



ALX and SDA

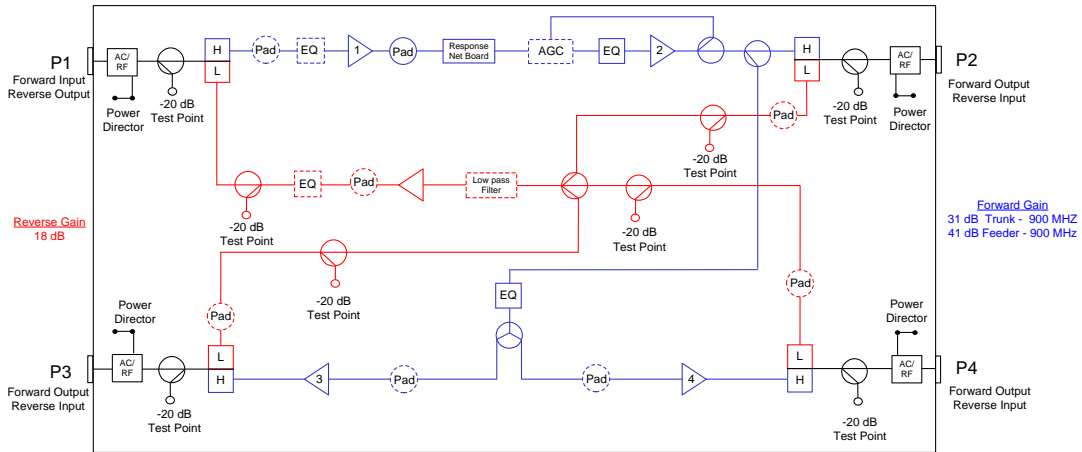
MiniFlex Super Distribution Amplifiers 900 MHz

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

- ◆ 900 MHz may be dropped into the 870 or 750 MHz spacing
- ◆ 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) 900 MHz Amplifier Block Diagram

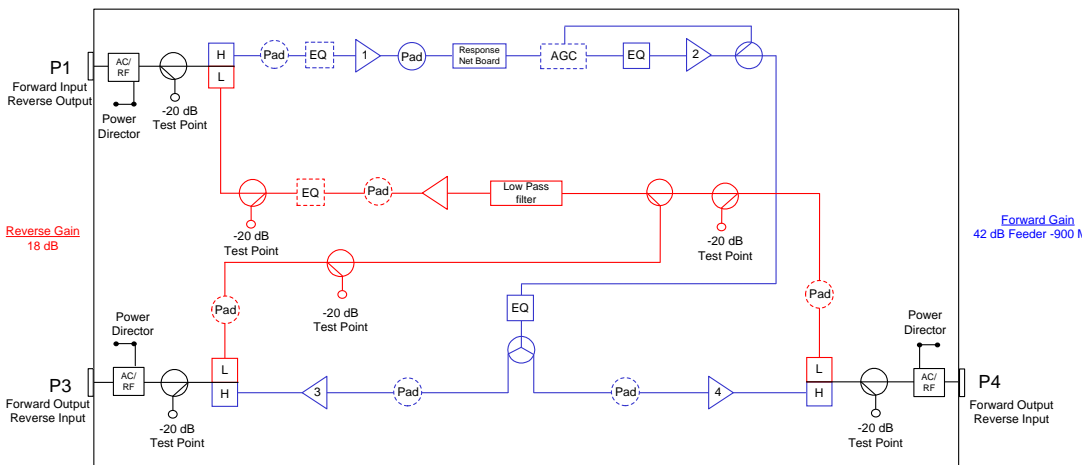


Reverse Gain
18 dB

Forward Gain
31 dB Trunk - 900 MHz
41 dB Feeder - 900 MHz

Note:
1. Forward gain stated at 900 MHz with AGC. Reverse gain stated at 40 MHz.

SDAB (Type 2A, 2T & 2M) 900 MHz Amplifier Block Diagram

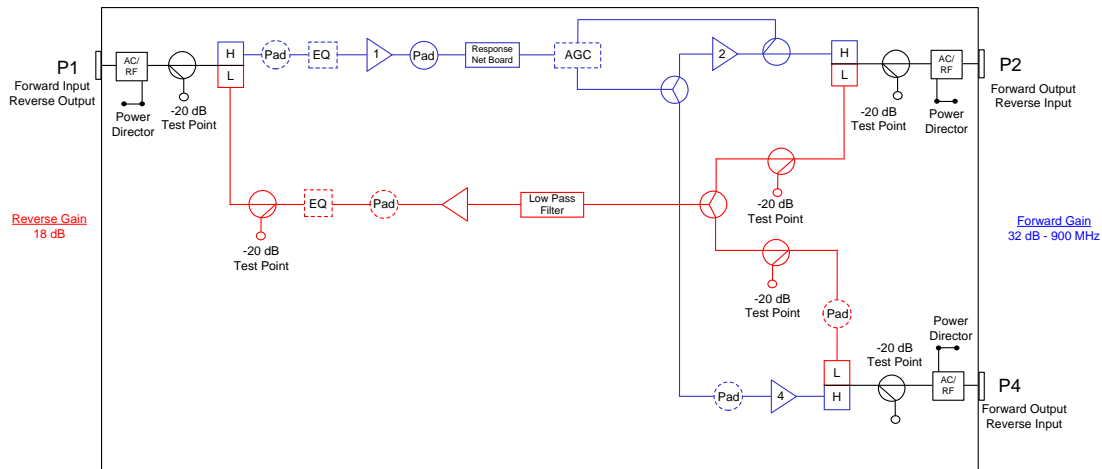


Reverse Gain
18 dB

Forward Gain
42 dB Feeder - 900 MHz

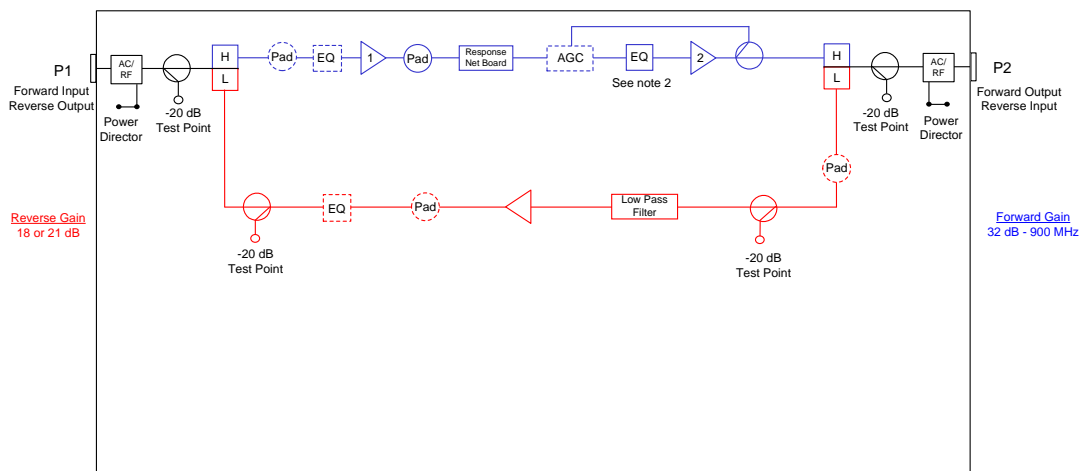
Note:
1. Forward gain stated at 900 MHz with AGC. Reverse gain stated at 40 MHz.

SDLA (Type 3A, 3T, & 3M Dual) 900 MHz Amplifier Block Diagram



Note:
1. Forward gain stated at 900 MHz with AGC. Reverse gain stated at 40 MHz.

SDLE & ALX High Performance (Type 3A, 3T, & 3M) 900 MHz Amplifier Block Diagram



Note:
1. Forward gain stated at 900 MHz with AGC. Reverse gain stated at 40 MHz.
2. The interstage EQ is not present in the ALX amplifiers.

STATION PARAMETERS: 900 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	751 - 900				
Frequency range		Time domain @ rated current above	-dBc	55	65	60	55				
Return loss		Any port, worst case	dB	17.0 @ 54 to 890 MHz 16.0 @ 890 to 900 MHz							
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 @ 5-7 MHz 0.5 @ 7 to 42 MHz							
Station Slope											
Operational slope - trunk & feeders		@ 54 / 550 / 900 MHz	dB	0 / 8.5 / 14.5							
Slope control type		Cable equalizers	dB	Plug-in EQ's							
Slope control range		Includes cable equivalent	dB	-21.0 to +21.0							
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											
			Single channel pilot AGC			DSIM-A Single Pilot Channel AGC					
Type			N / A	NTSC Analog			NTSC Analog or QAM				
Compensation Range			dB	System compensation input change +3/-5 @ 900 MHz			System compensation input change +3/-6 @ 900 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)	SDAB (Type 2)	SDLA (Type 3 Dual)	SDLX / ALX (Type 3)				
Operational Specifications											
Frequency range			MHz	54 to 890	890 to 900	54 to 890	890 to 900	54 to 890	890 to 900	54 to 890	890 to 900
Station flatness - trunk out		Normalized w / 0 dB slope	dB	±0.5	+0.5 / -1.0	-	-	-	-	±0.5	+0.5 / -1.0
Station flatness - feeder out			dB	±0.75	+0.75 / -1.25	±0.75	+0.75 / -1.25	±0.5	+0.5 / -1.0	-	-
Station passband			MHz	54 to 900							
Gain - Port 2 (AGC / Manual)		+0.5 / -0 @ 900 MHz (Temperature stabilized)	dB	31 / 34		-		32 / 36		32 / 36	
Gain - Port 3 (AGC / Manual)			dB	41 / 44		42 / 45		-		-	
Gain - Port 4 (AGC / Manual)			dB	41 / 44		42 / 45		32 / 36		-	
Gain control type			N / A	Plug-in pads							
Gain control steps		Pad value steps	dB	0.5							
550 MHz analog channel loading, 79 channels +350 MHz digital channel loading, 256 QAM at -6 dBc relative to its associated visual carrier											
Station Output Levels											
Port 2		@ 54 / 550 / 900 MHz	dBmV	26.5 / 35.0 / 41.0		-		36.5 / 45.0 / 51.0		36.5 / 45.0 / 51.0	
Port 3				36.5 / 45.0 / 51.0		36.5 / 45.0 / 51.0		-		-	
Port 4				36.5 / 45.0 / 51.0		36.5 / 45.0 / 51.0		36.5 / 45.0 / 51.0		-	
Station Noise Figure											
Noise figure (w / 1 dB for input EQ loss)		Typ. @ 54 MHz	dB	10.6	10.5	10.0	9.5				
		Typ. @ 550 MHz	dB	8.3	8.5	7.5	7.5				
		Typ. @ 900 MHz	dB	10.1	10.2	9.5	10.0				
Station Distortions (Worse Case)											
				Trunk / Feeder		Feeder		Feeder		Feeder	
Composite Triple Beat (CTB)			-dBc	82 / 73		71		71		71	
Cross Modulation (XMOD)			-dBc	79 / 68		65		67		65	
Composite Second Order (CSO-)		(Vc +0.75 & -1.25 MHz)	-dBc	71 / 68		70		68		68	
Composite Second Order (CSO+)		(Vc +1.25 MHz)	-dBc	73 / 72		70		73		74	
Carrier-to-Intermodulation Noise (CIN)			-dBc	80 / 71		69		69		69	

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)	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	8.5	8.5
Power Requirements:							
DSIM-A / SPAGC		Includes reverse (Worst case)	W	45.1	44.1	38.5	25.7
Thermal			W	43.5	42.5	36.9	24.1
Manual			W	43.0	42.1	36.5	23.6
AC Voltage							
Input ranges			VAC	40-90			
Current Draw (with AGC)							
@ 40 VAC		Maximum	A	1.32	1.28	1.11	0.72
@ 50 VAC			A	1.10	1.08	0.93	0.60
@ 60 VAC			A	0.97	0.95	0.81	0.53
@ 70 VAC			A	0.88	0.85	0.74	0.48
@ 80 VAC			A	0.80	0.78	0.67	0.44
@ 90 VAC			A	0.74	0.72	0.63	0.41
Weight				SDAT	SDAB	SDLA	SDLE ALX
Weight			lbs. (kg)	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 	EQDA870/XX.X (1.5 to 21 dB in 1.5 dB steps) CEQ870/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)	SPAGC870-XX (With 0 dB Pad) SPAGC870-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

Optional Accessories (Continued)

Description	Part Numbers
Test Adapter for Test Probe to Seizure Screw (RF Connector)	100677
AC Power Director	100818-01
Alignment Tool 5-3/16" (Tweaker Stick)	130315
EQ Puller Tool	130311
Replacement Housing (Standard)	HSG03/00
Replacement Housing (Chromate)	HSG04/00
Metal 5/8" Port Housing Caps	H5/8PLUG
Housing Port Dielectric Insert	030765-01
Seizure Screw / RF Connector 15A	100633-01



ACI Communications, Inc.
23307 66th Avenue South
Kent, WA 98032

Rev V 10-03-2015 Printed in U.S.A.
ACI Communications, Inc. reserves the right to discontinue the
manufacture or change specifications without prior notice on any
parts illustrated in this data sheet. Registered trademarks are the
property of their respective owners