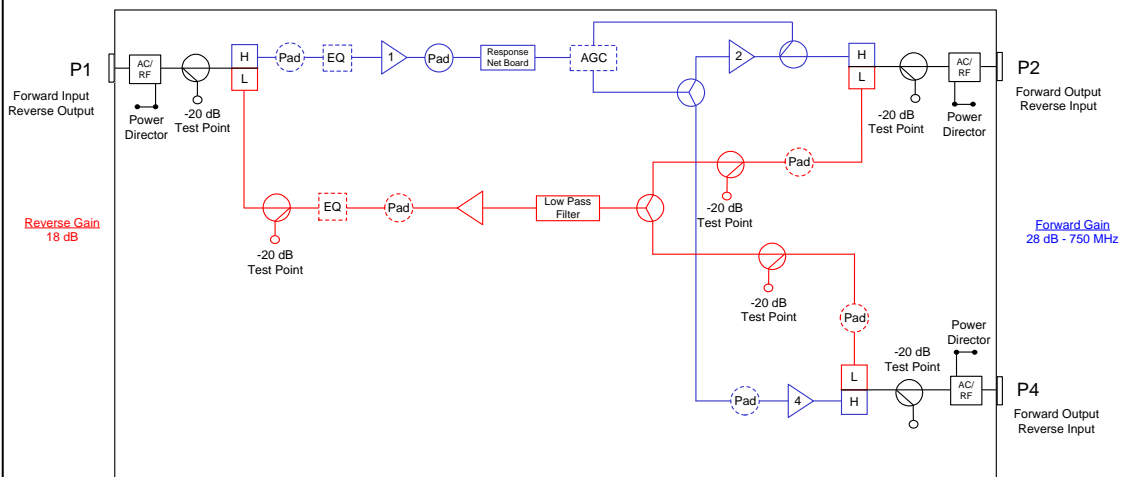
Jumper Position #1	Jumper Position #2	SDASPLTR3.5	SDADC7	SDADC7	SDADC12	SDADC12																																																								
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SDAB (Type 2A, 2T & 2M) 750 MHz Amplifier Block Diagram



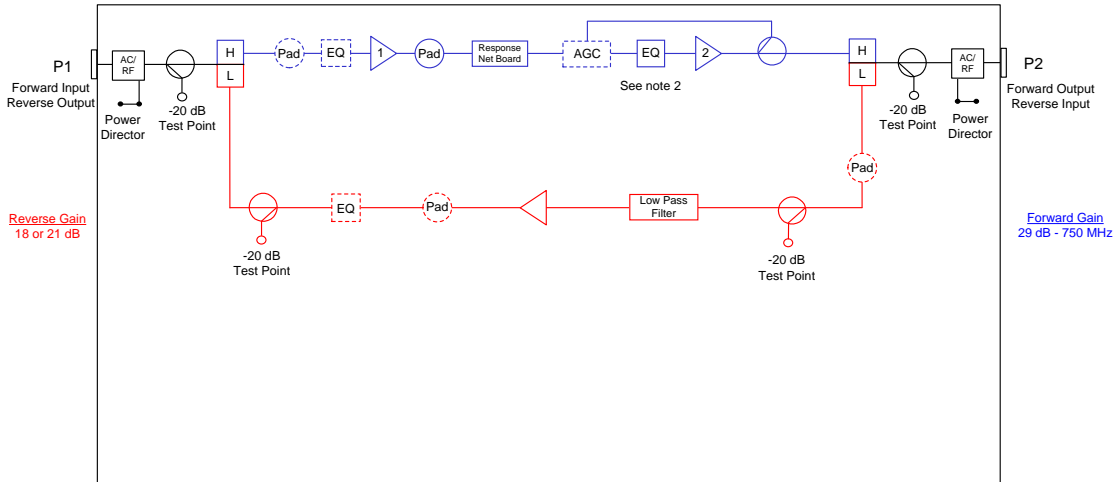
Note:
1. Forward gain stated at 750 MHz with AGC. Reverse gain stated at 40 MHz.

SDLA (Type 3A, 3T, & 3M Dual) 750 MHz Amplifier Block Diagram



Note:
1. Forward gain stated at 750 MHz with AGC. Reverse gain stated at 40 MHz.

SDLE & ALX (Type 3A, 3T, & 3M) 750 MHz Amplifier Block Diagram



Note:

1. Forward gain stated at 750 MHz with AGC. Reverse gain stated at 40 MHz.
2. The interstage EQ is not present in the ALX amplifiers.

STATION PARAMETERS: 750 MHz 42-53 MHz Split								
		CONDITIONS	UNITS	SPECIFICATIONS				
Housing passband			MHz	5 to 1002				
Input current capacity	Any port, worst case		Amperes	15				
Frequency range			MHz	5 - 10	11 - 600	600 - 750		
Frequency range	Time domain @ rated current above		-dBc	55	65	60		
Return loss	Any port, worst case		dB	17.0				
Test Points								
Test point type	Directional coupler		N / A					
Test point level			-dB	20.0				
Test point accuracy	Forward test points		±dB	0.5				
Test point accuracy	Reverse test points		±dB	0.75 @ 5 to 7 MHz 0.5 @ 7 to 42 MHz				
Station Slope								
Operational slope - trunk & feeders	@ 54 / 550 / 750 MHz		dB	0 / 9.0 / 12.5				
Slope control type	Cable equalizers		dB	Plug-in EQ's				
Slope control range	Includes cable equivalent		dB	-21.0 to +25.0				
Slope control steps	Equalizer value steps		dB	1.5 cable steps (Approx.1.1 dB slope steps)				
Station Group Delay								
Group delay	Channel 2 (Std)	nSec / 3.58 MHz		30 (25 Typical)				
Group delay	Channel 3			16				
Group delay	Channel 4			10				
Group delay	Channel 5 & >			3				
AGC								
Type			N / A	SPAGC Single Pilot Channel AGC NTSC Analog		DSIM-A Single Pilot Channel AGC NTSC Analog or QAM		
Compensation Range			dB	System compensation input change +3/-5 @ 750 MHz		System compensation input change +3/-6 @ 750 MHz		
Accuracy			±dB	0.5		0.5		
Nominal loss	@ 77 °F (25 °C)		dB	5.5		6.25		
Center frequency bandwidth				150 (Fc ± kHz)		6 (MHz)		
Configuration				SDAT (Type 1)	SDAF (Type 2 Tri)	SDAB (Type 2)	SDLA (Type 3 Dual)	SDLE / ALX (Type 3)
Operational Specifications								
Station passband			MHz	54 to 750				
Station flatness - trunk out	Normalized w / 0 dB slope		±dB	0.50	-	-	-	-
Station flatness - feeder out			±dB	0.75	0.75	0.75	0.50	0.50
Gain - Port 2 (AGC / Manual)	+0.5 / -0 @ 750 MHz (Temperature stabilized)		dB	28 / 33	-	-	28 / 33	29 / 34
Gain - Port 3 (AGC / Manual)			dB	37 / 42	37 / 42	38 / 43	-	-
Gain - Port 4 (AGC / Manual)			dB	37 / 42	37 / 42	38 / 43	28 / 33	-
Gain control type			N / A	Plug-in pads				
Gain control steps	Pad value steps		dB	0.5				
550 MHz analog channel loading, 79 channels +200 MHz digital channel loading, 256 QAM at -6 dBc relative to its associated visual carrier								
Station Output Levels								
Port 2	@ 54 / 550 / 750 MHz		dBmV	26.0 / 34.9 / 38.5	-	-	35.0 / 43.9 / 47.5	35.0 / 43.9 / 47.5
Port 3				35.0 / 43.9 / 47.5	35.0 / 43.9 / 47.5	35.0 / 43.9 / 47.5	-	-
Port 4				35.0 / 43.9 / 47.5	35.0 / 43.9 / 47.5	35.0 / 43.9 / 47.5	35.0 / 43.9 / 47.5	-
Station Noise Figure								
Noise figure (w / 1 dB for input EQ loss)	Typ. @ 54 MHz		dB	9.7	10.0	9.9	8.6	7.8
	Typ. @ 550 MHz		dB	8.6	8.7	8.6	8.7	8.4
	Typ. @ 750 MHz		dB	8.8	9.9	9.9	8.9	8.8
Station Distortions (Worse Case)								
				Trunk / Feeder	Feeder	Feeder	Feeder	Feeder
Composite Triple Beat (CTB)			-dBc	79 / 70	70	71	68	69
Cross Modulation (XMOD)			-dBc	77 / 67	67	68	62	67
Composite Second Order (CSO-)	(Vc +0.75 & -1.25 MHz)		-dBc	67 / 63	64	64	65	64
Composite Second Order (CSO+)	(Vc +1.25 MHz)		-dBc	70 / 67	68	68	69	69
Carrier-to-Intermodulation Noise (CIN)			-dBc	77 / 68	68	69	66	67

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 (18 or 21 for SDLE only)				
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 Tripe 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		8				
Group delay		38.5 MHz		25				
Configuration				SDAT (Type 1)	SDAF (Type 2 Tri)	SDAB (Type 2)	SDLA (Type 3 Dual)	SDLE / ALX (Type 3)
Reverse - Noise Figure								
Station noise figure (w / EQ)		Across the bandwidth	dB	13.0	13.0	10.5	10.5	8.5
Power Requirements:								
DSIM-A / SPAGC		Includes reverse (Worst case)	W	51.3	45.7	45.7	35.7	24.8
Thermal			W	49.6	44.1	44.1	34.1	23.3
Manual			W	49.2	43.6	43.6	33.7	22.8
AC Voltage								
Input ranges			VAC	40-90				
Current Draw (with AGC)								
@ 40 VAC		Maximum	A	1.54	1.41	1.41	1.15	0.84
@ 50 VAC			A	1.30	1.19	1.19	0.98	0.72
@ 60 VAC			A	1.14	1.04	1.04	0.87	0.64
@ 70 VAC			A	1.02	0.94	0.94	0.78	0.58
@ 80 VAC			A	0.91	0.84	0.84	0.71	0.53
@ 90 VAC			A	0.82	0.76	0.76	0.64	0.48
Weight				SDAT	SDAB	SDAB	SDLA	SDLE ALX
Weight			lbs. (kg)	16.0 (7.26)	16.0 (7.26)	16.0 (7.26)	14.5 (6.58)	14.5 (6.58) 11.0 (4.99)
Physical								
Dimensions - SDA		(H X W X D)	In. (cm)	6.75 X 14.25 X 9.00 (17.1 X 36.2 X 22.9)				
Dimensions - ALX		(H X W X D)	In. (cm)	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)				

SDA & ALX 15 Amp Product Configuration Worksheet

Customer: _____

Created By: _____ Order Date: _____

ORDERING MATRIX

September 29, 2015

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

- 1 STATION TYPE
 A = ALX 1 Output Low Profile LE D = SDLA 2 Output LE L = SDLE 1 Output LE
 B = SDAB 2 Output Feeder F = SDAF 2 or 3 Output Feeder T = SDAT 3 Output Trunk
 C = SDLT 1 Output Trunk LE J = SDBT 3 Equal Output Feeder

- 2 BANDWIDTH FREQUENCY
 7 = 750 MHz Upper Frequency 9 = 900 MHz Upper Frequency
 8 = 870 MHz Upper Frequency 1 = 1002 MHz Upper Frequency

- 3,4 STATION GAIN (Forward) - For 0.5 dB gain values, use the first two digits listed in the part number

Station Type Amplifier Model Frequency	TYPE 1					TYPE 2					TYPE 3					TYPE 3				
	SDAT					SDAB					SDLE					ALX				
	750	870	900	1002 STD	1002 GaN	750	870	900	1002 STD	1002 GaN	750	870	900	1002 STD	1002 GaN	750	870	900	1002 STD	1002 GaN
Max gain w/ AGC/ Thermal	28	31	31	33	36	38	NA	42	43	46	29	31	32	35.5	38.5	29	31	32	35.5	38.5
Max gain w/AGC bypass	33	34	34	38	41	43	NA	45	48	49	34	36	36	40.5	43.5	34	36	36	40.5	43.5

Station Type Amplifier Model Frequency	TYPE 2 TRI					TYPE 3 DUAL					TYPE 4					TYPE 6				
	SDAF					SDLA					SDLT					SDBT				
	750	870	900	1002 STD	1002 GaN	750	870	900	1002 STD	1002 GaN	750	870	900	1002 STD	750	870	900	1002 STD	1002 GaN	
Max gain w/ AGC/ Thermal	37	40	NA	43	46	28	31	32	35.5	35.5	29	31	NA	33	NA	40	NA	41	44	
Max gain w/AGC bypass	42	43	NA	46	49	33	36	36	40.5	40.5	34	36	NA	38	NA	43	NA	44	47	

- 5 CONTROL TYPE
 D = Digital Station Intelligence Manger (DSIM) P = Single Channel Pilot (Analog only) C = Composite AGC (750 MHz only)
 T = Thermal Bode M = Manual (AGC Bypass)

- 6 CONTROL FREQUENCY
 A = Channel 52 391.25 MHz SC or SP AGC J = Channel 72 511.25 MHz SPAGC only
 B = Channel 54 403.25 MHz SCAGC only M = Channel 70HRC 498.025 MHz SPAGC only
 C = Channel 58 427.25 MHz SPAGC only N = Channel 58HRC 426.021 MHz SPAGC only
 D = Channel 59 433.25 MHz SCAGC only 0 = Thermal Bode
 E = Channel 60 439.25 MHz SC or SP AGC 1 = AGC Bypass
 F = Channel 61 445.25 MHz SPAGC only 2 = DSIM-A Single Pilot AGC (Analog or Digital pilot) - Pilot channel loaded during setup
 G = Channel 62 451.25 MHz SC or SP AGC
 H = Channel 70 499.25 MHz SC or SP AGC

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

8 STATION SLOPE

	550	650	750	870	900	1002
A=	8.5	10.2	11.9	14.0	14.5	NA
C=	7.6	9.1	10.7	12.5	NA	NA
D=	8.9	10.7	12.5	14.7	NA	NA
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
T=	7.3	8.8	10.3	12.0	12.5	14.0
*K=	4.1	5.0	5.8	6.8	7.1	7.9

*Slope option "K" is only available on the SDLE and SDLA 1002 MHz stations

- 9 HOUSING OPTIONS
 0 = No housing or power pack B = SDA - Chromate w/ out TP
 1 = Module upgrade kit w/ power supply and seizure screw G = ALX - Standard low profile line extender w/ TP
 E = SDA - Standard w/ TP H = ALX - Chromate low profile line extender w/ TP
 F = SDA - Chromate w/ TP K = ALX - Chromate low profile line extender w/ out TP

- 10 DIPLEX FREQUENCY SPLIT
 4 = 42 / 53 5 = 55 / 70 (870 MHz Only) 6 = 65 / 85 (870 MHz Only) 8 = 85 / 105 (SDA 1G only)

- 11 STATION GAIN (Reverse)
 0 = None 4 = 18 dB min (SDA: T, B, F, LA, BT) T = 23 dB min (SDA: T, B, F, BT, LA, LE) - SDA 1G Only
 1 = Passive H = 18 dB min (SDLE, LT & ALX only) U = 24 dB min (SDLE & ALX) - SDA 1G GaN Only
 R = 21 dB min (SDLE, LT & ALX only)

- 12 SURGE PROTECTION
 A = Plug-in sidactor (included in SDA 1002 MHz and all of the ALX amplifiers & recommended for SDA 750, 870 & 900 MHz units)
 C = Triac (included in all SDA power supplies). The sidactor is recommend to increase surge protection level of the SDA units

- 13,14 TEST SPECS (Determined by ACI engineering)

- 15 SPECIAL/CUSTOMER: LABELS, FUNCTIONS, (Determined by Product Management)
 0, 1 = No special instructions 2 = Customer P/N in description 3 = SDAF w/3 dB splitter installed
 T or R = Trunk line extender for ALX M = Status monitoring pick-offs installed C = Module cover w/ thumb screw s (SDA 1G only)
 N = GaN Forward Hybrids (SDA 1G only)

Generic Order Form: Not all configurations are available

Accessory Ordering Information:

The SDA 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

	Part Numbers (Where XX.X = dB value)
SXP style attenuator pads <ul style="list-style-type: none"> • 1 Required for forward input • 1 Required for reverse output (if active) 	SXP-XX.XT (0 to 20 dB in 0.5 dB steps)
Forward equalizers <ul style="list-style-type: none"> • 1 Required forward input 	EQDA750/XX.X (1.5 to 25.5 dB in 1.5 dB steps) CEQ750/XX.X (1.5 to 21 dB in 1.5 dB steps)
Reverse equalizers <ul style="list-style-type: none"> • 1 Required reverse output (if active) 	REQ42/XX.XB (0 to 12.0 dB in 1.5 dB steps)

Optional Accessories

	Part Numbers
Digital Station Intelligence Manager - Single Pilot AGC Module (Analog or Digital)	DSIM-A-MDL-01
Digital Station Intelligence Manager -Controller	DSCT-xxx-yyy xxx = Pilot Channel Number yyy = Channel Type (Analog or Digital / QAM)
Digital Station Intelligence Manager - Cable Assembly For Computer Interface	240327-01
Single Pilot AGC (Analog Only) (See SDA ordering matrix for available pilot channels)	SPAGC750-XX (With 0 dB Pad) SPAGC750-XX-10 (With 10 dB Pad) XX = Pilot Channel Number
Thermal Bode AGC	T-BODE 870M
Manual AGC (Bypass plug-in)	080842
SXP style pads with long handles	SXPLXX.XT (0 to 20 dB in 0.5 dB steps)
Reverse SXP style pads with thermal compensation	THPL-XX.X (1.5 to 20.0 dB in 0.5 dB steps)
DC/SP1 Plug-in - SDAF only	SDA-SPLTR3.5, SDA-DC7, SDA-DC12
Power Supply (40-90 VAC)	SDA90VSP-V3
Test Probe (5.5" Long)	100685-01
Test Probe (1.57" / 4 cm Long)	TP-7504



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