



Flex Max601 1GHz Bridger Amplifier Technical Specification

Flex Max601 Specifications

	FORWARD Bridger (ea)	RETURN Bridger (ea)
General		
Pass Band, MHz	54–1002	5–42
Housing, MHz	1002	—
AC Current PAssing, Amp	15	15
Typical Operating Conditions		
Operational Gain, dB (–0, +1.0dB) ^{1,2}	43	18
Full Gain, dB (with EQ and ALC)	48	19
Channels, Number of NTSC ³	79	6
Operating Levels, Recommended		
Frequency, MHz	1002/870/750/550/54	42/5
Input, dBmV Minimum ⁴	9/8.2/8/7.7/10.5	17/17
Output, dBmV ^{5,6}	52/49.5/47.5/44/35	35/35
Performance Characteristics at Recommended Levels (Temperature Range: –40° C to 60° C)		
Carrier-to-Interference Ratio, dB ⁷		
Composite Triple Beat	75	80
Second Order Beat (F1 ± F2)	—	—
Cross Modulation ⁸ (per NCTA std.)	69	74
Third Order Beat (F1 ± F2 ± F3)	—	—
Composite 2IM ⁹	73	82
Comp. Intermodulation Noise CIN ¹⁰	73	—
Comp. Intermodulation Noise CIN ¹¹	79	—
Noise, 4 MHz, 75 Ohms ²	58/57.2/57/57.7/58.5	64
Noise Figure, dB (Without EQ) ¹²	9/9/9/8/10	15

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Factory Alignment, with ALC Reserve, Without EQ		
Cable Loss, dB @ 1002MHz	24	—
Flat Loss, dB	20	19
Gain Slope, dB	± 1.0	± 0.75
Flatness (@ Gain Slope), dB	± 1.0	± 0.75
Return Loss, dB Minimum, All Entry Ports	16	16
Testpoint Accuracy¹³		
–20dB Forward Input Test Point, dB	± 0.5 (54 to 550MHz) ± 1.0 (550 to 1002MHz)	—
–20dB Forward Output Testpoint(s), dB	± 0.5 (54 to 550MHz) ± 1.0 (550 to 1002MHz)	—
–20dB Reverse Input & Output Testpoint, dB	—	± 0.75
Powering Requirements¹⁴		
AC Voltage, 60Hz	@ 90V	@ 60V
AC Power, Watts, max./typ.	47.4/43.2	46.8/42.2
AC Current, mA, max./typ.	704/649	853/768
DC Current, mA @ 24 ± 0.5, max./typ.	1700/1530	1700/1530
Level Control		
Range, dB @ 1002 MHz	+3.5/–4.0	—
Accuracy, dB (–40°C to 60°C)	± 1.0	—
Operating Level Range, dBmV (at pilot frequency) ¹⁵	37 to 52	—
Operating Range, Analog Pilot	42 to 52	—
Operating Range, QAM Pilot	37 to 47	—
Pilot Frequency Band (Recommended)	711 MHz (single channel)	—
Gain Control		
Plug-In Pad	10-A-WC	10-A-WC
Equalization To Compensate For Cable Loss		
Plug-in Equalizers for Additional Equalization	PEQ-1G-xx	7-REF-WC
Chrominance, Luminance Delay, Maximum		
Channel 2, ns/3.58 MHz	28	—
Channel 3, ns/3.58 MHz	11	—
Channel 4, ns/3.58 MHz	7	—
Channel 5, ns/3.58 MHz	3.6	—
Return Group Delay, Maximum		
5.5–7MHz, ns	—	55
10–11.5MHz, ns	—	11
35–36.5MHz, ns	—	10
38.5–40MHz, ns	—	30

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	FORWARD	RETURN
	Bridger (ea)	Bridger (ea)
Hum Modulation (Time Domain at 15 A)		
5–10MHz, –dBc	—	55
11–750MHz, –dBc	65	65
751–1002MHz, –dBc	60	—

Specification Document Number 1503444 Rev G

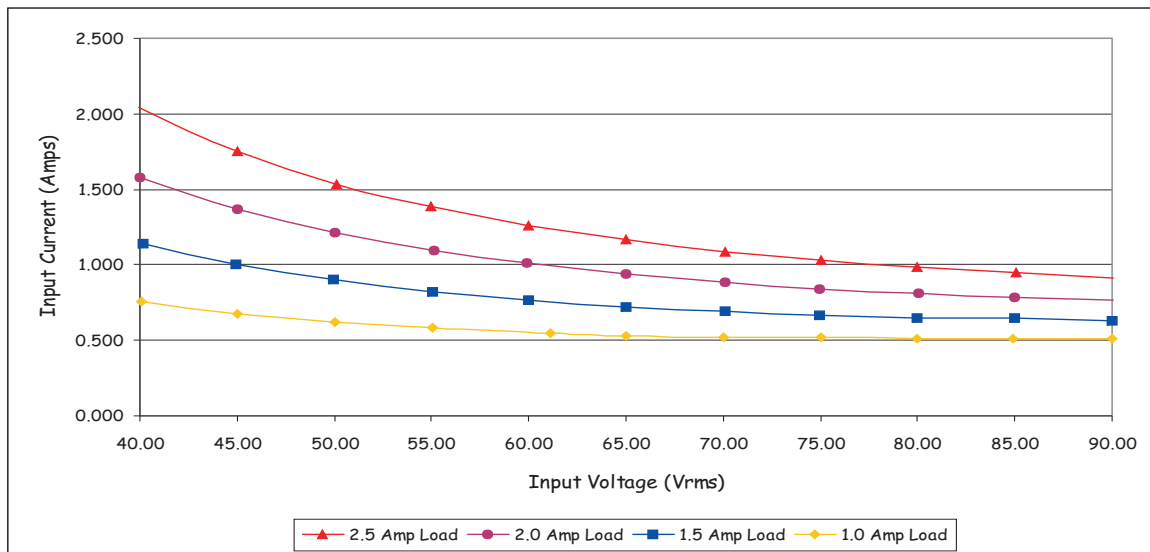
1. Spacing at highest frequency with Equalizer installed. Return spacing includes losses due to housing, diplex filters, and Return EQ.
2. The specifications are based on the amplifier configured (with two SPB–0) as a 2–output bridger with distribution outputs on Ports 2 and 4. When using output selectors 7-DC-4/8/12, levels should be derated accordingly based on the accessory specifications.
3. NTSC video channels occupying the appropriate frequency spectrum per specified number of channels.
4. Recommended minimum forward input levels at 1002MHz including loss due to equalizer.
5. Recommended maximum return output level at 42MHz including loss due to equalizer.
6. At specified operational tilt, maximum output level for 1GHz or 870MHz loading is 56.5dBmV @ HF.
7. Distortion performance is derated accordingly to take into account the influence of the digitally compressed channels operating at levels 6dB below equivalent video channels.
8. Cross modulation specification number indicates typical cascade performance.
9. Composite second order (CSO) distortion performance reflects typical cascaded performance derating at 15log.
10. Systems operating with digitally compressed channels or equivalent broadband noise from 550 to 1002MHz at levels 6dB below equivalent video channels will experience a composite distortion (CIN) appearing as noise in the 54 to 550 frequency spectrum.
11. Systems operating with digitally compressed channels or equivalent broadband noise from 550 to 870MHz at levels 6dB below equivalent video channels will experience a composite distortion (CIN) appearing as noise in the 54 to 550MHz frequency spectrum.
12. The Noise Figure and C/N specifications are typical within specified passband.
13. All testpoints are directional and referenced to their associated RF port.
14. Powering requirements. See 333995-37 power curves for additional information.
15. Denotes range of operating levels at pilot frequency where ALC will set up and operate. For operating levels below 45dBmV, ALC attenuator should be set to "DIGITAL" position.

Power Supply Specifications

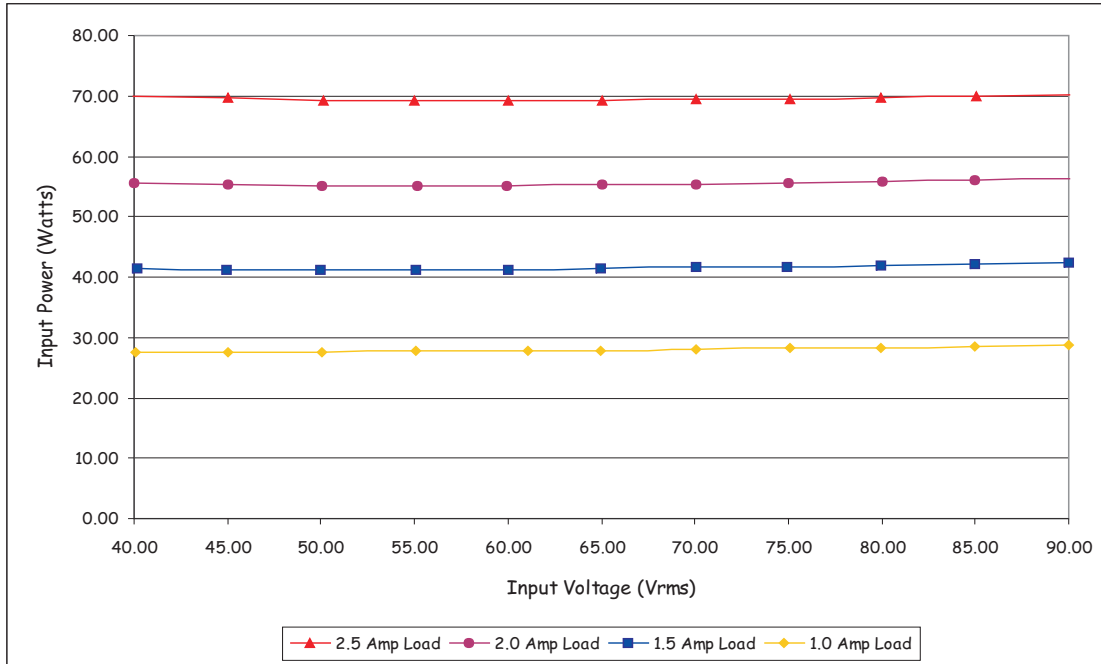
Characteristic	Specification
Input Voltage Range, 50/60Hz, Quasi-square wave	40 to 90V RMS
Input Frequency	50/60Hz
Output Voltage, VDC	24 ± 0.5
DC Output Current, max., A	2.5
Output Voltage Ripple, mVRMS, 0 to 100kHz	8
Output Voltage Ripple, mVp-p, 100MHz	150
Output Voltage Protection, max., VDC	33
Efficiency, typ.	85%
Short Circuit Current, max., ADC	4.2
Hold up Time @ 2.5ADC 40V, min., msec	7
Hold up Time @ 2.5ADC 60V, min., msec	25
Continuous Operation Input Voltage, min., VRMS	40
Re-start Voltage, min., VRMS	38
Low Voltage Turn Off, VRMS	20
Operating Temperature, °C ¹	-40 to 60

Specification Document Number 1503595 Rev B

1. Reflects an external ambient temperature range.

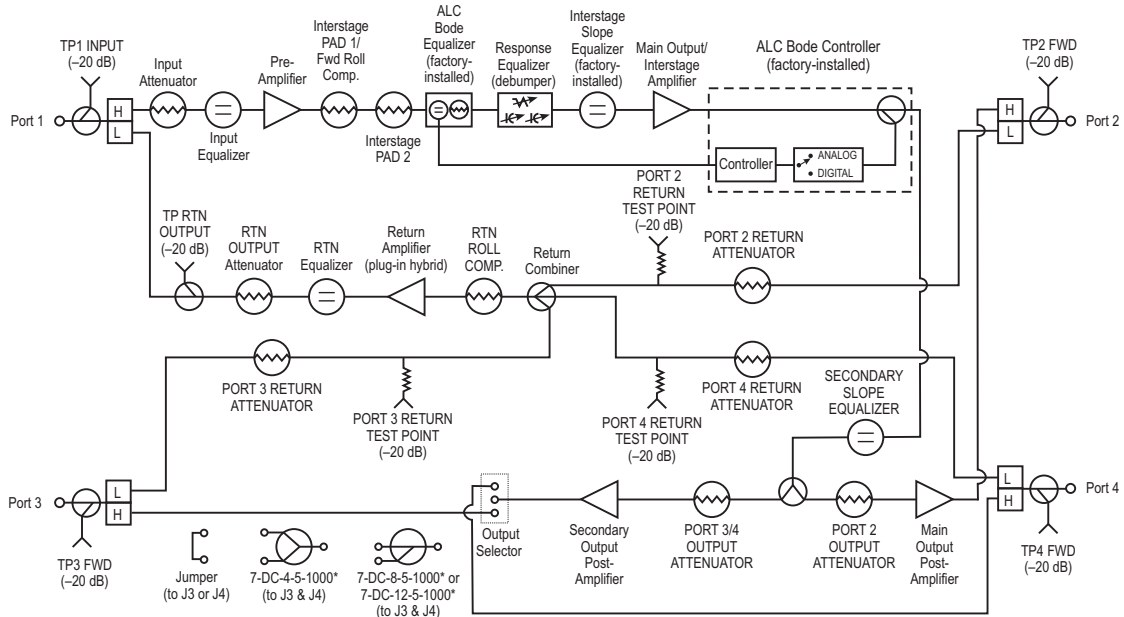


Flex Max601/DL



Flex Max601/DL

Functional Block Diagram



* Models ending in 870 are also specified up to 1002 MHz

Accessories

Plug-ins for a Opti Max3100	Plug-in Series
Factory-Installed Plug-Ins	
Circuits or jumpers are factory-installed in these positions according to customer or product requirements.	
Input Attenuator, Interstage PAD 1/FWD. Roll Comp., Interstage PAD 2, Port 2 output attenuator, Port 3/4 output attenuator, Port 2 return attenuator, Port 3 return attenuator, Port 4 return attenuator, and RTN output attenuator	Plug-in jumper ¹
Input Equalizer	stripline jumper ²
Automatic Level and Slope Control, ALSC (under cover, not user-changeable)	6-ALSC
Interstage Slope Equalizer	PEQ-1G-07 (1GHz) ²
Secondary Slope Equalizer	PEQ-1G-14 (1GHz) ²
Response Equalizer (debumper)	stripline jumper ³
RTN Equalizer	stripline jumper ⁴
Secondary Output Selector ⁵	
– If using only one secondary output	Jumper or 9-A0
– If using both secondary outputs	7-DC-4-5-1000-WC 7-DC-8-5-1000-WC 7-DC-12-5-1000-WC

1. ARRIS recommends using 10-A-WC series PADs; 9-A-WC series PADs are compatible with 10-A-WC PADs.
2. ARRIS recommends using PEQ-1G-xx equalizer (1 GHz); 7-2E-WC (862/750 MHz) EQs can be used if the upper frequency is 870/750 MHz.
3. Factory-shipped strip line jumper can be replaced with 1503638-001/1503639-001.
4. Factory-shipped strip line jumper can be replaced with 7-REF-WC.
5. Factory-shipped jumper configured for secondary output to Port 4.

Specifications are subject to change without notice.

Ordering Information

To configure a product that meets your specific needs, or for any questions, please contact your ARRIS Sales Professional. You may also use our Product Wizard, located at support.arrisi.com (User ID and password required). If you do not have a user ID and password or have forgotten your password, please use the Sign In Help section indicated.

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