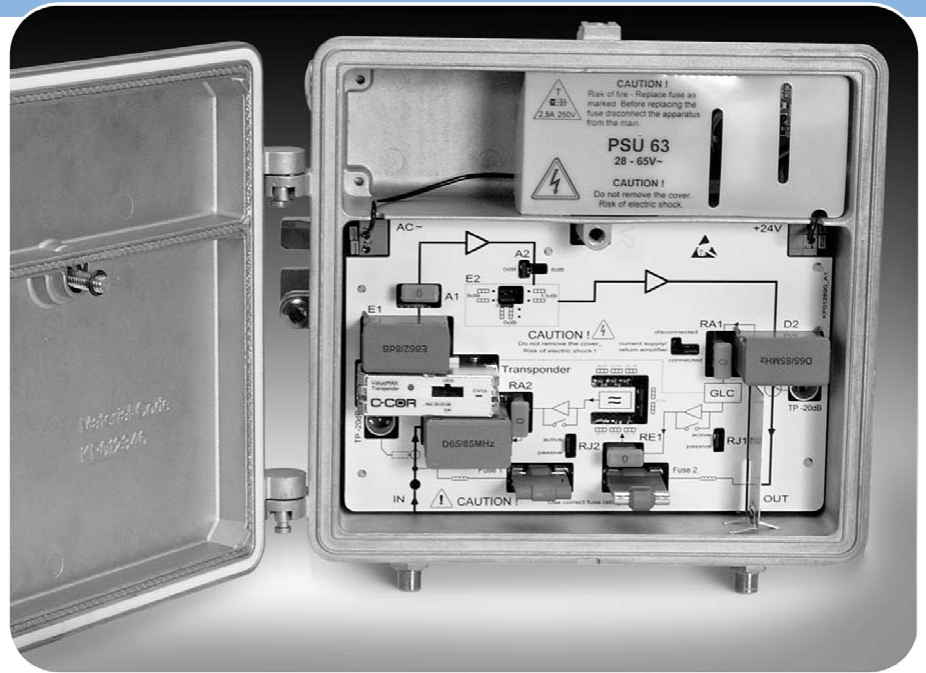


Flex Max220™

Plus

Multi-Dwelling Unit Amplifiers



Applications

- **End-of-line distribution amplifier or tap driver**
- **Medium and large multi-dwelling unit architectures**
- **EMS support via an HMS/AM protocol transponder**

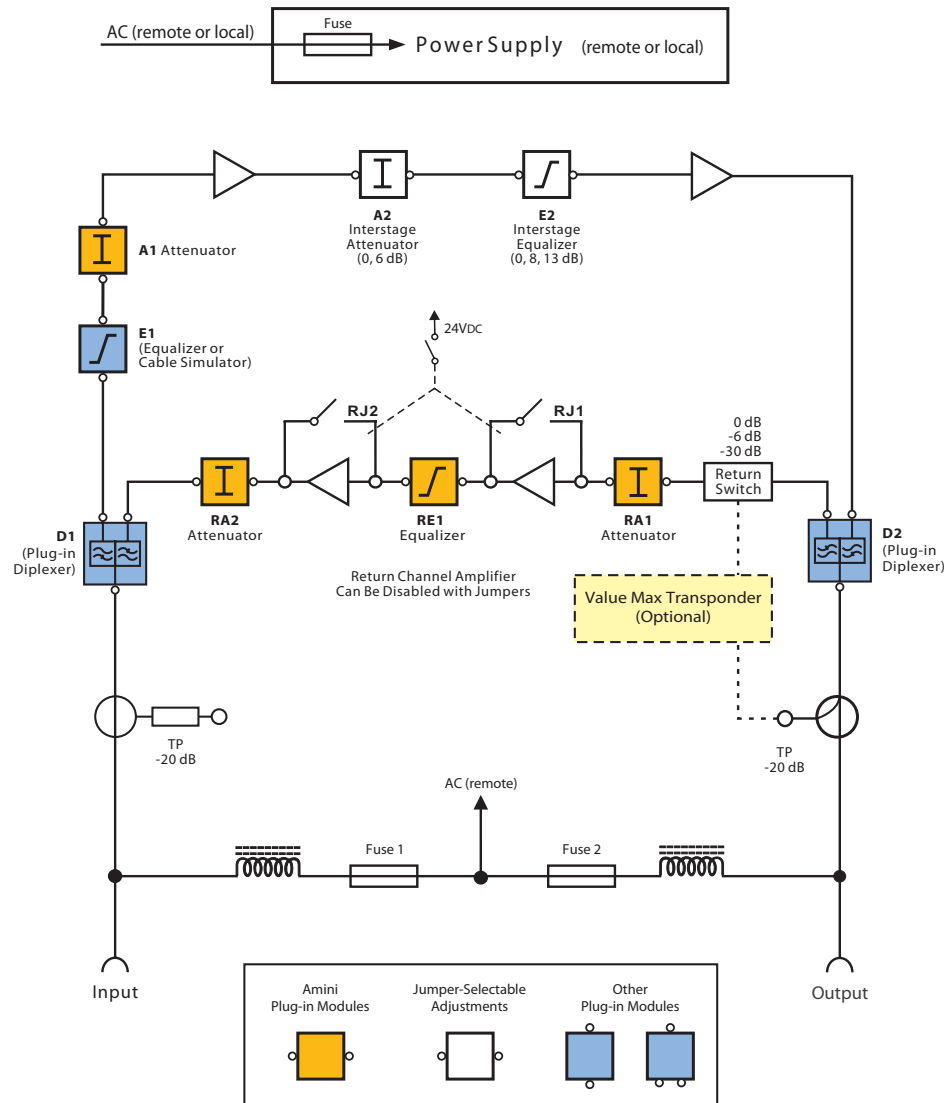
The C-COR Flex Max220 Plus Multi-Dwelling Unit (MDU) Amplifier combines advanced RF technology with installer friendly features to deliver signals to the subscriber at lower expense. The Flex Max220 Plus MDU Amplifier is dedicated to systems in which input sources are cable drops.

The Flex Max220 Plus MDU Amplifier is the most advanced end-of-line distribution amplifier to meet the requirements for modern HFC multi-transport networks. Applied robust Gallium Arsenide technology improves system performance and drives total system costs down. The convenient, cost-effective, on-board interstage equalizer compensates for frequency dependent attenuation of coaxial cables. The on-board interstage equalizer has jumper-selectable 0, 8, or 13dB tilt options, and the on-board interstage attenuator has jumper-selectable 0 or 6dB options.

With its 37dB gain, the Flex Max220 Plus covers all applications for modern high performance MDU amplifiers. In addition the Flex Max220 Plus is available with an HMS/AM protocol transponder, which provides system integrity, and combined with the on-board return path ingress switch, provides gate level control.

Features

- Apartment amplifier with GaAs input hybrid and high level power doubler output
- Plug-in diplexers
- Input plug-in keyed for equalizers or cable simulators
- Jumper-selectable interstage attenuator with 0/6dB options and interstage equalizer with 0/8/13dB tilt options
- Improved system reliability with HMS/AM compliant transponders controlling an on-board return ingress switch



Flex Max220 Plus MDU Amplifier Block Diagram

Specifications

General Specifications

Band Coverage	47/54/70/85 to 862 MHz
Frequency Response, 85 to 862 MHz	± 0.75 dB
Noise Figure	8.0 dB, typical
Return Loss, excludes duplexers crossover range	> 18 dB at 40 MHz (-1.5 dB/octave up to 862 MHz)
Gain, includes duplexers	$37 \text{ dB} \pm 1 \text{ dB}$
Impedance	75 Ohm
Testpoints	Bidirectional TP: -20 dB forward I/P; -18.5 dB return O/P Directional coupler TP: -20 dB forward output

Performance Specifications

@ Full 37 dB Gain (Note 1)	
CTB @ 112 dB μ V (52 dBmV)	≤ -60 dBc
CSO @ 112 dB μ V (52 dBmV)	≤ -60 dBc
@ 31 dB Gain (Note 2)	
CTB @ 110 dB μ V (50 dBmV)	≤ -60 dBc
CSO @ 110 dB μ V (50 dBmV)	≤ -60 dBc

Active Return Channel Amplifier, can be disabled with jumpers

Band Coverage	5 to 30/42/55/65 MHz
Frequency Response, port to port	± 0.75 dB
Noise Figure	< 7.0 dB
Return Loss	> 18 dB
Station Gain, with duplexers and 0 dB Amini plug-ins	
With both amplifier stages	24 dB
With one amplifier stage	11 dB
Passive	-3.5 dB
Output Level, IM2 ≥ 60 dB	110 dB μ V (50 dBmV)

Powering Specifications

Remote Power Supply	28 to 65 VAC, 47 to 63 Hz
Local Power Supply	90 to 250 VAC, 47 to 63 Hz
Power Consumption, typ., 85% efficiency	16 W, without optional transponder
Power Passing Capability	
RF Input and Output	3 A, max.
HUM, at max. remote feeding	< -60 dBc

Plug-In Modules

Duplexers	D30/47 MHz, D42/54 MHz, D55/70 MHz, D65/85 MHz
Cable Equivalents, fixed for up to 862 MHz	CE862/x, x = 2, 4, 6, 8 dB
Input Equalizers, fixed for up to 862 MHz	E862/xx, xx = 0 to 16 dB, in 2 dB increments
Attenuators (Note 3)	Amini: 0 to 20 dB, in 1 dB increments A862/0 dB
Value Max Transponder	HMS and AM protocols

Physical and Environmental Specifications

Dimensions (W x H x D)	221 x 92 x 187 mm (8.8 x 3.9 x 7.5 in.)
Weight, approx.	2.0 kg (4.5 lbs)
Connectors	
RF Input and Output Ports	3.5/12 type, F-type female, IEC type, and PG11 entry only options
RF Testpoints	F-type, male
Local Power Supply	PG9, mechanical
Operating Temperature Range	-40 to 60°C (-40 to 140°F), without permanent failure -20 to 60°C (-4 to 140°F), guaranteed
Storage Temperature Range	-40 to 70°C (-40 to 160°F)
Protection According to IEC 529	IP55

Notes:

- According to EN 50083-3, 41 CENELEC channel loading, and with diplexer modules, 8 dB slope, and 0 dB interstage attenuation.
- According to EN 50083-3, 41 CENELEC channel loading, and with diplexer modules, 8 dB slope, and 6 dB interstage attenuation.
- Amini attenuators are used to adjust the forward input level and return path output level and equalization. The A862/0 dB module is used in the diplexer location when no return path is activated.

Specifications subject to change without notice

Ordering Information

						1	2	3	4	5		6	7	8		9
F	M	2	2	0	–	P	P	A	x	x	–	x	M	5	–	x

1 Platform
P Plus

2 Diplexer (Frequency Split)		
P	Plug-in diplexer	a
a) Available splits: 30/47, 42/54, 55/70, 65/85MHz (must order separately).		

3 Return Channel Amplifier
A Active return

4 Power Supply	
2 Local powering (90–250VAC)	a
6 Remote powering (28–65VAC)	
a) Select "N" in #5 block, Fuse .	

5 Fuse	
A Standard 4 A fuse	a
N No fuse	
S Shorting bar	
a) In case of local powering. Select "2" in #4 block, Power Supply .	

6 RF Adapter
3 3.5/12 type
F F-type
I IEC type
P PG11 entry only; no adapter

7 RF Testpoint Connector
M F-type, male

8 Protection
5 IP55

9 Country Deviations (defines mains plug and country certifications)		
N	No power cord (remote powering)	a
E	Europe	b
a) Select "6" in #4 block, Power Supply .		
b) Select "2" in #4 block, Power Supply .		

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

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