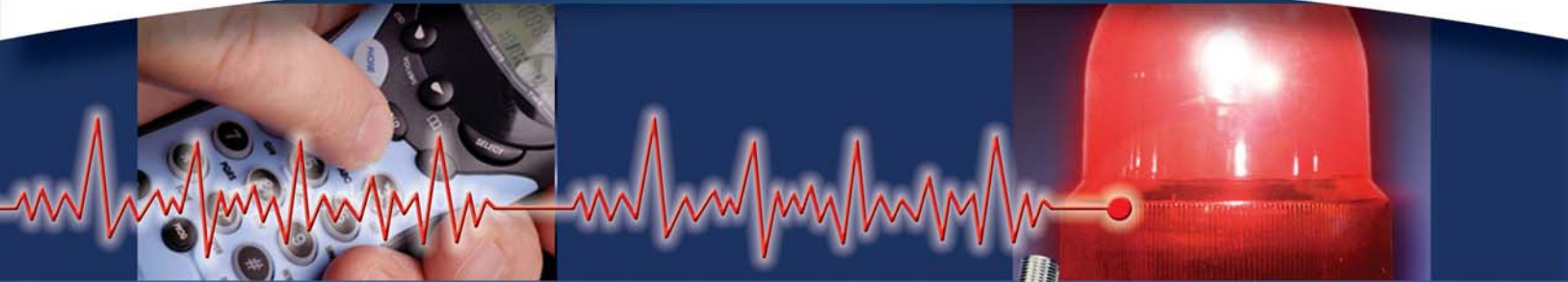


BYPASS DROP AMPLIFIER



PCT's bypass drop amplifier is designed to support critical applications such as telephony that require high reliability networks to provide uninterrupted service even in the event of power outages and/or amplifier failure. In normal operating mode the bypass amplifier provides ultra-low noise amplification of broadband signals to all ports for subscriber drop installations. In the event of power or amplifier failures, relays switch the amplifier into bypass mode creating a near zero dB loss connection to the bypass port connected to the Multimedia Terminal Adapter (MTA).

In conjunction with an MTA running on battery back-up, the bypass amplifier allows the subscriber to maintain an E911 connection to the operator at all times. The bypass amplifier then returns to normal operation once the cause is remedied. A dual color LED indicates normal or bypass mode operation of the amplifier for ease of diagnostics and troubleshooting; red indicates low input voltage or IC failure.



FEATURES & BENEFITS

- Bypass Failover conditions:
 - ▶ Power Outage
 - ▶ Low Input Voltage (brown out condition)
 - ▶ High Input Voltage
 - ▶ IC Failure
- Dual color LED status indicator:
 - ▶ Green - Normal Operation
 - ▶ Red - Bypass Mode
- IEEE 6 kV, B3 surge withstand on all RF ports.
- SCTE compliant, sealed "F" ports.
- Patented DSM seizure technology in all "F" ports provides increased spring retention and more surface contact.
 - ▶ Gold-plated, beryllium copper construction for better corrosion resistance, impedance matching, and less common path distortion.
 - ▶ Holds over 200 grams after multiple entries.
- Excellent noise and lowest distortions performance.
- Local and remote powering options.
- Available in several configurations:
 - ▶ Amplified Forward signal, Passive Return signal
 - ▶ Amplified Forward signal, Amplified Return signal
 - ▶ Unity Gain Forward signal, Unity Gain Return signal
 - ▶ Forward equalization
- Lightweight, powder coated and weather sealed housing for superior corrosion protection.



SPECIFICATIONS

	PCT-VB-2P	PCT-VB-2A	PCT-VB-2U	PCT-VB-4P	PCT-VB-4A	PCT-VB-4U	PCT-VB-8P	PCT-VB-8A	PCT-VB-8U	
FORWARD PATH										
Forward Path Frequency Range	MHz 54 to 1000									
Amplification Device	- RF Amplification IC - GaAs HBT									
Typical Gain	dB 11.5	11.5	0	7.5	7.5	0	4.0	4.0	0	
Gain Tolerance	dB ±1									
Flatness (peak-to-valley)	dB ±0.5									
Rated Output Level ¹	dBmV 21.5	21.5	15.0	17.0	18.0	15.0	14.0	14.0	15.0	
Return Loss	dB ≥ 18									
Isolation ²	dB > 22									
Group Delay (54 to 60 MHz)	ns < 20 / 3.58 MHz									
Group Delay (60 to 66 MHz)	ns < 7 / 3.58 MHz									
Group Delay (66 to 1000 MHz)	ns < 5 / 3.58 MHz									
Noise Figure	dB 2.7 avg. (4 max.)									
Composite Second Order Distortions	dBc < -62	< -60	< -60	< -62	< -60	< -60	< -62	< -60	< -60	
Composite Triple Beat Distortions	dBc < -75	< -72	< -72	< -75	< -72	< -72	< -75	< -72	< -72	
Cross Modulation Distortions	dBc < -75									
Hum Modulation	dBc < -75									
RETURN PATH										
Return Path Frequency Range	MHz 5 to 42									
Amplification Device	- RF Amplification IC - GaAs HBT									
Typical Gain / Loss	dB -5.0	10	0	-8.5	7	0	-12	4	0	
Gain Tolerance	dB -	±1.0	±1.0	-	±1.0	±1.0	-	±1.0	±1.0	
Passband Response	dB -	±0.5	±0.5	-	±0.5	±0.5	-	±0.5	±0.5	
Rated Output Level	dB -	57	55	-	54	55	-	51	55	
Noise Figure	dB -	5.5	5.5	-	5.5	5.5	-	5.5	5.5	
Flatness (peak-to-valley)	dB ± 0.5									
Return Loss	dB ≥ 18									
Isolation ² (5 to 15 MHz)	dB 22	> 20	> 20	22	> 20	> 20	22	> 20	> 20	
Isolation ² (15 to 42 MHz)	dB 25	> 25	> 25	25	> 25	> 25	25	> 25	> 25	
Composite Second Order	dBc -	< -60	< -60	-	< -60	< -60	-	< -60	< -60	
Composite Triple Beat	dBc -	< -72	< -72	-	< -72	< -72	-	< -72	< -72	
Cross Modulation	dBc -	< -75	< -75	-	< -75	< -75	-	< -75	< -75	
Second Harmonic Distortion	dBc -	< -95	< -95	-	< -95	< -95	-	< -95	< -95	
Group Delay (5 to 10 MHz / 36 to 42 MHz)	ns < 20 / 1 MHz									
Group Delay (10 to 36 MHz)	ns < 5 / 1 MHz									
Hum Modulation	dBc < -75									
SWITCHING CIRCUIT										
Mechanism	- Normally open electro-mechanical RF relay, SPDT									
Transition Time Between Modes	ms < 10									
Causes or Mode Switching	- Low or no input voltage and IC failure									
Insertion Loss in Bypass Mode	dB ≤ 1									
Flatness in Bypass Mode (peak-to-valley)	dB ±0.5									
Return Loss in Bypass Mode	dB ≥ 18									
GENERAL										
RFI Shielding	dB > 100									
Nominal Impedance	ohm 75									
Surge Withstand Capability (all RF ports)	- Conforms to ANSI/SCTE 81 2003, IEEE C62.41 Cat. B3 Waveform									
Operating Temperature	°C (°F) -40 to +60 (-40 to +140)									
F-ports	- Conforms to ANSI/SCTE 01 1996R2001; sealed; able to hold 15 psi									
Total Power Consumption (transformer + amplifier)	Watt < 5	< 10	< 10	< 5	< 10	< 10	< 5	< 10	< 10	

Notes 1 79 analog channels (54 to 552 MHz) at 10 dBmV/ch. + 33 digital channels (552 to 750 MHz) at -6 dBc (total channel power), relative to analog carriers. All channels flat at input.

2 Port-to-port.