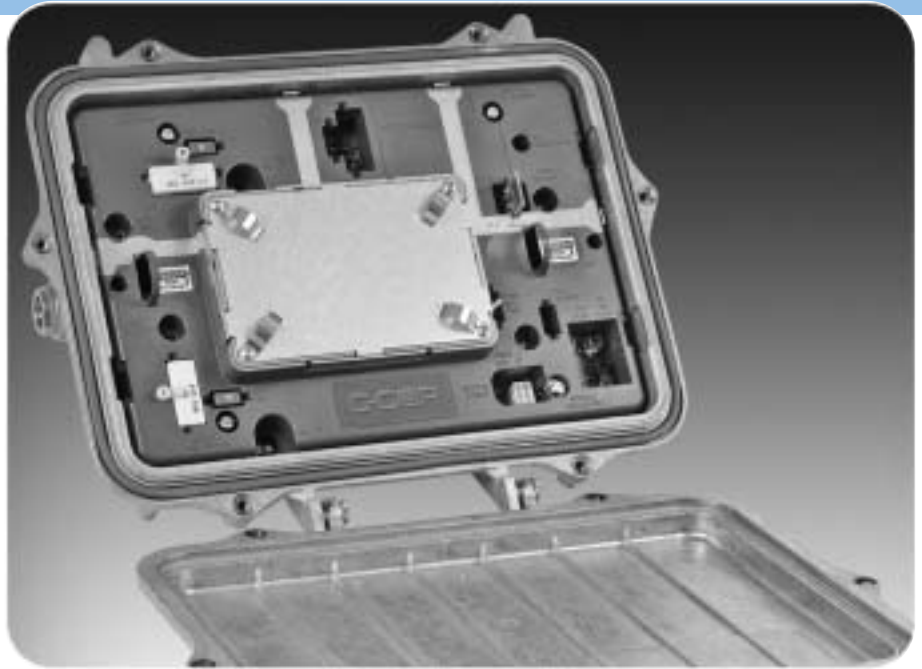


Flex Max340

Line Extenders



- **Transfer linearization**
- **Power doubling hybrids**
- **Robust and reliable**
- **15A power passing**
- **Directional coupler**
-20dB testpoints

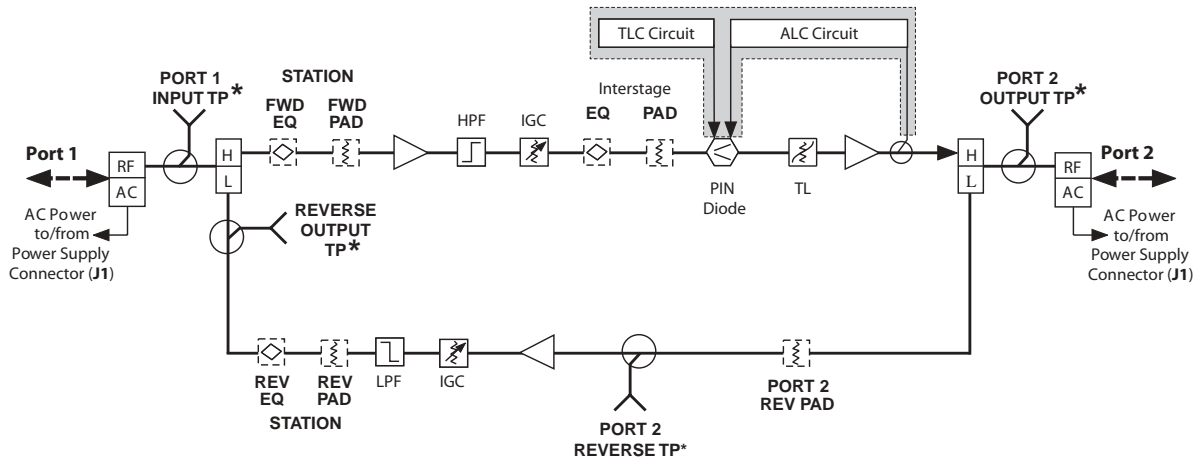
C-COR Flex Max340 Line Extenders use our performance enhancing Transfer Linearization (TL) Technology in conjunction with reliable, field-proven silicon-based Power Hybrid Doubling (PHD) technology to significantly improve the output capabilities of our 862MHz line extender.

Flex Max340 Line Extenders are available with or without TL Technology. TL Technology improves the linear characteristics of standard, highly reliable silicon technology hybrids, thereby allowing for higher operating level capabilities and/or improved distortion performance, in addition to higher channel capacities and improved system level performance. TL enhanced products also translate into fewer active devices necessary in the HFC architecture, thus reducing maintenance, installation, and powering costs.

Features

- TL Technology for improved performance capabilities over standard silicon-based technology
- High performance push-pull return amplifier for a wide range of signals on the return path
- Capable of handling 15 amperes of AC through-current for tough powering demands
- Pin-fin housing design for improved heat management and cooler operation
- C-COR Surge Protection Module (standard) decreases amplifier failure rates by dissipating surges due to lightning, power transients, and other causes
- User-configurable time-delay circuitry reduces load requirements on the network power supply during initial power-up
- Directional testpoints for accurate and repeatable measurements
- Reversible RF module gives operators the flexibility to make network design changes as fiber is pushed deeper and new optical nodes are deployed

Functional Block Diagram



Legend

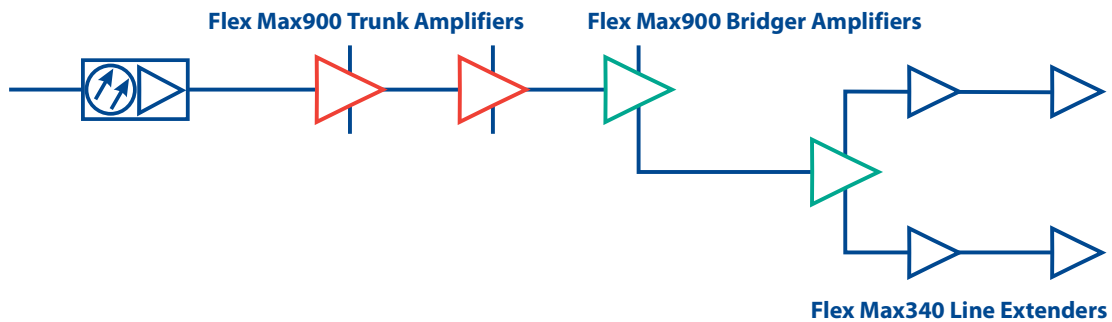
- RF signals and AC power combined
- RF signals only
- plug-in accessory
- * -20 dB directional testpoint
- TLC and ALC are ordered individually (Either/or—not together)

No level control (NLC) also available
 TL is Transfer Linearization Circuitry (only available with 862 MHz Line Extender)

Flex Max340 Line Extender with TL Technology

Application

Flex Max340 Line Extenders amplify and control forward feeder signals from a network amplifier or other line extender. Return path circuitry of the Flex Max340 Line Extender also amplifies return signals from the subscriber.



Sample Specifications

	Forward	Return
General		
Bandwidth, MHz	54 to 862	5 to 42
AC Current Passing, A	15	15
Typical Operating Conditions		
Operational Gain, dB (Note 1)	31	18
Channels, Number of NTSC (Note 2)	112/96/79	6
Operating Levels (recommended)		
Frequency, MHz	862/750/650/550/54	42/5
Input, dBmV, min. (Note 3)	20.5/19/18/17/12	17/17
Output, dBmV (Note 4)	51.5/49.5/48/46/37	35/35
Performance Specifications @ Specified Levels		
(Temperature Range: -40 to 60°C)		
Carrier-to-Interference Ratio, dB		
Composite Triple Beat	63/68/73	—
Second Order Beat (F1 ± F2)	—	82
Cross Modulation (per NCTA std.) (Note 5)	60/64/65	78
Third Order Beat (F1 ± F2 ± F3)	—	89
Composite 2IM	58/66/73	—
Composite Intermodulation Noise CIN (Note 6)	66	—
Noise, 4MHz, 75Ω (Note 7)	69.5/69/68/67/62	69
Noise Figure, dB (without EQ) (Note 7)	9/8/8/8/8	7
Full Gain, dB (without EQ and ALC)	35.5	19
Factory Alignment (with ALC reserve, without EQ)		
Cable Loss, dB @ 862MHz	8	—
Flat Loss, dB	24	19
Gain Slope, dB	-0.25 to 0.5	-0.5 to 0.5
Flatness, dB	±0.5	±0.5
Return Loss, dB, min., All Entry Ports	16	16.5
Powering Requirements, max./typ. (Note 8)		
		With Active Return
AC Voltage, 60Hz		@ 90V @ 60V
AC Power, Watts		29.5/26 29/25.5
AC Current, mA		475/450 580/525
DC Current, mA @ 24V ± 0.5V		1075/940 1075/940
Automatic Level Control		
Range, dB @ 862MHz	+3.5/-4.0	—
Accuracy (-40 to 60°C), dB	±0.5	—
Operating Level Range (from specified levels), dB	+2/-6	—
Pilot Frequency Band (recommended), MHz	439.25 (single channel)	—

Specification Document Number 601071 Rev H

Notes:

- Spacing is at the highest frequency with SEQ-862-xx installed. Return spacing includes losses due to housing, duplex filters, and MEQ-42-xx.
- NTSC video channels occupying the appropriate frequency spectrum per specified number of channels.
- Recommended minimum forward input level at 862MHz including loss due to equalizer.
- Recommended maximum return output level at 42MHz including loss due to equalizer.
- Cross modulation specification number indicates typical cascade performance.
- System operating with digitally compressed channels or equivalent broadband noise from 550 to 862MHz 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.
- Power Supply is internal to RF module. See 333995-25 for additional information.

Specifications are subject to change without notice

Ordering Information

Flex Max340 Line Extender with TL Technology

		1	2	3	4	5		6	7	8	9	10	11	12
N	L	2	x	D	D	x	-	x	x	6	x	2	x	x

1 Series	
2	200 series with TL technology
	a) 15A current passing capability.

2 Spacing	
6	31 dB
7	35 dB
8	34 dB
	a) Select "A1", "KB", "KC", "L0", or "L4" in #6,7 block, Level Control .
	b) Only available with "NA" in #6-7 block, Level Control .
	c) Must select "J" in #5 block, Frequency Split , and "KB" or "L0" in #6-7 block, Level Control .

3 Bandwidth	
D	862MHz

4 Factory Equalization	
D	8dB

5 Frequency Split	
J	42/54MHz
N	65/80MHz
Q	55/70MHz
	a) Select "A1", "KB", "L0", or "NA" #6-7 block, Level Control .
	b) Select "KB", "L0", or "NA" #6-7 block, Level Control .
	c) Select "KB", "KC", "L4", or "NA" #6-7 block, Level Control .

6-7 Level Control	
A1	TLC
KB	439.25 MHz TV
KC	451.25 MHz TV
L0	499.25 MHz TV
L4	495.25 MHz TV
NA	None
	a) Select "6" in #2 block, Spacing .
	b) Select "6" or "8" in #2 block, Spacing .
	c) Select "7" in #2 block, Spacing .
	d) Not available with "N" or "Q" in #5 block, Frequency Split .
	e) Only available with "J" or "N" in #5 block, Frequency Split .
	f) Only available with "Q" #5 block, Frequency Split .

8 Return	
6	18dB gain active

9 Output Configuration	
B	1 output with -20dB internal testpoints
D	1 output with -20dB external testpoints
	a) Select "A" or "B" #11 block, Housing .
	b) Select "A" or "G" in #11 block, Housing .

10 Powering	
2	1.0A, 90V transformerless with time delay
	a) 40-90V operating range.

11 Housing	
A	None
B	2-Port, 1 GHz, with -20dB internal testpoints
G	2-Port, 1 GHz, with -20dB external testpoints
	a) Select "1" #12 block, Housing Finish . Required when ordering module only.
	b) Select "B" #9 block, Output Configuration .
	c) Select "D" #9 block, Output Configuration .

12 Housing Finish	
1	Standard (or N/A)
4	Corrosion protected
	a) Required when ordering module only.

Contact your C-COR sales professional for ordering information for the Flex Max340 Line Extender without TL Technology.

Americas Headquarters

60 Decibel Road • State College • Pennsylvania • 16801 • USA
 T: 1-814-238-2461 T: 1-800-233-2267 F: 1-814-238-4065

EuroPacific Headquarters

Transistorstraat 44-V • 1322 CG Almere • The Netherlands
 T: 31-36-546 1111 F: 31-36-536 4255

Flex Max is a trademark and the C-COR logo is a registered trademark of C-COR Incorporated.
 Copyright © 2006 C-COR Incorporated. All rights reserved.



www.c-cor.com