



## MFTJ MultiFlex-J 1002 MHz (MDU) Amplifier With GaN Hybrids

The ACI Communications' MultiFlex-J Amplifier is specifically designed for use in vertical mount applications. It is ideal for apartment complexes or business high-rise situations. The standard MFTJ GaN configuration has 45 dB of forward gain with 8 dB of slope from 54-1002 MHz and a reverse gain of 24 dB.

### Features

- ◆ Adjustments for forward/reverse gain, input/output levels, and slope are easily accomplished with the use of plug-in JXP style attenuators pads and fixed value equalizers.
- ◆ Pad adjustable forward and return equalizers that only require the JXP pad value to be changed for different slopes.
- ◆ Forward slopes and levels are easily configured for 750, 870 or 1002 MHz.
- ◆ Mounting is accomplished using easily accessible external tabs allowing a variety of placements in vented lock boxes or pedestals.
- ◆ The amplifier is housed in a finned aluminum die-cast housing for superior heat dissipation.
- ◆ -20 dB directional coupler test points are provided in the forward path at both the input and output with separate test points in the reverse path.
- ◆ RF connections are made through high performance SCTE compliant "F" type cable or 5/8" standard hard-line type cable connectors allowing the flexibility to place the unit on any type of cable.
- ◆ The MFTJ is available in mains (90-240VAC) or Cable (40-90 VAC) configurations

MFTJ GaN 42/53 1002 MHz (MDU Amplifier)					
		Notes	SPECIFICATION	Hybrid Reverse	
			GaN Forward Hybrids	RTA24HY-065	RTA30HY-065
Bandwidth (MHz)			54 to 1002	5 to 42	
Station flatness	1		± 0.5	±0.5	
Gain (dB)	2		45.0	19.0	24.0
Slope (dB)	1		8 ±1.0	0 ±1	
Return loss (dB) worst case	1		16.0	16.0	
RF test point (dB)			-20.0 ±1.0	-20.0 ±1.0	
<b>Distortions Worst Case</b>					
Channel loading	3, 8		79	6	
Rated output level (dBmV)	3		39/54	35	
Rated output slope (dB)	3		15.0 ±1.0	0	
Composite Triple Beat CTB (-dBc)	4		71.0	80.0	
Composite Second Order CSO (-dBc) high side	4		75.0	79.0	
Cross Modulation XMOD (-dBc)	5		78.0	72.0	
Noise figure (dB)	6		7.8	9.0	
<b>Group Delay (ns)</b>					
Forward (n + 3.58 MHz) (ns)			30 (worst case)		
Reverse (n + 1.5 MHz) (ns)			36 (worst case)		
Surge protection (kv)	7		6		
<b>Power Requirements (With Active Reverse Path)</b>					
		Units			
Mains powered (90-240 VAC)		W	24.1 (Max)		
Cable powered (40-90 VAC)		W	25.1 (Max)		
<b>Current Draw (With Active Reverse path) 40-90 VAC only</b>					
Input Ranges (Selectable)		Units	40-90		
@ 40 VAC		A	0.82		
@ 50 VAC		A	0.68		
@ 60 VAC		A	0.57		
@ 70 VAC		A	0.50		
@ 80 VAC		A	0.45		
@ 90 VAC		A	0.40		
<b>AC Power Passing Limit - AC by-pass current damage limit (amps)</b>					
Cable powered (40 - 90 VAC) only		A	10		
<b>Environmental</b>					
Operating temperature		°F (°C)	-40 to +140 (-40 to +60)		
<b>PHYSICAL</b>					
Dimensions (L X W X H)		in (cm)	13.00 X 9.25 X 2.75 (33.0 X 23.5 X 7.0)		
Weight		lbs (kg)	7.9 (3.58)		

**Notes:**

1. Single station measured with all forward and reverse pads and equalizers with 0 dB values.
2. Typical operating gain is measured with equalizers in all forward locations and 0 dB pads.
3. Standard channels flat per NCTA test methods or sloped as indicated by rated output slope.
4. Worst case as measured on matrix distortion analyzer utilizing CW carrier.
5. Worst case as measured on matrix distortion analyzer utilizing a 15.75 KHz square wave and measured to nearest dB.
6. Single station noise figure measured with 8 dB pads and equalizers. For system calculations add 1 dB for equalizer loss and 1 dB loss for diplex
7. 6 KV surge protection standard for mains powered units. For cable powered units, 6 KV surge protection requires installation of the optional plug-in sidactor (P/N 090689-01).
8. "550 MHz analog channel loading, 79 channels +450 MHz digital channel loading, 256 QAM at -6 dBc relative to its associated visual carrier



# Ordering Information

The MultiFlex-J can be ordered in a number of variations. Each is defined by a part number which specifies a certain combination of options.

## MFTJ Configuration Sheet

Customer: \_\_\_\_\_

Created By: \_\_\_\_\_ Order Date: \_\_\_\_\_

### ORDERING MATRIX

November 13, 2018

Position	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
<b>PART NUMBER</b>	<b>M</b>	<b>F</b>	<b>T</b>	<b>J</b>		/								--	

- |   |  |
|---|--|
| <p>5 <input type="checkbox"/> <b>BANDWIDTH</b><br/>1 = 1002 MHz</p> <p>7-8 <input type="checkbox"/> <input type="checkbox"/> <b>FORWARD GAIN</b><br/>42 = 42 dB @ 1002 MHz (GasFet Hybrids)<br/>45 = 45 dB @ 1002 MHz (GaN Hybrids)</p> <p>9 <input type="checkbox"/> <b>HYBRID TECHNOLOGY / PAD EQ'S (See Note 5)</b><br/>P = GasFet Power Doubling<br/>A = GasFet Power Doubling With Pad Adjustable EQ's<br/>B = GaN Power Doubling With Pad Adjustable EQ's</p> <p>10 <input type="checkbox"/> <b>STATION SLOPE (see note 2)</b><br/>C = 0 dB @ 1002 MHz (standard)<br/>H = 8 dB @ 1002 MHz<br/>K = 13.5 dB @ 1002 MHz<br/>F = 15 dB @ 1002 MHz</p> <p>11 <input type="checkbox"/> <b>FREQUENCY SPLIT (MHz)</b><br/>4 = Subsplit (42 / 53)<br/>5 = Subsplit (55 / 70) Future<br/>6 = Subsplit (65 / 85)<br/>7 = Subsplit (40 / 50) (see note 3)</p> | <p>12 <input type="checkbox"/> <b>REVERSE GAIN</b><br/>1 = Passive reverse (Jumper)<br/>6 = Hybrid reverse (19 dB gain)<br/>7 = Hybrid reverse (24 dB gain)</p> <p>13 <input type="checkbox"/> <b>POWERING</b><br/>1 = Cable switch mode power supply (40 - 90 VAC)<br/>9 = Mains switch mode power supply (90 - 240 VAC)</p> <p>15 <input type="checkbox"/> <b>POWER CORD SETS OR CUSTOM (see note 4)</b><br/>0 = None<br/>1 = North America<br/>2 = International / Europe<br/>3 = Japan<br/>4 = Australia<br/>5 = Argentina<br/>X = Custom - (Determined by product management)</p> |
|---|--|

### NOTES:

- For proper setup it is recommended that you only use the ACI Communications test probe (P/N 100685-01 or TP-7504).
- Contact ACI for distortion specifications other than the standard 0 dB of slope.
- For frequency split (40 / 50) use REQ42/XXB or AREQ42PB for reverse EQ.
- Positions 14 & 15 are not used in the cable powered (40 - 90 VAC) part number.
- The pad adjustable equalizers need to use the 1.0" Tall JXP pads (JXP100-XX.X) to allow the housing lid to close.

### ACCESSORIES:

#### Required Accessories for using fixed value plug-in equalizers

Forward all units - reverse if active

Plug-in equalizers	1 Reverse	1 Forward
Plug-in pad	1 Reverse	1 Forward

#### Optional Accessories (Sold separately)

For 19 dB reverse gain (P/N RTA24HY-065)  
For 24 dB reverse gain (P/N RTA30HY-065)  
RF 5.5" long test probe (P/N 100685-01)  
RF 1.57" long test probe (P/N TP-7504)  
Surge protect sidactor (P/N 090689-01)

#### Equalizers & JXP Pads

##### Fixed Value Equalizers

CEQ1G/\* - Cable Equivalent Equalizers 1002 MHz 1.0 to 12.0 dB in 1.0 dB steps

EQDA1G/\* - Forward Equalizers 1002 MHz 1-18 dB in 1 dB steps, 20-30 dB in 2 dB steps

REQ42/\*B - Reverse Equalizers 5-42 MHz 0 to 12 dB in 1.5 dB steps

##### Pad Adjustable Equalizers

AEQDA1G - Forward Equalizer JXP Platform 0-18 dB

ACEQ1G - Forward Cable Equivalent Equalizers JXP Platform 0-9 dB

AREQB42 - Reverse Equalizers JXP Platform 0-12 dB

##### JXP Style Attenuator Pads

Attenuator Pads (JXP138-XX.X) from 0 to 20 in .5 dB increments

Attenuator Pads (JXP100-XX.X) from 0 to 20 in .5 dB increments



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