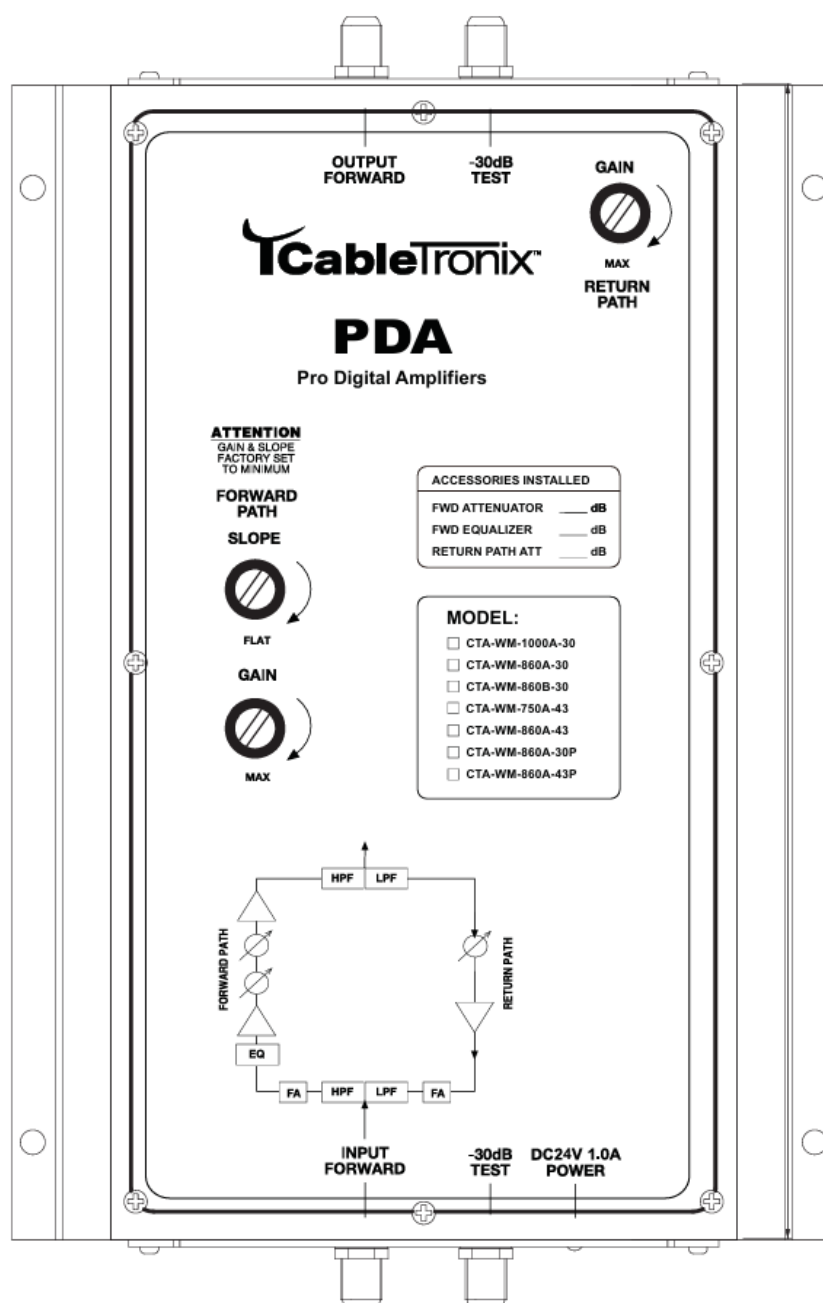


CTA-WM Series

User Manual



Features

- Available in multiple bandwidth options: 1000 MHz, 860 MHz, 750 MHz, and 550 MHz
 - Built-in variable slope and gain controls for the forward path
 - Integrated gain control for the return path
 - Compatible with optional plug-in equalizers and attenuators
 - Push-pull and power-doubling hybrid models offered
 - Low distortion with high input and output capability
 - Supplied with an external UL-approved 24 VDC power adapter
 - Input and output test ports (-30 dB) allow signal monitoring without disrupting service
-

Description

The CTA-WM Series comprises self-contained, high-performance broadband indoor distribution amplifiers, specifically engineered for CATV and SMATV signal distribution systems. These amplifiers utilize push-pull or power-doubling technology to deliver exceptionally low distortion and high-output performance.

Three distinct models are available, supporting the following frequency bands:

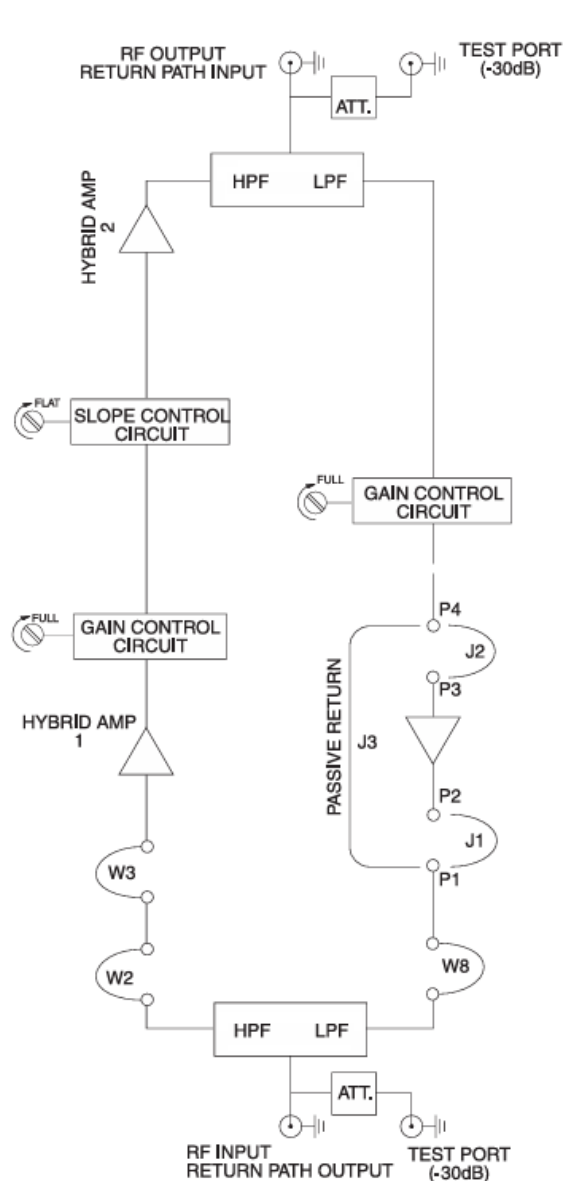
- 49 MHz – 1000 MHz
- 54 MHz – 860 MHz
- 49 MHz – 860 MHz
- 49 MHz – 750 MHz

Standard configuration supports one-way operation within the 47 MHz to 550 MHz or 47 MHz to 750 MHz range. Two-way operation is also supported, featuring a return path of either 5 MHz to 36 MHz or 5 MHz to 42 MHz, depending on the model.

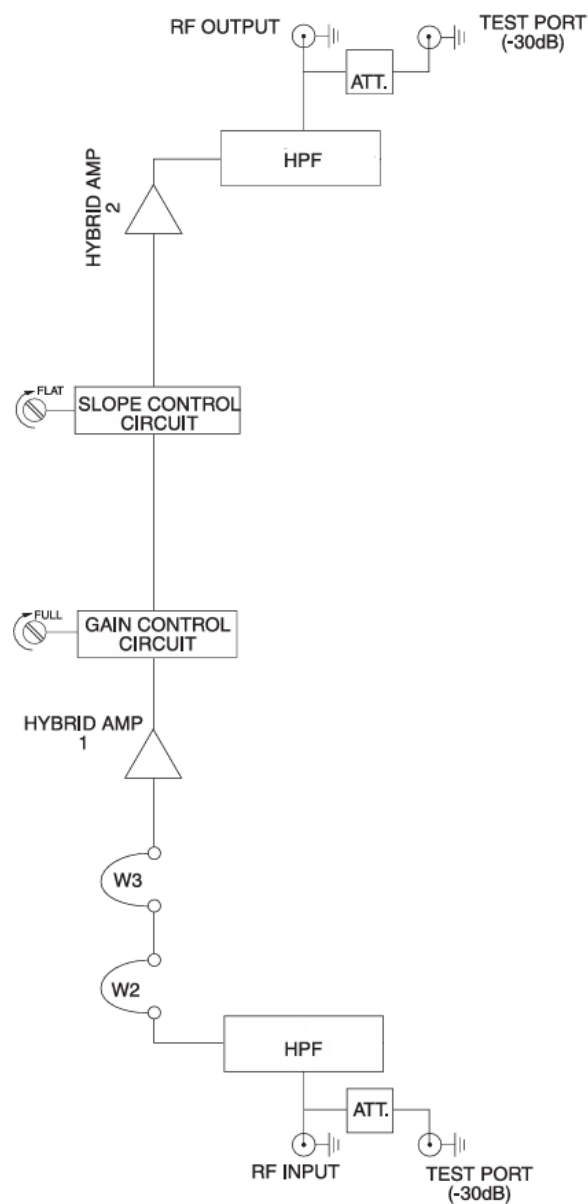
Front-panel gain, and slope controls offer convenient access for setup and adjustment. Additionally, two -30 dB test ports are provided for signal monitoring without interrupting service.

These amplifiers are ideal for RF distribution applications in hospitals, educational institutions, apartment buildings, hotels, and other similar environments. Each unit is housed in a durable aluminum enclosure for effective heat dissipation and corrosion resistance.

Block Diagram



Forward and Return Path



Forward Path Only

NOTES:

1. For passive return, connect J3 to P1 and P4.
2. For active return, connect J1 to P1 and P2 and J2 to P3 and P4.
3. Plug-in equalizers and attenuators are optional.

If plug-ins are to be used, remove jumper wire at appropriate location and insert plug-in.

Order Information

Model Format: CTA-WM-XXXX-X-XX-X

(Fields: 1 2 3 4)

1. Frequency Range (Stop Frequency @ Forward Path)

- 1000 = 1000 MHz
- 860 = 860 MHz
- 750 = 750 MHz
- 550 = 550 MHz

2. Start Frequency @ Forward Path & Return Path Frequency Range

- A = Start @ 49 MHz (Return Path: 5 MHz – 36 MHz)
- B = Start @ 54 MHz (Return Path: 5 MHz – 42 MHz)
- None = Forward path only (No return path)

3. XX: Gain @ Forward Path

1. Specify desired gain level in dB

4. Output Stage Type

- P = Power Doubling
- None = Push-Pull

Specifications

Push-Pull Model	CTA-WM-1000A-30	CTA-WM-860B-30	CTA-WM-860A-43	CTA-WM-860A-30	CTA-WM-750A-43	CTA-WM-1000A-30	CTA-WM-860B-30	CTA-WM-860A-43	CTA-WM-860A-30	CTA-WM-750A-43
Path	Forward Path					Return Path				
Freq Range	49-1000 MHz	54-860 MHz	49-860 MHz	49-860 MHz	49-750 MHz	5-36 MHz	5-42 MHz	5-36 MHz	5-36 MHz	5-36 MHz
Gain	32 dB MIN.	32 dB MIN.	43 dB MIN.	32 dB MIN.	43 dB MIN.	19 dB (MIN.)				
Slope Control	10 dB (MIN.)					-				
Gain Control	12 dB (MIN.)					18 dB (MIN.)				
Noise Figure	8.0 dB (MAX.) (Note.1)					6.0 dB (MAX.)				
Gain Flatness	± 1.0 dB (MAX.)					± 1.0 dB (MAX.)				
Return Loss (Input & Output)	15 dB (MIN.)					15 dB (MIN.)				
Test Port Level	-30±2.0 dB					-				
Composite Triple Beat (CTB)	-62 dB (Note 2).					-60 dB (Note.3)				
Cross Modulation (XM)	-60 dB (Note.2)					-60 dB (Note.3)				
Composite 2nd Order Beat (CSO)	-64 dB (Note 2).					-60 dB (Note.3)				
Power Supply (Adaptor)	Input: 100-240 VAC, 50/60Hz Output: 24 VDC/1A									
Impedance (All Ports)	75 ohms					75 ohms				
Connector (All Ports)	F Type female					F Type female				
Operating Temperature	-4 – 140 °F (-20 ~ 60°C)									

Note:

1. Measurement at full gain with 0dB slope
2. 98 channels Vo=46 dBmv at 743.25MHz, flat output level across the band
3. 3 channels Vo=42 dBmv

Push-Pull Model	CTA-WM-550-30	CTA-WM-550-50	CTA-WM-750-30
Path	Forward Path		
Freq Range	47-550 MHz		47-750 MHz
Gain	32 dB MIN.	49 dB MIN.	32 dB MIN.
Slope Control	10 dB (MIN.)		
Gain Control	12 dB (MIN.)		
Noise Figure	8.0 dB (MAX.) (Note.1)		
Gain Flatness	± 1.0 dB (MAX.)		
Return Loss (Input & Output)	15 dB (MIN.)		
Test Port Level	-30±2.0 dB		
Composite Triple Beat (CTB)	-62 dB (Note.2)		
Cross Modulation (XM)	-60 dB (Note.2)		
Composite 2nd Order Beat (CSO)	-64 dB (Note.2)		
Power Supply (Adaptor)	Input: 100-240 VAC, 50/60Hz Output: 24 VDC/1A		
Impedance (All Ports)	75 ohms		
Connector (All Ports)	F Type female		
Operating Temperature	-4 – 140 °F (-20 ~ 60°C)		

Note:

1. Measurement at full gain with 0dB slope
2. 98 channels Vo=46 dBmv at 743.25MHz, flat output level across the band

Power-Doubling Model	CTA-WM-860A-43P	CTA-WM-860A-30P	CTA-WM-860A-43P	CTA-WM-860A-30P
Path	Forward Path		Return Path	
Freq Range	49-860 MHz		5-36 MHz	
Gain	43 MIN.	32 MIN.	19 dB (MIN.)	
Slope Control	10 dB (MIN.)		-	
Gain Control	12 dB (MIN.)		18 dB (MIN.)	
Noise Figure	8.0 dB (MAX.) (Note.1)		6.0 dB (MAX.)	
Gain Flatness	± 1.0 dB (MAX.)		± 1.0 dB (MAX.)	
Return Loss (Input & Output)	15 dB (MIN.)		15 dB (MIN.)	
Test Port Level	-30±2.0 dB		-	
Composite Triple Beat (CTB)	-64 dB (Note.2)		-60 dB (Note.3)	
Cross Modulation (XM)	-62 dB (Note.2)		-60 dB (Note.3)	
Composite 2nd Order Beat (CSO)	-66 dB (Note.2)		-60 dB (Note.3)	
Power Supply (Adaptor)	Input: 100-240 VAC, 50/60Hz Output: 24 VDC/1A			
Impedance (All Ports)	75 ohms		75 ohms	
Connector (All Ports)	F Type female		F Type female	
Operating Temperature	-4 – 140 °F (-20 ~ 60°C)			

Note:

1. Measurement at full gain with 0dB slope
2. 98 channels Vo=46 dBmv at 743.25MHz, flat output level across the band
3. 3 channels Vo=42 dBmv

Functional Operation

For Forward and Return Path

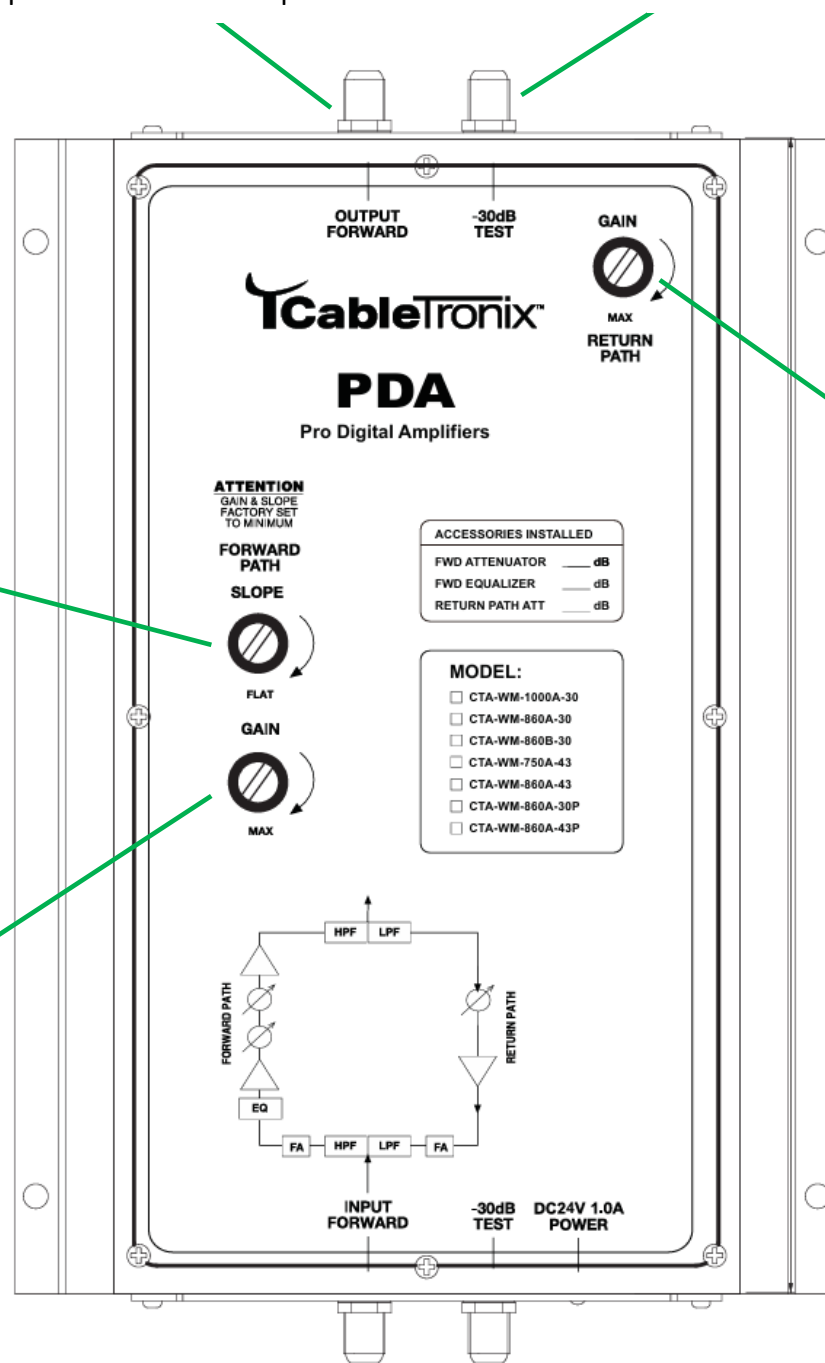
Forward Path Output or Return Path Input

-30dB Output Test point

Slope Control @
Forward Path

Gain Control @
Return Path

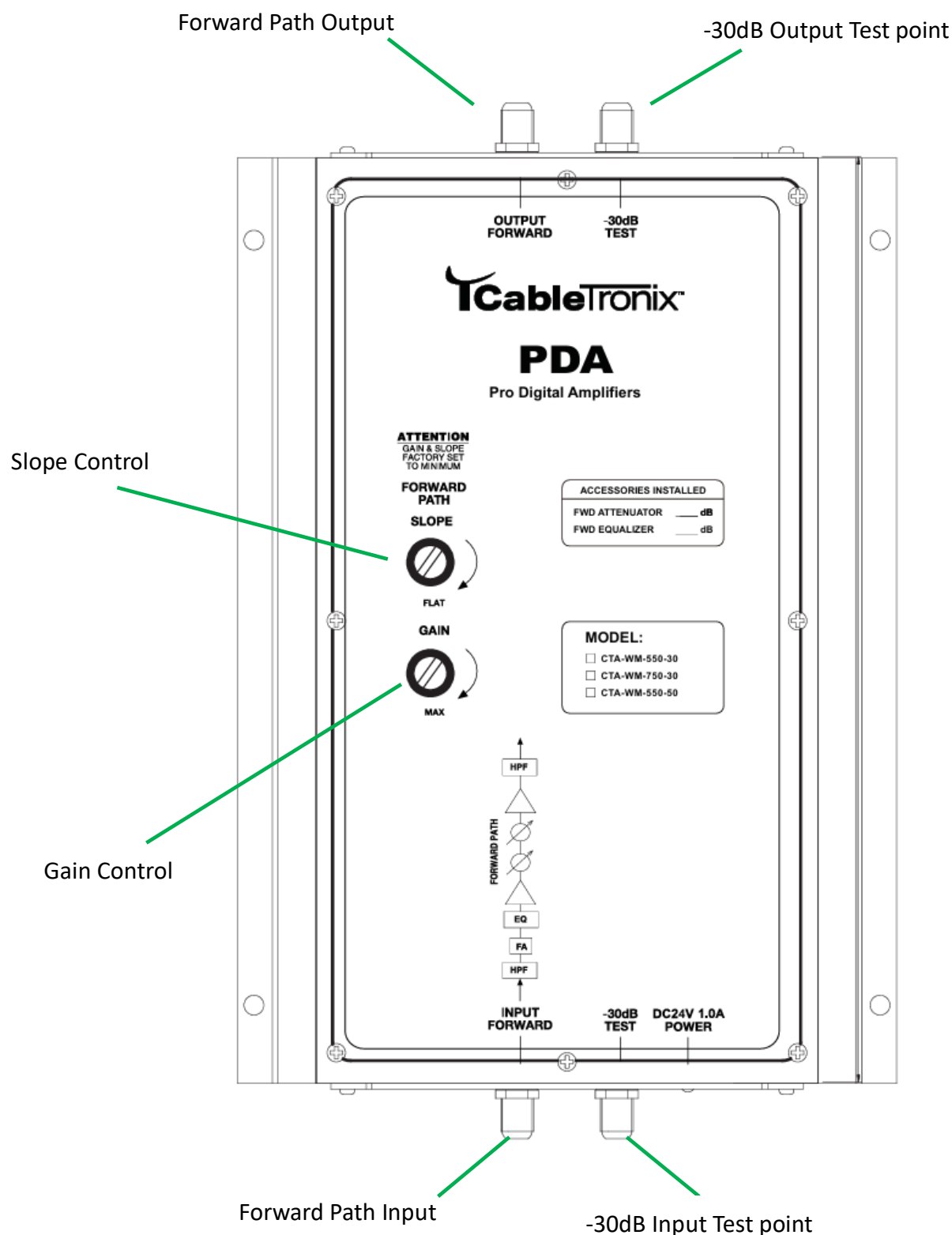
Gain Control @
Forward Path



Forward Path Input or Return Path Output

-30dB Input Test point

For forward path only



Installation



Installation Instructions

1. **Mount the Unit:**
Securely install the unit by fastening screws or bolts through its mounting tabs into a rack, wall, or other stable surface.
2. **Connect RF Input:**
Attach the source RF signal to the amplifier's input port.
3. **Connect RF Output:**
Connect the distribution RF cable to the amplifier's output port.
4. **Power the Unit:**
Plug the unit's power cord into a wall outlet or a power strip providing line power.
5. **Test Signal Input:**
Connect an RF spectrum analyzer or signal level meter to the input test point to monitor the signal.
6. **Adjust Output Level:**
Set the amplifier's output level to meet the required distribution amplitude and tilt (slope) specifications.
7. **Optimize Input Signal:**
Install plug-in attenuators and equalizers at the input as needed to achieve proper signal levels and optimal performance.

CABLETRONIX 1-Year Limited Warranty

CABLETRONIX. (the "Company") warrants to the Original Purchaser that the item purchased is free from defects in workmanship or material under normal use. This warranty starts on the date of shipment of the hardware to the Original Purchaser.

During the warranty period, the Company agrees to repair or replace, at its sole option, without charge to Original Purchaser, any defective component. To obtain service, the Original Purchaser must return the item to the Company properly packaged for shipping. All defective products must be returned to the Company within thirty (30) days of failure. Products must be returned with a description of the failure and Return Merchandise Authorization (RMA) number supplied by the Company. To receive a RMA number and a return shipping address on where to deliver the hardware, call 610-429-1821. The shipping, and insurance charges incurred in shipping to the Company will be paid by Original Purchaser, and all risk for the hardware shall remain with the Original Purchaser until such time as Company takes receipt of the hardware. Upon receipt, the Company will promptly repair or replace the defective unit, and then return said unit to Original Purchaser, shipping prepaid. The Company may use reconditioned or like-new parts or units, at its sole option, when repairing any hardware. Repaired products shall carry the same amount of outstanding warranty as from original purchase. Any claim under the warranty must include dated proof of purchase or invoice. In any event, the Company's liability for defective hardware is limited to repairing or replacing the hardware.

This warranty is contingent upon proper use of the hardware by Original Purchaser and does not cover: if damage is due to Acts of God (including fire, flood, earthquake, storm, hurricane or other natural disaster), accident, unusual physical, electrical, or electromechanical stress, modifications, neglect, misuse, operation with media not approved by the Company, tampering with or altering of the hardware, riot, war, invasion, act of foreign enemies, hostilities (regardless of whether war is declared), civil war, rebellion, revolution, insurrection, military or usurped power or confiscation, terrorist activities,

nationalization, government sanction, blockage,

embargo, labor dispute, strike, lockout or interruption or failure of electricity, air conditioning, or humidity control, internet, network, or telephone service

The warranties given herein, together with any implied warranties covering the hardware, including any warranties of merchantability or fitness for a particular purpose, are limited in duration to one year from the date of shipment to the Original Purchaser. Jurisdictions vary with regard to the enforceability of warranty limitations, and you should check the laws of your local jurisdiction to find out whether the above limitation applies to you.

The Company shall not be liable to you for loss of data, loss of profits, lost savings, special, incidental, consequential, indirect, or other similar damages arising from breach of warranty, breach of contract, negligence, or other legal action even if the Company or its agent has been advised of the possibility of such damages, or for any claim brought against you by another party. Jurisdictions vary with regard to the enforceability of provisions excluding or limiting liability for incidental or consequential damages. You should check the laws of your local jurisdiction to find out whether the above exclusion applies to you.

This warranty allocates risks of product failure between Original Purchaser and the Company. The Company's hardware pricing reflects this allocation of risk and the limitations of liability contained in this warranty. The warranty set forth above is in lieu of all other express warranties, whether oral or written. The agents, employees, distributors, and dealers of the Company are not authorized to make modification to this warranty, or additional warranties binding on the Company. Accordingly, additional statements such as dealer advertising or presentations, whether oral or written, do not constitute warranties by the Company and should not be relied upon.

This warranty gives you specific legal rights. You may also have other rights which vary from one jurisdiction to another.