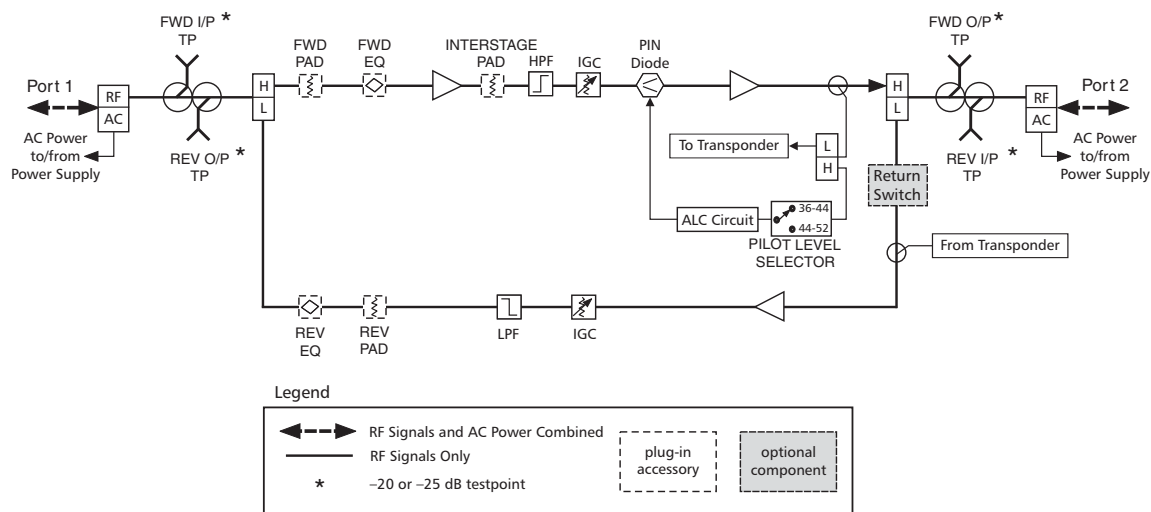




# Flex Max331 1 GHz Multipurpose Line Extender Technical Specification

## Functional Block Diagram for ALC



## Specifications (ALC Version)

	Forward	Return
<b>General</b>		
Bandwidth, MHz	54 to 1002	5 to 42
AC Current Passing, A (Note 1)	15	15
<b>Typical Operating Conditions</b>		
Operational Gain, dB (Note 2)	35	18
Channels, Number of NTSC (Note 3)	79	6
Operating Levels (recommended)		
Frequency, MHz	1002/870/750/550/54	42/5
Input, dBmV, min. (Note 4)	17/15.4/14.4/12.6/10.2	17/17
Output, dBmV (Notes 5, 6)	52/49.5/47.5/44/35	35/35

## Specifications (ALC Version)

### Performance Specifications @ Recommended Levels

(Temperature Range: -40 to 60°C)

#### Carrier-to-Interference Ratio, dB

Composite Triple Beat	77	84
Second Order Beat (F1 ± F2)	—	—
Cross Modulation (per NCTA std.) (Note 7)	72	74
Third Order Beat (F1 ± F2 ± F3)	—	—
Composite 2IM	75	80
Composite Intermodulation Noise (CIN) (Note 8)	73	—
Composite Intermodulation Noise (CIN) (Note 9)	79	—
Noise, 4MHz, 75Ω (Note 10)	68/66.4/65.4/63.6/59.2	70.5
Noise Figure, dB (without EQ) (Note 10)	7/7/7/7/9	5.5
<b>Full Gain, dB (without EQ and ALC)</b>	<b>39.5</b>	<b>19</b>

#### Factory Alignment (with ALC reserve, without EQ)

Cable Loss, dB @ 1002MHz	13	—
Flat Loss, dB	23	19
Gain Slope, dB	-0.25 to 0.75	-0.5 to 0.5
Flatness, dB	±0.5	±0.5
Return Loss, dB, min., all entry ports (Note 11)	16	16

#### Powering Requirements, max./typ. (Note 12)

	With Active Return, EMT, and Return Switch		With Active Return	
	@ 90V	@ 60V	@ 90V	@ 60V
AC Voltage, 60Hz				
AC Power, Watts	26.7/26.1	26.2/25.6	24.9/24.4	24.4/23.9
AC Current, mA	370/355	600/570	340/335	535/520
DC Current, mA @ 24V ± 0.5V	935/915	935/915	870/850	870/850

#### Automatic Level Control

Range, dB @ 1002MHz	+3.5/-4.5	—
Accuracy (-40 to 60°C), dB	±0.5	—
Operating Level Range (from specified levels), dB	±4.5	—
Pilot Frequency Band (recommended), MHz	499.25 (single channel)	—

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#### Notes:

- AC current passing is shown with factory complete line extenders. AC current passing is 13A for Flex Max331 RF modules used to upgrade E700 series line extenders.
- Spacing is at the highest frequency with SEQ-1G-xx installed. Return spacing includes losses due to housing, diplex filters, and MEQ-42-xx.
- NTSC video channels occupying the appropriate frequency spectrum per specified number of channels.
- Recommended minimum forward input level at 1002MHz including loss due to equalizer.
- Recommended maximum return output level at 42MHz including loss due to equalizer.
- At specified Operational Tilt, maximum Output Level for 1GHz or 870MHz loading is 56.5dBmV@HF.
- Cross modulation specification number indicates typical cascade performance.
- System 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 550MHz frequency spectrum.
- System 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.
- The Noise Figure and C/N specifications are typical within the specified passband.
- Return loss can be degraded by as much as 1.5dB when used with housing option M or N and also when using kit assembly number 1504044-001.
- Power supply is internal to RF module. Refer to drawing #333995-32. 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.
- TLC specifications (P/N 1500417) and NLC specifications (P/N 1500519) are also available. Contact your ARRIS sales professional.

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](http://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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