



BLE  
(1 Output Line Extender)



MB  
(2 or 3 output Bridger)

## ASEM MOTO BLE & MB Distribution Amplifiers 1002 MHz

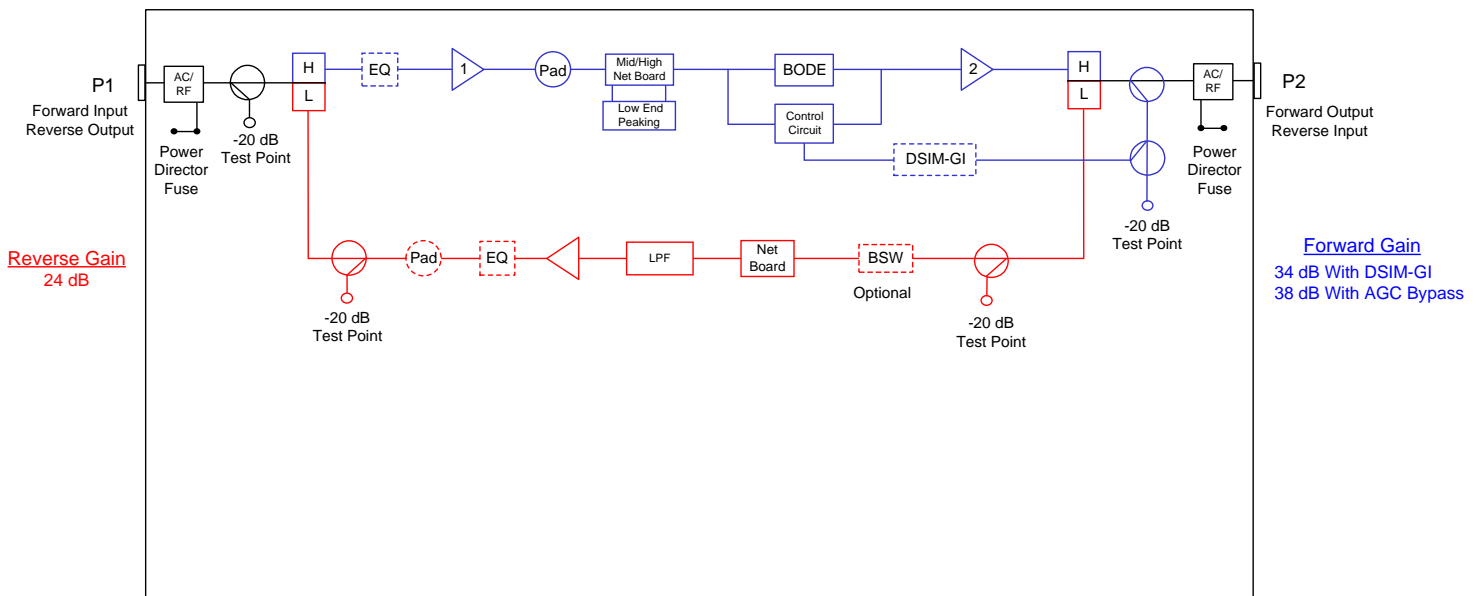
The ACI ASEM Moto BLE and MB 1G RF upgrade modules are now offered with the Gallium Nitride (GaN) hybrid technology that allows for 3 dB higher output levels while maintaining close to the same specifications as the previous stations with the Gallium Arsenide (GaAs) hybrids. With this increase in the 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

- ◆ 1002 MHz may be dropped into the 750 or 870 MHz spacing
- ◆ 5 to 42, 55, 65 or 85 MHz reverse path
- ◆ Ideal for traditional HFC networks for increased performance & reliability
- ◆ Ideal for fiber deep networks with the extended reach of the amplifiers
- ◆ Lower power consumption the OEM amplifiers
- ◆ Increased reliability with higher surge protection in the GaN hybrids
- ◆ Pad Adjustable EQs & REQs
- ◆ Automatic Gain Control with the DSIM-GI
- ◆ Up to 3 dB higher output levels with same distortion performance with GaN Hybrids
- ◆ Increased reliability with higher surge protection with GaN hybrids

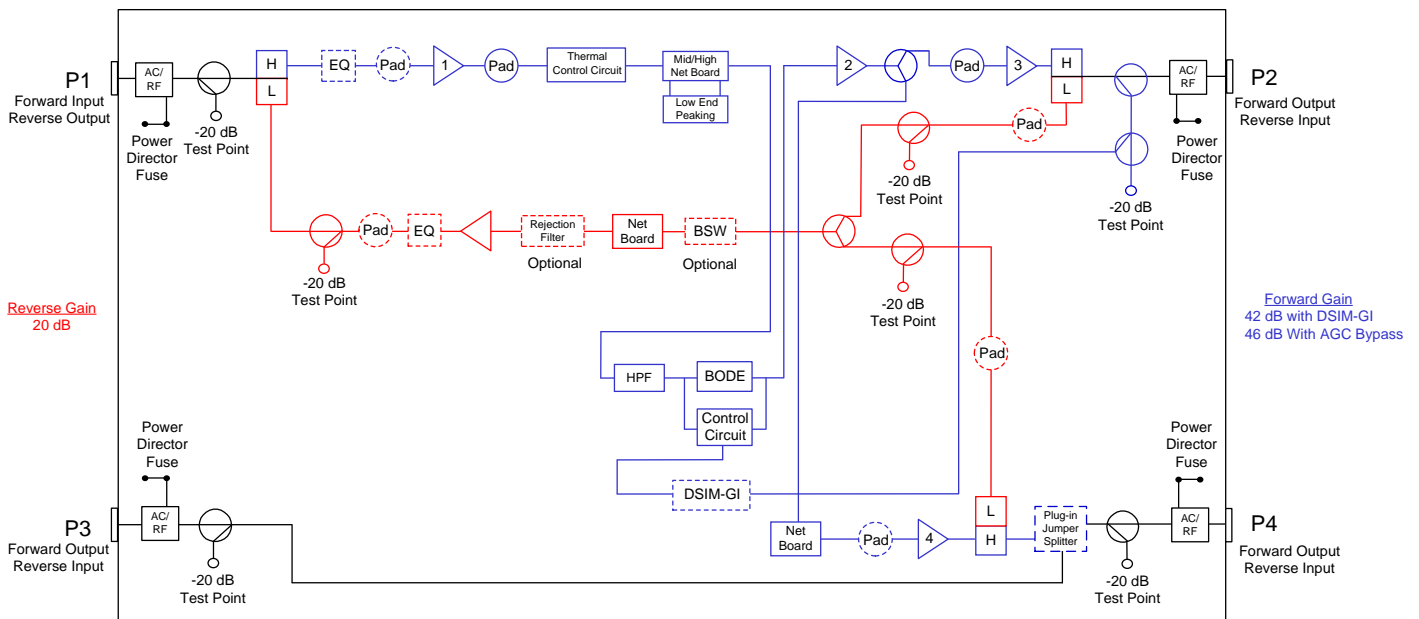
# BLOCK DIAGRAM

## ASEM-BLE



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

## ASEM-MB



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

# SPECIFICATIONS (MB - Bridger)

STATION PARAMETERS:			1002 MHz 42-53 MHz Split		ASEM Moto-MB 1002 MHz With GaN Hybrids 15.0 dB Forward Slope @ 1002 MHz High Forward Gain	
SPECIFICATIONS	CONDITIONS	UNITS	Forward	Return		
Housing passband		MHz	53-1002	5-42		
Flatness	Normalized w / 0 dB slope	dB	± 0.75	± 0.5		
Minimum Full Gain		dB	46	NA		
Operation Gain	+0.5 / -0 dB @ 1002MHz	dB	42	20		
Noise Figure	(w / 1dB for input EQ loss)	dB	12.5	15.5		
Test Point	Forward & reverse	dB	20 (±1.0dB)	20 (±1.0dB)		
Return Loss	Any port, worst case	dB	14.5	15		
Hum Modulation	Time domain @ rated 15A	dBc	<60	<65		
Slope Reference Frequency		MHz	54/550/1002	35 (flat)		
Reference Output Level	@ 54 / 550 / 1002 MHz	dBmV	39/47/54	-		
Operating Interstage Slope	@ 1002 MHz	dB	15 ± 1	NA		
<b>Distortion Performance (Worse Case)</b>			<b>Forward</b>	<b>Return</b>		
Channel loading			NTSC/550 MHz analog channel loading, 79 channels +450 MHz digital channel loading, 256 QAM at -6 dBc relative to its associated visual carrier		6 channel analog	
Composite Triple Beat (CTB)		-dBc	69	80		
Cross Modulation (XMOD)		-dBc	60	70		
Composite Second Order (CSO)		-dBc	68	79		
Carrier-to-Intermodulation Noise (CIN)		-dBc	66	-		
<b>Station Group Delay</b>						
Group delay	Channel 2 (Std)	nSec / 3.58 MHz	40 (35 Typical)			
Group delay	Channel 3		16			
Group delay	Channel 4		10			
Group delay	Channel 5 & >		3			
<b>ADU</b>			<b>DSIM-GI Single Pilot Channel ADU</b>			
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)			
<b>Power Requirements</b>						
DC Voltage		VDC	24			
Current DC Max.	Current draw at 24 VDC	mA	1590			
Power Consumption Max.		W	52			
AC Input Voltage Range		VAC	38-90			
AC Current Draw Max.		A				
	@ 90VAC		0.6			
	@ 60VAC		0.8			
	@ 38VAC		1.3			
<b>Weight</b>						
Weight		lbs. (kg)	3.75 (1.7)			
<b>Physical</b>						
Dimensions	(H x W x D)	In, (cm)	5.9 X 12.6 X 2.36 (15 X 32 X 6)			
<b>Environmental</b>						
Operating temperature		°F (°C)	-40 to +140 (-40 to +60)			

# SPECIFICATIONS (BLE - Line Extender)

STATION PARAMETERS: 1002 MHz 42-53 MHz Split			ASEM - Moto BLE 1002 MHz With GaN Hybrids 15.0 dB Forward Slope @ 1002 MHz High Forward Gain	
SPECIFICATIONS	CONDITIONS	UNITS	Forward	Return
Housing passband		MHz	53-1002	5-42
Flatness	Normalized w / 0 dB slope	dB	± 0.7	± 0.5
Minimum Full Gain		dB	38	NA
Operation Gain	+0.5 / -0 dB @ 1002MHz	dB	34	24
Noise Figure	(w / 1dB for input EQ loss)	dB	55 MHz = 12 550 MHz = 7.5	15
Test Point	Forward & reverse	dB	20 (±1.0 dB)	20 (±1.0 dB)
Return Loss	Any port, worst case	dB	15	16
Hum Modulation	Time domain @ rated 15A	dBc	<60	<60
Slope Reference Frequency		MHz	54/550/1002	35 (flat)
Reference Output Level	@ 54 / 550 / 1002 MHz	dBmV	36/43.8/51	-
Operating Interstage Slope	@ 1002 MHz	dB	15 ± 1	NA
Distortion Performance (Worse Case)			Forward	Return
Channel loading			NTSC/550 MHz analog channel loading, 79 channels +450 MHz digital channel loading, 256 QAM at -6 dBc relative to its associated visual carrier	6 channel analog
Composite Triple Beat (CTB)		-dBc	71	80
Cross Modulation (XMOD)		-dBc	62	70
Composite Second Order (CSO)		-dBc	68	81
Carrier-to-Intermodulation Noise (CIN)		-dBc	58	-
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 & >		3	
ADU			DSIM-GI Single Pilot Channel ADU	
Pilot Channel Type		N / A	NTSC Analog or QAM	
Compensation Range		dB	System compensation input change +3/-6 @ 1002 MHz	
Accuracy		±dB	0.5	
Center frequency bandwidth			6 (MHz)	
Power Requirements				
DC Voltage		VDC	24	
Current DC Max.	Current draw at 24 VDC	mA	1000	
Power Consumption Max.		W	35	
AC Input Voltage Range		VAC	38-90	
AC Current Draw Max.		A	0.5	
@ 90VAC			0.6	
@ 60VAC			0.8	
@ 40VAC				
Weight				
Weight		lbs. (kg)	3.31 (1.5)	
Physical				
Dimensions	(H x W x D)	In. (cm)	5.12 X 8.72 X 3.20 (13.0 X 22.14 X 8.20)	
Environmental				
Operating temperature		°F (°C)	-40 to +140 (-40 to +60)	

# Ordering Matrix

ORDERING MATRIX										November 14, 2016	
<p style="margin: 0;"><b>ASEM Product Configuration Worksheet</b></p> <p style="margin: 5px 0 0 20px;">Customer: _____</p> <p style="margin: 5px 0 0 20px;">Created By: _____ Order Date: _____</p>											
	Position	1	2	3	4	5	6	7	8	9	10
	PART NUMBER										
1,2	<input type="checkbox"/> <input type="checkbox"/>	STATION TYPE									
		BL = 1 Output LE      MB = 2 Output Bridger      BT =4 Output Bridger									
3	<input type="checkbox"/>	BANDPASS SPLIT									
		K = 5-42 MHz / 54- 1002 MHz									
4,5	<input type="checkbox"/> <input type="checkbox"/>	STATION GAIN (Forward)									
		Frequency	54-1002 MHz								
		Amplifier Model	BL	MB	BT						
		Max gain with DSIM-GI	34	42	42						
		Max gain w/AGC bypass	38	46	46						
6	<input type="checkbox"/>	FORWARD GAIN CONTROL TYPE									
		M = Manual (AGC Bypass)      D = Digital Station Intelligence Manger (DSIM-GI)									
7	<input type="checkbox"/>	STATION SLOPE									
			550	650	750	870	1002				
		A	7.9	9.4	11.0	12.9	15.0				
8	<input type="checkbox"/>	STATION GAIN (Reverse)									
		B = 20 dB min (MB Only) L = 24 dB min (BL Only) T = 17.5 dB min (BT only)									
9	<input type="checkbox"/>	HOUSING OPTIONS									
		M = RF Module Only									
10	<input type="checkbox"/>	CUSTOM OPTIONS									
		0 = NONE X = Determined by Product Management									
<p style="margin: 0; font-weight: bold;">Generic Order Form: Not all configurations are available</p>											



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Rev B 1-23-2017 Printed in U.S.A.  
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