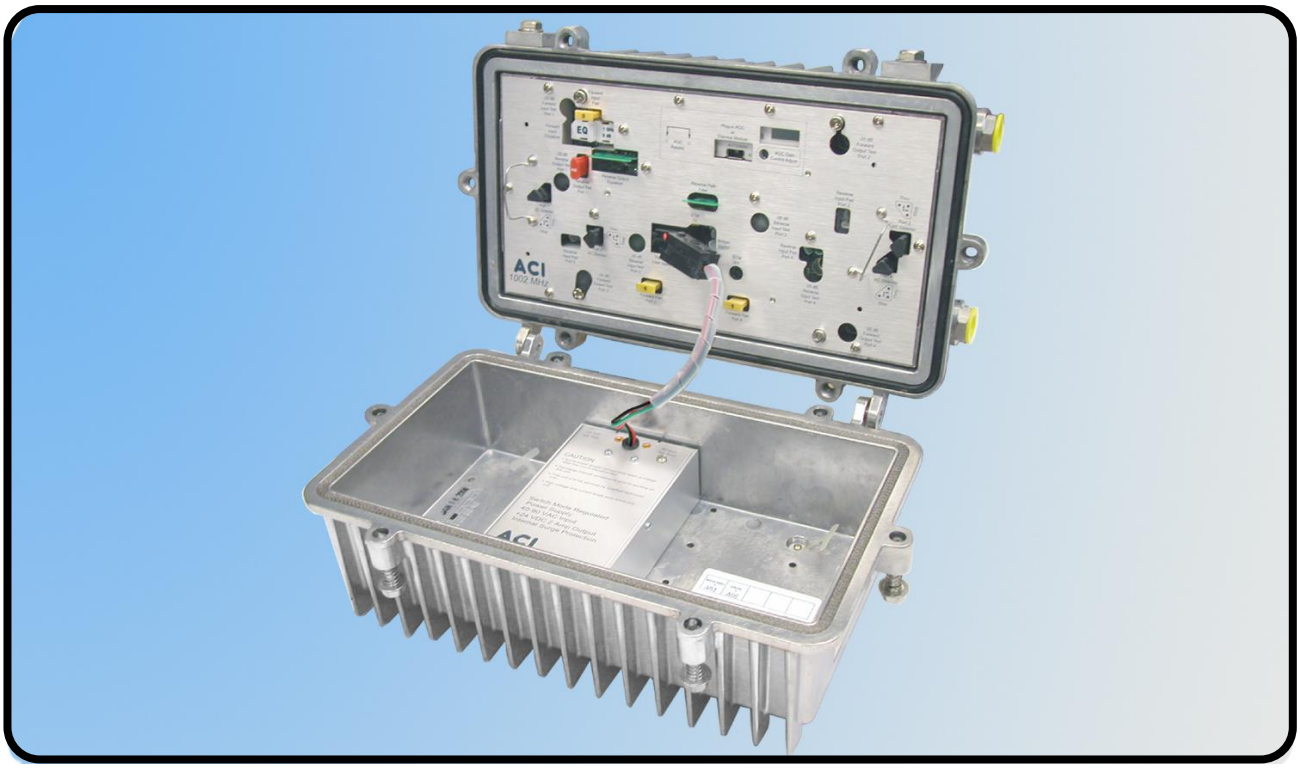
ACI Communications, Inc.
Serving the CATV Industry Since 1986

MiniFlex
Super Distribution Amplifiers 1002 MHz

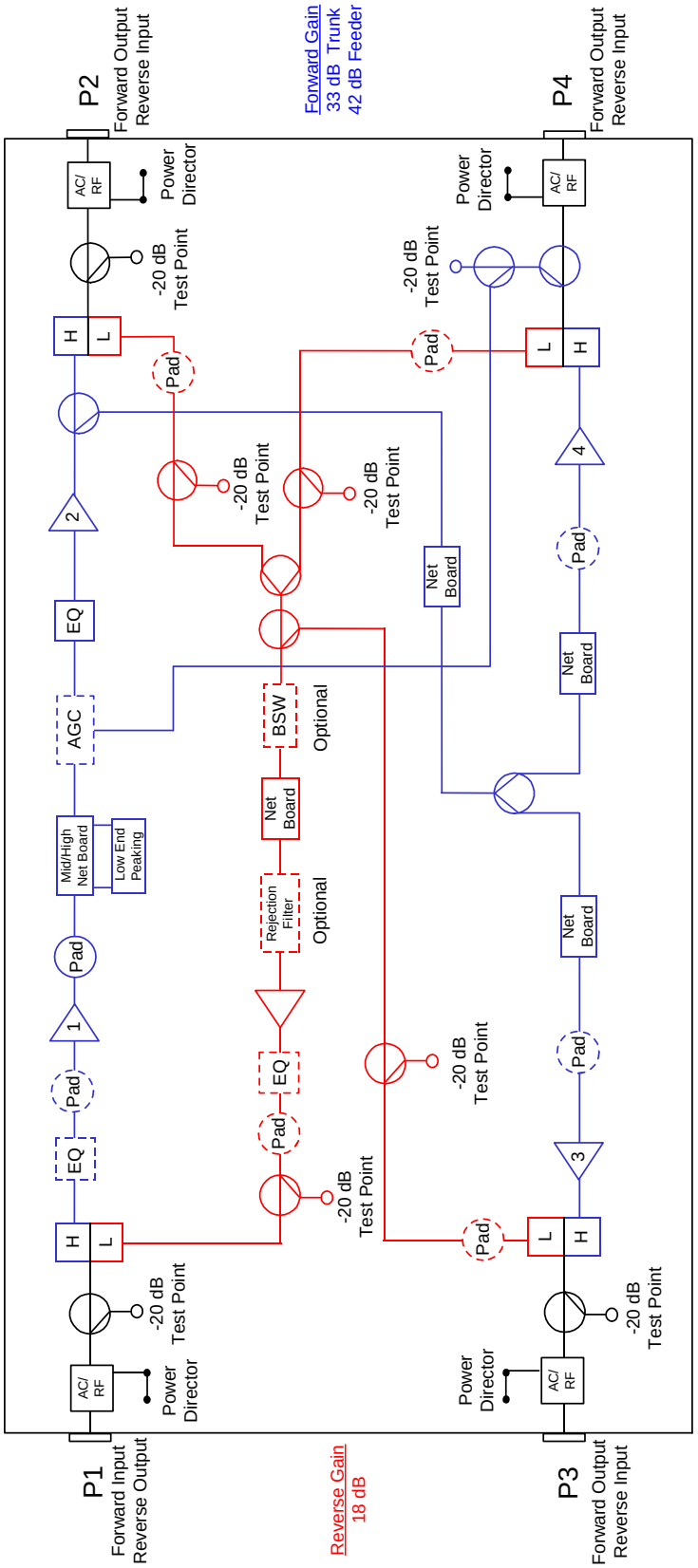


The ACI MiniFlex super distribution RF amplifiers provided high quality RF distribution for fiber-to-feeder, HFC (hybrid fiber coaxial), or PDN (power domain node) architectures.

Features

- 1002 MHz may be dropped into the 750 or 870 MHz spacing
- 85/105 MHz frequency option that will double the reverse bandwidth
- Common 1002 MHz housing platform
- 15 amp power passing
- Plug-in 8 MHz reverse path rejection filter (sold separately)
- CE qualified
- Self retracting housing cover bolts
- -20 dB directional coupler test points
- AGC or thermal or manual options
- 5 to 42 or 55 or 65 or 85 MHz reverse path
- Plug-in attenuator JXP style pads for each reverse path
- Plug-in equalizers
- Test point for each reverse path
- Standard push on “F” connectors can be used on all test points

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



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

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ACI Communications, Inc.			Trunk Amplifier, SDAT 1002 MHz (Type 1) 1 Trunk Output, 2 Feeder Outputs		
STATION PARAMETERS:	1002 MHz 42-53 MHz Split				
	CONDITIONS	UNITS	SPECIFICATIONS		NOTES
Housing passband		MHz	5 to 1002		
Input current capacity	Any port, worst case	Amperes	15		
Frequency range		MHz	5 - 40	54 - 1002	
Hum modulation	Time domain @ rated current above	-dBc	65	69	
Return loss	Any port, worst case	dB	18.0		
Test Points					
Test point type	Directional coupler	N / A			
Test point level		-dB	20.0		Fwd & Rev
Test point accuracy	Forward TP	±dB	0.5		
Frequency range		MHz	5 to 42		
Test point accuracy	Reverse TP	±dB	0.5		
Test point accuracy	Reverse Injection	±dB	0.5		
Operational Specifications					
Station passband		MHz	54 to 1002		
Station flatness - trunk out	Normalized w / 0 dB slope	±dB	0.35		
Station flatness - feeder out	Normalized w / 0 dB slope	±dB	0.6		
Gain - trunk (Type 1A & 1T)	+0.5 / -0 @ 1002 MHz	dB	33.0		Temperature stabilized
Gain - feeder (Type 1A & 1T)	+0.5 / -0 @ 1002 MHz	dB	42.0		Temperature stabilized
Gain - trunk (Type 1M)	+0.5 / -0 @ 1002 MHz	dB	38.0		Temperature stabilized
Gain - feeder (Type 1M)	+0.5 / -0 @ 1002 MHz	dB	47.0		Temperature stabilized
Gain control type		N / A	Plug-in pads		
Gain control steps	Pad value steps	dB	0.5		
Station Slope					
Operational slope - trunk & feeders	@ 54 / 550 / 750 / 870/ 1002 MHz	dB	0 / 9.0 / 12.6 / 14.8 / 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 to 18.0 (1.0 dB steps) & 20.0 to 30.0 (2.0 dB steps) -1.0 to -12.0 (1.0 dB steps)		
Station Group Delay					
Group delay	Channel 2 (Std)	nSec / 3.58 MHz	40		Typical 35
Group delay	Channel 3	nSec / 3.58 MHz	16		
Group delay	Channel 4	nSec / 3.58 MHz	10		
Group delay	Channel 5 & >	nSec / 3.58 MHz	3		
AGC					
Type		N / A	Single channel pilot AGC		
Range		dB	8.0		System compensation input change +3/-5 @ 1002 MHz
Accuracy		±dB	0.5		
Nominal loss		dB	5.5		Loss @ room temp
Center frequency bandwidth		Fc ± kHz	150		

ACI Communications, Inc.							Trunk Amplifier, SDAT 1002 MHz (Type 1) 1 Trunk Output, 2 Feeder Outputs
550 MHz analog channel loading, 79 channels +450 MHz digital channel loading, 256 QAM at -6 dBc relative to its associated visual carrier							
Station Output Levels							
Trunk out Port 2	@ 54 / 550 / 750 / 870 / 1002 MHz	dBmV	26.0 / 35.0 / 38.6 / 40.8 / 43.2				
Feeder out Ports 3 & 4	@ 54 / 550 / 750 / 870 / 1002 MHz	dBmV	35.0 / 44.0 / 47.6 / 49.8 / 52.2				
Station Noise Figure							
Noise figure (w / 1 dB for input EQ loss)	Typ. @ 54 MHz	dB	6.5				
Noise figure (w / 1 dB for input EQ loss)	Typ. @ 550 MHz	dB	8.0				
Noise figure (w / 1 dB for input EQ loss)	Typ. @ 1002 MHz	dB	6.5				
Station Distortions			Trunk WC	Trunk Ty.	Feeder WC	Feeder Ty.	WC=worst case Ty.=Typical
Composite Triple Beat (CTB)		-dBc	79	81	71	73	
Cross Modulation (XMOD)		-dBc	78	80	68	70	
Composite Second Order (CSO-)	(Vc +0.75 & -1.25 MHz)	-dBc	72	74	71	73	
Composite Second Order (CSO+)	(Vc +1.25 MHz)	-dBc	74	76	69	71	
Carrier-to-Intermodulation Noise (CIN)		-dBc	76	78	69	71	

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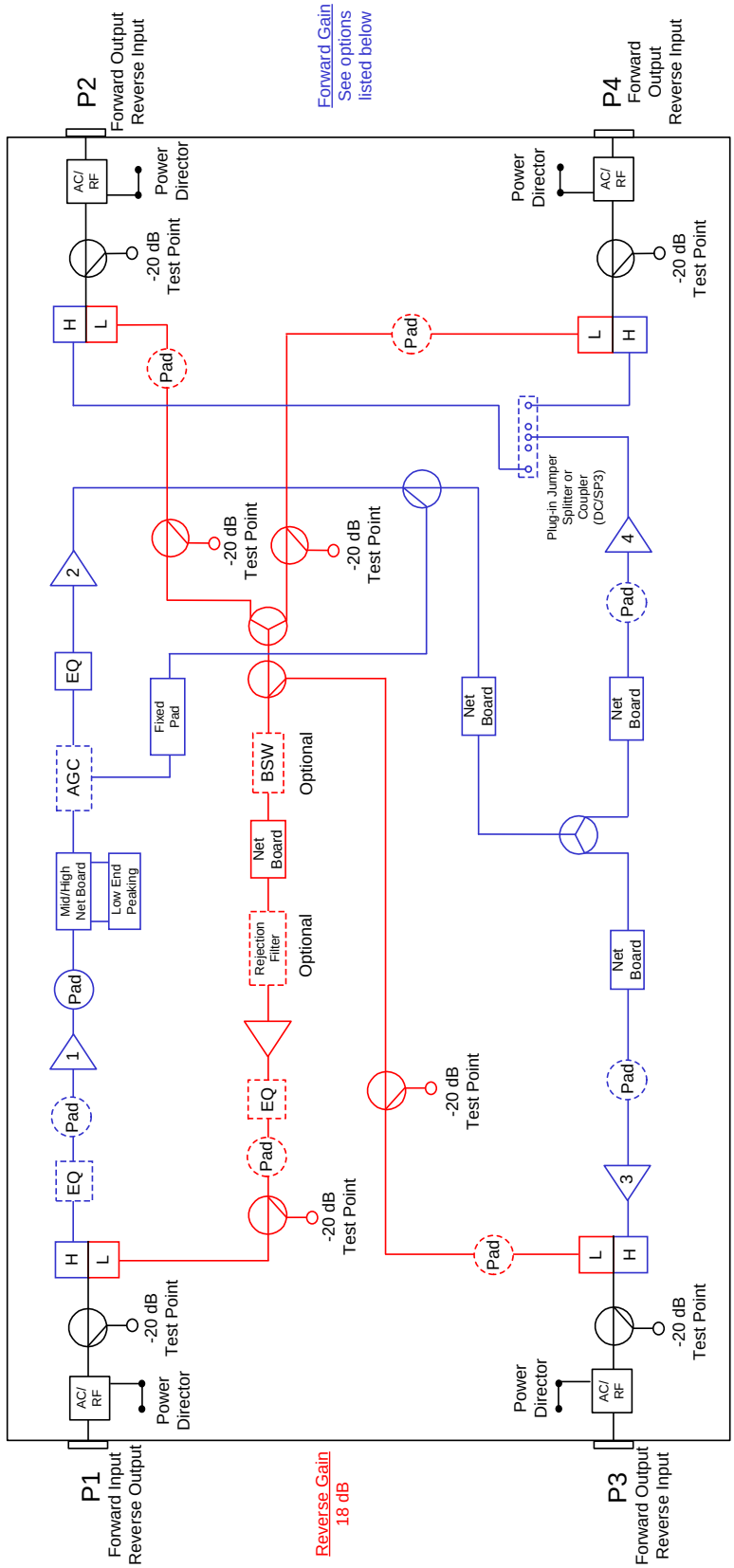
ACI Communications, Inc.						Trunk Amplifier, SDAT 1002 MHz (Type 1) 1 Trunk Output, 2 Feeder Outputs
REVERSE SPECTRUM:						
REVERSE - CHANNEL LOADING						
	Typically 23 each, 1.5 MHZ wide QPSK channels.					
Reverse - General	CONDITIONS	UNITS	SPECIFICATION			NOTES
Station passband		MHZ	5 to 42			
Station flatness	Normalized w / 0 dB slope	±dB	0.5			
Reverse - Station Gain						
Gain	+0.5 / -0 @ 40 MHz	dB	18.0			Temperature stabilized
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 trunk input port	Average	dBmV	35.0			
Reverse - Noise Figure						
Station noise figure (w / EQ)	Across the bandwidth	dB	15.5			
REVERSE - STATION DISTORTIONS						
Composite Second Order (CSO)	6 channel loading	-dBc	82.0			
Composite Tripe Beat (CTB)	6 channel loading	-dBc	90.0			
Cross Modulation (XMOD)	6 channel loading	-dBc	80.0			
Reverse - Station Group Delay						
Group delay	5 MHz	nSec / 1.5 MHz	36			
Group delay	7 MHz	nSec / 1.5 MHz	16			
Group delay	10 MHz	nSec / 1.5 MHz	4			
Group delay	35 MHz	nSec / 1.5 MHz	10			
Group delay	38.5 MHz	nSec / 1.5 MHz	25			
Power Requirements:						
Station configuration	Includes reverse	N / A	AGC	Thermal	Manual	
Power Requirements	Worst case	W	40.0	38.3	37.8	
AC Voltage						
Input ranges		VAC	40-90			
Current Draw (with AGC)						
@ 40 VAC	Maximum	A	1.30			
@ 50 VAC	Maximum	A	1.14			
@ 60 VAC	Maximum	A	0.96			
@ 70 VAC	Maximum	A	0.87			
@ 80 VAC	Maximum	A	0.79			
@ 90 VAC	Maximum	A	0.67			
Environmental						
Operating temperature		°F (°C)	-40 to +140 (-40 to +60)			
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)			
Weight		lbs. (kg)	16.0 (7.26)			

SDAF (Type 2A-TRI, 2T-TRI, 2M-TRI) 1002 MHz Amplifier Block Diagram



Notes:
1. Forward gain stated at 1002 MHz with AGC. Reverse gain stated at 40 MHz.
2. 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)
	1002
P2	43.0
P3	43.0
P4	N/A

Port	Fwd Gain (dB)
	1002
P2	N/A
P3	43.0
P4	43.0

Jumper Position #2 (P3 & P4 active)

SDA1G-SPLTR3.5

Port	Fwd Gain (dB)
	1002
P2	39.5
P3	43.0
P4	39.5

Port	Fwd Gain (dB)
	1002
P2	36.0
P3	43.0
P4	40.5

SDA1G-DC7

-7dB | SDA1G-DC7 | THRU

Port	Fwd Gain (dB)
	1002
P2	40.5
P3	43.0
P4	36.0

SDA1G-DC12

THRU | SDA1G-DC12 | -12dB

Port	Fwd Gain (dB)
	1002
P2	31.0
P3	43.0
P4	41.0

SDA1G-DC12

THRU | SDA1G-DC12 | -12dB

Port	Fwd Gain (dB)
	1002
P2	41.0
P3	43.0
P4	31.0

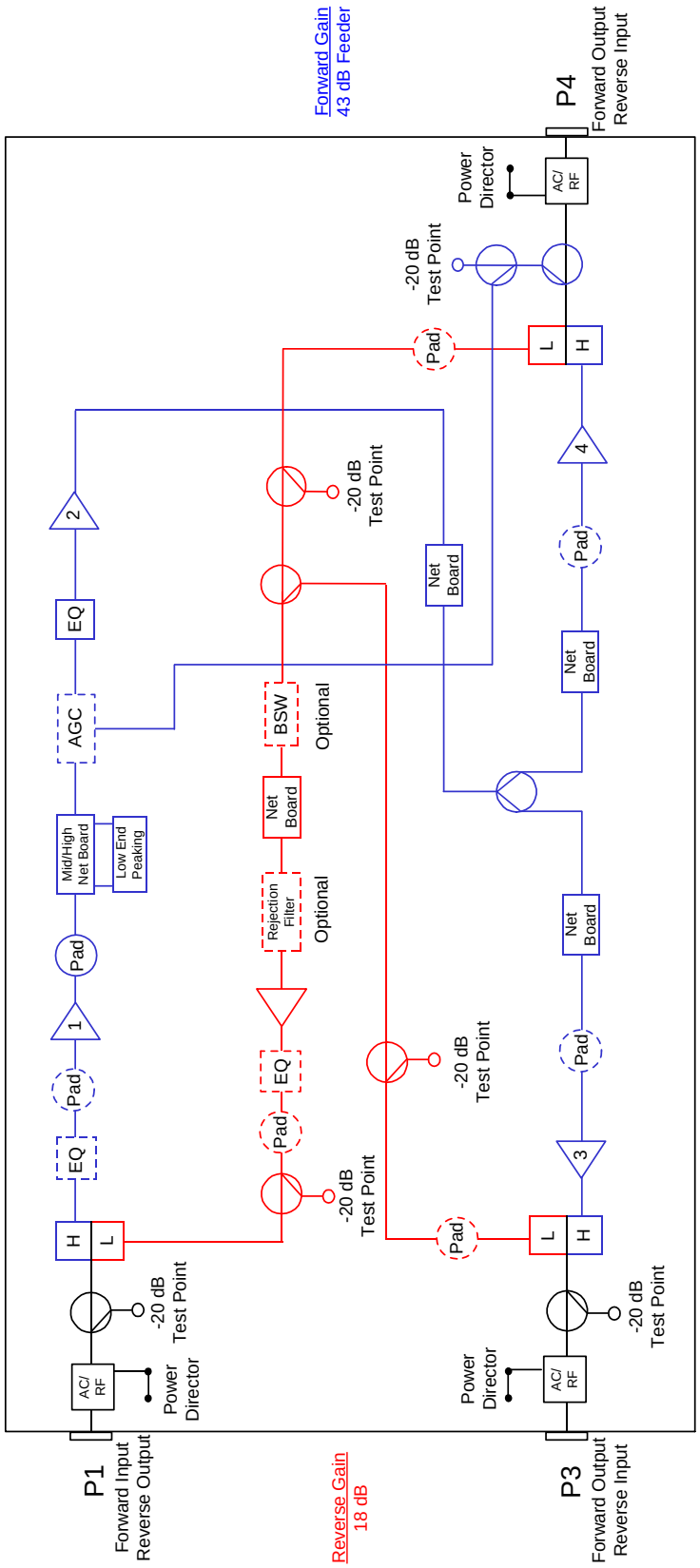
ACI Communications, Inc.			Configurable Bridger Amplifier, SDAF 1002 MHz (Type 2-TRI) 2 or 3 Output Feeder		
STATION PARAMETERS:	1002 MHz 42-53 MHz with Jumper in position #2				
Description	CONDITIONS	UNITS	SPECIFICATION		NOTES
Housing passband		MHz	5 to 1002		
Input current capacity	Any port, worst case	Amperes	15		
Frequency range		MHz	5 - 40	54 - 1002	
Hum modulation	Time domain @ rated current above	-dBc	65	69	
Return loss	Any port, worst case	dB	18.0		
Test Points					
Test point type	Directional coupler	N / A			
Test point level(s)		-dB	20.0		Fwd & Rev
Test point accuracy	Forward TP	±dB	0.5		
Frequency range		MHz	5 to 7	7 to 42	
Test point accuracy	Reverse TP	±dB	0.75	0.5	
Test point accuracy	Reverse injection	±dB	0.75	0.5	
Station Gain					
Station passband		MHz	54 to 1002		
Station flatness - feeder out	Normalized w / 0 dB slope	±dB	0.75		
Gain feeder (Type 2A-TRI & 2T-TRI)	+0.5/-0 @ 1002 MHz	dB	43.0		Temperature stabilized
Gain feeder (Type 2M-TRI)	+0.5/-0 @ 1002 MHz	dB	46.0		Temperature stabilized
Gain control type		N / A	Plug-in pads		
Gain control steps	Pad value steps	dB	0.5		
Station Slope					
Operational slope	@ 54/550/750/870/1002 MHz	dB	0 / 9.0 / 12.6 / 14.7 / 17.2		
Slope control type	Cable equalizers	N / A	Plug-in EQ's		
Slope control range	Includes cable equivalent	dB	-0.0 to +12.0		
Slope control steps	Equalizer value steps	dB	1 cable steps		Approx 1.1 dB slope steps
Station Group Delay					
Group delay	Channel 2 (Std)	nSec / 3.58 MHz	40		Typical 35
Group delay	Channel 3	nSec / 3.58 MHz	16		
Group delay	Channel 4	nSec / 3.58 MHz	10		
Group delay	Channel 5 & >	nSec / 3.58 MHz	3		
AGC					
Type			Single channel pilot AGC		
Range		dB	8.0		System compensation input change -3/+5 @ 1002 MHz
Accuracy		±dB	0.5		
Nominal loss		dB	5.5		Loss @ room temp
Center frequency bandwidth		Fc +/- kHz	150		

ACI Communications, Inc.				Configurable Bridger Amplifier, SDAF 1002 MHz (Type 2-TRI) 2 or 3 Output Feeder	
550 MHz Analog Channel Loading, 79 Channels +320 MHz Digital Channel Loading 256 QAM, at -6 dBc relative to its associated visual carrier					
Station Output Levels					
	Feeder out Port 3 & 4	@ 54/550/750/870/1002 MHz	dBmV	35.0/44.0/47.6/49.8/52.2	
Station Noise Figure					
	Noise figure (w /1 dB for input EQ loss)	Typical @ 54 MHz	dB	11.0	
	Noise figure (w /1 dB for input EQ loss)	Typical. @ 550 MHz	dB	6.0	
	Noise figure (w /1 dB for input EQ loss)	Typical @ 870 MHz	dB	7.8	
	Noise figure (w /1 dB for input EQ loss)	Typical @ 1002 MHz	dB	7.0	
Station Distortions				Worst Case	Average
	Composite Triple Beat (CTB)		-dBc	68.0	70.0
	Cross Modulation (XMOD)		-dBc	68.0	70.0
	Composite Second Order (CSO-)	(Vc +0.75 & 1.25 MHz)	-dBc	74.0	76.0
	Composite Second Order (CSO+)	(Vc +1.25 MHz)	-dBc	75.0	77.0
	Carrier-to-Intermodulation Noise (CIN)		-dBc	66.0	68.0

Revision date: 7/11/2010

ACI Communications, Inc.						Configurable Bridger Amplifier, SDAF1002 MHz (Type 2-TRI) 2 or 3 Output Feeder
REVERSE SPECTRUM:						
Reverse - Channel Loading						
	Typically 23 each, 1.5 MHz wide QPSK channels.					
Reverse - General	CONDITIONS	UNITS	SPECIFICATION			NOTES
Station passband		MHz	5 to 42			
Station flatness	Normalized w / 0 dB slope	±dB	0.5			
Reverse - Station Gain						
Gain	Minimum @ 40 MHz	dB	18.0			Temperature stabilized
Gain control type		N / A	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 cable steps			Approx. 1.1 dB slope steps
Reverse - Station Output Levels						
@ Forward input port		dBmV	35.0			
Reverse - Noise Figure						
Station noise figure (w/EQ)	Across the bandwidth	dB	12.0			
Reverse - Station Distortions						
Composite Second Order (CSO)	6 NTSC channel loading	-dBc	82.0			
Composite Triple Beat (CTB)	6 NTSC channel loading	-dBc	90.0			
Cross Modulation (XMOD)	6 NTSC channel loading	-dBc	80.0			
Reverse - Station Group Delay						
Group delay	5 MHz	nSec / 1.5 MHz	36			
Group delay	7 MHz	nSec / 1.5 MHz	16			
Group delay	10 MHz	nSec / 1.5 MHz	4			
Group delay	35 MHz	nSec / 1.5 MHz	8			
Group delay	38.5 MHz	nSec / 1.5 MHz	25			
Power Requirements:						
Station configuration	Includes reverse	N / A	AGC	Thermal	Manual	
Power Requirements	Worst case	W	40.5	39.1	37.8	
AC Voltage						
Input Ranges		VAC	40 to 90			
Current Draw (with AGC)						
@ 40 VAC	Maximum	A	1.30			
@ 50 VAC	Maximum	A	1.06			
@ 60 VAC	Maximum	A	1.03			
@ 70 VAC	Maximum	A	0.96			
@ 80 VAC	Maximum	A	0.88			
@ 90 VAC	Maximum	A	0.80			
Environmental						
Operating temperature		°F (°C)	-40 to +140 (-40 to +60)			
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)			
Weight		lbs. (kg)	16.0 (7.26)			

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



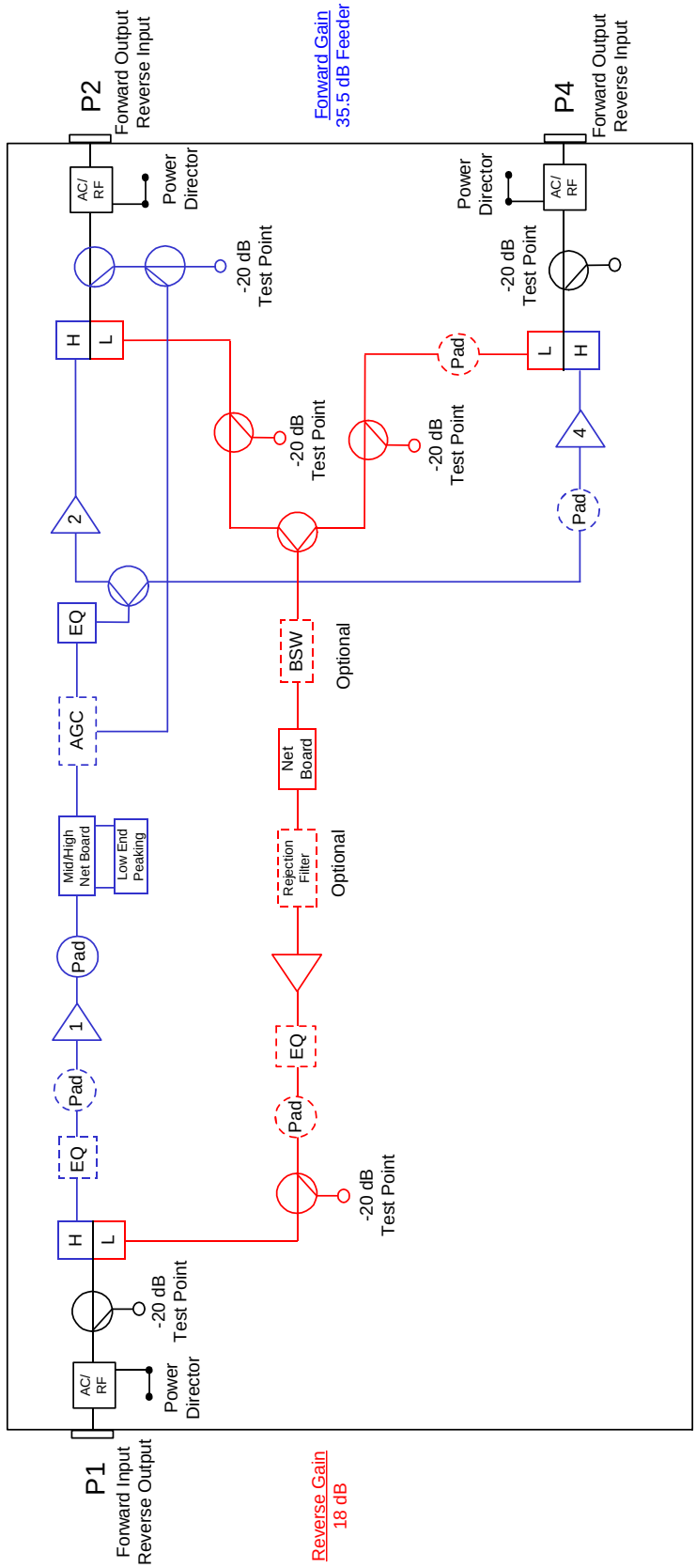
Note:
1. Forward gain stated at 1002 MHz with AGC. Reverse gain stated at 40 MHz.

ACI Communications, Inc.			Bridger Amplifier, SDAB 1002 MHz (Type 2) 2 Feeder Outputs		
STATION PARAMETERS:	1002 MHz 42-53 MHz Split				
Description	CONDITIONS	UNITS	SPECIFICATION		NOTES
Housing passband		MHz	5 to 1002		
Input current capacity	Any port, worst case	Amperes	15		
Frequency range		MHz	5 - 40	54 - 1002	
Hum modulation	Time domain @ rated current above	-dBc	65	69	
Return loss	Any port, worst case	dB	18.0		
Test Points					
Test point type	Directional coupler	N / A			
Test point level(s)		-dB	20.0		Fwd & rev
Test point accuracy	Forward TP	±dB	0.5		
Frequency range		MHz	5 to 42		
Test point accuracy	Reverse TP	±dB	0.5		
Test point accuracy	Reverse injection	±dB	0.5		
Operational Specifications					
Station passband		MHz	54 to 1002		
Station flatness - feeder out	Normalized w / 0 dB slope	±dB	0.6		
Gain feeder (Type 2A & 2T)	+0.5 / -0 @ 1002 MHz	dB	43.0		Temperature stabilized
Gain feeder (Type 2M)	+0.5 / -0 @ 1002 MHz	dB	48.0		Temperature stabilized
Gain control type		N / A	Plug-in pads		
Gain control steps	Pad value steps	dB	0.5		
Station Slope					
Operational slope	@ 54 / 550 / 750 / 870 / 1002 MHz	dB	0 / 9.0 / 12.6 / 14.8 / 17.2		
Slope control type	Cable equalizers	N / A	Plug-in EQ's		
Slope control range	Includes cable equivalent	dB	-12.0 to +30.0		
Slope control steps	Equalizer value steps	dB	0 to 18.0 (1.0 dB steps) & 20.0 to 30.0 (2.0 dB steps) -1.0 to -12.0 (1.0 dB steps)		
Station Group Delay					
Group delay	Channel 2 (Std)	nSec / 3.58 MHz	40		Typical 35
Group delay	Channel 3	nSec / 3.58 MHz	16		
Group delay	Channel 4	nSec / 3.58 MHz	10		
Group delay	Channel 5 & >	nSec / 3.58 MHz	3		
AGC					
Type		N / A	Single channel pilot AGC		
Range		dB	8.0		System compensation input change +3/-5 @ 1002 MHz
Accuracy		±dB	0.5		
Nominal loss		dB	5.5		Loss @ room temp
Center frequency bandwidth		Fc ±kHz	150		

ACI Communications, Inc.						Bridger Amplifier, SDAB 1002 MHz (Type 2) 2 Feeder Outputs
550 MHz analog channel loading, 79 channels +450 MHz digital channel loading, 256 QAM at -6 dBc relative to its associated visual carrier						
Station Output Levels						
	Feeder out Ports 3 & 4	@ 54 / 550 / 750/ 870 / 1002 MHz	dBmV	35.0 / 44.0 / 47.6 / 49.8 / 52.2		
Station Noise Figure						
	Noise figure (w /1 dB for input EQ loss)	Typ. @ 54 MHz	dB	6.5		
	Noise figure (w /1 dB for input EQ loss)	Typ. @ 550 MHz	dB	9.0		
	Noise figure (w /1 dB for input EQ loss)	Typ. @ 1002 MHz	dB	7.5		
Station Distortions				Worst Case	Typical	
	Composite Triple Beat (CTB)		-dBc	72	74	
	Cross Modulation (XMOD)		-dBc	69	71	
	Composite Second Order (CSO-)	(Vc +0.75 & -1.25 MHz)	-dBc	77	79	
	Composite Second Order (CSO+)	(Vc +1.25 MHz)	-dBc	78	80	
	Carrier-to-Intermodulation Noise (CIN)		-dBc	70	72	

ACI Communications, Inc.						Bridger Amplifier, SDAB 1002 MHz (Type 2) 2 Feeder Outputs
REVERSE SPECTRUM:						
Reverse - Channel Loading						
	Typically 23 each, 1.5 MHZ wide QPSK channels.					
Reverse - General	CONDITIONS	UNITS	SPECIFICATION			NOTES
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	dB	18.0			Temperature stabilized
Gain control type		N /A	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 trunk input port		dBmV	35.0			
Reverse - Noise Figure						
Station noise figure (w/EQ)	Across the bandwidth	dB	11.5			
Reverse - Station Distortions						
Composite Second Order (CSO)	6 channel loading	-dBc	82.0			
Composite Triple Beat (CTB)	6 channel loading	-dBc	90.0			
Cross Modulation (XMOD)	6 channel loading	-dBc	80.0			
Reverse - Station Group Delay						
Group delay	5 MHz	nSec / 1.5 MHz	36			
Group delay	7 MHz	nSec / 1.5 MHz	16			
Group delay	10 MHz	nSec / 1.5 MHz	4			
Group delay	35 MHz	nSec / 1.5 MHz	10			
Group delay	38.5 MHz	nSec / 1.5 MHz	25			
Power Requirements:						
Station configuration	Includes reverse	N /A	AGC	Thermal	Manual	
Power Requirements	Worst case	W	39.6	38.0	37.4	
AC Voltage						
Input Ranges		VAC	40-90			
Current Draw (with AGC)						
@ 40 VAC	Maximum	A	1.31			
@ 50 VAC	Maximum	A	1.13			
@ 60 VAC	Maximum	A	0.95			
@ 70 VAC	Maximum	A	0.88			
@ 80 VAC	Maximum	A	0.79			
@ 90 VAC	Maximum	A	0.69			
Environmental						
Operating temperature		^{o}F (^{o}C)	-40 to +140 (-40 to +60)			
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)			
Weight		lbs. (kg)	16.0 (7.26)			

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



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

ACI Communications, Inc.®

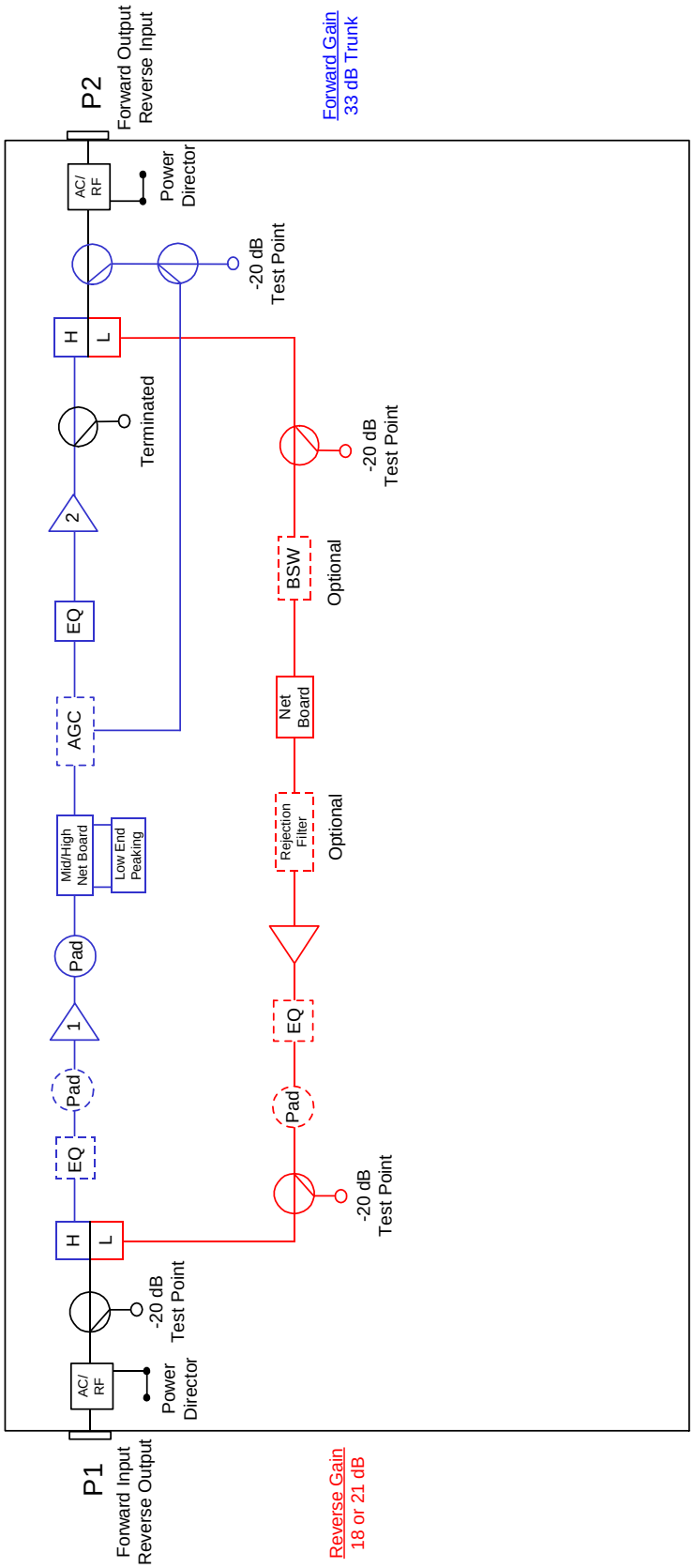
ACI Communications,			Dual Output Line Extender, SDLA 1002 MHz (Type 3 dual) 2 Output Line Extender		
STATION PARAMETERS:	1002 MHz 42-53 MHz Split				
Description	CONDITIONS	UNITS	SPECIFICATION		NOTES
Housing passband		MHz	5 to 1002		
Input current capacity	Any port, worst case	Amperes	15		
Frequency range		MHz	5 - 40	54 - 1002	
Hum modulation	Time domain @ rated current above	-dBc	65	69	
Return loss	Any port, worst case	dB	18.0		
Test Points					
Test point type	Directional coupler	N / A			
Test point level(s)		-dB	20.0		Fwd & Rev
Test point accuracy	Forward TP	±dB	0.5		
Frequency range		MHz	5 to 42		
Test point accuracy	Reverse TP	±dB	0.5		
Test point accuracy	Reverse injection	±dB	0.5		
Operational Specifications					
Station passband		MHz	54 to 1002		
Station flatness - Port 2	Normalized w / 0 dB slope	±dB	0.35		
Station flatness - Port 4	Normalized w / 0 dB slope	±dB	0.6		
Gain (Type 3A, 3T Dual)	+0.5 / -0 @ 1002 MHz	dB	35.5		Temperature stabilized
Gain (Type 3M Dual)	+0.5 / -0 @ 1002 MHz	dB	40.5		Temperature stabilized
Gain control type		N / A	Plug-in pads		
Gain control steps	Pad value steps	dB	0.5		
Station Slope					
Operational slope	@ 54 / 550 / 750 / 870 / 1002 MHz	dB	0 / 9.0 / 12.6 / 14.8 / 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 to 18.0 (1.0 dB steps) & 20.0 to 30.0 (2.0 dB steps) -1.0 to -12.0 (1.0 dB steps)		
Station Group Delay					
Group delay	Channel 2 (Std)	nSec / 3.58 MHz	40		Typical 35
Group delay	Channel 3	nSec / 3.58 MHz	16		
Group delay	Channel 4	nSec / 3.58 MHz	10		
Group delay	Channel 5 & >	nSec / 3.58 MHz	3		
AGC					
Type		N / A	Single channel pilot AGC		
Range		dB	8.0		System compensation input change +3/-5 @ 1002 MHz
Accuracy		±dB	0.5		
Nominal loss		dB	5.5		Loss @ room temp
Center frequency bandwidth		Fc ± kHz	150		

ACI Communications, Inc.			Dual Output Line Extender, SDLA 1002 MHz (Type 3 dual) 2 Output Line Extender		
550 MHz analog channel loading, 79 channels +450 MHz digital channel loading, 256 QAM at -6 dBc relative to its associated visual carrier					
Station Output Levels					
Feeder out Port 2 & 4	@ 54 / 550 / 750 / 870 / 1002 MHz	dBmV	35.0 / 44.0 / 47.6 / 49.8 / 52.2		
Station Noise Figure					
Noise figure (w / 1 dB for input EQ loss)	Typ. @ 54 MHz	dB	11.2		
Noise figure (w / 1 dB for input EQ loss)	Typ. @ 550 MHz	dB	6.5		
Noise figure (w / 1 dB for input EQ loss)	Typ. @ 1002 MHz	dB	6.5		
Station Distortions			Worst Case	Typical	
Composite Triple Beat (CTB)		-dBc	70	72	
Cross Modulation (XMOD)		-dBc	69	71	
Composite Second Order (CSO-)	(Vc +0.75 & -1.25 MHz)	-dBc	69	71	
Composite Second Order (CSO+)	(Vc +1.25 MHz)	-dBc	67	69	
Composite Intermodulation Noise (CIN)		-dBc	68	70	

ACI Communications, Inc.®

ACI Communications, Inc.			Dual Output Line Extender, SDLA 1002 MHz (Type 3 dual) 2 Output Line Extender			
REVERSE SPECTRUM:						
Reverse - Channel Loading	CONDITIONS	UNITS	SPECIFICATION			NOTES
	Typically 23 each, 1.5 MHZ wide QPSK channels.					
Reverse - General						
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	dB	18			Temperature stabilized
Gain control type		N / A	Plug-in pads			
Gain control steps	Pad value steps	dB	0.5			
Reverse - Station Slope						
Slope control type		N / A	Plug-in EQ's			
Slope control range		dB	0 to 12.0			
Slope control steps	Equalizer value steps	dB	1.0			
Reverse - Station Output Levels						
@ Forward trunk input port		dBmV	35.0			
Reverse - Noise Figure						
Station Noise Figure (w / EQ)		dB	12.0			
Reverse - Station Distortions						
Composite Second Order (CSO)	6 channel loading	-dBc	82.0			
Composite Triple Beat (CTB)	6 channel loading	-dBc	90.0			
Cross Modulation (XMOD)	6 channel loading	-dBc	80.0			
Reverse - Station Group Delay						
Group delay	5 MHz	nSec / 1.5 MHz	36			
Group delay	7 MHz	nSec / 1.5 MHz	16			
Group delay	10 MHz	nSec / 1.5 MHz	4			
Group delay	35 MHz	nSec / 1.5 MHz	10			
Group delay	38.5 MHz	nSec / 1.5 MHz	25			
Power Requirements:						
Station configuration	Includes reverse	N / A	AGC	Thermal	Manual	
Power Requirements	Worst case	W	36.2	34.7	34.22	
AC Voltage						
Input ranges		VAC	40-90			
Current Draw (with AGC)						
@ 40 VAC	Maximum	A	1.15			
@ 50 VAC	Maximum	A	0.96			
@ 60 VAC	Maximum	A	0.86			
@ 70 VAC	Maximum	A	0.77			
@ 80 VAC	Maximum	A	0.69			
@ 90 VAC	Maximum	A	0.63			
Environmental						
Operating temperature		°F (°C)	-40 to +140 (-40 to +60)			
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)			
Weight		lbs. (kg)	14.5 (6.58)			

SDLT (Type 4A, 4T, & 4M) 1002 MHz Amplifier Block Diagram



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

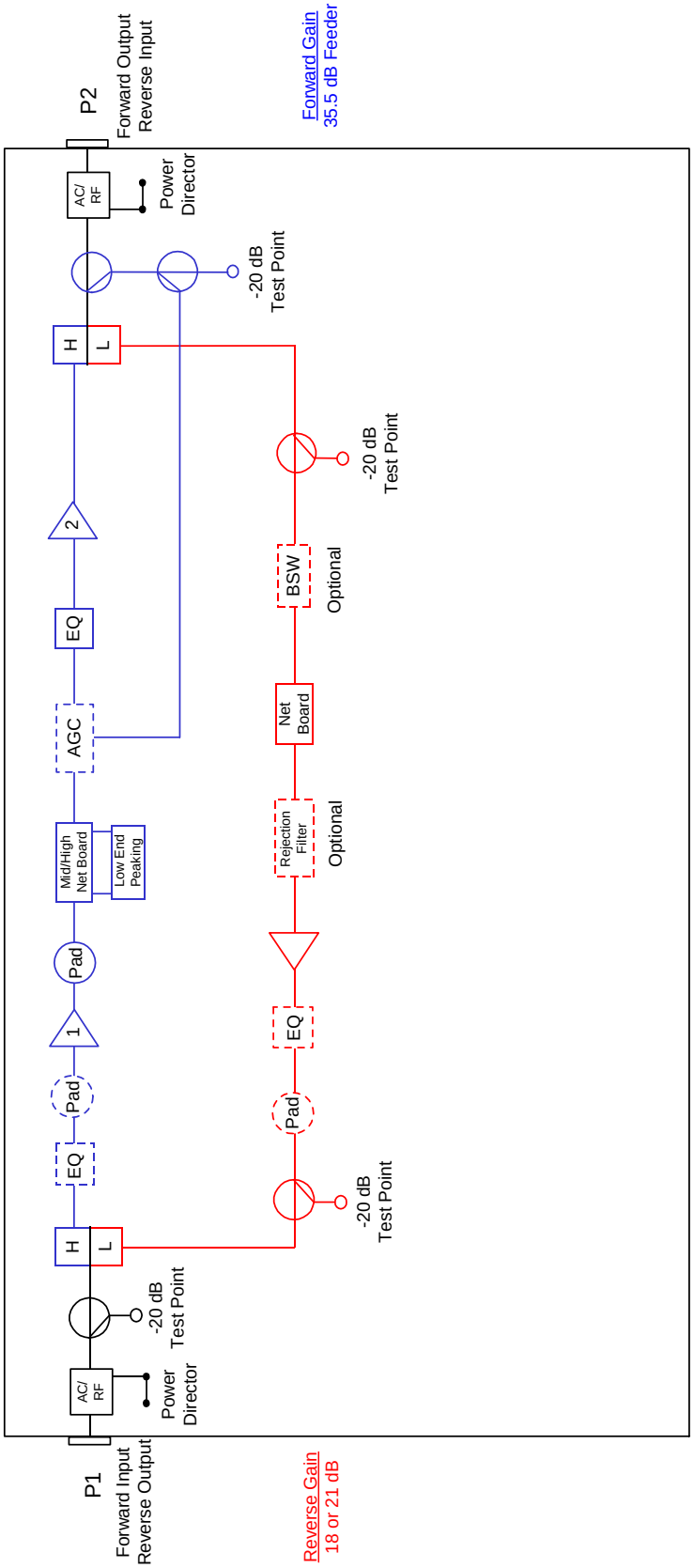
ACI Communications,					Line Extender, SDLT 1002 MHz (Type 4) 1 Output Trunk Line Extender
STATION PARAMETERS:	1002 MHz 42-53 MHz Split				
Description	CONDITIONS	UNITS	SPECIFICATION		NOTES
Housing passband		MHz	5 to 1002		
Input current capacity	Any port, worst case	Amperes	15		
Frequency range		MHz	5 - 40	54 - 1002	
Hum modulation	Time domain @ rated current above	-dBc	65	69	
Return loss	Any port, worst case	dB	18.0		
Test Points					
Test point type	Directional coupler	N / A			
Test point level(s)		-dB	20.0		Fwd & Rev
Test point accuracy	Forward TP	±dB	0.5		
Frequency range		MHz	5 to 42		
Test point accuracy	Reverse TP	±dB	0.5		
Test point accuracy	Reverse injection	±dB	0.5		
Operational Specifications					
Station passband		MHz	54 to 1002		
Station flatness - feeder out	Normalized w / 0 dB slope	±dB	0.35		
Gain (Type 4A or 4T)	+0.5 / -0 @ 1002 MHz	dB	33.0		Temperature stabilized
Gain (Type 4M)	+0.5 / -0 @ 1002 MHz	dB	38.0		Temperature stabilized
Gain control type		N / A	Plug-in pads		
Gain control steps	Pad value steps	dB	0.5		
Station Slope					
Operational slope	@ 54 / 550 / 750 / 870 / 1002 MHz	dB	0 / 9.0 / 12.6 / 14.8 / 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 to 18.0 (1.0 dB steps) & 20.0 to 30.0 (2.0 dB steps) -1.0 to -12.0 (1.0 dB steps)		
Station Group Delay					
Group delay	Channel 2 (Std)	nSec / 3.58 MHz	40		Typical 35
Group delay	Channel 3	nSec / 3.58 MHz	16		
Group delay	Channel 4	nSec / 3.58 MHz	10		
Group delay	Channel 5 & >	nSec / 3.58 MHz	3		
AGC					
Type		N / A	Single channel pilot AGC		
Range		dB	8.0		System compensation input change +3/-5 @ 1002 MHz
Accuracy		±dB	0.5		
Nominal loss		dB	5.5		Loss @ room temp
Center frequency bandwidth		Fc ± kHz	150		

ACI Communications, Inc.			Line Extender, SDLT 1002 MHz (Type 4) 1 Output Trunk Line Extender		
550 MHz analog channel loading, 79 channels +450 MHz digital channel loading, 256 QAM at -6 dBc relative to its associated visual carrier					
Station Output Levels for Type 3					
Trunk out Port 2	@ 54 / 550 / 750 / 870 / 1002 MHz	dBmV	26.0 / 35.0 / 38.6 / 40.8 / 43.2		
Station Noise Figure					
Noise figure (w / 1 dB for input EQ loss)	Typ. @ 54 MHz	dB	7.0		
Noise figure (w / 1 dB for input EQ loss)	Typ. @ 550 MHz	dB	9.5		
Noise figure (w / 1 dB for input EQ loss)	Typ. @ 1002 MHz	dB	7.5		
Station Distortions			Worst Case	Typical	
Composite Triple Beat (CTB)		-dBc	79	81	
Cross Modulation (XMOD)		-dBc	78	80	
Composite Second Order (CSO-)	(Vc +0.75 & -1.25 MHz)	-dBc	72	74	
Composite Second Order (CSO+)	(Vc +1.25 MHz)	-dBc	74	76	
Composite Intermodulation Noise (CIN)		-dBc	76	78	

Revision date: 10/8/2008

ACI Communications, Inc.							Line Extender, SDLT 1002 MHz (Type 4) 1 Output Line Extender
REVERSE SPECTRUM:							
Reverse - Channel Loading	CONDITIONS	UNITS	SPECIFICATION			NOTES
	Typically 23 each, 1.5 MHZ wide QPSK channels.					
Reverse - General						
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	dB	18.0 or 21.0			Temperature stabilized
Gain control type		N / A	Plug-in pads			
Gain control steps	Pad value steps	dB	0.5			
Reverse - Station Slope						
Slope control type		N / A	Plug-in EQ's			
Slope control range		dB	0 to 12.0			
Slope control steps	Equalizer value steps	dB	1.0			
Reverse - Station Output Levels						
@ Forward trunk input port		dBmV	35.0			
Reverse - Noise Figure						
Station Noise Figure (w / EQ)		dB	10.0			
Reverse - Station Distortions						
Composite Second Order (CSO)	6 channel loading	-dBc	82.0			
Composite Triple Beat (CTB)	6 channel loading	-dBc	90.0			
Cross Modulation (XMOD)	6 channel loading	-dBc	80.0			
Reverse - Station Group Delay						
Group delay	5 MHz	nSec / 1.5 MHz	36			
Group delay	7 MHz	nSec / 1.5 MHz	16			
Group delay	10 MHz	nSec / 1.5 MHz	4			
Group delay	35 MHz	nSec / 1.5 MHz	10			
Group delay	38.5 MHz	nSec / 1.5 MHz	25			
Power Requirements:						
Station configuration	Includes reverse	N / A	AGC	Thermal	Manual	
Power Requirements	Worst case	W	24.9	23.0	22.8	
AC Voltage						
Input ranges		VAC	40-90			
Current Draw (with AGC)						
@ 40 VAC	Maximum	A	0.87			
@ 50 VAC	Maximum	A	0.79			
@ 60 VAC	Maximum	A	0.67			
@ 70 VAC	Maximum	A	0.62			
@ 80 VAC	Maximum	A	0.55			
@ 90 VAC	Maximum	A	0.47			
Environmental						
Operating temperature		^{o}F (^{o}C)	-40 to +140 (-40 to +60)			
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)			
Weight		lbs. (kg)	14.5 (6.58)			

SDLE (Type 3A, 3T, & 3M) 1002 MHz Amplifier Block Diagram



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

ACI Communications, Inc.®

ACI Communications,			Line Extender, SDLE 1002 MHz (Type 3) 1 Output Line Extender		
STATION PARAMETERS:	1002 MHz 42-53 MHz Split				
Description	CONDITIONS	UNITS	SPECIFICATION		NOTES
Housing passband		MHz	5 to 1002		
Input current capacity	Any port, worst case	Amperes	15		
Frequency range		MHz	5 - 40	54 - 1002	
Hum modulation	Time domain @ rated current above	-dBc	65	69	
Return loss	Any port, worst case	dB	18.0		
Test Points					
Test point type	Directional coupler	N / A			
Test point level(s)		-dB	20.0		Fwd & Rev
Test point accuracy	Forward TP	±dB	0.5		
Frequency range		MHz	5 to 42		
Test point accuracy	Reverse TP	±dB	0.5		
Test point accuracy	Reverse injection	±dB	0.5		
Operational Specifications					
Station passband		MHz	54 to 1002		
Station flatness - feeder out	Normalized w / 0 dB slope	±dB	0.35		
Gain (Type 3A, 3T)	+0.5 / -0 @ 1002 MHz	dB	35.5		Temperature stabilized
Gain (Type 3M)	+0.5 / -0 @ 1002 MHz	dB	40.5		Temperature stabilized
Gain control type		N / A	Plug-in pads		
Gain control steps	Pad value steps	dB	0.5		
Station Slope					
Operational slope	@ 54 / 550 / 750 / 870 / 1002 MHz	dB	0 / 9.0 / 12.6 / 14.8 / 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 to 18.0 (1.0 dB steps) & 20.0 to 30.0 (2.0 dB steps) -1.0 to -12.0 (1.0 dB steps)		
Station Group Delay					
Group delay	Channel 2 (Std)	nSec / 3.58 MHz	40		Typical 35
Group delay	Channel 3	nSec / 3.58 MHz	16		
Group delay	Channel 4	nSec / 3.58 MHz	10		
Group delay	Channel 5 & >	nSec / 3.58 MHz	3		
AGC					
Type		N / A	Single channel pilot AGC		
Range		dB	8.0		System compensation input change +3/-5 @ 1002 MHz
Accuracy		±dB	0.5		
Nominal loss		dB	5.5		Loss @ room temp
Center frequency bandwidth		Fc ± kHz	150		

ACI Communications, Inc.				Line Extender, SDLE 1002 MHz (Type 3) 1 Output Line Extender	
550 MHz analog channel loading, 79 channels +450 MHz digital channel loading, 256 QAM at -6 dBc relative to its associated visual carrier					
Station Output Levels for Type 3					
Feeder out Port 2	@ 54 / 550 / 750 / 870 / 1002 MHz	dBmV	35.0 / 44.0 / 47.6 / 49.8 / 52.2		
Station Noise Figure					
Noise figure (w / 1 dB for input EQ loss)	Typ. @ 54 MHz	dB	7.0		
Noise figure (w / 1 dB for input EQ loss)	Typ. @ 550 MHz	dB	9.5		
Noise figure (w / 1 dB for input EQ loss)	Typ. @ 1002 MHz	dB	7.5		
Station Distortions			Worst Case	Typical	
Composite Triple Beat (CTB)		-dBc	79	81	
Cross Modulation (XMOD)		-dBc	71	73	
Composite Second Order (CSO-)	(Vc +0.75 & -1.25 MHz)	-dBc	69	71	
Composite Second Order (CSO+)	(Vc +1.25 MHz)	-dBc	70	72	
Composite Intermodulation Noise (CIN)		-dBc	77	79	

ACI Communications, Inc.			Line Extender, SDLE 1002 MHz (Type 3) 1 Output Line Extender			
REVERSE SPECTRUM:						
Reverse - Channel Loading	CONDITIONS	UNITS	SPECIFICATION			NOTES
	Typically 23 each, 1.5 MHZ wide QPSK channels.					
Reverse - General						
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	dB	18.0 or 21.0			Temperature stabilized
Gain control type		N / A	Plug-in pads			
Gain control steps	Pad value steps	dB	0.5			
Reverse - Station Slope						
Slope control type		N / A	Plug-in EQ's			
Slope control range		dB	0 to 12.0			
Slope control steps	Equalizer value steps	dB	1.0			
Reverse - Station Output Levels						
@ Forward trunk input port		dBmV	35.0			
Reverse - Noise Figure						
Station Noise Figure (w / EQ)		dB	10.0			
Reverse - Station Distortions						
Composite Second Order (CSO)	6 channel loading	-dBc	82.0			
Composite Triple Beat (CTB)	6 channel loading	-dBc	90.0			
Cross Modulation (XMOD)	6 channel loading	-dBc	80.0			
Reverse - Station Group Delay						
Group delay	5 MHz	nSec / 1.5 MHz	36			
Group delay	7 MHz	nSec / 1.5 MHz	16			
Group delay	10 MHz	nSec / 1.5 MHz	4			
Group delay	35 MHz	nSec / 1.5 MHz	10			
Group delay	38.5 MHz	nSec / 1.5 MHz	25			
Power Requirements:						
Station configuration	Includes reverse	N / A	AGC	Thermal	Manual	
Power Requirements	Worst case	W	24.9	23.0	22.8	
AC Voltage						
Input ranges		VAC	40-90			
Current Draw (with AGC)						
@ 40 VAC	Maximum	A	0.87			
@ 50 VAC	Maximum	A	0.79			
@ 60 VAC	Maximum	A	0.67			
@ 70 VAC	Maximum	A	0.62			
@ 80 VAC	Maximum	A	0.55			
@ 90 VAC	Maximum	A	0.47			
Environmental						
Operating temperature		^{o}F (^{o}C)	-40 to +140 (-40 to +60)			
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)			
Weight		lbs. (kg)	14.5 (6.58)			

ACI Communications, Inc.®

SDA & ALX 15 Amp Product Configuration Worksheet

Customer: _____

Created By: _____ Order Date: _____

ORDERING MATRIX

May 28, 2011

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
B = SDAB 2 Output Feeder
C = SDLT 1 Output Trunk LE
D = SDLA 2 Output LE
F = SDAF 2 or 3 Output Feeder
J = SDBT 3 Equal Output Feeder
L = SDLE 1 Output LE
T = SDAT 3 Output Trunk

2 ____ BANDWIDTH FREQUENCY

7 = 750 MHz Upper Frequency
8 = 870 MHz Upper Frequency
9 = 900 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	750	870	900	1002	750	870	900	1002	750	870	900	1002
Max gain with AGC/ Thermal	28	31	31	33	38	NA	42	43	29	31	32	35.5	29	31	32	NA
Max gain w/AGC bypass	33	34	34	38	43	NA	45	48	34	36	36	40.5	34	36	36	NA

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

5 ____ CONTROL TYPE

C = Composite AGC (750 MHz only)
P = Single Channel Pilot (recommended)
T = Thermal Bode
M = Manual (AGC Bypass)

6 ____ CONTROL FREQUENCY

0 = Thermal Bode
1 = AGC Bypass

A = Channel 52	391.25MHz	SC or SP AGC	E = Channel 60	439.25 MHz	SC or SP AGC
B = Channel 54	403.25 MHz	SCAGC only	F = Channel 61	445.25 MHz	SPAGC only
C = Channel 58	427.25 MHz	SPAGC only	G = Channel 62	451.25 MHz	SC or SP AGC
D = Channel 59	433.25 MHz	SCAGC only	H = Channel 70	499.25 MHz	SC or SP AGC
			J = Channel 72	511.25 MHz	SPAGC only
			M = Channel 70HRC	498.025 MHz	SPAGC only
			N = Channel 58HRC	426.021 MHz	SPAGC only

7 B 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

9 ____ HOUSING OPTIONS

0 = No housing or power pack
1 = Module upgrade kit with power supply and seizure screws
E = SDA - Standard with TP
F = SDA - Chromate with TP
B = SDA - Chromate without TP
G = ALX - Standard low profile line extender with TP
H = ALX - Chromate low profile line extender with TP
K = ALX - Chromate low profile line extender without TP

10 ____ DIPLEX FREQUENCY SPLIT

4 =42 / 53
5 =55 / 70 (870 MHz Only)
6 =65 / 85 (870 MHz Only)
8 =85 / 105 (1002 MHz Only)

11 ____ STATION GAIN (Reverse)

0 = None
1 = Passive
4 = 18 dB min (SDA: T, B, F, LA, BT)
H = 18 dB min (SDLE, LT & ALX 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 X X TEST SPECS (Determined by ACI engineering)

15 X SPECIAL/CUSTOMER: LABELS, FUNCTIONS, (Determined by Product Management)

0, 1 = No special instructions
T or R = Trunk line extender for ALX
2 = Customer P/N in description
M = Status monitoring pick-offs installed
3 = SDAF w/3 dB splitter installed
C = Module cover with thumb screws (SDA 1G only)

Generic Order Form: Not all configurations are available

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