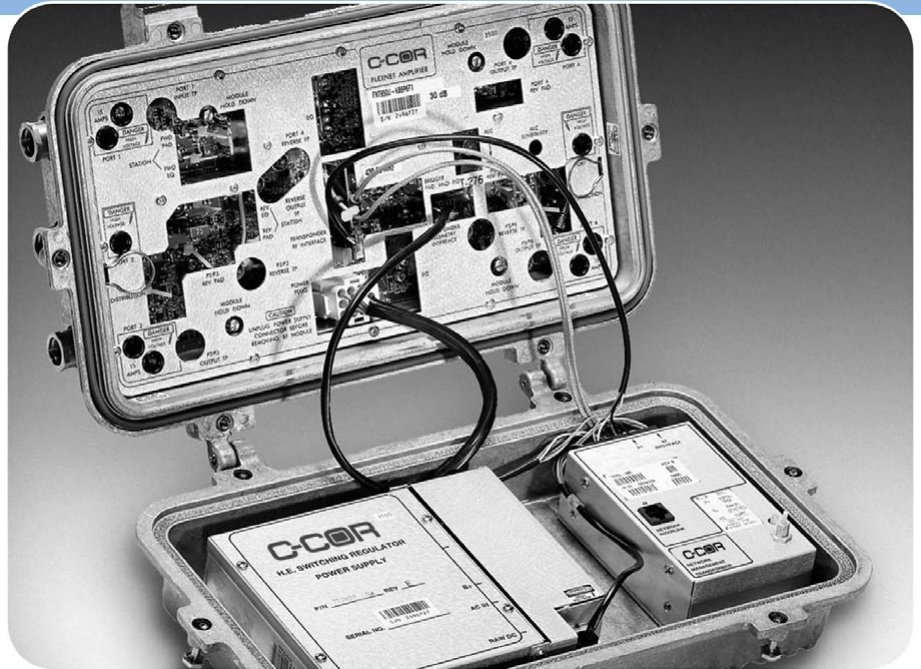


Flex Max900™

Trunk Amplifiers



- **Transfer linearization**
- **Node upgradability**
- **15A power passing**
- **Power doubling hybrids**
- **Reversible RF module allows the amplifier to open to roadside**
- **Upgradable to an optical node with our Flex Max Lid Upgrade**

C-COR Flex Max900 Trunk Amplifiers are the industry standard for RF distribution products. The forward gain and output configurations provided by Flex Max900 Trunk Amplifiers are designed to ensure cost-effective new designs and drop-in upgrades. The high gain of these amplifiers helps overcome the higher insertion losses of coaxial cable and passives at 750 and 862MHz. In addition, the 862MHz amplifier gain has been selected to allow the trunk modules to be used for drop-in upgrades of existing 750MHz designs.

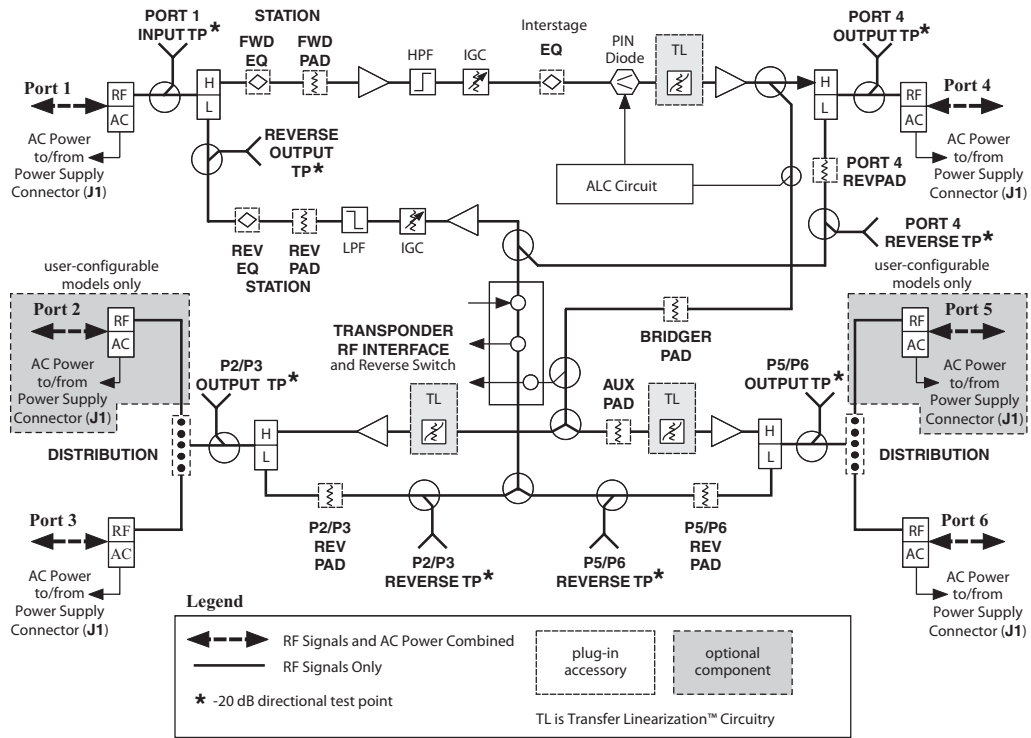
Flex Max900 Trunks are available with Transfer Linearization technology, which improves the linear characteristics of standard, highly reliable silicon technology hybrids, thereby allowing for higher operating level capabilities and/or improved distortion performance, in addition to higher channel capacities 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.

In addition, Flex Max900 Trunks can be upgraded to optical nodes with our Flex Max Lid Upgrade.

Features

- TL Technology for improved performance capabilities over standard silicon-based technology
- High efficiency, switching regulator power supply for 60 or 90 volt operation
- Die-cast, aluminum alloy housing with unique RFI and weather sealing for durability and protection of internal electronics; pressure tested to 12 psi
- Optional 90° access to corner ports for improved cost effectiveness in underground installations

Functional Block Diagram

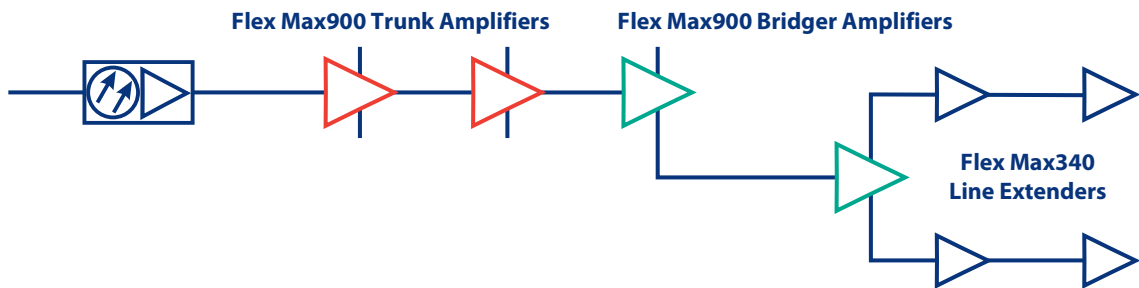


Flex Max900 Trunk Amplifier

Application

The Flex Max Trunk is a three active output station that provides one trunk level output and two distribution level outputs. The two active distribution or bridger ports can be configured in the field to provide four outputs. Flex Max Trunks provide a high performance trunk level output to "express" to other Flex Max Trunks in the cascade for maximum distortion performance.

The Flex Max Bridger is used at the end of the express line. The Flex Max Bridger provides two high-level distribution outputs, which can also be configured in the field to provide four outputs. These distribution ports can be independently configured for specific applications.



Application Diagram

Flex Max900 Trunk Amplifier Sample Specifications

	Trunk	Forward 2 O/P Bridger	Return Trunk & 2 O/P Bridger
General			
Passband, MHz	54–862		5–42
Housing, MHz	1000		—
AC Current Passing, A			
Ports 1, 3, 6	15		15
Ports 2, 5	13		13
Typical Operating Conditions			
Operational Gain, dB (–0, +0.5) (Notes 1, 2, and 3)	30	39	18
Channels, Number of NTSC (Note 4)	112/96/79	112/96/79	6
Operating Levels (recommended)			
Frequency, MHz	862/750/650/550/54	862/750/650/550/54	42/5
Input, dBmV, min. (Note 5)	12.5/12/11.5/11/12	12.5/12/11.5/11/12	17/17
Output, dBmV (Note 6)	42.5/40.5/39/37/28	51.5/49.5/48/46/37	35/35
Performance Specifications @ Recommended Levels			
Temperature Range: –40 to 60°C			
Carrier-to-Interference Ratio, dB (Note 7)			
Composite Triple Beat	69/76/80	67/72/77	89
Second Order Beat (F1 ± F2)	—	—	—
Cross Modulation (per NCTA std.)(Note 8)	64/70/74	62/65/68	78
Third Order Beat (F1 ± F2 ± F3)	—	—	—
Composite 2IM	65/70/76	59/67/73	82
Comp. Intermodulation Noise (CIN) (Note 9)	75	67	—
Noise, 4 MHz, 75 Ohms	61/61/60.5/60/60	61/61/60.5/60/60	66
Noise Figure, dB (without EQ)	9.5/9/9/9/10	9.5/9/9/9/10	10
Full Gain, dB (without EQ and ALC)	35	44	19
Factory Alignment (with ALC Reserve, without EQ)			
Cable Loss, dB @ 862 MHz	18	18	—
Flat Loss, dB	13	22	19
Gain Slope, dB	–0.25 to 1.0	–1.0 to 1.0	±0.5
Flatness (@ Gain Slope), ±dB	0.5	0.75	0.5
Return Loss, dB min., all entry ports	16	16	16.5
Powering Requirements, max./typ. (Note 10)			With Active Return
AC Voltage, 60 Hz			@ 90V @ 60V
AC Power, Watts			52/47.5 51.5/47
AC Current, mA			725/685 940/855
DC Current, mA @ 24V ± 0.5V			1895/1725 1895/1725
Level Control			
Range, dB @ 862 MHz		± 4.0 dB	—
Accuracy (–40 to 60°C)		± 0.5 dB	—
Output Level Range, (from nominal)		+2/–6 dB	—
Pilot Frequency Band (recommended)	439.25 MHz (Single Channel)		—

Specification Document Number 601153 Rev C

Notes:

- Spacing at the highest frequency with SEQ-862-XX installed. Reverse spacing includes losses due to housing, diplex filters, and MEQ-42-X.
- The specifications are based on the amplifier configured (with two SPB-0) as a 2-output bridger with distribution outputs on ports 3 and 6. When using distribution plug-ins SS-1000-8 or SDC-1000-12, levels should be derated accordingly based on the accessory specification.
- Bridger port gain and flatness is 9±0.75 dB as referenced to the trunk.
- NTSC video channels occupying the appropriate frequency spectrum per specified number of channels.
- Recommended minimum forward input level at 862 MHz including loss due to the equalizer.
- Recommended maximum reverse output level at 42 MHz including loss due to the equalizer.
- 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.
- Cross Modulation specification number indicates typical cascade performance.
- Systems operating with digitally compressed channels or equivalent broadband noise from 550 to 750 MHz at levels 6 dB below equivalent video channels will experience a composite distortion (CIN) appearing as noise in the 54 to 550 MHz frequency spectrum.
- Powering requirements indicated are with the model HEPS790-2.3 power supply 122027-04. See 333995-17 for additional information.
- Specifications are typical for Flex Max Trunks with Transfer Linearization (TL) technology. Contact your C-COR sales professional for specifications for Flex Max Trunks without TL technology and for Flex Max Bridgers with and without TL technology.

Specifications subject to change without notice

Flex Max900 Trunk Amplifier Model Options

			1	2	3	4	5	6	7	8	9	10	11	12
F	N	T	9	5	D	x	x	x	x	6	x	x	x	x

1 Series	
9 900 series	a
a) 15A current passing capability.	

2 Spacing	
5 30dB	a
a) 18dB factory equalization.	

3 Bandwidth	
D 862MHz	

4 Frequency Split	
J 42/54MHz	
Q 55/70MHz	
N 65/80MHz	

5 Module Designator	
- Standard	
T Transfer linearization technology	a
a) TL technology is currently not available in the 55/70 split.	

6-7 Level Control	
KB 439.25MHz TV	
L0 499.25MHz TV	a
KC 451.25MHz TV	b
L4 495.25MHz TV	b
a) Only available with 42/54 or 65/80 splits.	
b) Only available with 55/70 split.	

8 Return	
6 18dB gain active	a
a) Includes internal return testpoints.	

9 Output Configuration	
H Trunk with 2 bridger outputs—user config. to 4 outputs with -20dB internal testpoints	a,c
P Trunk with 2 bridger outputs—user config. to 4 outputs with -20dB external testpoints	b,c
a) Select "A", "C", or "K" in #11 block, Housing .	
b) Select "A", "F", "L", or "P" in #11 block, Housing .	
c) Plug-in splitters and directional couplers must be ordered separately.	

10 Powering	
1 None	a
6 2.3A, 90V, 50/60Hz, H.E. transformerless	b
a) Select "A" in #11 block, Housing . Required when ordering RF module only.	
b) 40-90 V operating range.	

11 Housing	
A None	a
C 6-Port Flex Max, 1GHz, with -20dB internal testpoints	b
F 6-Port Flex Max, 1GHz, with -20dB external testpoints	c
K 6-Port Flex Max, 1GHz, with -20dB internal testpoints and four 90° access ports	b
L 6-Port Flex Max, 1GHz, with -20dB external testpoints and four 90° access ports	c
P 6-Port Flex Max, 1GHz, bypass housing with -20dB external testpoints	c
a) Select "I" in #12 block, Housing Finish . Required when ordering RF module only.	
b) Select "H" in #9 block, Output Configuration .	
c) Select "P" in #9 block, Output Configuration . Forward testpoints only.	

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

Contact your C-COR sales professional for Flex Max900 Bridger model options.

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 © 2005 C-COR Incorporated. All rights reserved.



www.c-cor.com