



## SDA and ALX MiniFlex Super Distribution Amplifiers 1002 MHz

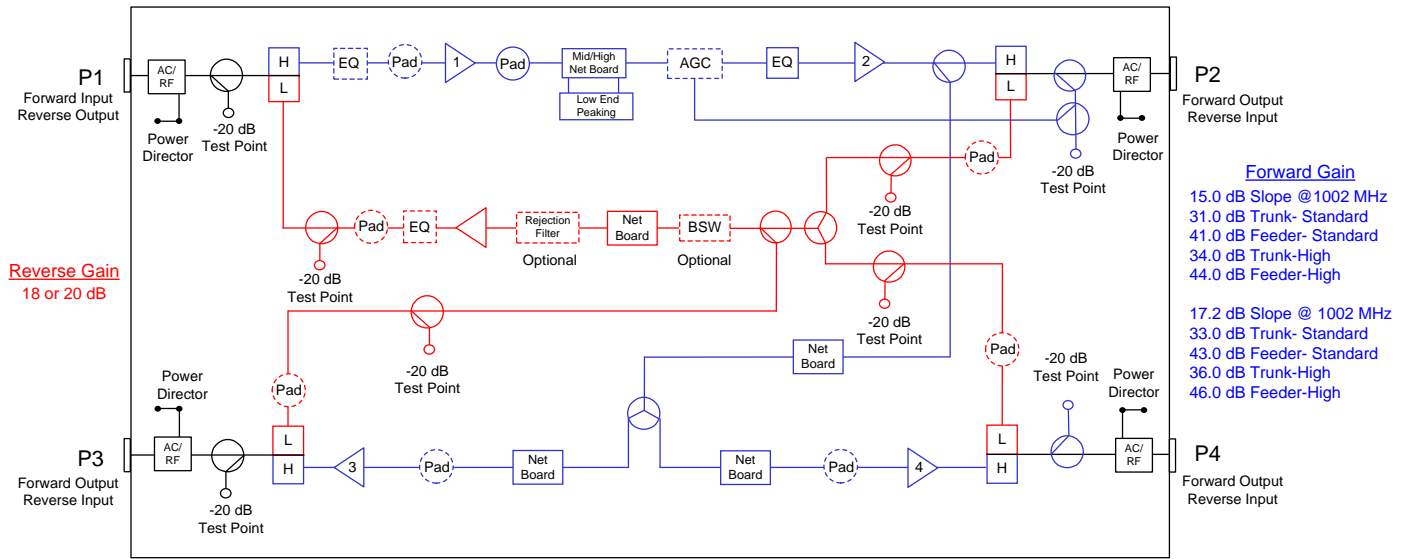
The ACI MiniFlex super distribution RF amplifiers are now offered with the Gallium Nitride (GaN) hybrid technology that allows for 3 dB higher output levels while maintaining close to the same specifications as the previous stations with the Gallium Arsenide (GaAs) hybrids. With this increase in the output level capabilities the cable operators are now able to extend the fiber deeper in their networks at a lower cost by reducing the number of active that are needed. The GaN hybrid technology is also extremely beneficial for use in the traditional HFC networks with the increase in station performance at the standard output levels over the GaAS hybrid stations.

### Features

- ◆ 1002 MHz may be dropped into the 750 or 870 MHz spacing
- ◆ Availability of an 85/105 or 204/258 MHz option to increase the reverse bandwidth
- ◆ Common 1002 MHz housing platform
- ◆ Optional, 8 or 14 MHz reverse path rejection filter (sold separately)
- ◆ 5 to 42, 55, 65, 85 or 204 MHz reverse path
- ◆ Patented DSIM Technology (Digital AGC)
- ◆ Increased reliability with higher surge
- ◆ Ideal for fiber deep networks with the extended reach of the amplifiers
- ◆ Ideal for traditional HFC networks for increased performance & reliability
- ◆ Lower power consumption
- ◆ Upgradable, reverse split options

# Block Diagrams

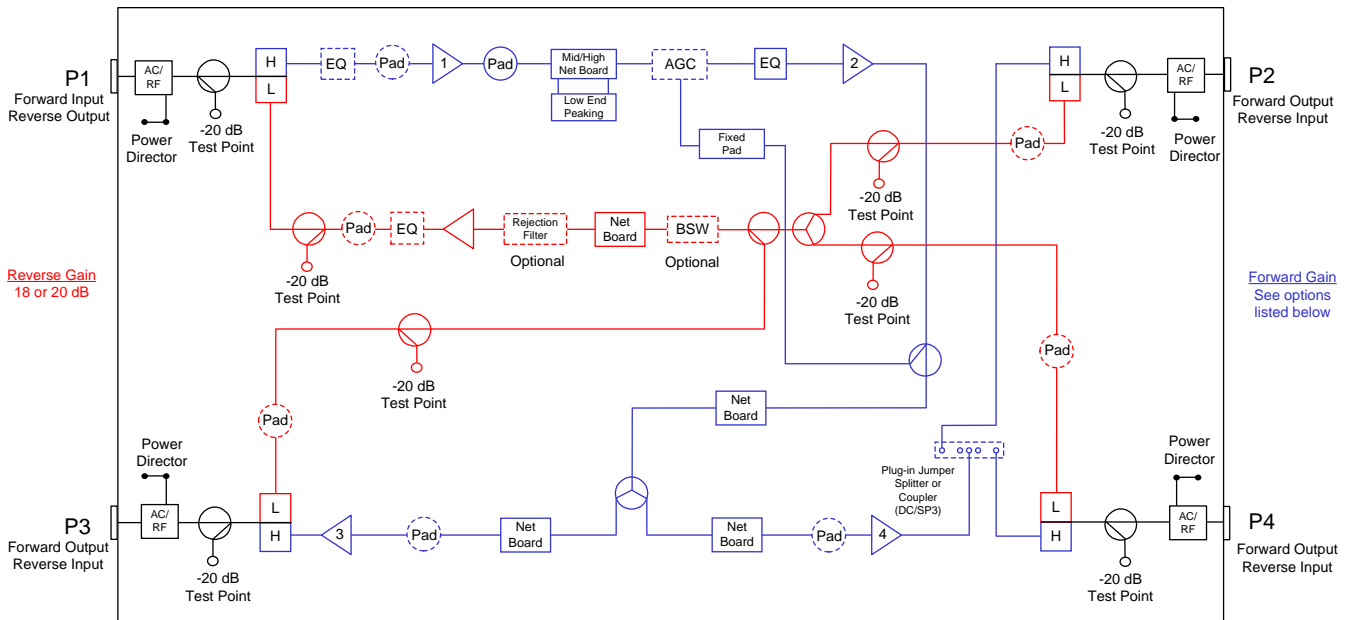
## SDAT (Type 1) 1002 MHz GaN Amplifier Block Diagram



Note:

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

## SDAF (Type 2-TRI) 1002 MHz GaN Amplifier Block Diagram

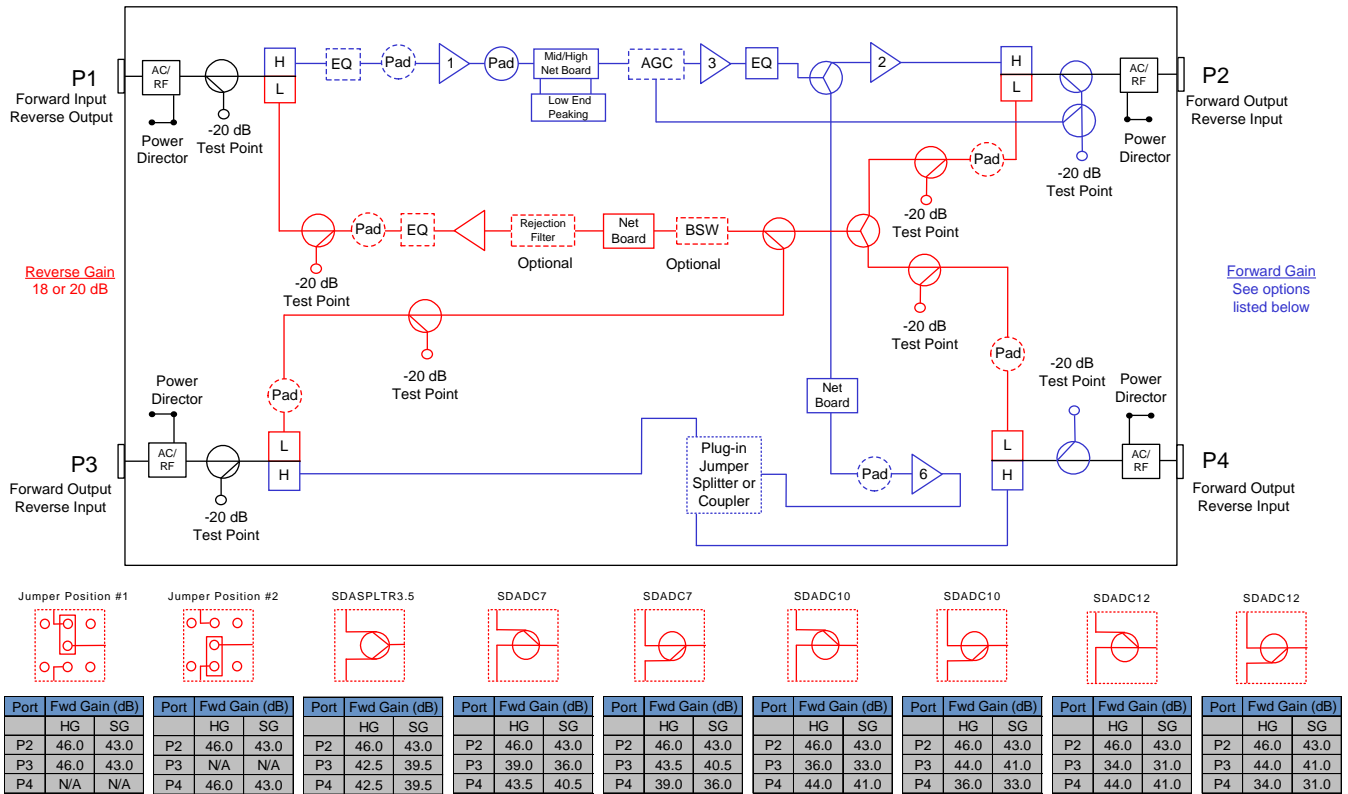


Jumper Position #1 (P2 & P3 active)		Jumper Position #2 (P3 & P4 active)		SDA1G-SPLTR3.5	SDA1G-DC7	SDA1G-DC7	SDA1G-DC10	SDA1G-DC10	SDA1G-DC12	SDA1G-DC12	
Port	Fwd Gain (dB)	Port	Fwd Gain (dB)	Port	Fwd Gain (dB)	Port	Fwd Gain (dB)	Port	Fwd Gain (dB)	Port	Fwd Gain (dB)
	HG SG		HG SG		HG SG		HG SG		HG SG		HG SG
P2	46.0 43.0	P2	N/A N/A	P2	42.5 39.5	P2	39.0 36.0	P2	43.5 40.5	P2	36.0 33.0
P3	46.0 43.0	P3	46.0 43.0	P3	46.0 43.0	P3	46.0 43.0	P3	46.0 43.0	P3	46.0 43.0
P4	N/A N/A	P4	46.0 43.0	P4	42.5 39.5	P4	43.5 40.5	P4	44.0 41.0	P4	36.0 33.0

Notes:

- Forward gain stated at 1002 MHz with AGC and 17.2 dB of slope at. Reverse gain stated at 40 MHz.
- For 15.0 dB slope the forward gain is decrease by 1 dB.
- Amplifiers are configured at the factory with jumper in Position #2 to have P3 & P4 active. Splitters and Couplers are sold separately.

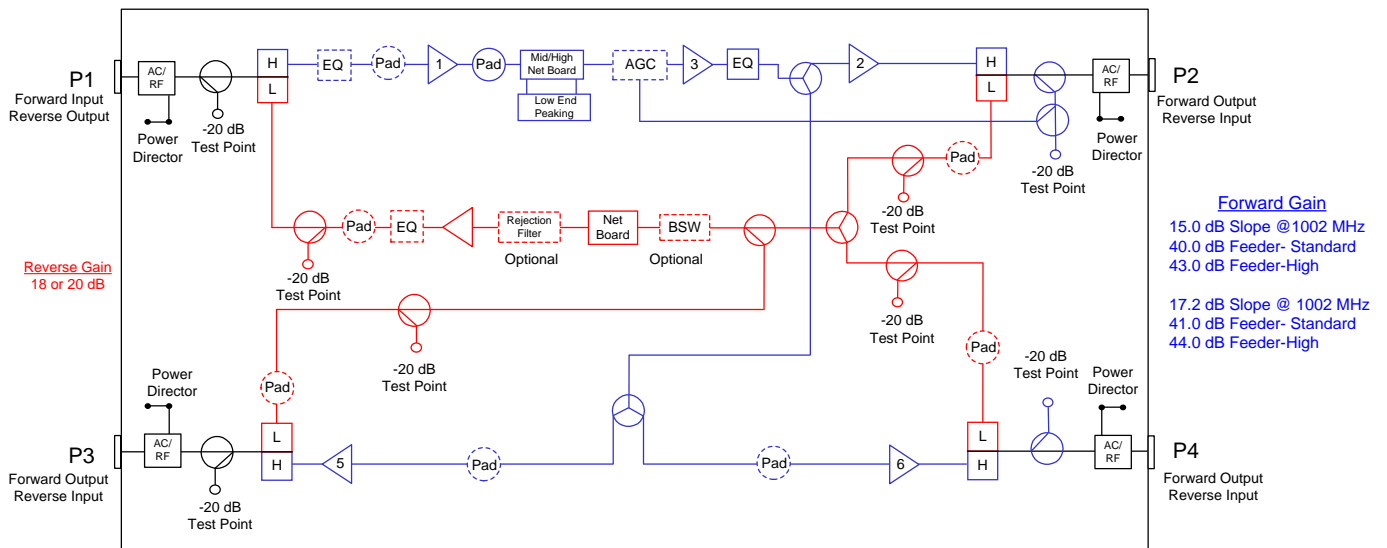
## SDAM (Type 2-TRI) 1002 MHz GaN Amplifier Block Diagram



**Notes:**

1. Forward gain stated at 1002 MHz with AGC and 17.2 dB of slope at. Reverse gain stated at 40 MHz.
2. For 15.0 dB slope the forward gain is decrease by 1 dB.
3. Amplifiers are configured at the factory with jumper in Position #2 to have P2 & P4 active. Splitters and Couplers are sold separately.
4. Amplifiers are configured at the factory to have the standard forward gains (SG). For the high forward gains (HG) reduce the Interstage pad value by 3 dB.

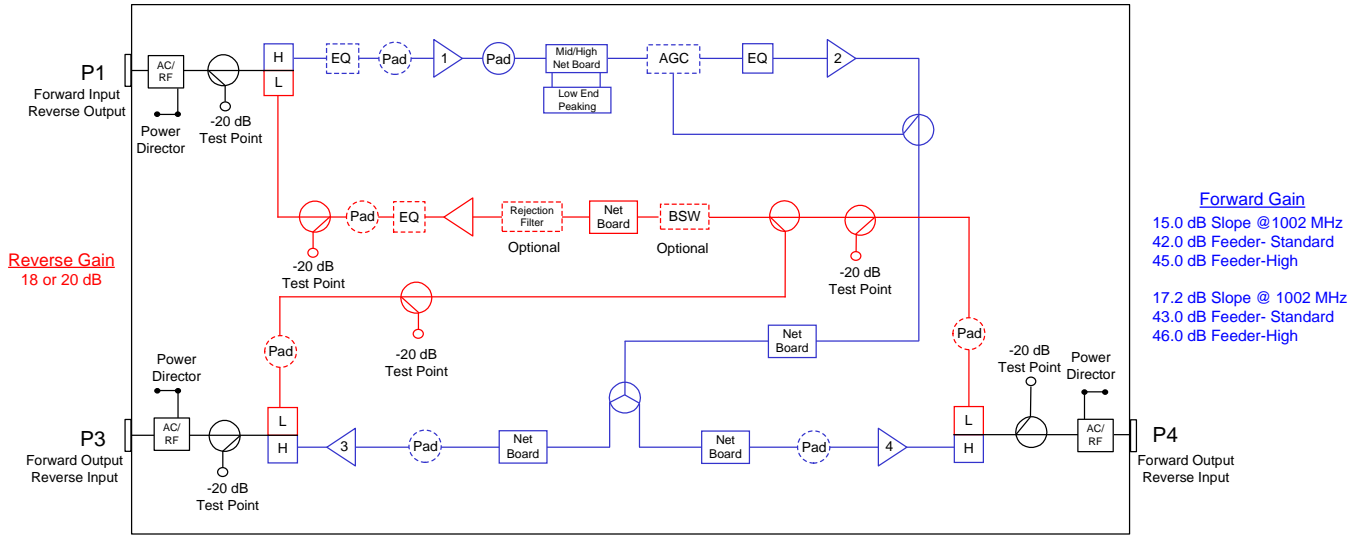
## SDBT (Type 6) 1002 MHz GaN Amplifier Block Diagram



**Note:**

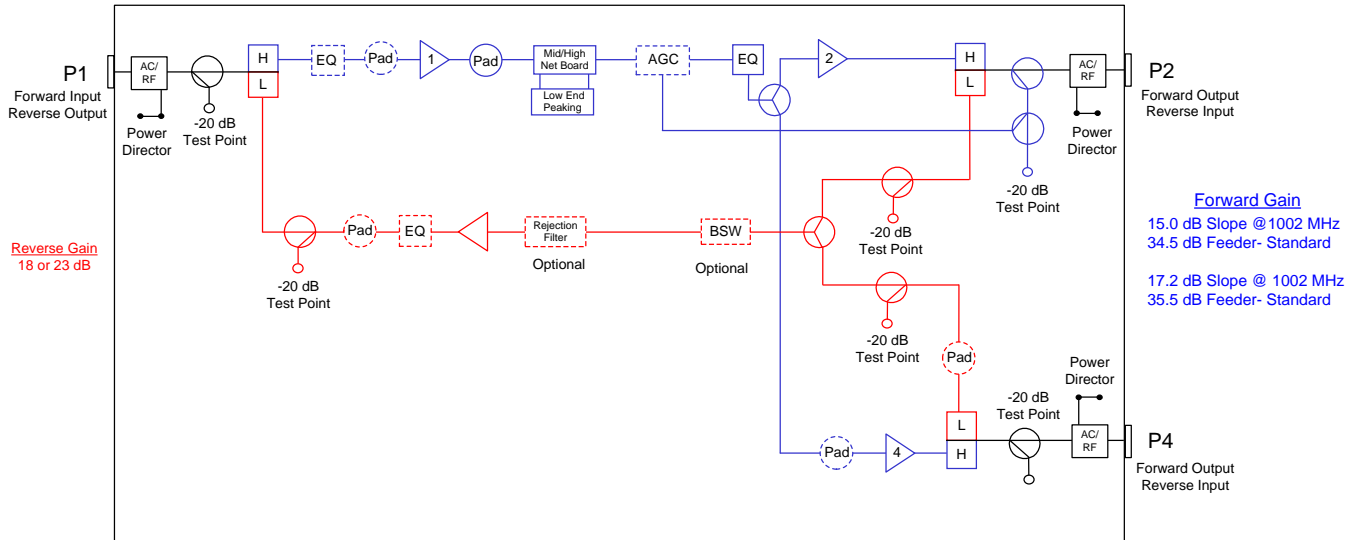
1. Forward gain stated at 1002 MHz with AGC. Reverse gain stated at 40 MHz.

## SDAB (Type 2) 1002 MHz GaN Amplifier Block Diagram



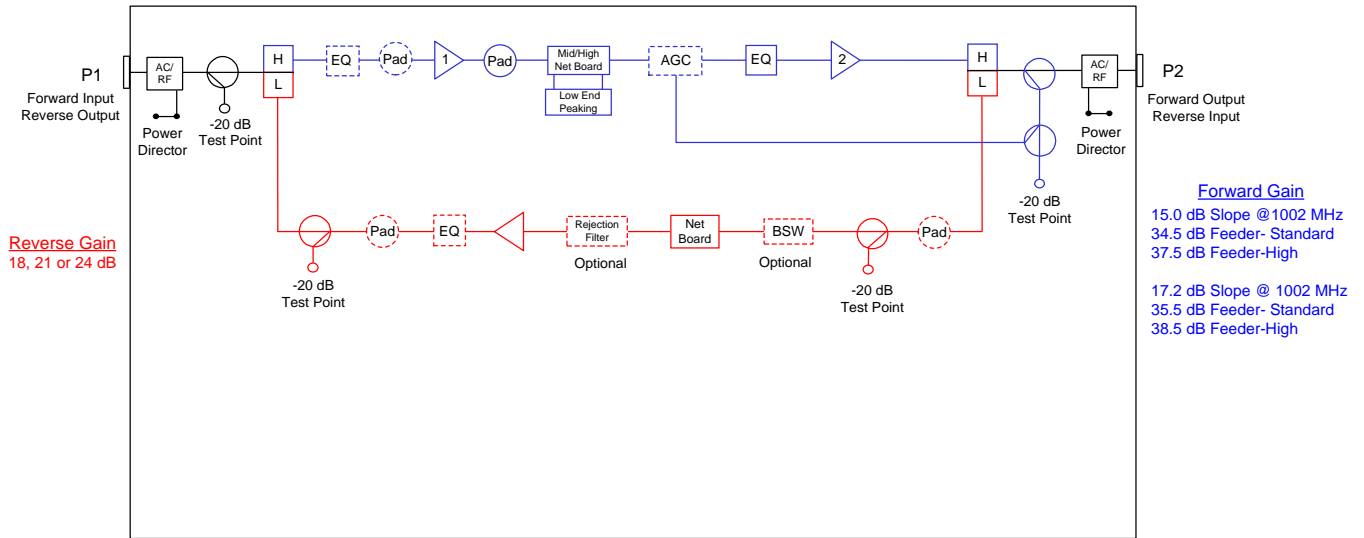
Note:  
1. Forward gain stated at 1002 MHz with AGC. Reverse gain stated at 40 MHz.

## SDLA (Type 3-Dual) 1002 MHz GaN Amplifier Block Diagram



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

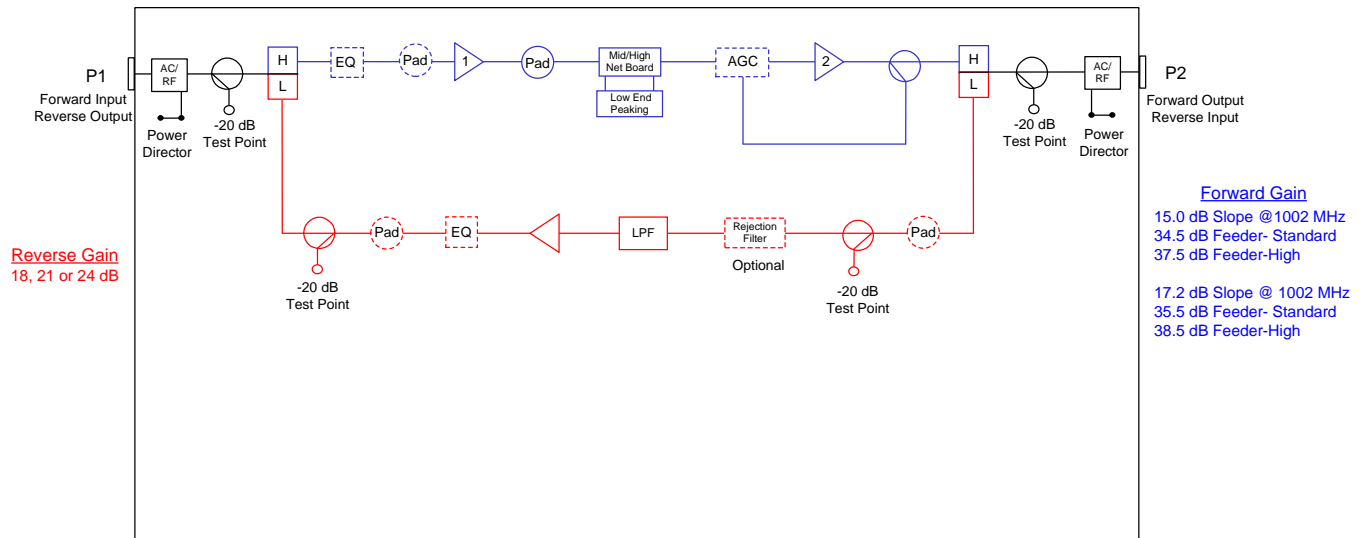
## SDLE (Type 3) 1002 MHz GaN Amplifier Block Diagram



Note:

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

## ALX (Type 3) 1002 MHz GaN Amplifier Block Diagram



Note:

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

# Station Parameters (SDAT, SDAF, SDBT & SDAM) 17.2 dB Slope

STATION PARAMETERS:		1002 MHz 42-53 MHz Split		SDA 1002 MHz With GaN Hybrids 17.2 dB Forward Slope @ 1002 MHz Standard Forward Gain			
		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	17.0			
<b>Test Points</b>							
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	0.5			
<b>Station Slope</b>							
Operational slope - trunk & feeders		@ 54 / 550 / 1002 MHz	dB	0 / 9.0 / 17.2			
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)			
<b>Station Group Delay</b>							
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 & >		4			
<b>AGC</b>							
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				SDAT (Type 1)	SDBT (Type 6)	SDAF (Type 2-TRI)	SDAM (Type 2-TRI)
<b>Operational Specifications</b>							
Station passband			MHz	54 to 1002			
Station flatness - trunk out		Normalized w / 0 dB slope	±dB	0.35	-	-	-
Station flatness - feeder out			±dB	0.6	0.6	0.6	0.6
Gain - Port 2 (AGC / Manual)		+0.5 / -0 @ 1002 MHz (Temperature stabilized)	dB	33 / 38	41 / 44	-	43 / 46
Gain - Port 3 (AGC / Manual)			dB	43 / 48	41 / 44	43 / 46	-
Gain - Port 4 (AGC / Manual)			dB	43 / 48	41 / 44	43 / 46	43 / 46
Gain control type			N / A	Plug-in pads			
Gain control steps		Pad value steps	dB	0.5			
<b>Station Output Levels Digital</b>							
Port 2		@ 54 / 550 / 1002 MHz	dBmV	19 / 38 / 36.2	29 / 38 / 46.2	-	29 / 38 / 46.2
Port 3				29 / 38 / 46.2	29 / 38 / 46.2	29 / 38 / 46.2	-
Port 4				29 / 38 / 46.2	29 / 38 / 46.2	29 / 38 / 46.2	29 / 38 / 46.2
<b>Station Output Levels Analog</b>							
Port 2		@ 54 / 550 / 1002 MHz	dBmV	25 / 34 / 42.2	35 / 44 / 52.2	-	35 / 44 / 52.2
Port 3				35 / 44 / 52.2	35 / 44 / 52.2	35 / 44 / 52.2	-
Port 4				35 / 44 / 52.2	35 / 44 / 52.2	35 / 44 / 52.2	35 / 44 / 52.2
<b>Station Noise Figure</b>							
Noise figure (w / 1 dB for input EQ loss)		Typ. @ 54 MHz	dB	11.5	14.7	12.4	15.8
		Typ. @ 550 MHz	dB	6.9	9.2	7.0	8.9
		Typ. @ 1002 MHz	dB	7.1	10.7	7.4	8.7
<b>Station Distortions (Worse Case)</b>				Trunk / Feeder	Feeder	Feeder	Feeder
550 MHz analog channel loading, 79 channels +450 MHz digital channel loading, 256 QAM at -6 dBc relative to its associated visual carrier							
Composite Triple Beat (CTB)			-dBc	81 / 76	73	73	73
Cross Modulation (XMOD)			-dBc	80 / 71	70	71	71
Composite Second Order (CSO-)		(Vc +0.75 & -1.25 MHz)	-dBc	78 / 71	70	72	72
Composite Second Order (CSO+)		(Vc +1.25 MHz)	-dBc	82 / 74	77	75	75
Carrier-to-Intermodulation Noise (CIN)			-dBc	79 / 74	71	71	71

# Station Parameters (SDAT, SDAF, SDBT & SDAM) 15.0 dB Slope

STATION PARAMETERS:		1002 MHz 42-53 MHz Split		SDA 1002 MHz With GaN Hybrids 15.0 dB Forward Slope @ 1002 MHz Standard Forward Gain			
	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	17.0				
<b>Test Points</b>							
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	0.5				
<b>Station Slope</b>							
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)				
<b>Station Group Delay</b>							
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 & >		4				
<b>AGC</b>							
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			SDAT (Type 1)	SDBT (Type 6)	SDAF (Type 2-TRI)	SDAM (Type 2-TRI)	
<b>Operational Specifications</b>							
Station passband		MHz	54 to 1002				
Station flatness - trunk out	Normalized w / 0 dB slope  +0.5 / -0 @ 1002 MHz (Temperature stabilized)	±dB	0.35	-	-	-	
Station flatness - feeder out		±dB	0.6	0.6	0.6	0.6	
Gain - Port 2 (AGC / Manual)		dB	31 / 36	40 / 43	-	42 / 45	
Gain - Port 3 (AGC / Manual)		dB	41 / 46	40 / 43	42 / 45	-	
Gain - Port 4 (AGC / Manual)	dB	41 / 46	40 / 43	42 / 45	42 / 45		
Gain control type		N / A	Plug-in pads				
Gain control steps	Pad value steps	dB	0.5				
<b>Station Output Levels - Digital</b>							
Port 2	@ 54 / 550 / 1002 MHz	dBmV	20 / 27.8 / 35	30 / 37.8 / 45	-	30 / 37.8 / 45	
Port 3			30 / 37.8 / 45	30 / 37.8 / 45	30 / 37.8 / 45	-	
Port 4			30 / 37.8 / 45	30 / 37.8 / 45	30 / 37.8 / 45	30 / 37.8 / 45	
<b>Station Output Levels - Analog</b>							
Port 2	@ 54 / 550 / 1002 MHz	dBmV	26 / 33.8 / 41	36 / 43.8 / 51	-	36 / 43.8 / 51	
Port 3			36 / 43.8 / 51	36 / 43.8 / 51	36 / 43.8 / 51	-	
Port 4			36 / 43.8 / 51	36 / 43.8 / 51	36 / 43.8 / 51	36 / 43.8 / 51	
<b>Station Noise Figure</b>							
Noise figure (w / 1 dB for input EQ loss)	Typ. @ 54 MHz	dB	11.5	14.7	12.4	15.8	
	Typ. @ 550 MHz	dB	6.9	9.1	7.0	8.9	
	Typ. @ 1002 MHz	dB	7.1	10.6	7.4	8.7	
Station Distortions (Worse Case)			Trunk / Feeder	Feeder	Feeder	Feeder	
550 MHz analog channel loading, 79 channels +450 MHz digital channel loading, 256 QAM at -6 dBc relative to its associated visual carrier							
Composite Triple Beat (CTB)		-dBc	83 / 78	75	75	75	
Cross Modulation (XMOD)		-dBc	82 / 73	72	72	72	
Composite Second Order (CSO-)	(Vc +0.75 & -1.25 MHz)	-dBc	79 / 72	71	71	71	
Composite Second Order (CSO+)	(Vc +1.25 MHz )	-dBc	83 / 75	77	79	79	
Carrier-to-Intermodulation Noise (CIN)		-dBc	81 / 76	73	73	73	

## Reverse Spectrum (SDAT, SDAF, SDBT & SDAM)

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 or 20 for SDAT, SDBT, SDAF & SDAM			
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	1.0			
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		6			
Group delay		35 MHz		10			
Group delay		38.5 MHz		33			
Configuration				SDAT (Type 1)	SDBT (Type 6)	SDAF (Type 2-TRI)	SDAM (Type 2-TRI)
Reverse - Noise Figure							
Station noise figure (w / EQ)		Across the bandwidth	dB	15.8	16.1	12.4	15.0
Power Requirements:							
DSIM-A		Includes reverse (Worst case)	W	44.7	52.1	44.1	45.5
Manual			W	42.6	50.0	42.0	43.4
AC Voltage							
Input ranges			VAC	40-90			
Current Draw (with AGC)							
@ 40 VAC		Maximum	A	1.41	1.58	1.39	1.28
@ 50 VAC			A	1.17	1.36	1.16	1.15
@ 60 VAC			A	1.03	1.20	1.02	1.01
@ 70 VAC			A	0.93	1.09	0.92	0.90
@ 80 VAC			A	0.86	1.00	0.85	0.81
@ 90 VAC			A	0.80	0.94	0.79	0.73
Weight				SDAT	SDBT	SDAF	SDAM
Weight			lbs. (kg)	16.0 (7.26)	16.0 (7.26)	16.0 (7.26)	16.0 (7.26)
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)			
Environmental							
Operating temperature			°F (°C)	-40 to +140 (-40 to +60)			



# Station Parameters (SDAB, SDLA, SDLE & ALX) 17.2 dB Slope

STATION PARAMETERS:		1002 MHz 42-53 MHz Split		SDA 1002 MHz With GaN Hybrids 17.2 dB Forward Slope @ 1002 MHz Standard Forward Gain			
		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	17.0			
<b>Test Points</b>							
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	0.5			
<b>Station Slope</b>							
Operational slope - trunk & feeders		@ 54 / 550 / 1002 MHz	dB	0 / 9.0 / 17.2			
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)			
<b>Station Group Delay</b>							
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 & >		4			
<b>AGC</b>							
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				SDAB (Type 2)	SDLA (Type 3-DUAL)	SDLE (Type 3)	ALX (Type 3)
<b>Operational Specifications</b>							
Station passband			MHz				
Station flatness - trunk out	Normalized w / 0 dB slope		±dB	-	-	-	-
Station flatness - feeder out			±dB	0.6	0.6	0.35	0.35
Gain - Port 2 (AGC / Manual)	+0.5 / -0 @ 1002 MHz (Temperature stabilized)		dB	-	35.5 / 40.5	35.5 / 40.5	35.5 / 40.5
Gain - Port 3 (AGC / Manual)			dB	43 / 46	-	-	-
Gain - Port 4 (AGC / Manual)			dB	43 / 46	35.5 / 40.5	-	-
Gain control type			N / A				
Gain control steps		Pad value steps	dB				
<b>Station Output Levels Digital</b>							
Port 2	@ 54 / 550 / 1002 MHz		dBmV	-	29 / 38 / 46.2	29 / 38 / 46.2	29 / 38 / 46.2
Port 3				29 / 38 / 46.2	-	-	-
Port 4				29 / 38 / 46.2	29 / 38 / 46.2	-	-
<b>Station Output Levels Analog</b>							
Port 2	@ 54 / 550 / 1002 MHz		dBmV	-	35 / 44 / 52.2	35 / 44 / 52.2	35 / 44 / 52.2
Port 3				35 / 44 / 52.2	-	-	-
Port 4				35 / 44 / 52.2	35 / 44 / 52.2	-	-
<b>Station Noise Figure</b>							
Noise figure (w / 1 dB for input EQ loss)		Typ. @ 54 MHz	dB	11.8	9.5	8.8	9.0
		Typ. @ 550 MHz	dB	6.6	6.9	6.2	6.4
		Typ. @ 1002 MHz	dB	7.2	7.9	7.3	7.5
<b>Station Distortions (Worse Case)</b>				Feeder	Feeder	Feeder	Feeder
550 MHz analog channel loading, 79 channels +450 MHz digital channel loading, 256 QAM at -6 dBc relative to its associated visual carrier							
Composite Triple Beat (CTB)			-dBc	75	78	81	78
Cross Modulation (XMOD)			-dBc	68	80	76	73
Composite Second Order (CSO-)		(Vc +0.75 & -1.25 MHz)	-dBc	71	75	78	79
Composite Second Order (CSO+)		(Vc +1.25 MHz )	-dBc	77	76	79	78
Carrier-to-Intermodulation Noise (CIN)			-dBc	73	76	79	76

# Station Parameters (SDAB, SDLA, SDLE & ALX) 15.0 dB Slope

STATION PARAMETERS:		1002 MHz 42-53 MHz Split		SDA 1002 MHz With GaN Hybrids 15.0 dB Forward Slope @ 1002 MHz Standard Forward Gain			
	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	17.0				
<b>Test Points</b>							
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	0.5				
<b>Station Slope</b>							
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)				
<b>Station Group Delay</b>							
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 & >		4				
<b>AGC</b>							
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			SDAB (Type 2)	SDLA (Type 3-DUAL)	SDLE (Type 3)	ALX (Type 3)	
<b>Operational Specifications</b>							
Station passband		MHz					
Station flatness - trunk out	Normalized w / 0 dB slope	±dB	-	-	-	-	
Station flatness - feeder out		±dB	0.6	0.6	0.35	0.35	
Gain - Port 2 (AGC / Manual)	+0.5 / -0 @ 1002 MHz (Temperature stabilized)	dB	-	34.5 / 39.5	34.5 / 39.5	34.5 / 39.5	
Gain - Port 3 (AGC / Manual)		dB	42 / 45	-	-	-	
Gain - Port 4 (AGC / Manual)		dB	42 / 45	34.5 / 39.5	-	-	
Gain control type		N / A					
Gain control steps	Pad value steps	dB					
<b>Station Output Levels - Digital</b>							
Port 2	@ 54 / 550 / 1002 MHz	dBmV	-	30 / 37.8 / 45	30 / 37.8 / 45	30 / 37.8 / 45	
Port 3			30 / 37.8 / 45	-	-	-	
Port 4			30 / 37.8 / 45	30 / 37.8 / 45	-	-	
<b>Station Output Levels - Analog</b>							
Port 2	@ 54 / 550 / 1002 MHz	dBmV	-	36 / 43.8 / 51	36 / 43.8 / 51	36 / 43.8 / 51	
Port 3			36 / 43.8 / 51	-	-	-	
Port 4			36 / 43.8 / 51	36 / 43.8 / 51	-	-	
<b>Station Noise Figure</b>							
Noise figure (w / 1 dB for input EQ loss)	Typ. @ 54 MHz	dB	11.8	9.5	8.8	9.0	
	Typ. @ 550 MHz	dB	6.6	6.9	6.2	6.3	
	Typ. @ 1002 MHz	dB	7.2	7.9	7.2	7.6	
Station Distortions (Worse Case)			Feeder	Feeder	Feeder	Feeder	
550 MHz analog channel loading, 79 channels +450 MHz digital channel loading, 256 QAM at -6 dBc relative to its associated visual carrier							
Composite Triple Beat (CTB)		-dBc	77	80	83	75	
Cross Modulation (XMOD)		-dBc	70	81	78	69	
Composite Second Order (CSO-)	(Vc +0.75 & -1.25 MHz)	-dBc	72	76	79	76	
Composite Second Order (CSO+)	(Vc +1.25 MHz )	-dBc	78	77	80	77	
Carrier-to-Intermodulation Noise (CIN)		-dBc	75	78	81	73	

## Reverse Spectrum (SDAB, SDLA, SDLE & ALX)

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 or 20 for SDAB 18 or 23 for SDLA 18, 21 or 24 for SDLE & ALX			
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	1.0			
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		6			
Group delay		35 MHz		10			
Group delay		38.5 MHz		33			
Configuration				SDAB (Type 2)	SDLA (Type 3-DUAL)	SDLE (Type 3)	ALX (Type 3)
Reverse - Noise Figure							
Station noise figure (w / EQ)		Across the bandwidth	dB	14.6	12.2	10.0	9.7
Power Requirements:							
DSIM-A		Includes reverse (Worst case)	W	44.1	39.7	26.8	26.3
Manual			W	42.0	37.5	24.6	24.2
AC Voltage							
Input ranges			VAC	40-90			
Current Draw (with AGC)							
@ 40 VAC		Maximum	A	1.39	1.25	0.85	0.75
@ 50 VAC			A	1.16	1.05	0.72	0.63
@ 60 VAC			A	1.02	0.92	0.64	0.58
@ 70 VAC			A	0.92	0.84	0.59	0.51
@ 80 VAC			A	0.85	0.77	0.55	0.46
@ 90 VAC			A	0.79	0.72	0.50	0.42
Weight				SDAB	SDLA	SDLE	ALX
Weight			lbs. (kg)	16.0 (7.26)	14.5 (6.58)	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)			

# Ordering Matrix

## SDA & ALX 15 Amp 1002 MHz GaN Product Configuration Worksheet

Customer: \_\_\_\_\_

Created By: \_\_\_\_\_ Order Date: \_\_\_\_\_

### ORDERING MATRIX

December 6, 2018

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

- 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  
 J = SDBT 3 Equal Output Feeder      W = SDAM 2 or 3 Output Feeder

- 2  BANDWIDTH 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	TYPE 1	TYPE 6	TYPE 2 TRI	TYPE 2 TRI	TYPE 2	TYPE 3 DUAL	TYPE 3	TYPE 3
Amplifier Model	SDAT	SDBT	SDAF	SDAM	SDAB	SDLA	SDLE	ALX
Frequency	1002	1002	1002	1002	1002	1002	1002	1002
Max gain with AGC/ Thermal	36	44	46	43	46	35.5	38.5	38.5
Max gain w/AGC bypass	41	47	49	46	49	40.5	43.5	43.5

- 5,6  CONTROL TYPE  
 D2 = DSIM-A Single Pilot AGC (Analog or Digital pilot) - Pilot channel loaded during setup  
 M1 = Manual (AGC Bypass)

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

8  STATION SLOPE

	42/54 or 40/50	85/105	240/258
E=	17.2	16.2	14.2
F=	15.0	14.0	12.0
T=	14.0	13.0	11.0
*K=	7.9	6.9	4.9

\*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 - Standard with TP (Same as option E)  
 1 = Module upgrade kit with power supply and seizure screws      G = ALX - Standard low profile line extender with TP  
 E = SDA - Standard with TP  
 C = SDA - Standard with TP (Same as option E)

- 10  DIPLEX FREQUENCY SPLIT  
 4 = 42 / 53      7 = 40 / 50      5 = 55 / 70      6 = 65 / 85      8 = 85 / 105      2 = 204 / 258

- 11  STATION GAIN (Reverse)  
 0 = None      4 = 18 dB min (SDA: T, B, F, M, LA, BT)      J = 20 dB min (SDA: T, B, F, M, LA, BT)  
 1 = Passive      H = 18 dB min (SDLE & ALX)      T = 23 dB min (SDA: B, LA)  
    R = 21 dB min (SDLE, LA & ALX)      U = 24 dB min (SDLE & ALX)

- 12  SURGE PROTECTION  
 A = Version 5 SDA 45-90 VAC power supply and plug-in sidactor or ALX with Plug-in sidactor (Standard)  
 B = Version 4 SDA 40-90 VAC power supply with fuse surge protection  
 D = Version 5 SDA 45-90 VAC power supply and plug-in sidactor  
 K = Version 6 SDA 45-90 VAC power supply with fuse surge protection and plug-in sidactor  
 F = ALX with plug-in sidactor & fuse holder on power supply cover  
 C = No Sidactor - Triac only (Included in the SDA power supply)  
 \* For SDA module only units, select the power supply version that is in the current complete station.

- 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      A = GaN Hybrids & Pad adjustable EQ's      N = GaN Forward Hybrids

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 (For using fixed value plug-in equalizers)

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

### 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 Apple iOS or android	DSIM-DONGLE-02
Cable assembly DSIM adaptor to connect controller	240330-01
Manual AGC (Bypass plug-in)	AGC-BYPASS-1G
Pad Adjustable Equalizer JXP Platform 0-18 dB	AEQDA1G
Pad Adjustable Cable Equivalent Equalizers JXP Platform 0-9 dB	ACEQ1G
Pad Adjustable Reverse Equalizers 5-42, 85 and 204 MHz JXP Platform 0-12 dB	AREQDA42 AREQDA85 AREQDA204
Reverse Rejection Filter 14 MHz	RPRFLTR-14
Reverse Rejection Filter 8 MHz	RPRFLTR-8
Reverse Rejection Filter by-pass	RPRFLTR-JMP

## Optional Accessories (Continued)

Description	Part Numbers
DC/SP3 Plug-in - SDAF only	SDA1G-SPLTR3.5 SDA1G-DC10 SDA1G-DC7 SDA1G-DC12
DC/SP3 Plug-in - SDAM only	SDASPLTR3.5 SDADC7 SDADC10 SDADC12
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
EQ Puller Tool	130311
Nut Driver 1/2"	130312
Nut Driver 5/8"	130313
Power Supply with fuse (40-90 VAC) Version 4	SDA90VSP-V4
Power Supply (45-90 VAC) Version 5	SDA90VSP-V5
Replacement SDA Housing	HSG03/00
Replacement ALX Housing	HSG15/00
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

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