



SDA and ALX

MiniFlex Super Distribution Amplifiers 1002 MHz 85/105 MHz Frequency Split

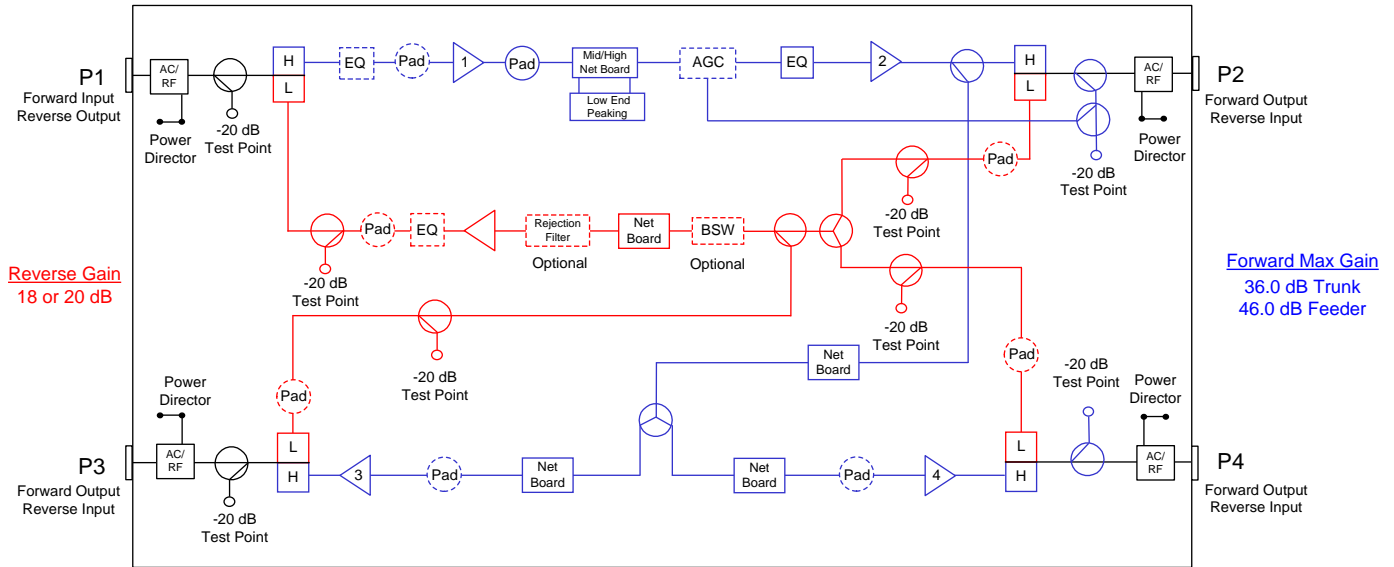
The ACI MiniFlex super distribution RF amplifiers are now offered with the Gallium Nitride (GaN) hybrid technology that allows for 3 dB higher output levels while maintaining close to the same specifications as the previous stations with the Gallium Arsenide (GaAs) hybrids. With this increase in the 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 a 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, 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

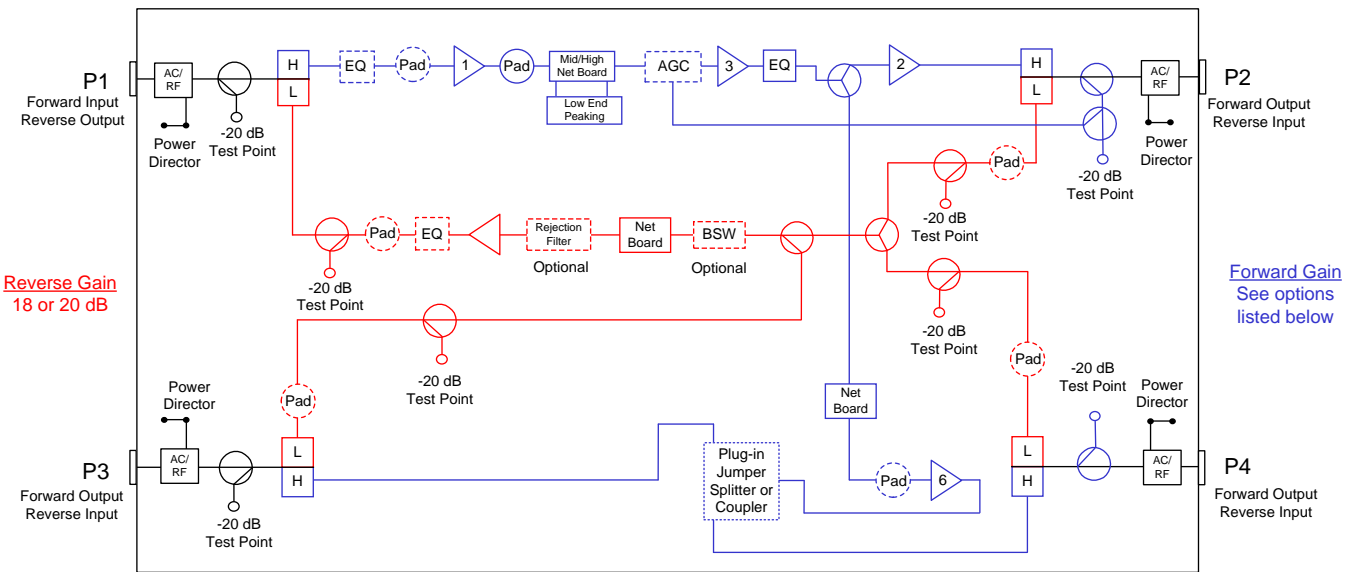
SDAT (Type 1) 1002 MHz GaN Amplifier Block Diagram



Note:

1. Forward gain stated at 1002 MHz with DSIM AGC. Reverse gain stated at 85 MHz.

SDAM (Type 7) 1002 MHz GaN Amplifier Block Diagram



Jumper Position #1

Jumper Position #2

SDASPLTR3.5

SDADC7

SDADC7

SDADC10

SDADC10

SDADC12

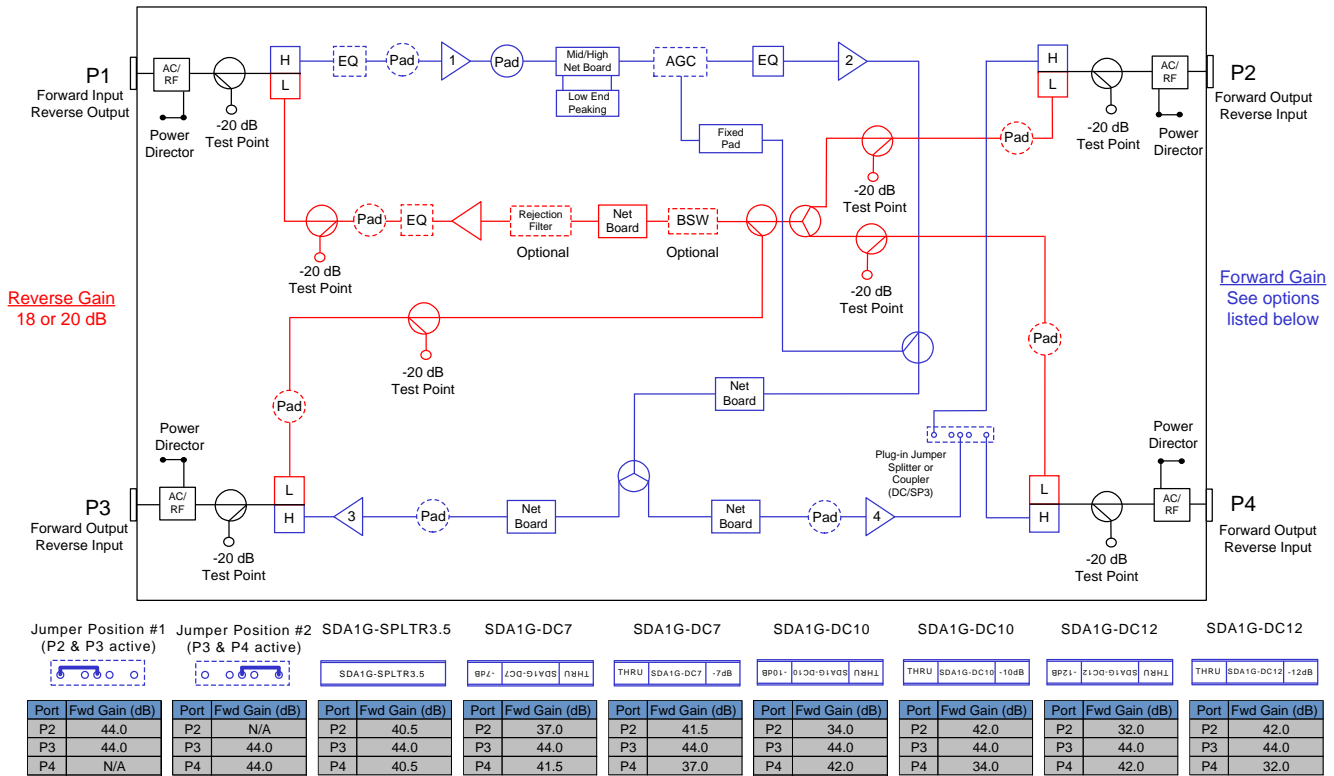
SDADC12

Port	Fwd Gain (dB)	Port	Fwd Gain (dB)	Port	Fwd Gain (dB)	Port	Fwd Gain (dB)	Port	Fwd Gain (dB)	Port	Fwd Gain (dB)	Port	Fwd Gain (dB)	Port	Fwd Gain (dB)	Port	Fwd Gain (dB)
P2	44.0	P2	44.0	P2	44.0	P2	44.0	P2	44.0	P2	44.0	P2	44.0	P2	44.0	P2	44.0
P3	44.0	P3	N/A	P4	40.5	P3	37.0	P3	41.5	P3	34.0	P3	42.0	P3	32.0	P3	42.0
P4	N/A	P4	44.0	P4	40.5	P4	41.5	P4	37.0	P4	42.0	P4	34.0	P4	42.0	P4	32.0

Notes:

1. Forward gain stated at 1002 MHz with DSIM AGC. Reverse gain stated at 85 MHz.
2. Amplifiers are configured at the factory with jumper in Position #2 to have P2 & P4 active. Splitters and Couplers are sold separately.

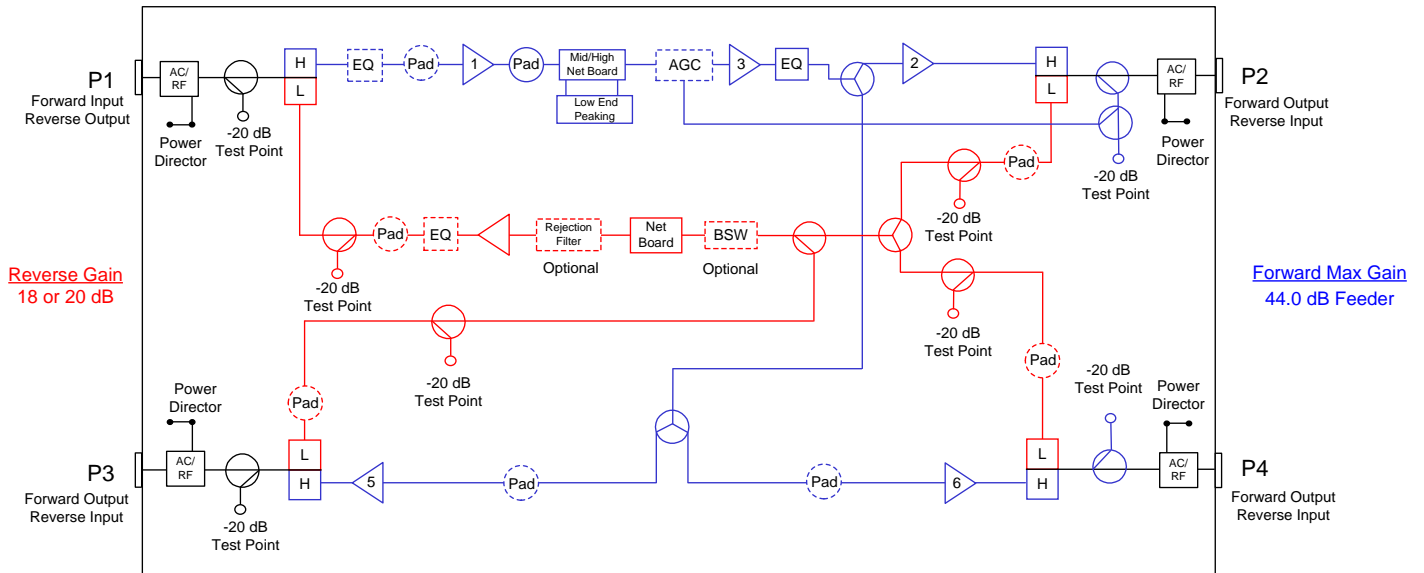
SDAF (Type 2-TRI) 1002 MHz GaN Amplifier Block Diagram



Notes:

1. Forward gain stated at 1002 MHz with DSIM AGC. Reverse gain stated at 85 MHz.
2. Amplifiers are configured at the factory with jumper in Position #2 to have P3 & P4 active. Splitters and Couplers are sold separately.

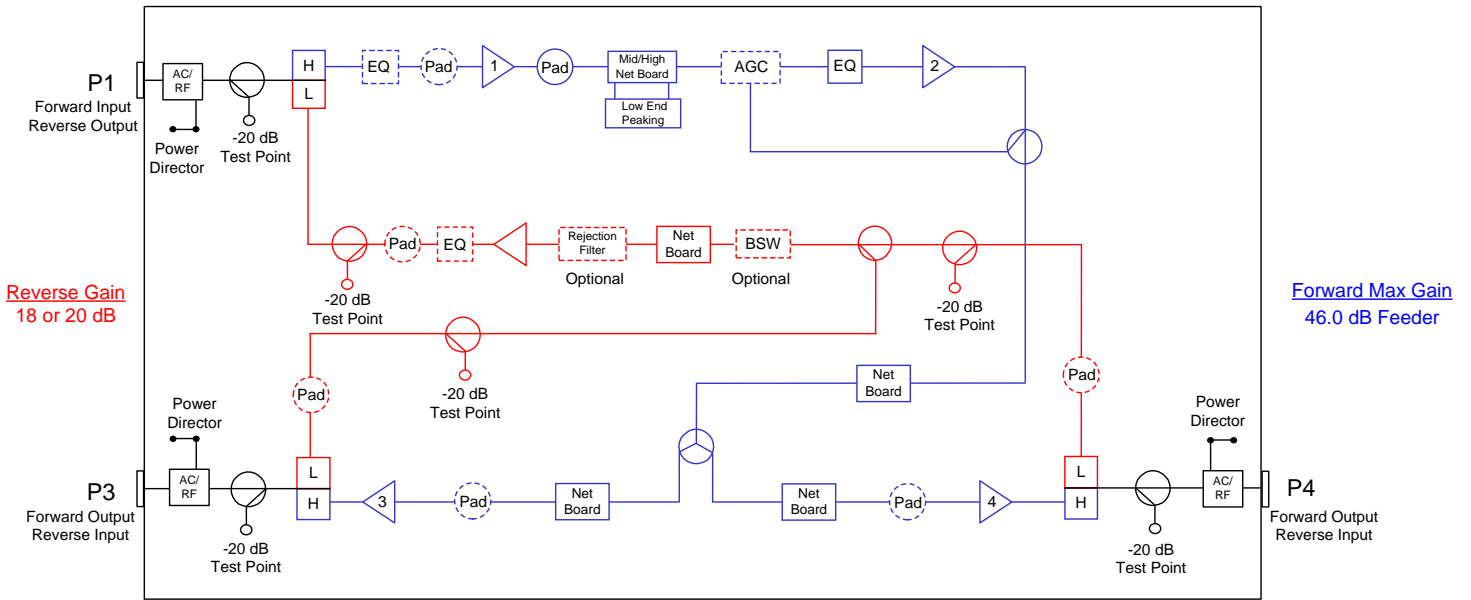
SDBT (Type 6) 1002 MHz GaN Amplifier Block Diagram



Note:

1. Forward gain stated at 1002 MHz with DSIM AGC. Reverse gain stated at 85 MHz.

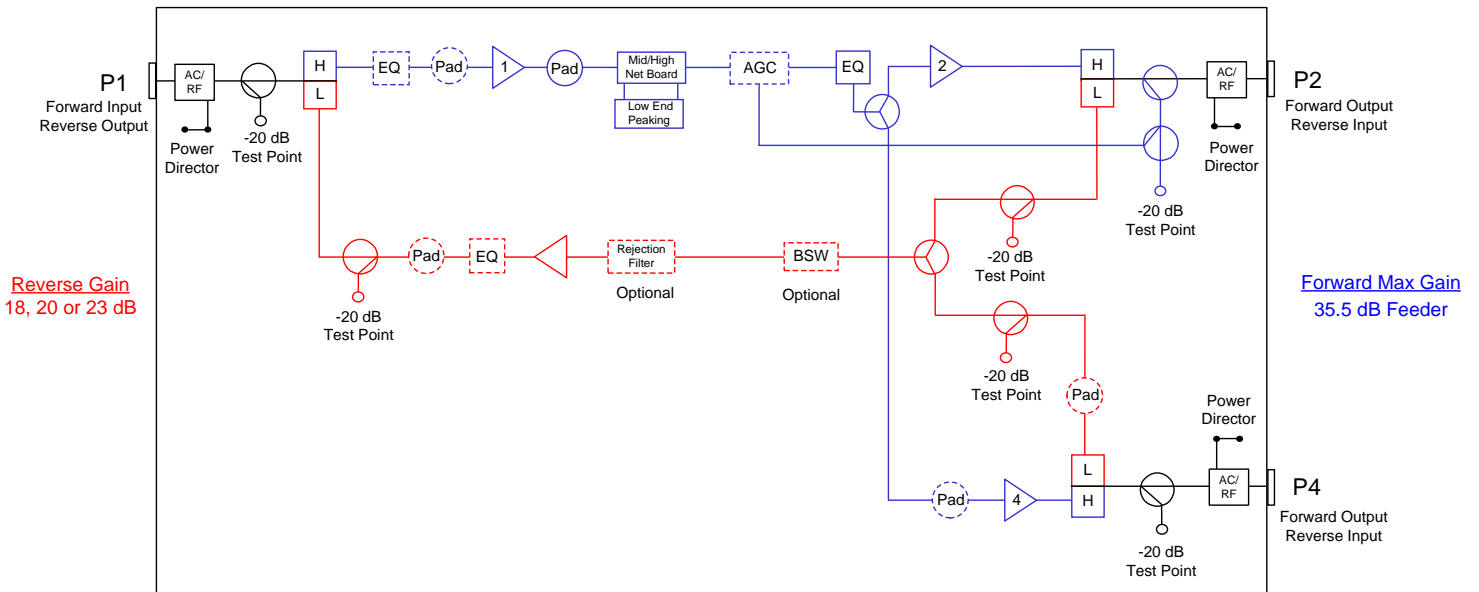
SDAB (Type 2) 1002 MHz GaN Amplifier Block Diagram



Note:

1. Forward gain stated at 1002 MHz with DSIM AGC. Reverse gain stated at 85 MHz.

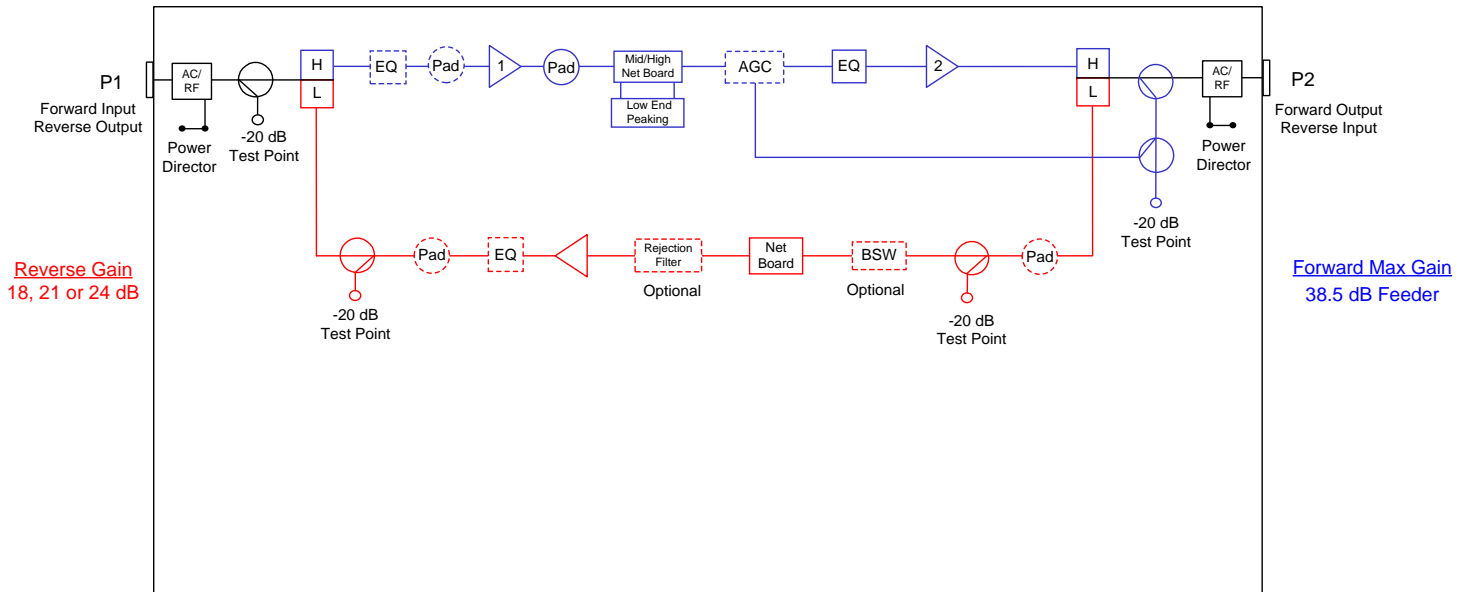
SDLA (Type 3-Dual) 1002 MHz GaN Amplifier Block Diagram



Note:

1. Forward gain stated at 1002 MHz with DSIM AGC. Reverse gain stated at 85 MHz.

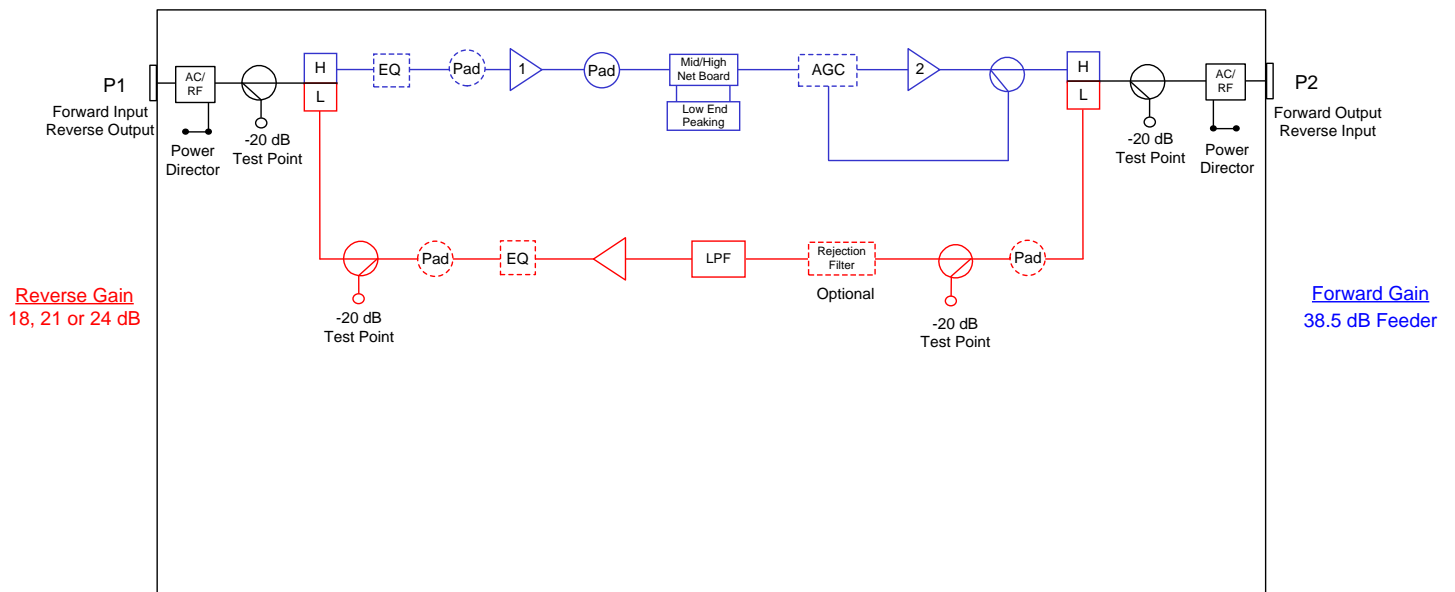
SDLE (Type 3) 1002 MHz GaN Amplifier Block Diagram



Note:

1. Forward gain stated at 1002 MHz with DSIM AGC. Reverse gain stated at 85 MHz.

ALX (Type 3) 1002 MHz GaN Amplifier Block Diagram



Note:

1. Forward gain stated at 1002 MHz with DSIM AGC. Reverse gain stated at 85 MHz.

Station Parameters (SDAT, SDBT, SDAF, & SDAM) 16.2 dB Slope

STATION PARAMETERS:		1002 MHz 85-105 MHz Split		SDA 1002 MHz With GaN Hybrids 16.2 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 @ 5-85 MHz 70 @ 105-1002 MHz			
Return loss	Any port, worst case		dB	17.0			
Test Points							
Frequency range			MHz	5 to 85 (Reverse) / 105 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			
Station Slope							
Operational slope - trunk & feeders	@ 105 / 550 / 1002 MHz		dB	0 / 8.0 / 16.2			
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)			
Station Group Delay							
Group delay	109.25 MHz		nSec / 3.58 MHz	40 (35 Typical)			
Group delay	115.25 MHz			16			
Group delay	121.25 MHz			10			
Group delay	127.25 MHz			4			
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				SDAT (Type 1)	SDBT (Type 6)	SDAF (Type 2-TR1)	SDAM (Type 2-TR1)
Operational Specifications							
Station passband			MHz	105 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	36 / 41	44 / 49	-	44 / 49
Gain - Port 3 (AGC / Manual)			dB	46 / 51	44 / 49	44 / 49	-
Gain - Port 4 (AGC / Manual)			dB	46 / 51	44 / 49	44 / 49	44 / 49
Gain control type				N / A	Plug-in pads		
Gain control steps	Pad value steps		dB	0.5			
Station Output Levels Digital							
Port 2	@ 105 / 550 / 1002 MHz		dBmV	22.8 / 30.8 / 39.0	32.8 / 40.8 / 49.0	-	32.8 / 40.8 / 49.0
Port 3			dBmV	32.8 / 40.8 / 49.0	32.8 / 40.8 / 49.0	32.8 / 40.8 / 49.0	-
Port 4			dBmV	32.8 / 40.8 / 49.0	32.8 / 40.8 / 49.0	32.8 / 40.8 / 49.0	32.8 / 40.8 / 49.0
Station Output Levels Analog							
Port 2	@ 105 / 550 / 1002 MHz		dBmV	28.8 / 36.8 / 45.0	38.8 / 46.8 / 55.0	-	38.8 / 46.8 / 55.0
Port 3			dBmV	38.8 / 46.8 / 55.0	38.8 / 46.8 / 55.0	38.8 / 46.8 / 55.0	-
Port 4			dBmV	38.8 / 46.8 / 55.0	38.8 / 46.8 / 55.0	38.8 / 46.8 / 55.0	38.8 / 46.8 / 55.0
Station Noise Figure							
Noise figure (w / 1 dB for input EQ loss)	Typ. @ 105 MHz		dB	11.2	14.8	12.1	11.9
	Typ. @ 550 MHz		dB	6.7	8.6	6.7	7.4
	Typ. @ 1002 MHz		dB	6.9	10.0	7.1	8.2
Station Distortions (Worse Case)							
				Trunk / Feeder	Feeder	Feeder	Feeder
550 MHz analog channel loading, 74 channels +450 MHz digital channel loading, 256 QAM at -6 dBc relative to its associated visual carrier							
Composite Triple Beat (CTB)			-dBc	76 / 71	70	73	73
Cross Modulation (XMOD)			-dBc	74 / 65	68	79	72
Composite Second Order (CSO-)	(Vc +0.75 & -1.25 MHz)		-dBc	75 / 68	73	69	72
Composite Second Order (CSO+)	(Vc +1.25 MHz)		-dBc	80 / 72	78	73	82
Carrier-to-Intermodulation Noise (CIN)			-dBc	74 / 69	68	71	71

Station Parameters (SDAT, SDBT, SDAF, & SDAM) 14.0 dB Slope

STATION PARAMETERS:		1002 MHz 85-105 MHz Split		SDA 1002 MHz With GaN Hybrids 14.0 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 @ 5-85 MHz 70 @ 105-1002 MHz			
Return loss	Any port, worst case		dB	17.0			
Test Points							
Frequency range			MHz	5 to 85 (Reverse) / 105 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			
Station Slope							
Operational slope - trunk & feeders	@ 105 / 550 / 1002 MHz		dB	0 / 6.9 / 14.0			
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	109.25 MHz			40 (35 Typical)			
Group delay	115.25 MHz	nSec /		16			
Group delay	121.25 MHz	3.58 MHz		10			
Group delay	127.25 MHz			4			
AGC							
Pilot Channel Type			N / A	DSIM-A Single Pilot Channel AGC			
Compensation Range			dB	NTSC Analog or QAM			
Accuracy			±dB	System compensation input change +3/-6 @ 1002 MHz			
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)
Operational Specifications							
Station passband			MHz	105 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	36 / 41	44 / 49	-
Gain - Port 3 (AGC / Manual)			dB	46 / 51	44 / 49	44 / 49	-
Gain - Port 4 (AGC / Manual)			dB	46 / 51	44 / 49	44 / 49	44 / 49
Gain control type			N / A	Plug-in pads			
Gain control steps	Pad value steps		dB	0.5			
Station Output Levels - Digital							
Port 2	@ 105 / 550 / 1002 MHz		dBmV	25.0 / 31.9 / 39.0	35.0 / 41.9 / 49.0	-	35.0 / 41.9 / 49.0
Port 3			dBmV	35.0 / 41.9 / 49.0	35.0 / 41.9 / 49.0	35.0 / 41.9 / 49.0	-
Port 4			dBmV	35.0 / 41.9 / 49.0	35.0 / 41.9 / 49.0	35.0 / 41.9 / 49.0	35.0 / 41.9 / 49.0
Station Output Levels - Analog							
Port 2	@ 105 / 550 / 1002 MHz		dBmV	31.0 / 37.9 / 45.0	41.0 / 47.9 / 55.0	-	41.0 / 47.9 / 55.0
Port 3			dBmV	41.0 / 47.9 / 55.0	41.0 / 47.9 / 55.0	41.0 / 47.9 / 55.0	-
Port 4			dBmV	41.0 / 47.9 / 55.0	41.0 / 47.9 / 55.0	41.0 / 47.9 / 55.0	41.0 / 47.9 / 55.0
Station Noise Figure							
Noise figure (w / 1 dB for input EQ loss)	Typ. @ 105 MHz		dB	11.2	14.8	12.1	11.9
	Typ. @ 550 MHz		dB	6.7	8.6	6.7	7.4
	Typ. @ 1002 MHz		dB	6.9	10.0	7.1	8.2
Station Distortions (Worse Case)				Trunk / Feeder	Feeder	Feeder	Feeder
550 MHz analog channel loading, 74 channels +450 MHz digital channel loading, 256 QAM at -6 dBc relative to its associated visual carrier							
Composite Triple Beat (CTB)			-dBc	78 / 73	68	75	69
Cross Modulation (XMOD)			-dBc	76 / 67	66	72	70
Composite Second Order (CSO-)	(Vc +0.75 & -1.25 MHz)		-dBc	76 / 69	72	70	70
Composite Second Order (CSO+)	(Vc +1.25 MHz)		-dBc	81 / 73	75	74	73
Carrier-to-Intermodulation Noise (CIN)			-dBc	76 / 71	66	73	69

Reverse Spectrum (SDAT, SDBT, SDAF, & 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 85			
Station flatness		Normalized w / 0 dB slope	±dB	0.5			
Reverse - Station Gain							
Gain		+0.5 / -0 @ 85 MHz (Temperature stabilized)	dB	18 or 20 for SDAT, SDBT, SDAF & SDAM			
Gain control type				Plug-in pads			
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)		12 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		80.5 MHz		10			
Group delay		83.5 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	45-90			
Current Draw (with AGC)							
@ 45 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) 16.2 dB Slope

STATION PARAMETERS:		1002 MHz 85-105 MHz Split		SDA 1002 MHz With GaN Hybrids 16.2 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 @ 5-85 MHz 70 @ 105-1002 MHz			
Return loss	Any port, worst case		dB	17.0			
Test Points							
Frequency range			MHz	5 to 85 (Reverse) / 105 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			
Station Slope							
Operational slope - trunk & feeders	@ 105 / 550 / 1002 MHz		dB	0 / 8.0 / 16.2			
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)			
Station Group Delay							
Group delay	109.25 MHz	nSec / 3.58 MHz		40 (35 Typical)			
Group delay	115.25 MHz			16			
Group delay	121.25 MHz			10			
Group delay	127.25 MHz			4			
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				SDAB (Type 2)	SDLA (Type 3-DUAL)	SDLE (Type 3)	ALX (Type 3)
Operational Specifications							
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	38.5 / 43.5	38.5 / 43.5
Gain - Port 3 (AGC / Manual)			dB	46 / 51	-	-	-
Gain - Port 4 (AGC / Manual)			dB	46 / 51	35.5 / 40.5	-	-
Gain control type				N / A			
Gain control steps	Pad value steps		dB				
Station Output Levels Digital							
Port 2	@ 105 / 550 / 1002 MHz		dBmV	-	32.8 / 40.8 / 49.0	32.8 / 40.8 / 49.0	32.8 / 40.8 / 49.0
Port 3				32.8 / 40.8 / 49.0	-	-	-
Port 4				32.8 / 40.8 / 49.0	32.8 / 40.8 / 49.0	-	-
Station Output Levels Analog							
Port 2	@ 105 / 550 / 1002 MHz		dBmV	-	38.8 / 46.8 / 55.0	38.8 / 46.8 / 55.0	38.8 / 46.8 / 55.0
Port 3				38.8 / 46.8 / 55.0	-	-	-
Port 4				38.8 / 46.8 / 55.0	38.8 / 46.8 / 55.0	-	-
Station Noise Figure							
Noise figure (w / 1 dB for input EQ loss)	Typ. @ 105 MHz		dB	11.5	9.2	9.3	8.9
	Typ. @ 550 MHz		dB	6.4	6.7	6.9	7.9
	Typ. @ 1002 MHz		dB	7.0	7.7	8.1	7.1
Station Distortions (Worse Case)				Feeder	Feeder	Feeder	Feeder
550 MHz analog channel loading, 74 channels +450 MHz digital channel loading, 256 QAM at -6 dBc relative to its associated visual carrier							
Composite Triple Beat (CTB)			-dBc	70	72	70	73
Cross Modulation (XMOD)			-dBc	62	84	68	67
Composite Second Order (CSO-)	(Vc +0.75 & -1.25 MHz)		-dBc	68	75	74	76
Composite Second Order (CSO+)	(Vc +1.25 MHz)		-dBc	75	76	75	76
Carrier-to-Intermodulation Noise (CIN)			-dBc	68	70	68	71

Station Parameters (SDAB, SDLA, SDLE & ALX) 14.0 dB Slope

STATION PARAMETERS:		1002 MHz 85-105 MHz Split		SDA 1002 MHz With GaN Hybrids 14.0 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 @ 5-85 MHz 70 @ 105-1002 MHz			
Return loss	Any port, worst case		dB	17.0			
Test Points							
Frequency range			MHz	5 to 85 (Reverse) / 105 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			
Station Slope							
Operational slope - trunk & feeders	@ 105 / 550 / 1002 MHz		dB	0 / 6.9 / 14.0			
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 & >			4			
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				SDAB (Type 2)	SDLA (Type 3-DUAL)	SDLE (Type 3)	ALX (Type 3)
Operational Specifications							
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	38.5 / 43.5	38.5 / 43.5
Gain - Port 3 (AGC / Manual)			dB	46 / 51	-	-	-
Gain - Port 4 (AGC / Manual)			dB	46 / 51	35.5 / 40.5	-	-
Gain control type			N / A				
Gain control steps	Pad value steps		dB				
Station Output Levels - Digital							
Port 2	@ 105 / 550 / 1002 MHz		dBmV	-	35.0 / 41.9 / 49.0	35.0 / 41.9 / 49.0	35.0 / 41.9 / 49.0
Port 3				35.0 / 41.9 / 49.0	-	-	-
Port 4				35.0 / 41.9 / 49.0	35.0 / 41.9 / 49.0	-	-
Station Output Levels - Analog							
Port 2	@ 105 / 550 / 1002 MHz		dBmV	-	41.0 / 47.9 / 55.0	41.0 / 47.9 / 55.0	41.0 / 47.9 / 55.0
Port 3				41.0 / 47.9 / 55.0	-	-	-
Port 4				41.0 / 47.9 / 55.0	41.0 / 47.9 / 55.0	-	-
Station Noise Figure							
Noise figure (w / 1 dB for input EQ loss)	Typ. @ 105 MHz		dB	11.5	9.2	9.3	8.9
	Typ. @ 550 MHz		dB	6.4	6.7	6.9	7.9
	Typ. @ 1002 MHz		dB	7.0	7.7	8.1	7.1
Station Distortions (Worse Case)				Feeder	Feeder	Feeder	Feeder
550 MHz analog channel loading, 74 channels +450 MHz digital channel loading, 256 QAM at -6 dBc relative to its associated visual carrier							
Composite Triple Beat (CTB)			-dBc	72	74	72	70
Cross Modulation (XMOD)			-dBc	64	86	70	63
Composite Second Order (CSO-)	(Vc +0.75 & -1.25 MHz)		-dBc	69	76	75	73
Composite Second Order (CSO+)	(Vc +1.25 MHz)		-dBc	76	77	76	75
Carrier-to-Intermodulation Noise (CIN)			-dBc	70	72	70	68

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 85			
Station flatness		Normalized w / 0 dB slope	±dB	0.5			
Reverse - Station Gain							
Gain		+0.5 / -0 @ 85 MHz (Temperature stabilized)	dB	18 or 20 for SDAB 18, 20 or 23 for SDLA 18, 21 or 24 for SDLE & ALX			
Gain control type				Plug-in pads			
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)		12 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		80.5 MHz		10			
Group delay		83.5 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	42.6	39.7	26.8	26.3
Manual			W	40.5	37.5	24.6	24.2
AC Voltage							
Input ranges			VAC	45-90			
Current Draw (with AGC)							
@ 45 VAC		Maximum	A	1.22	1.25	0.85	0.75
@ 50 VAC			A	1.14	1.05	0.72	0.63
@ 60 VAC			A	1.04	0.92	0.64	0.58
@ 70 VAC			A	0.94	0.84	0.59	0.51
@ 80 VAC			A	0.85	0.77	0.55	0.46
@ 90 VAC			A	0.78	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

April 22, 2021

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
Max gain with AGC/ Thermal	36	44	44	44	46	35.5	38.5	38.5
Max gain w/AGC bypass	41	49	49	49	51	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
- | | 54-1002 | 105-1002 | 258-1002 |
|-----|---------|----------|----------|
| E= | 17.2 | 16.2 | 13.7 |
| F= | 15.0 | 14.0 | 11.5 |
| T= | 14.0 | 13.0 | 10.5 |
| *K= | 7.9 | 6.9 | 4.4 |

*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 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
 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 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"> • 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) REQDA204/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

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 (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	030770-01
Seizure Screw / RF Connector 15A	100633-01



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

Rev C 06-08-2021 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. ACI and DSIM are registered trademarks and ASEM and ACION are trademarks of ACI. Other trademarks are the property of their respective owners, and ACI is in no way affiliated with these companies.