



SDA and ALX

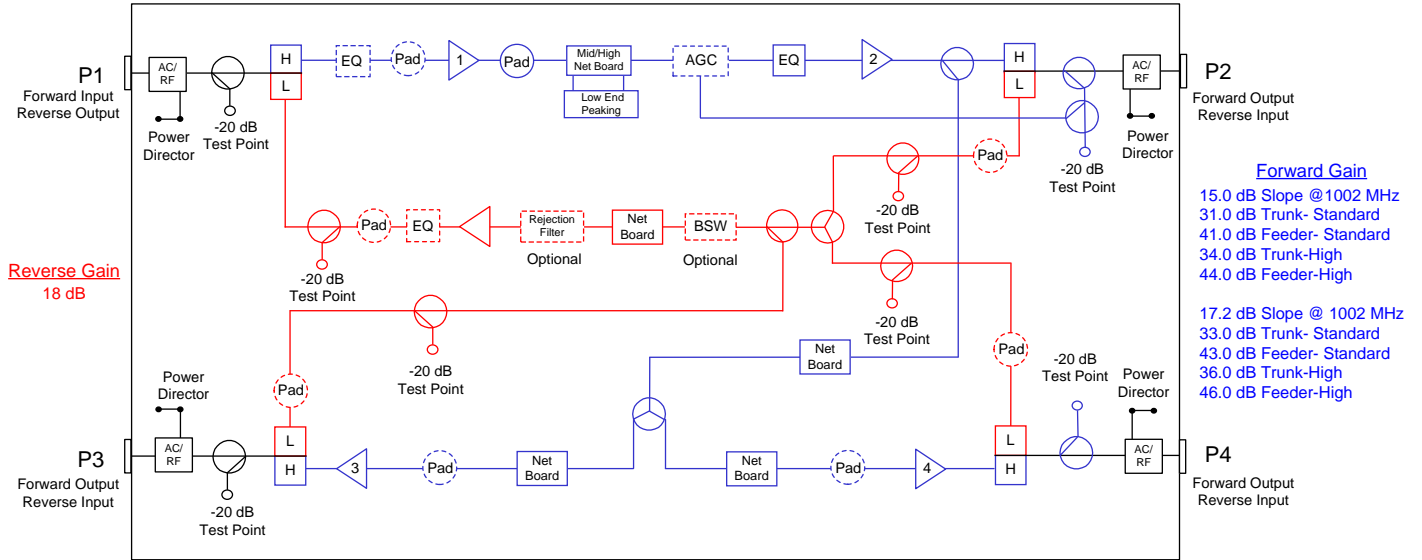
MiniFlex Super Distribution Amplifiers 1002 MHz

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 MHz option that will double the reverse bandwidth
- ◆ Common 1002 MHz housing platform
- ◆ Optional, 8 or 14 MHz reverse path rejection filter (sold separately)
- ◆ AGC or thermal or manual options
- ◆ 5 to 42, 55, 65 or 85 MHz reverse path
- ◆ Increased reliability with higher surge protection in the GaN hybrids
- ◆ Up to 3 dB higher output levels with same distortion performance
- ◆ Ideal for fiber deep networks with the extended reach of the amplifiers
- ◆ Ideal for traditional HFC networks for increased performance & reliability
- ◆ Lower power consumption

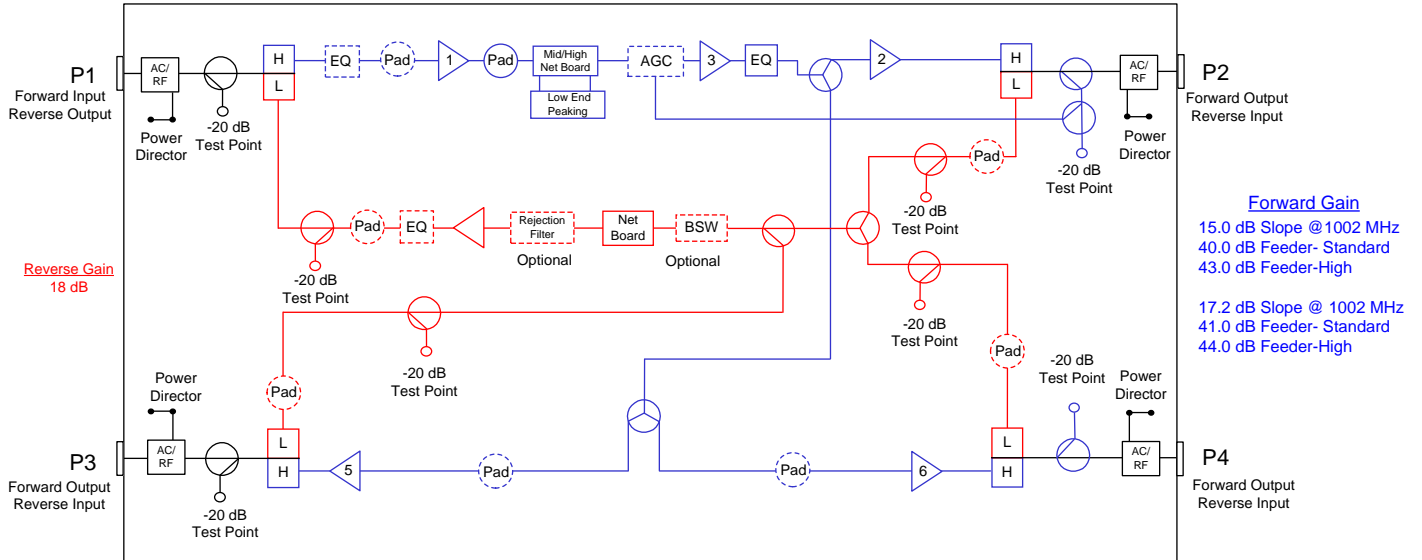
SDAT (Type 1A, 1T & 1M) 1002 MHz GaN Amplifier Block Diagram



Note:

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

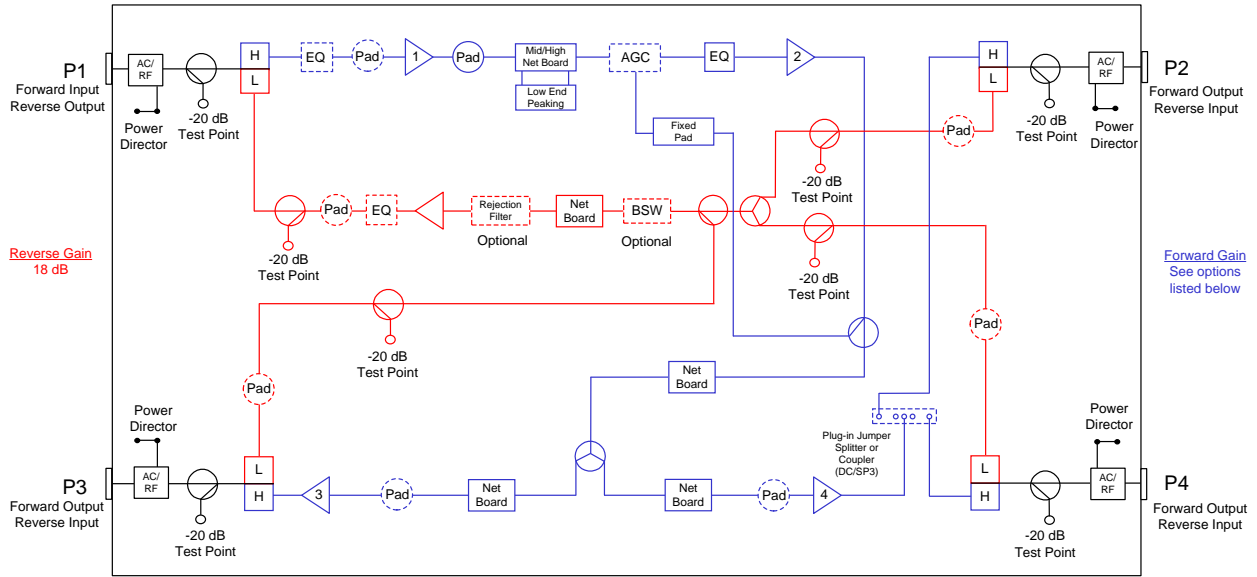
SDBT (Type 6A, 6T & 6M) 1002 MHz GaN Amplifier Block Diagram



Note:

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

SDAF (Type 2A-TRI, 2T-TRI, 2M-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 P3 & P4 active. Splitters and Couplers are sold separately.

Jumper Position #1
(P2 & P3 active)



Port	Fwd Gain (dB)	HG	SG
P2	46.0	43.0	
P3	46.0	43.0	
P4	N/A	N/A	

Jumper Position #2
(P3 & P4 active)



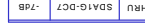
Port	Fwd Gain (dB)	HG	SG
P2	N/A	N/A	
P3	46.0	43.0	
P4	46.0	46.0	

SDA1G-SPLTR3.5



Port	Fwd Gain (dB)	HG	SG
P2	42.5	39.5	
P3	46.0	43.0	
P4	42.5	39.5	

SDA1G-DC7



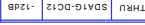
Port	Fwd Gain (dB)	HG	SG
P2	39.0	36.0	
P3	46.0	43.0	
P4	43.5	40.5	

SDA1G-DC7



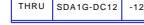
Port	Fwd Gain (dB)	HG	SG
P2	43.5	40.5	
P3	46.0	43.0	
P4	39.0	36.0	

SDA1G-DC12



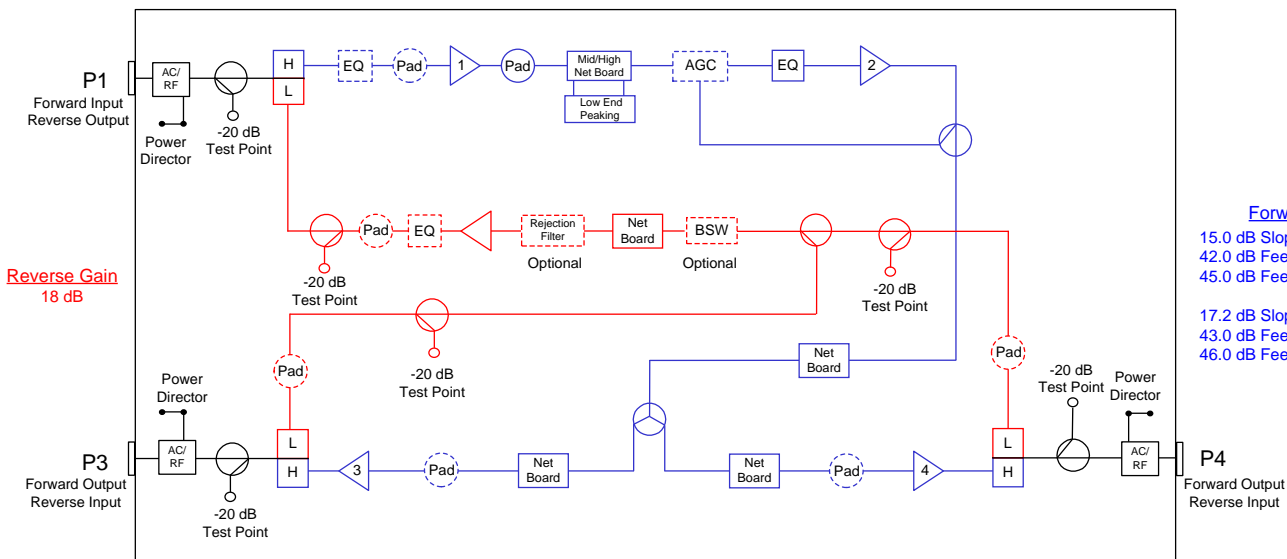
Port	Fwd Gain (dB)	HG	SG
P2	34.0	31.0	
P3	46.0	43.0	
P4	43.0	41.0	

SDA1G-DC12



Port	Fwd Gain (dB)	HG	SG
P2	44.0	41.0	
P3	46.0	43.0	
P4	34.0	31.0	

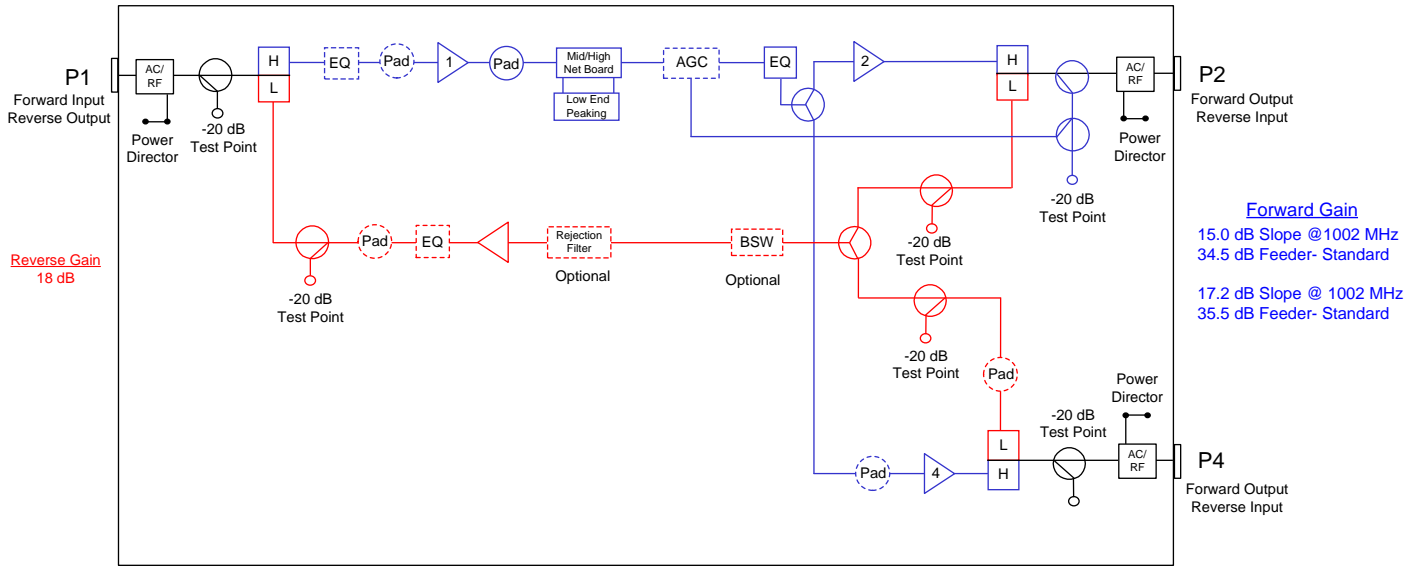
SDAB (Type 2A, 2T & 2M) 1002 MHz GaN Amplifier Block Diagram



Note:

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

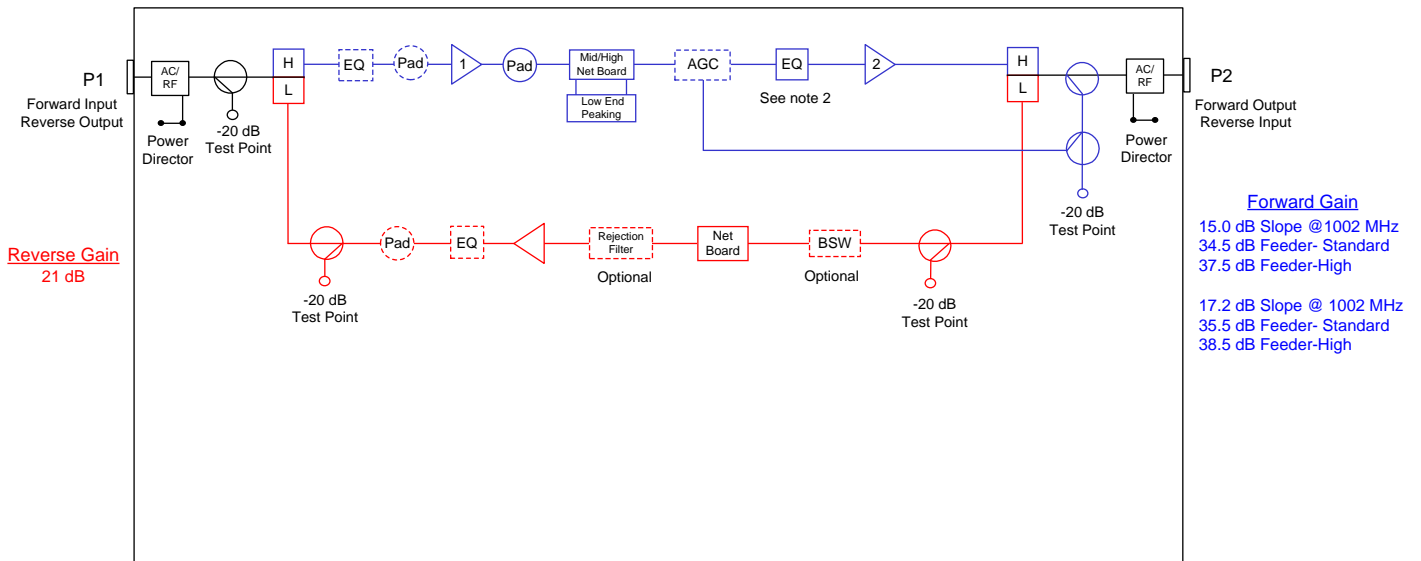
SDLA (Type 3A, 3T, & 3M Dual) 1002 MHz GaN Amplifier Block Diagram



Note:

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

SDLE & ALX (Type 3A, 3T, & 3M) 1002 MHz GaN 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 PARAMETERS: 1002 MHz 42-53 MHz Split			SDA 1002 MHz With GaN Hybrids 17.2 dB Forward Slope @ 1002 MHz High 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					
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	0.5					
Station Slope								
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)					
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								
DSIM-A Single Pilot Channel AGC								
Pilot Channel Type		N / A	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) High Gain	SDBT (Type 6) High Gain	SDAF (Type 2-TRI) High Gain	SDAB (Type 2) High Gain	SDLE (Type 3) High Gain	ALX (Type 3) High Gain
Operational Specifications								
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	0.35	0.35
Gain - Port 2 (AGC / Manual)	+0.5 / -0 @ 1002 MHz (Temperature stabilized)	dB	36 / 41	43 / 47	-	-	38.5 / 43.5	38.5 / 43.5
Gain - Port 3 (AGC / Manual)		dB	46 / 51	43 / 47	46 / 49	46 / 49	-	-
Gain - Port 4 (AGC / Manual)		dB	46 / 51	43 / 47	46 / 49	46 / 49	-	-
Gain control type		N / A	Plug-in pads					
Gain control steps	Pad value steps	dB	0.5					
Station Output Levels - Digital								
Port 2	@ 54 / 550 / 1002 MHz	dBmV	22 / 31.0 / 39.2	32 / 41.0 / 49.2	-	-	32 / 41.0 / 49.2	32 / 41.0 / 49.2
Port 3			32 / 41.0 / 49.2	32 / 41.0 / 49.2	32 / 41.0 / 49.2	32 / 41.0 / 49.2	-	-
Port 4			32 / 41.0 / 49.2	38 / 47.0 / 55.2	32 / 41.0 / 49.2	32 / 41.0 / 49.2	-	-
Station Output Levels - Analog								
Port 2	@ 54 / 550 / 1002 MHz	dBmV	28 / 37 / 45.2	38 / 47 / 55.2	-	-	38 / 47 / 55.2	38 / 47 / 55.2
Port 3			38 / 47 / 55.2	38 / 47 / 55.2	38 / 47 / 55.2	38 / 47 / 55.2	-	-
Port 4			38 / 47 / 55.2	38 / 47 / 55.2	38 / 47 / 55.2	38 / 47 / 55.2	-	-
Station Noise Figure								
Noise figure (w / 1 dB for input EQ loss)	Typ. @ 54 MHz	dB	11.2	14.5	12.1	11.5	8.5	8.9
	Typ. @ 550 MHz	dB	6.7	9.0	6.6	6.4	6.0	6.7
	Typ. @ 1002 MHz	dB	6.9	10.5	7.2	7.0	7.7	8.1
Station Distortions (Worse Case)			Trunk / Feeder	Feeder	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 / 70	67	72	69	75	72
Cross Modulation (XMOD)		-dBc	74 / 65	62	70	62	70	67
Composite Second Order (CSO-)	(Vc +0.75 & -1.25 MHz)	-dBc	75 / 68	70	69	68	75	76
Composite Second Order (CSO+)	(Vc +1.25 MHz)	-dBc	79 / 71	75	72	74	76	75
Carrier-to-Intermodulation Noise (CIN)		-dBc	73 / 68	65	70	67	73	70

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						
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	0.5						
Station Slope										
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)						
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						
Compensation Range			dB	NTSC Analog or QAM						
Accuracy			±dB	System compensation input change +3/-6 @ 1002 MHz						
Nominal loss	@ 77 °F (25 °C)		dB	0.5						
Center frequency bandwidth				6.25						
Configuration				SDAT (Type 1) Standard Gain	SDBT (Type 6) Standard Gain	SDAF (Type 2-TR1) Standard Gain	SDAB (Type 2) Standard Gain	SDLA (Type 3-DUAL) Standard Gain	SDLE (Type 3) Standard Gain	ALX (Type 3) Standard Gain
Operational Specifications										
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	0.6	0.35	0.35
Gain - Port 2 (AGC / Manual)			dB	33 / 38	41 / 44	-	-	35.5 / 40.5	35.5 / 40.5	35.5 / 40.5
Gain - Port 3 (AGC / Manual)			dB	43 / 48	41 / 44	43 / 46	43 / 46	-	-	-
Gain - Port 4 (AGC / Manual)			dB	43 / 48	41 / 44	43 / 46	43 / 46	35.5 / 40.5	-	-
Gain control type			N / A	Plug-in pads						
Gain control steps	Pad value steps		dB	0.5						
Station Output Levels Digital										
Port 2	@ 54 / 550 / 1002 MHz		dBmV	19 / 38 / 36.2	29 / 38 / 46.2	-	-	29 / 38 / 46.2	29 / 38 / 46.2	29 / 38 / 46.2
Port 3				29 / 38 / 46.2	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	29 / 38 / 46.2	-	-
Station Output Levels Analog										
Port 2	@ 54 / 550 / 1002 MHz		dBmV	25 / 34 / 42.2	35 / 44 / 52.2	-	-	35 / 44 / 52.2	35 / 44 / 52.2	35 / 44 / 52.2
Port 3				35 / 44 / 52.2	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	35 / 44 / 52.2	-	-
Station Noise Figure										
Noise figure (w / 1 dB for input EQ loss)	Typ. @ 54 MHz		dB	11.5	14.7	12.4	11.8	9.5	8.8	9.0
	Typ. @ 550 MHz		dB	6.9	9.2	7.0	6.6	6.9	6.2	6.4
	Typ. @ 1002 MHz		dB	7.1	10.7	7.4	7.2	7.9	7.3	7.5
Station Distortions (Worse Case)				Trunk / Feeder	Feeder	Feeder	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	75	78	81	78
Cross Modulation (XMOD)			-dBc	80 / 71	70	71	68	80	76	73
Composite Second Order (CSO-)	(Vc +0.75 & -1.25 MHz)		-dBc	78 / 71	70	72	71	75	78	79
Composite Second Order (CSO+)	(Vc +1.25 MHz)		-dBc	82 / 74	77	75	77	76	79	78
Carrier-to-Intermodulation Noise (CIN)			-dBc	79 / 74	71	71	73	76	79	76

STATION PARAMETERS: 1002 MHz 42-53 MHz Split			SDA 1002 MHz With GaN Hybrids 15.0 dB Forward Slope @ 1002 MHz High 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					
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	0.5					
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 & >		4					
AGC								
DSIM-A Single Pilot Channel AGC								
Pilot Channel Type		N / A	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) High Gain	SDBT (Type 6) High Gain	SDAF (Type 2-TRI) High Gain	SDAB (Type 2) High Gain	SDLE (Type 3) High Gain	ALX (Type 3) High Gain
Operational Specifications								
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	0.35	0.35
Gain - Port 2 (AGC / Manual)	+0.5 / -0 @ 1002 MHz (Temperature stabilized)	dB	34 / 39	43 / 46	-	-	37.5 / 42.5	37.5 / 42.5
Gain - Port 3 (AGC / Manual)		dB	44 / 49	43 / 46	45 / 48	45 / 48	-	-
Gain - Port 4 (AGC / Manual)		dB	44 / 49	43 / 46	45 / 48	45 / 48	-	-
Gain control type		N / A	Plug-in pads					
Gain control steps	Pad value steps	dB	0.5					
Station Output Levels - Digital								
Port 2	@ 54 / 550 / 1002 MHz	dBmV	23 / 30.8 / 38	33 / 40.8 / 48	-	-	33 / 40.8 / 48	33 / 40.8 / 48
Port 3			33 / 40.8 / 48	33 / 40.8 / 48	33 / 40.8 / 48	33 / 40.8 / 48	-	-
Port 4			33 / 40.8 / 48	33 / 40.8 / 48	33 / 40.8 / 48	33 / 40.8 / 48	-	-
Station Output Levels - Analog								
Port 2	@ 54 / 550 / 1002 MHz	dBmV	29 / 36.8 / 44	39 / 46.8 / 54	-	-	39 / 46.8 / 54	39 / 46.8 / 54
Port 3			39 / 46.8 / 54	39 / 46.8 / 54	39 / 46.8 / 54	39 / 46.8 / 54	-	-
Port 4			39 / 46.8 / 54	39 / 46.8 / 54	39 / 46.8 / 54	39 / 46.8 / 54	-	-
Station Noise Figure								
Noise figure (w / 1 dB for input EQ loss)	Typ. @ 54 MHz	dB	11.2	14.5	12.1	11.5	8.5	8.9
	Typ. @ 550 MHz	dB	6.7	9.0	6.6	6.4	6.0	6.6
	Typ. @ 1002 MHz	dB	6.9	10.5	7.2	7.0	7.6	8.0
Station Distortions (Worse Case)			Trunk / Feeder	Feeder	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 / 72	69	74	71	77	69
Cross Modulation (XMOD)		-dBc	76 / 67	63	72	64	72	63
Composite Second Order (CSO-)	(Vc +0.75 & -1.25 MHz)	-dBc	76 / 69	71	70	69	76	73
Composite Second Order (CSO+)	(Vc +1.25 MHz)	-dBc	80 / 72	77	73	75	77	74
Carrier-to-Intermodulation Noise (CIN)		-dBc	75 / 70	67	72	69	75	67

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						
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	0.5						
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 & >		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	0.5						
Center frequency bandwidth			6.25						
Configuration			SDAT (Type 1) Standard Gain	SDBT (Type 6) Standard Gain	SDAF (Type 2-TR) Standard Gain	SDAB (Type 2) Standard Gain	SDLA (Type 3-DUAL) Standard Gain	SDLE (Type 3) Standard Gain	ALX (Type 3) Standard Gain
Operational Specifications									
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	0.6	0.35	0.35
Gain - Port 2 (AGC / Manual)		dB	31 / 36	40 / 43	-	-	34.5 / 39.5	34.5 / 39.5	34.5 / 39.5
Gain - Port 3 (AGC / Manual)		dB	41 / 46	40 / 43	42 / 45	42 / 45	-	-	-
Gain - Port 4 (AGC / Manual)		dB	41 / 46	40 / 43	42 / 45	42 / 45	34.5 / 39.5	-	-
Gain control type		N / A	Plug-in pads						
Gain control steps	Pad value steps	dB	0.5						
Station Output Levels - Digital									
Port 2	@ 54 / 550 / 1002 MHz	dBmV	20 / 27.8 / 35	30 / 37.8 / 45	-	-	30 / 37.8 / 45	30 / 37.8 / 45	30 / 37.8 / 45
Port 3			30 / 37.8 / 45	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	30 / 37.8 / 45	-	-
Station Output Levels - Analog									
Port 2	@ 54 / 550 / 1002 MHz	dBmV	26 / 33.8 / 41	36 / 43.8 / 51	-	-	36 / 43.8 / 51	36 / 43.8 / 51	36 / 43.8 / 51
Port 3			36 / 43.8 / 51	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	36 / 43.8 / 51	-	-
Station Noise Figure									
Noise figure (w / 1 dB for input EQ loss)	Typ. @ 54 MHz	dB	11.5	14.7	12.4	11.8	9.5	8.8	9.0
	Typ. @ 550 MHz	dB	6.9	9.1	7.0	6.6	6.9	6.2	6.3
	Typ. @ 1002 MHz	dB	7.1	10.6	7.4	7.2	7.9	7.2	7.6
Station Distortions (Worse Case)			Trunk / Feeder	Feeder	Feeder	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	77	80	83	75
Cross Modulation (XMOD)		-dBc	82 / 73	72	72	70	81	78	69
Composite Second Order (CSO-)	(Vc +0.75 & -1.25 MHz)	-dBc	79 / 72	71	71	72	76	79	76
Composite Second Order (CSO+)	(Vc +1.25 MHz)	-dBc	83 / 75	77	79	78	77	80	77
Carrier-to-Intermodulation Noise (CIN)		-dBc	81 / 76	73	73	75	78	81	73

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 23 for SDA 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 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		6						
Group delay		35 MHz		10						
Group delay		38.5 MHz		33						
Configuration				SDAT (Type 1)	SDBT (Type 6)	SDAF (Type 2-TRI)	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	15.8	16.1	12.4	14.6	12.2	10.0	9.7
Power Requirements:										
DSIM-A		Includes reverse (Worst case)	W	44.7	52.1	44.1	44.1	39.7	26.8	26.3
Manual			W	42.6	50.0	42.0	42.0	37.5	24.6	24.2
AC Voltage										
Input ranges			VAC	40-90						
Current Draw (with AGC)										
@ 40 VAC		Maximum	A	1.41	1.58	1.39	1.39	1.25	0.85	0.75
@ 50 VAC			A	1.17	1.36	1.16	1.16	1.05	0.72	0.63
@ 60 VAC			A	1.03	1.20	1.02	1.02	0.92	0.64	0.58
@ 70 VAC			A	0.93	1.09	0.92	0.92	0.84	0.59	0.51
@ 80 VAC			A	0.86	1.00	0.85	0.85	0.77	0.55	0.46
@ 90 VAC			A	0.80	0.94	0.79	0.79	0.72	0.50	0.42
Weight				SDAT	SDBT	SDAF	SDAB	SDLA	SDLE	ALX
Weight			lbs. (kg)	16.0 (7.26)	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		(H X W X D)	ln. (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)						

SDA & ALX 15 Amp Product Configuration Worksheet

Customer: _____

Created By: _____ Order Date: _____

ORDERING MATRIX

March 27, 2018

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	TYPE 1					TYPE 2					TYPE 3					TYPE 3																								
Amplifier Model	SDAT										SDAB										SDLE										ALX									
Frequency	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	750	870	900	1002 STD	1002 GaN															
Max gain with 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	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	34	36	36	40.5	43.5															

Station Type	TYPE 2 TRI					TYPE 3 DUAL					TYPE 4					TYPE 6																								
Amplifier Model	SDAF										SDLA										SDLT										SDBT									
Frequency	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 with 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 O = 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)

	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 without TP
 1 = Module upgrade kit with power supply and seizure screws G = ALX - Standard low profile line extender with TP
 E = SDA - Standard with TP H = ALX - Chromate low profile line extender with TP
 F = SDA - Chromate with TP K = ALX - Chromate low profile line extender without TP
 C = SDA - Standard with TP (Same as option E)

- 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) 2 =204 / 258 (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) - 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 = Version 5 SDA 45-90 VAC power supply and plug-in sidactor
 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
 E = ALX with plug-in sidactor
 F = ALX with plug-in sidactor & fuse in power supply
 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 M = Status monitoring pick-offs installed C = Module cover with thumb screws (SDA 1G only)
 N = GaN Forward Hybrids (SDA 1G only) A = GaN Hybrids & Pad adjustable EQ's (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 (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)

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 MHz JXP Platform 0-12 dB	AREQDA42
Pad Adjustable Reverse Equalizers 5-85 MHz JXP Platform 0-12 dB	AREQDA85
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-DC7 SDA1G-DC12
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
Power Supply with fuse (45-90 VAC) Version 6	SDA90VSP-V6
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	030765-01
Seizure Screw / RF Connector 15A	100633-01



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

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