Flex Max901e 1 GHz Bridger Amplifiers Technical Specification

Flex Max901e Bridger, 1002 MHz, 42/54 Split

Characterisitic	FORWARD 2O/P Bridger	RETURN 2O/P Bridger
General		
Passband, MHz	54–1002	5–42
Housing, MHz	1002	—
AC Current Passing, A		
Ports 1, 3, 4, 6	15	15
Ports 2, 5 (“H” and “P” options)	13	13
Typical Operating Conditions		
Operational Gain, dB[1, 2]	43	18
Channels, Number of NTSC[3]	79	6
Operating Levels (recommended)		
Frequency, MHz	1002/870/750/550/54	42/5
Input, dBmV, min.[4]	9/8.1/7.8/7.4/10.1	17/17
Output, dBmV[5, 6]	52/49.5/47.5/44/35	35/35
Performance Specifications @ Recommended Levels (Temperature Range: –40 to 60°C)		
Carrier-to-Interference Ratio, dB[7]		
Composite Triple Beat	75	80
Cross Modulation (per NCTA std.)[8]	67	74
Composite 2IM	73	82
Composite Intermodulation Noise CIN[9]	73	—
Composite Intermodulation Noise CIN[10]	79	—
Noise, 4 MHz, 75 Ohms[2]	59/58.1/57.8/58.4/59.1	64
Noise Figure, dB (without EQ)[11]	8/8/8/7/9	12
Full Gain, dB (without EQ and ALC)	48	19
Factory Alignment (with ALC Reserve, without EQ)		
Cable Loss, dB @ 1002 MHz	23	—
Flat Loss, dB	21	19
Gain Slope, dB	–1.0 to 1.0	—

Technical Specifications

Flex Max901e Bridger, 1002 MHz, 42/54 Split (cont'd)

Characterisitic	FORWARD	RETURN	
	2 O/P Bridger	2 O/P Bridger	
Flatness (@ Gain Slope), ±dB[12,13]	±1.0 P-V	0.5 P-V	
Return Loss, dB min., All Entry Ports	16	16	
Testpoint[14]			
–20 or –25 dB Forward Input TP, dB	±1.0	—	
–20 or –25 dB Forward Output TP, dB	±0.5 (54 to 550), ±1.0 (551 to 1002)	—	
–20 or –25 dB Return In and Out TP, dB	—	±0.5	
Powering Requirements, Max. /Typ.[15]		**With Active Return**	
AC Voltage, 60 Hz		@ 90V	@ 60V
AC Power, Watts		45.5/41	45/40
AC Current, mA		670/630	820/740
DC Current, mA @ 24 V ± 0.5 V		1650/1475	1650/1475
Level Control			
Range, dB @ 1002 MHz	+4/–5 dB	—	
Accuracy (–40 to 60° C)	±0.5 dB	—	
Output Level Range[16] (from nominal)	+5/–3 dB	—	
Pilot Frequency Band[17] (recommended)	499.25 MHz (Single Channel)	—	
Gain Control			
Plug-in PAD[18]	NPB–XXX	NPB–XXX	
Equalization to Compensate for Cable Loss			
Plug-in Equalizers for Additional Equalization	SEQ–1G–XX	MEQ–42–XX	
Chrominance/Luminance Delay, Max.			
Channel 2, ns/3.58 MHz	33	—	
Channel 3, ns/3.58 MHz	14	—	
Channel 4, ns/3.58 MHz	7	—	
Channel 5, ns/3.58 MHz	3.6	—	
Return Group Delay, Max.			
5.5–7 MHz, ns	—	52	
10–11.5 MHz, ns	—	6	
35–36.5 MHz, ns	—	10	
38.5–40 MHz, ns	—	19	
Hum Modulation (Time Domain @ 15 A)			
5–10 MHz, –dBc	—	55	
11–750 MHZ, –dBc	60	60	
751–1002 MHz, –dBc	55	—	

Specification Document Number 1502213 Rev D

1. Spacing at highest frequency with SEQ–1G–XX installed. Return spacing includes losses due to housing, diplex filters, and MEQ–42–X.
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 3. When using distribution plug-ins SS–1000–2, SDC–1000–8 or SDC–1000–12, 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 1002 MHz including loss due to equalizer.
5. Recommended maximum return output level at 42 MHz including loss due to equalizer.
6. At specified operational tilt maximum output level for 870 MHz or 1 GHz loading is 56.5 dBmV @ 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. 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 in the 54 to 550 frequency spectrum.
10. 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.
11. The Noise Figure and C/N specifications are typical within specified passband.
12. The forward bridger port gain and flatness (ports 2, 3, and 5 only) is 0 ±1.0dB as referenced to port 6.
13. The return bridger port gain and flatness (ports 2, 3, and 5 only) is 0 ±0.5dB as referenced to port 6.
14. All testpoints are directional and referenced to their associated RF port. For "H" output option, all forward and return testpoints are internal and only accessible with the housing lid open. For "P" output option, all forward testpoints are external and all return testpoints are internal.
15. Power requirements indicated are with the HEPS790–2.3 power supply 122027–05. See 333995–17 for additional information. For 60VAC Powering: AC Power consumption in Watts divided by a factor of 43 = Amps required. For 90VAC Powering: For ≤ 67VAC, 1.03 x (AC Power consumption in watts divided by voltage) = Amps required. For 67 - 90VAC, AC Power consumption in watts divided by 65 = Amps required.
16. ALC pilot level range is based on a nominal pilot level of 43 dBmV for pilot frequencies ≤ 499.25MHz or 31 dBmV for pilot frequencies > 499.25 MHz. ARRIS recommends that if the pilot level, from a design standpoint, is more than +2/-1 dBmV from nominal, the ALC PAD should be changed to optimize the ALC pilot level range. This should alleviate any possible ALC setup and/or operation issues due to typical system level variations caused by system components flatness characteristics. See the equipment manual (P/N 1502154) for correct selection of ALC PAD value to insure proper ALC setup and operation.
17. For ALC pilot frequencies of ≤ 499.25MHz, the ALC pilot filter is a single channel device. This means that the adjacent channels will have no affect on the RF power level that the RF detector is measuring. For ALC pilot frequencies > 499.25MHz, the ALC pilot filter is not a single channel device. This means that the adjacent QAM channels will have an affect on the RF power level that the RF detector is measuring. ARRIS recommends that the adjacent QAM channels be present on the system before the ALC system of the amplifier station is balanced. This will avoid station re-balance in the future when those QAM channels would be added to the system.
18. ARRIS accessories should be used for guaranteed performance; using third party accessories may result in degraded and/or intermittent performance.

Flex Max901e Bridger, 1002MHz, 55/70 Split

Characteristic	FORWARD 2O/P Bridger	RETURN 2O/P Bridger
General		
Passband, MHz	70–1002	5–55
Housing, MHz	1002	—
AC Current Passing, A		
Ports 1, 3, 4, 6	15	15
Ports 2, 5 ("H" and "P" options)	13	13
Typical Operating Conditions		
Operational Gain, dB[1, 2]	43	18
Channels, Number of NTSC[3]	76	6
Operating Levels (recommended)		
Frequency, MHz	1002/870/750/550/70	55/5
Input, dBmV, min.[4]	9/8.1/7.8/7.4/10.1	17/17
Output, dBmV[5, 6]	52/49.5/47.5/44/35.5	35/35
Performance Specifications @ Recommended Levels (Temperature Range: –40 to 60°C)		
Carrier-to-Interference Ratio, dB[7]		
Composite Triple Beat	75	80
Cross Modulation (per NCTA std.)[8]	67	74
Composite 2IM	73	82

Flex Max901e Bridger, 1002 MHz, 55/70 Split (cont'd)

Characteristic	FORWARD	RETURN	
	2 O/P Bridger	2 O/P Bridger	
Composite Intermodulation Noise CIN[9]	73	—	
Composite Intermodulation Noise CIN[10]	79	—	
Noise, 4 MHz, 75 Ohms[2]	59/58.1/57.8/58.4/59.1	64	
Noise Figure, dB (without EQ)[11]	8/8/8/7/9	12	
Full Gain, dB (without EQ and ALC)	48	19	
Factory Alignment (with ALC Reserve, without EQ)			
Cable Loss, dB @ 1002 MHz	23	—	
Flat Loss, dB	21	19	
Gain Slope, dB	–1.0 to 1.0	—	
Flatness (@ Gain Slope), ±dB[12,13]	±1.0 P-V	0.5 P-V	
Return Loss, dB min., All Entry Ports	16	16	
Testpoint[14]			
–20 or –25 dB Forward Input TP, dB	±1.0	—	
–20 or –25 dB Forward Output TP, dB	±0.5 (54 to 550), ±1.0 (551 to 1002)	—	
–20 or –25 dB Return In and Out TP, dB	—	±0.5	
Powering Requirements, Max. /Typ.[15]		**With Active Return**	
AC Voltage, 60 Hz		@ 90 V	@ 60 V
AC Power, Watts		45.5/41	45/40
AC Current, mA		670/630	820/740
DC Current, mA @ 24 V ± 0.5 V		1650/1475	1650/1475
Level Control			
Range, dB @ 1002 MHz	+4/–5 dB	—	
Accuracy (–40 to 60° C)	±0.5 dB	—	
Output Level Range[16] (from nominal)	+5/–3 dB	—	
Pilot Frequency Band[17] (recommended)	499.25 MHz (Single Channel)	—	
Gain Control			
Plug-in PAD[18]	NPB–XXX	NPB–XXX	
Equalization to Compensate for Cable Loss			
Plug-in Equalizers for Additional Equalization	SEQ–1G–XX	MEQ–55–XX	
Chrominance/Luminance Delay, Max.			
Channel 5, ns/3.58 MHz	14	—	
Channel 6, ns/3.58 MHz	9	—	
Return Group Delay, Max.			
5.5–7 MHz, ns	—	52	
10–11.5 MHz, ns	—	7	
52–53.5 MHz, ns	—	21	
53.5–55 MHz, ns	—	36	
70–71.5 MHz, ns	21	—	
71.5–73 MHz, ns	15	—	

Flex Max901e Bridger, 1002 MHz, 55/70 Split (cont'd)

Characteristic	FORWARD 2 O/P Bridger	RETURN 2 O/P Bridger
Hum Modulation (Time Domain @ 15 A)		
5–10 MHz, –dBc	—	55
11–750 MHZ, –dBc	60	60
751–1002 MHz, –dBc	55	—

Specification Document Number 1502467 Rev B

1. Spacing at highest frequency with SEQ–1G–XX installed. Return spacing includes losses due to housing, diplex filters, and MEQ–55–XX.
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 3. When using distribution plug-ins SS–1000–2, SDC–1000–8 or SDC–1000–12, 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 1002 MHz including loss due to equalizer.
5. Recommended maximum return output level at 55 MHz including loss due to equalizer.
6. At specified operational tilt maximum output level for 870 MHz or 1002 MHz loading is 56.5 dBmV at HF.
7. Distortion performance is derated accordingly to take into account the influence of the digitally compressed channels operating at levels 6 dB below equivalent video channels.
8. Cross modulation specification number indicates typical cascade performance.
9. Systems operating with digitally compressed channels or equivalent broadband noise from 550 to 1002 MHz at levels 6 dB below equivalent video channels will experience a composite distortion (CIN) appearing in the 70 to 550 frequency spectrum.
10. Systems operating with digitally compressed channels or equivalent broadband noise from 550 to 1002 MHz at levels 6 dB below equivalent video channels will experience a composite distortion (CIN) appearing as noise in the 70 to 550 MHz frequency spectrum.
11. The Noise Figure and C/N specifications are typical within specified passband.
12. The forward bridger port gain and flatness (ports 2, 3, and 5 only) is 0 ±1.0 dB as referenced to port 6.
13. The return bridger port gain and flatness (ports 2, 3, and 5 only) is 0 ±0.5 dB as referenced to port 6.
14. All testpoints are directional and referenced to their associated RF port. For "H" output option, all forward and return testpoints are internal and only accessible with the housing lid open. For "P" output option, all forward testpoints are external and all return testpoints are internal.
15. Power requirements indicated are with the HEPS790–2.3 power supply 122027–05. See 333995–17 for additional information. For 60VAC Powering: AC Power consumption in Watts divided by a factor of 43 = Amps required. For 90VAC Powering: For ≤ 67VAC, 1.03 x (AC Power consumption in watts divided by voltage) = Amps required. For 67 - 90VAC, AC Power consumption in watts divided by 65 = Amps required.
16. ALC pilot level range is based on a nominal pilot level of 43 dBmV for pilot frequencies ≤ 499.25 MHz or 39 dBmV for pilot frequencies > 499.25 MHz. ARRIS recommends that if the pilot level, from a design standpoint, is more than +2/-1 dBmV from nominal, the ALC PAD should be changed to optimize the ALC pilot level range. This should alleviate any possible ALC setup and/or operation issues due to typical system level variations caused by system components flatness characteristics. See the equipment manual (P/N 1502154) for correct selection of ALC PAD value to insure proper ALC setup and operation.
17. For ALC pilot frequencies of ≤ 499.25 MHz and below, the ALC pilot filter is a single channel device. This means that the adjacent channels will have no affect on the RF power level that the RF detector is measuring. For ALC pilot frequencies > 499.25 MHz, the ALC pilot filter is not a single channel device. This means that the adjacent QAM channels will have an affect on the RF power level that the RF detector is measuring. ARRIS recommends that the adjacent QAM channels be present on the system before the ALC system of the amplifier station is balanced. This will avoid station re-balance in the future when those QAM channels would be added to the system.
18. ARRIS accessories should be used for guaranteed performance; using third party accessories may result in degraded and/or intermittent performance.

Flex Max901e Bridger, 1002 MHz, 65/85 Split

Characteristic	FORWARD 2 O/P Bridger	RETURN 2 O/P Bridger
General		
Passband, MHz	85–1002	5–65
Housing, MHz	1002	—
AC Current Passing, A		
Ports 1, 3, 4, 6	15	15

Flex Max901e Bridger, 1002 MHz, 65/85 Split (cont'd)

Characteristic	FORWARD	RETURN
	2O/P Bridger	2O/P Bridger
Ports 2, 5 ("H" and "P" options)	13	13
Typical Operating Conditions		
Operational Gain, dB[1, 2]	43	18
Channels, Number of PAL[3]	60	6
Operating Levels (recommended)		
Frequency, MHz	1002/870/750/600/85	65/5
Input, dBmV, min.[4]	9/8.1/7.8/7.4/9.5	17/17
Output, dBmV[5, 6]	52/49.5/47.5/45/35.5	35/35
Performance Specifications @ Recommended Levels (Temperature Range: –40 to 60°C)		
Carrier-to-Interference Ratio, dB[7]		
Composite Triple Beat	75	80
Cross Modulation (per NCTA std.)[8]	67	74
Composite 2IM	73	82
Composite Intermodulation Noise CIN[9]	66	—
Composite Intermodulation Noise CIN[10]	72	—
Noise, 4 MHz, 75 Ohms[2]	58/57.1/56.8/57.4/57.5	64
Cenelec Performance Specification[11]		
Output Level for 60 dBc CTB Performance	55 dBmV(115 dBµV)	
Output Level for 70 dBc CSO Performance	55 dBmV(115 dBµV)	
Noise Figure, dB (without EQ)[12]	8/8/8/7/9	12
Full Gain, dB (without EQ and ALC)	48	19
Factory Alignment (with ALC Reserve, without EQ)		
Cable Loss, dB @ 1002 MHz	23	—
Flat Loss, dB	21	19
Gain Slope, dB	–1.0 to 1.0	—
Flatness (@ Gain Slope), ±dB[13, 14]	±1.0 P-V	0.5 P-V
Return Loss, dB min., All Entry Ports	16	16
Testpoint[15]		
–20 or –25 dB Forward Input TP, dB	±1.0	—
–20 or –25 dB Forward Output TP, dB	±0.5 (54 to 550), ±1.0 (551 to 1002)	—
–20 or –25 dB Return In and Out TP, dB	—	±0.5

Powering Requirements, Max. /Typ.[16]	With Active Return	
AC Voltage, 60 Hz	@ 90V	@ 60V
AC Power, Watts	45.5/41	45/40
AC Current, mA	670/630	820/740
DC Current, mA @ 24 V ± 0.5 V	1650/1475	1650/1475

Level Control		
Range, dB @ 1002 MHz	+4/–5 dB	—
Accuracy (–40 to 60°C)	±0.5 dB	—
Output Level Range[17] (from nominal)	+5/–3 dB	—
Pilot Frequency Band[18] (recommended)	499.25 MHz (Single Channel)	—

Flex Max901e Bridger, 1002 MHz, 65/85 Split (cont'd)

Characteristic	FORWARD 2 O/P Bridger	RETURN 2 O/P Bridger
Gain Control		
Plug-in PAD[19]	NPB–XXX	NPB–XXX
Equalization to Compensate for Cable Loss		
Plug-in Equalizers for Additional Equalization	SEQ–1G–XX	MEQ–65–XX
Chrominance/Luminance Delay, Max.		
Channel S2, (PAL), ns/4.43 MHz	5	—
Channel S3, (PAL), ns/4.43 MHz	4	—
Channel 95, (NTSC), ns/3.58 MHz	10	—
Channel 96, (NTSC), ns/3.58 MHz	7	—
Return Group Delay, Max.		
5.5–7 MHz, ns	—	52
10–11.5 MHz, ns	—	8
62–63.5 MHz, ns	—	21
63.5–85 MHz, ns	—	34
85-86.5 MHz, ns	—	13
86.5-88 MHz, ns	—	11
Hum Modulation (Time Domain @ 15 A)		
5–10 MHz, –dBc	—	55
11–750 MHZ, –dBc	60	60
751–1002 MHz, –dBc	55	—

Specification Document Number 1502530 Rev C

1. Spacing at highest frequency with SEQ–1G–XX installed. Return spacing includes losses due to housing, diplex filters, and MEQ–65–XX.
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 3. When using distribution plug-ins SS–1000–2, SDC–1000–8 or SDC–1000–12, levels should be derated accordingly based on the accessory specifications.
3. PAL video channels occupying the appropriate frequency spectrum per specified number of channels.
4. Recommended minimum forward input levels at 1002 MHz including loss due to equalizer.
5. Recommended maximum return output level at 65 MHz including loss due to equalizer.
6. At specified operational tilt maximum output level for 870 MHz or 1 GHz loading is 56.5 dBmV at HF.
7. Distortion performance is derated accordingly to take into account the influence of the digitally compressed channels operating at levels 6 dB below equivalent video channels.
8. Cross modulation specification number indicates typical cascade performance.
9. Systems operating with digitally compressed channels or equivalent broadband noise from 600 to 1002 MHz at levels 6 dB below equivalent video channels will experience a composite distortion (CIN) appearing in the 85 to 600 frequency spectrum.
10. Systems operating with digitally compressed channels or equivalent broadband noise from 600 to 870 MHz at levels 6 dB below equivalent video channels will experience a composite distortion (CIN) appearing as noise in the 85 to 600 MHz frequency spectrum.
11. According to EN50083-3, 42 channel Cenelec loading and 8 dB slope.
12. The Noise Figure and C/N specifications are typical within specified passband.
13. The forward bridger port gain and flatness (ports 2, 3, and 5 only) is 0 ±1.0 dB as referenced to port 6.
14. The return bridger port gain and flatness (ports 2, 3, and 5 only) is 0 ±0.5 dB as referenced to port 6.
15. All testpoints are directional and referenced to their associated RF port. For "H" output option, all forward and return testpoints are internal and only accessible with the housing lid open. For "P" output option, all forward testpoints are external and all return testpoints are internal.
16. Power requirements indicated are with the HEPS790–2.3 power supply 122027–05. See 333995–17 for additional information. For 60VAC Powering: AC Power consumption in Watts divided by a factor of 43 = Amps required. For 90VAC Powering: For ≤ 67VAC, 1.03 x (AC Power consumption in watts divided by voltage) = Amps required. For 67 - 90VAC, AC Power consumption in watts divided by 65 = Amps required.

17. ALC pilot level range is based on a nominal pilot level of 43 dBmV for pilot frequencies ≤ 499.25 MHz or 39 dBmV for pilot frequencies > 499.25 MHz. ARRIS recommends that if the pilot level, from a design standpoint, is more than +2/-1 dBmV from nominal, the ALC PAD should be changed to optimize the ALC pilot level range. This should alleviate any possible ALC setup and/or operation issues due to typical system level variations caused by system components flatness characteristics. See the equipment manual (P/N 1502154) for correct selection of ALC PAD value to insure proper ALC setup and operation.
18. For ALC pilot frequencies of ≤ 499.25 MHz, the ALC pilot filter is a single channel device. This means that the adjacent channels will have no affect on the RF power level that the RF detector is measuring. For ALC pilot frequencies > 499.25 MHz, the ALC pilot filter is not a single channel device. This means that the adjacent QAM channels will have an affect on the RF power level that the RF detector is measuring. ARRIS recommends that the adjacent QAM channels be present on the system before the ALC system of the amplifier station is balanced. This will avoid station re-balance in the future when those QAM channels would be added to the system.
19. ARRIS accessories should be used for guaranteed performance; using third party accessories may result in degraded and/or intermittent performance.

Flex Max901e Bridger, 1002 MHz, 85/105 Split

Characteristic	FORWARD 2 O/P Bridger	RETURN 2 O/P Bridger
General		
Passband, MHz	105–1002	5–85
Housing, MHz	1002	—
AC Current Passing, A		
Ports 1, 3, 6	15	15
Ports 2, 5 (“H” and “P” options)	13	13
Typical Operating Conditions		
Operational Gain, dB[1, 2]	43	18
Channels, Number of NTSC	73	6
Operating Levels (recommended)		
Frequency, MHz	1002/870/750/550/105	85/5
Input, dBmV, min.[3]	9/8.1/7.8/7.4/9.1	17/17
Output, dBmV[4, 5]	52/49.5/47.5/44/34	35/35
Performance Specifications @ Recommended Levels (Temperature Range: –40 to 60°C)		
Carrier-to-Interference Ratio, dB[6]		
Composite Triple Beat	75	80
Cross Modulation (per NCTA std.)[7]	67	74
Composite 2IM	73	82
Composite Intermodulation Noise CIN[8]	73	—
Composite Intermodulation Noise CIN[9]	79	—
Noise, 4 MHz, 75 Ohms[2]	59/58.1/57.8/58.4/58.1	64
Noise Figure, dB (without EQ)[10]	8/8/8/7/9	12
Full Gain, dB (without EQ and ALC)	48	19
Factory Alignment (with ALC Reserve, without EQ)		
Cable Loss, dB @ 1002 MHz	23	—
Flat Loss, dB	21	19
Gain Slope, dB	–1.0 to 1.0	—
Flatness (@ Gain Slope), ±dB[11, 12]	±1.0 P-V	0.5 P-V
Return Loss, dB min., All Entry Ports	16	16
Testpoint[13]		
–20 or –25 dB Forward Input TP, dB	±1.0	—

Flex Max901e Bridger, 1002 MHz, 85/105 Split (cont'd)

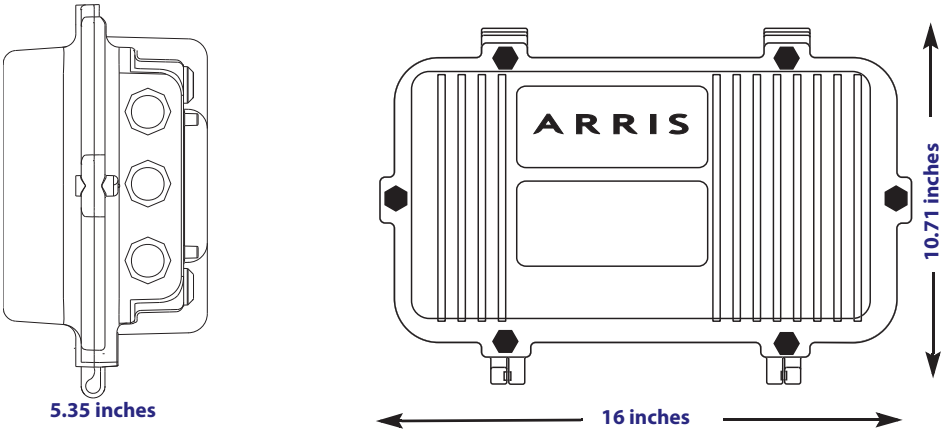
Characteristic	FORWARD	RETURN	
	2 O/P Bridger	2 O/P Bridger	
–20 or –25 dB Forward Output TP, dB	±0.5 (85 to 550 MHz), ±1.0 (551 to 1002 MHz)	—	
–20 or –25 dB Return In and Out TP, dB	—	±0.5	
Powering Requirements, Max. /Typ.[14]		**With Active Return**	
AC Voltage, 60 Hz		@ 90 V	@ 60 V
AC Power, Watts		45.5/41	45/40
AC Current, mA		670/630	820/740
DC Current, mA @ 24 V ± 0.5 V		1650/1475	1650/1475
Level Control			
Range, dB @ 1002 MHz	+4/–5 dB	—	
Accuracy (–40 to 60°C)	±0.5 dB	—	
Output Level Range[15] (from nominal)	+5/–3 dB	—	
Pilot Frequency Band[16] (recommended)	499.25 MHz (Single Channel)	—	
Gain Control			
Plug-in PAD[17]	NPB–XXX	NPB–XXX	
Equalization to Compensate for Cable Loss			
Plug-in Equalizers for Additional Equalization	SEQ–1G–XX	MEQ–85–XX	
Chrominance/Luminance Delay, Max.			
Channel 98, ns/3.58 MHz	15	—	
Channel 99, ns/3.58 MHz	9	—	
Return Group Delay, Max.			
5.5–7 MHz, ns	—	52	
10–11.5 MHz, ns	—	7	
82.5–83 MHz, ns	—	15	
83–85 MHz, ns	—	20	
105-106.5 MHz, ns	15	—	
106.5-108 MHz, ns	13	—	
Hum Modulation (Time Domain @ 15 A)			
5–10 MHz, –dBc	—	55	
11–750 MHZ, –dBc	60	60	
751–1002 MHz, –dBc	55	—	

Specification Document Number 1502470 Rev B

1. Spacing at highest frequency with SEQ–1G–XX installed. Return spacing includes losses due to housing, diplex filters, and MEQ–85–XX.
2. NTSC video channels occupying the appropriate frequency spectrum per specified number of channels.
3. Recommended maximum return output level at 85 MHz including loss due to equalizer.
4. All testpoints are directional and referenced to their associated RF port. For "H" output option, all forward and return testpoints are internal and only accessible with the housing lid open. For "P" output option, all forward testpoints are external and all return testpoints are internal.
5. Power requirements indicated are with the HEPS790–2.3 power supply 122027–05. See 333995–17 for additional information. For 60VAC Powering: AC Power consumption in Watts divided by a factor of 43 = Amps required. For 90VAC Powering: For ≤ 67VAC, 1.03 x (AC Power consumption in watts divided by voltage) = Amps required. For 67 - 90VAC, AC Power consumption in watts divided by 65 = Amps required.
6. Systems operating with digitally compressed channels or equivalent broadband noise from 550 to 1002 MHz at levels 6 dB below equivalent video channels will experience a composite distortion (CIN) appearing in the 105 to 550 frequency spectrum.
7. Cross modulation specification number indicates typical cascade performance.

8. The specifications are based on the amplifier configured (with two SPB–0) as a 2–output bridger with distribution outputs on Ports 2 and 3. When using distribution plug-ins SS–1000–2, SDC–1000–8 or SDC–1000–12, levels should be derated accordingly based on the accessory specifications.
9. The Noise Figure and C/N specifications are typical within specified passband.
10. Distortion performance is derated accordingly to take into account the influence of the digitally compressed channels operating at levels 6 dB below equivalent video channels.
11. The forward bridger port gain and flatness (ports 2, 3, and 5 only) is 0 ±1.0 dB as referenced to port 6.
12. The return bridger port gain and flatness (ports 2, 3, and 5 only) is 0 ±0.5 dB as referenced to port 6.
13. ALC pilot level range is based on a nominal pilot level of 43 dBmV for pilot frequencies ≤ 499.25 MHz or 39 dBmV for pilot frequencies > 499.25 MHz. ARRIS recommends that if the pilot level, from a design standpoint, is more than +2/-1 dBmV from nominal, the ALC PAD should be changed to optimize the ALC pilot level range. This should alleviate any possible ALC setup and/or operation issues due to typical system level variations caused by system components flatness characteristics. See the equipment manual (P/N 1502154) for correct selection of ALC PAD value to insure proper ALC setup and operation.
14. Systems operating with digitally compressed channels or equivalent broadband noise from 550 to 1002 MHz at levels 6 dB below equivalent video channels will experience a composite distortion (CIN) appearing as noise in the 105 to 550 MHz frequency spectrum.
15. At specified operational tilt maximum output level for 870 MHz or 1 GHz loading is 56.5 dBmV at HF.
16. For ALC pilot frequencies of ≤ 499.25 MHz, the ALC pilot filter is a single channel device. This means that the adjacent channels will have no affect on the RF power level that the RF detector is measuring. For ALC pilot frequencies > 499.25 MHz, the ALC pilot filter is not a single channel device. This means that the adjacent QAM channels will have an affect on the RF power level that the RF detector is measuring. ARRIS recommends that the adjacent QAM channels be present on the system before the ALC system of the amplifier station is balanced. This will avoid station re-balance in the future when those QAM channels would be added to the system.
17. ARRIS accessories should be used for guaranteed performance; using third party accessories may result in degraded and/or intermittent performance.

Refer to the Flex Max901e Technical Overview Document (FM901e_TOD_date) or the Flex Max901e Equipment Manual (P/N 1502154) for complete specifications. Specifications are subject to change without notice.



Flex Max901e Dimensions

Characteristic	Specification
Uncrated (H x W x D)	10.7 x 16.0 x 5.3 inches (27.2 x 40.6 x 13.6 cm)
Crated (H x W x D)	12.0 x 18.0 x 6.0 inches (30.5 x 45.7 x 15.2 cm)
Crated weight, approx.	13.24 lbs (6.01 kg)

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.