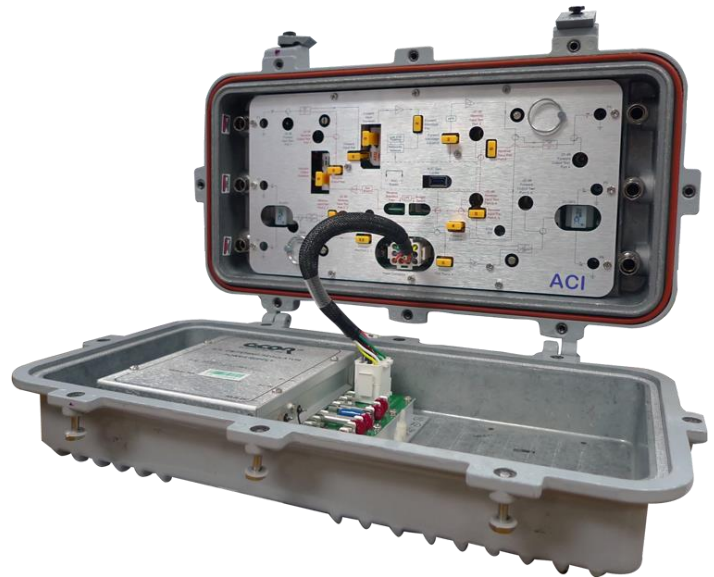




AFM-L
(1 Output Line Extender)



AFM-T
(1 Trunk / 2 Bridger)

ASEM C-Cor®/Arris® Distribution Amplifiers 1002 MHz

The ACI ASEM C-Cor®/Arris® 1G RF upgrade modules 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.

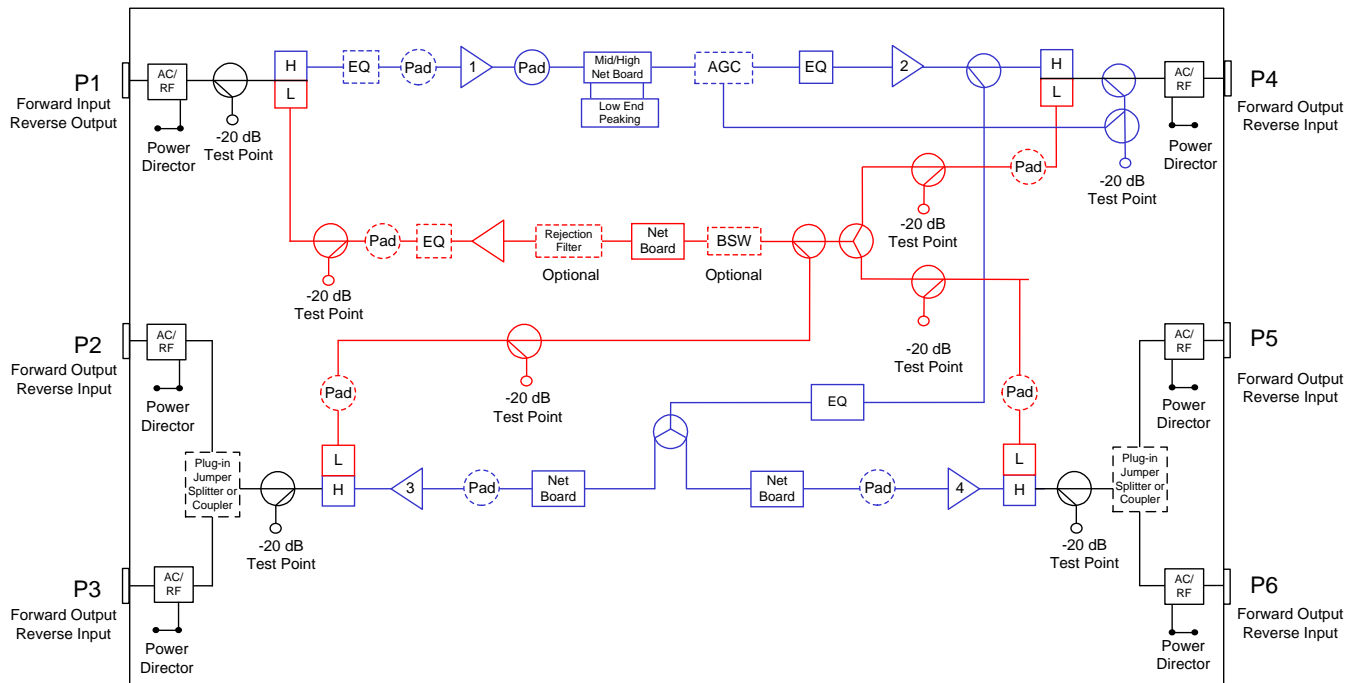
Features

- ◆ AFM-T Trunk is compatible with Arris® 901e FMT and is a 1G drop-in replacement for the C-Cor® FNT700, FNT800, FNT900
- ◆ AFM-B Bridger is compatible with Arris® 901e FMB and is a 1G drop-in replacement for the C-Cor® FNB700, FNB800, FNB900
- ◆ AFM-L Line Extender is compatible with Arris®/C-Cor® FM331e and is a 1G drop-in replacement for the C-Cor® E6 and E7 Line Extender
- ◆ Pad adjustable forward and return EQ's
- ◆ 5 to 42, 85 or 204 MHz reverse path
- ◆ Ideal for traditional HFC networks for increased performance & reliability
- ◆ Ideal for fiber deep networks with the extended reach of the amplifiers
- ◆ Patented DSIM technology (Digital AGC)
- ◆ Increased reliability with higher surge protection in the GaN hybrids
- ◆ Lower power consumption than OEM amplifiers

Block Diagrams

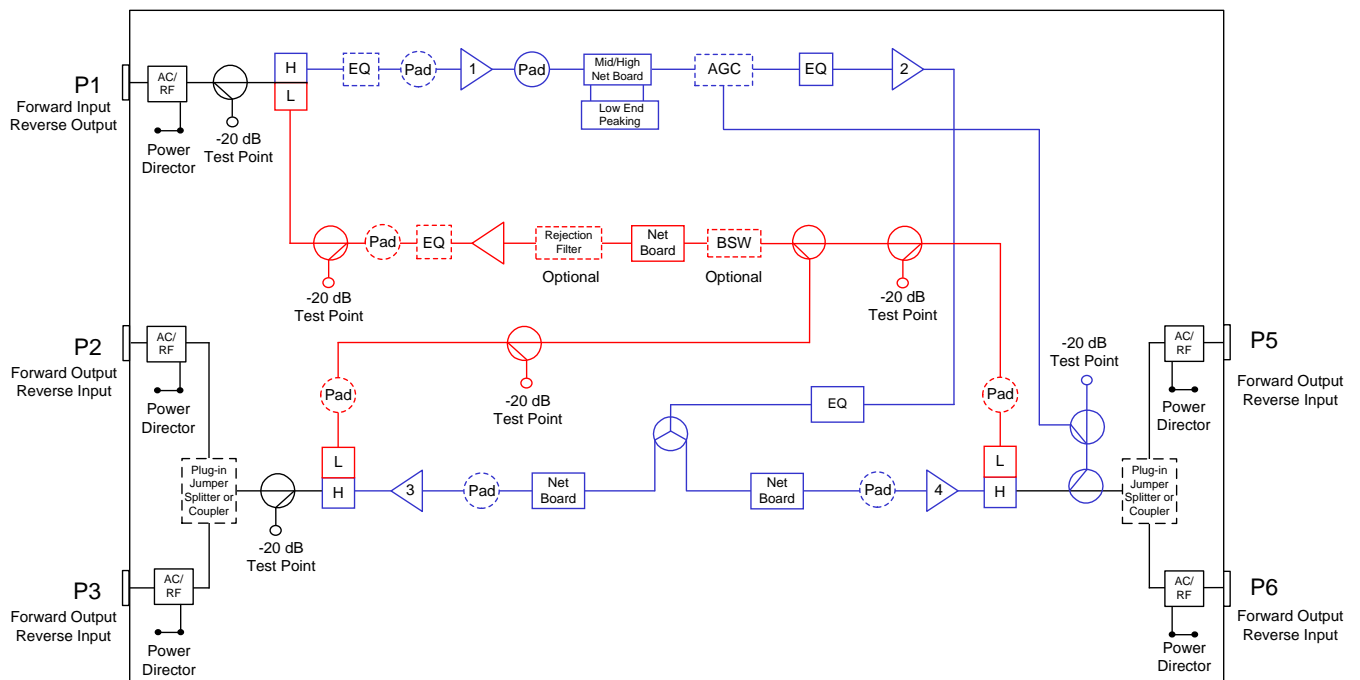
AFM-T

AFM-T 1 Trunk / 2 Bridger Outputs 1002 MHz GaN Amplifier Block Diagram



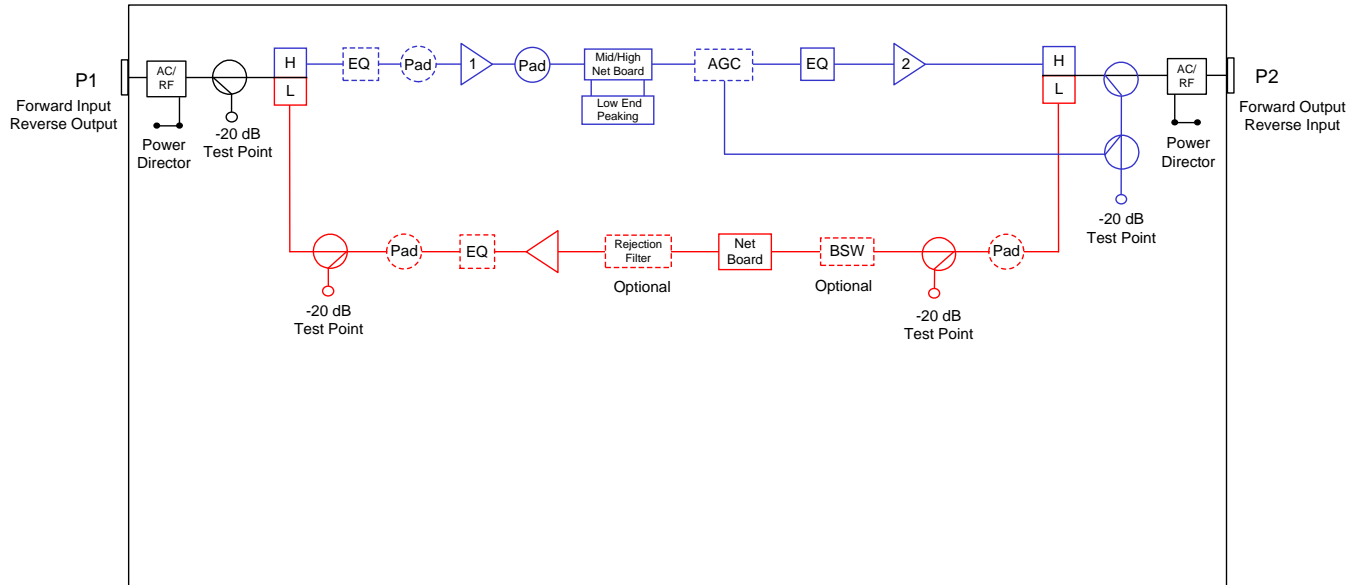
AFM-B

AFM-B 2 Bridger Outputs 1002 MHz GaN Amplifier Block Diagram



AFM-L

AFM-L 1 Output Line Extender 1002 MHz GaN Amplifier Block Diagram



Station Parameters 42/53 MHz

STATION PARAMETERS: 1002 MHz 42-53 MHz Split			ASEM C-Cor® / Arris® RF Modules 1002 MHz With GaN Hybrids							
		CONDITIONS	UNITS	SPECIFICATIONS						Notes
Housing passband			MHz	5 to 1002						
Max AC current		Continuous	Amps	15						
Max AC current		Surge	Amps	25						
Hum modulation		Time domain @ rated current above	-dBc	65 @ 5-42 MHz 70 @ 54-1002 MHz						
Return loss		Any port, worst case	dB	16.0						
Test Points										
Frequency range			MHz	5 to 42 (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	0.75						
Station Slope				AFM-T Trunk	AFM-T Trunk	AFM-B Bridger	AFM-L Line Extender			
Internal Slope (Tilt)		± 0.5 dB	dB	T/B : 15/15	T/B : 8/15	15.0	15.0			
Slope control type		Cable equalizers	dB	Plug-in Pad Adjustable EQ's						
Slope control range		Includes cable equivalent	dB	-9.0 to +18						
Slope control steps		Equalizer value steps	dB	1.0						
Station Group Delay										
Group delay		Channel 2 (Std)	nSec / 3.58 MHz	40						
Group delay		Channel 3		16						
Group delay		Channel 4		10						
Group delay		Channel 5 & >		3						
AGC										
Pilot Channel Type			N / A	DSIM-A Single Pilot Channel AGC NTSC Analog or QAM						
Compensation Range			dB	System compensation input change ± 5.5 @ 1002 MHz						
Accuracy			±dB	0.5						
Nominal loss		@ 77 °F (25 °C)	dB	6.25						
Center frequency bandwidth				6 (MHz)						
Configuration				AFM-T Slope T/B : 15/15	AFM-T Slope T/B : 8/15	AFM-B	AFM-L			
Operational Specifications				Trunk	Bridger	Trunk	Bridger			
Station passband			MHz	54 to 1002						
Station flatness		Normalized w / 0 dB slope	±dB	0.5	0.5	0.5	0.5	0.5	0.5	
Operational Gain - With AGC		Minimum @ 1002 MHz (Temperature stabilized)	dB	33.0	43.0	33.0	43.0	43.0	35.0	Note 1
Station Output Levels				AFM-T		AFM-T		AFM-B Bridger	AFM-L Line Extender	
Output Level @...		1002 MHz 870 MHz 550 MHz 54 MHz	dBmV	43.0 40.9 35.9 28.0	52.0 49.9 44.9 37.0	42.0 40.9 38.2 34.0	52.0 49.9 44.9 37.0	52.0 49.9 44.9 37.0	52.0 49.9 44.9 37.0	Note 2
Reference Output Slope (Tilt)		54-1002 MHz	dB	15.0	15.0	8.0	15.0	15.0	15.0	
Station Noise Figure				AFM-T		AFM-T		AFM-B	AFM-L	
Noise figure (w / 1 dB for input EQ loss)		Max	dB	9.1		9.1		9.1	9.0	
550 MHz analog channel loading, 79 channels +450 MHz digital channel loading, 256 QAM at -6 dBc relative to its associated visual carrier										
Station Distortions (Worse Case)				Main	AUX	Main	AUX			
Composite Triple Beat			-dBc	79	75	82	75	75	75	
Cross Modulation			-dBc	72	67	75	67	67	71	
Composite Second Order High Side			-dBc	77	73	78	73	73	74	

Reverse Station Specifications 5-42 MHz

REVERSE SPECTRUM: For 42/53 Split						
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			AFM-T	AFM-B	AFM-L	
Gain	Minimum		dB	20.0	20.0	21.0
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	6 channel loading		-dBc	82.0		
Composite Tripe Beat				90.0		
Cross Modulation				80.0		
Reverse - Station Group Delay						
Group delay	5 MHz		nSec / 1.5 MHz	36		
Group delay	7 MHz			16		
Group delay	10 MHz			4		
Group delay	35 MHz			10		
Group delay	38.5 MHz			25		
Reverse - Noise Figure			AFM-T	AFM-B	AFM-L	
Station noise figure (w / EQ)	Max		dB	12.5	12.5	10.5
Power Requirements:						
Configuration			AFM-T	AFM-B	AFM-L	
With DSIM-A	Includes reverse (Worst case)		W	53.5	45.5	28.0
Environmental						
Operating temperature			°F (°C)	-40 to +140 (-40 to +60)		

Station Parameters 85/105 MHz

STATION PARAMETERS:		1002 MHz 85-105 MHz Split						ASEM C-Cor® / Arris® RF Modules 1002 MHz With GaN Hybrids		
		CONDITIONS	UNITS	SPECIFICATIONS						Notes
Housing passband			MHz	5 to 1002						
Max AC current		Continuous	Amps	15						
Max AC current		Surge	Amps	25						
Hum modulation		Time domain @ rated current above	-dBc	65 @ 5-85 MHz 70 @ 54-1002 MHz						
Return loss		Any port, worst case	dB	16.0						
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	0.75						
Station Slope				AFM-T Trunk	AFM-T Trunk	AFM-B Bridger	AFM-L Line Extender			
Internal Slope (Tilt)		± 0.5 dB	dB	T/B : 14/14	T/B : 7/14	14.0	14.0			
Slope control type		Cable equalizers	dB	Plug-in Pad Adjustable EQ's						
Slope control range		Includes cable equivalent	dB	-9.0 to +18						
Slope control steps		Equalizer value steps	dB	1.0						
Station Group Delay										
109.25 MHz			nSec / 3.58 MHz	25						
115.25 MHz				16						
121.25 MHz				10						
127.25 MHz				3						
AGC				DSIM-A Single Pilot Channel AGC						
Pilot Channel Type			N / A	NTSC Analog or QAM						
Compensation Range			dB	System compensation input change ± 5.5 @ 1002 MHz						
Accuracy			±dB	0.5						
Nominal loss		@ 77 °F (25 °C)	dB	6.25						
Center frequency bandwidth				6 (MHz)						
Configuration				AFM-T Slope T/B : 14/14	AFM-T Slope T/B : 7/14	AFM-B	AFM-L			
Operational Specifications				Trunk	Bridger	Trunk	Bridger			
Station passband			MHz	105 to 1002						
Station flatness		Normalized w / 0 dB slope	±dB	0.5	0.5	0.5	0.5	0.5	0.5	
Operational Gain - With AGC		Minimum @ 1002 MHz (Temperature stabilized)	dB	33.0	43.0	33.0	43.0	43.0	35.0	Note 1
Station Output Levels				AFM-T		AFM-T		AFM-B Bridger	AFM-L Line Extender	
				Main	AUX	Main	AUX			
Output Level @...	1002 MHz		dBmV	42.0	52.0	43.0	52.0	52.0	52.0	Note 2
	870 MHz			41.0	50.1	41.1	50.1	50.1	50.1	
	550 MHz			38.7	45.3	36.3	45.3	45.3	45.3	
	105 MHz			35.0	38.0	29.0	38.0	38.0	38.0	
Reference Output Slope (Tilt)		105-1002 MHz	dB	14.0	14.0	7.0	14.0	14.0	14.0	
Station Noise Figure				AFM-T		AFM-T		AFM-B	AFM-L	
Noise figure (w / 1 dB for input EQ loss)		Max	dB	9.1		9.1		9.1	9.0	
NTSC/550 MHz analog channel loading, 71 channels +450 MHz digital channel loading, 256 QAM at -6 dBc relative to its associated visual carrier										
Station Distortions (Worse Case)				Main	AUX	Main	AUX			
Composite Triple Beat			-dBc	79	75	82	75	75	75	
Cross Modulation			-dBc	72	67	75	67	67	71	
Composite Second Order High Side			-dBc	77	73	78	73	73	74	

Reverse Station Specifications 5-85 MHz

REVERSE SPECTRUM: For 85/105 Split						
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			AFM-T	AFM-B	AFM-L	
Gain	Minimum		dB	20.0	20.0	21.0
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	6 channel loading		-dBc	82.0		
Composite Tripe Beat				90.0		
Cross Modulation				80.0		
Reverse - Station Group Delay						
Group delay	5 MHz		nSec / 1.5 MHz	36		
Group delay	7 MHz			16		
Group delay	10 MHz			4		
Group delay	80.5 MHz			10		
Group delay	83.5 MHz			25		
Reverse - Noise Figure			AFM-T	AFM-B	AFM-L	
Station noise figure (w / EQ)	Max		dB	12.5	15.5	10.5
Power Requirements:						
Configuration			AFM-T	AFM-B	AFM-L	
With DSIM-A	Includes reverse (Worst case)		W	53.5	45.5	28.0
Environmental						
Operating temperature			°F (°C)	-40 to +140 (-40 to +60)		

Notes:

1. The AFM-T & B operational gain – with AGC are based on the amplifier configured with jumper at DC/SP 3 (port 3) and DC/SP 2 (port 6) as a 2 output Bridger.
2. When using the DC/SP plug-ins SDA1G-SPLTR3.5, SDA1G-DC7, SDA1G-DC10 and SDA1G-DC12, levels will derated accordingly based on the accessory specification.

Accessory Ordering Information:

The ASEM C-Cor 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

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 • 1 Required for forward input Equalizer • 1 Required for reverse output Equalizer 	JXP138-XX (0 to 20 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
DSIM Bluetooth Dongle Apple iOS or android	DSIM-DONGLE-02
Digital Station Intelligence Manager - Cable Assembly For Computer Interface	240327-01
Cable assembly DSIM adaptor to connect controller	240330-01
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 & 5-85 MHz JXP Platform 0-12 dB (5 Pin)	AREQDA42 AREQDA85
Splitter, 3.5 dB, 1GHz	SDASPLTR3.5
Directional Coupler, 7 dB, 1GHz	SDADC7
Directional Coupler, 10 dB, 1GHz	SDADC10
Directional Coupler, 12 dB, 1GHz	SDADC12
Reverse Rejection Filter 14 MHz	RPRFLTR-14
Reverse Rejection Filter 8 MHz	RPRFLTR-8
Reverse Rejection Filter by-pass	RPRFLTR-JMP
Test Probe (5.5" Long)	100685-01
Test Probe (1.57" / 4 cm Long)	TP-7504
Power Supply Adaptor Cable 9 to 12 Pin Connectors	240336-01
Conversion Kit, 85/105 ASEM C-Cor AFM-L LE	120597-01
Conversion Kit, 85/105 ASEM C-Cor AFM-B Bridger	120598-01
Conversion Kit, 85/105 ASEM C-Cor AFM-T Trunk	120599-01

Ordering Matrix

ASEM C-Cor Product Configuration Worksheet

Customer: _____

Created By: _____ Order Date: _____

ORDERING MATRIX

February 1, 2019

Position	1	2	3	4	5	6	7	8	9	10	11	12	13
PART NUMBER	A	F	M	-									

- 5 STATION TYPE
- T = AFM-T 1 Trunk / 2 Bridger Outputs (User configurable to 4 outputs)
 B = AFM-B 2 Output Bridger (User configurable to up to 4 outputs)
 L = AFM-L 1 Output Line Extender

- 6 BANDPASS SPLIT
- 4 = 5-42 MHz / 54-1002 MHz 2 = 5-204 MHz / 258-1002 MHz
 8 = 5-85 MHz / 105-1002 MHz

- 7,8 STATION GAIN (Forward) - For 0.5 dB gain values, use the first two digits listed in the part number

Amplifier Model	AFM-L	AFM-B	AFM-T	AFM-T
For Slope Call Out	A	A	E	F
Max gain with DSIM	35.0	43.0	33.0	33.0
Max gain w/AGC bypass	39.5	48.0	38.0	38.0

- 9 FORWARD GAIN CONTROL TYPE
- M = Manual (AGC Bypass) D = Digital Station Intelligence Manger

- 10 STATION SLOPE

Call Out	Station	42/54	85/105	240/258
A =	FML & FMB	15	14	11
E =	FMT (T/B)	15/15	14/14	11/11
F =	FMT (T/B)	8/15	7/14	4/11

Note: T/B for Trunk/Bridger Ports

- 11 STATION GAIN (Reverse)
- B = 20 dB min (AFM-T & B Only)
 R = 21 dB min (AFM-L Only)

- 12 CUSTOM OPTIONS
- 0 = NONE
 X = Determined by Product Management

Generic Order Form: Not all configurations are available



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