

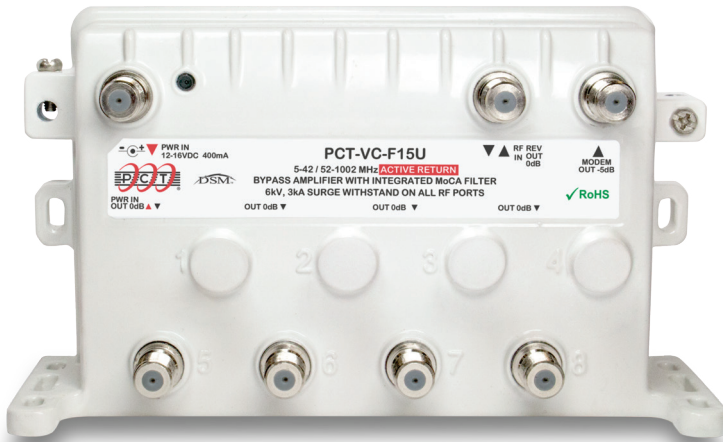
# MoCA BYPASS AMPLIFIERS

## Unity Gain

### PCT-VC-F15U



Innovation for the Last Mile®



## All Ports MoCA Enabled

### Bypass Amplifier Supports

### Next-Generation MoCA Gateways

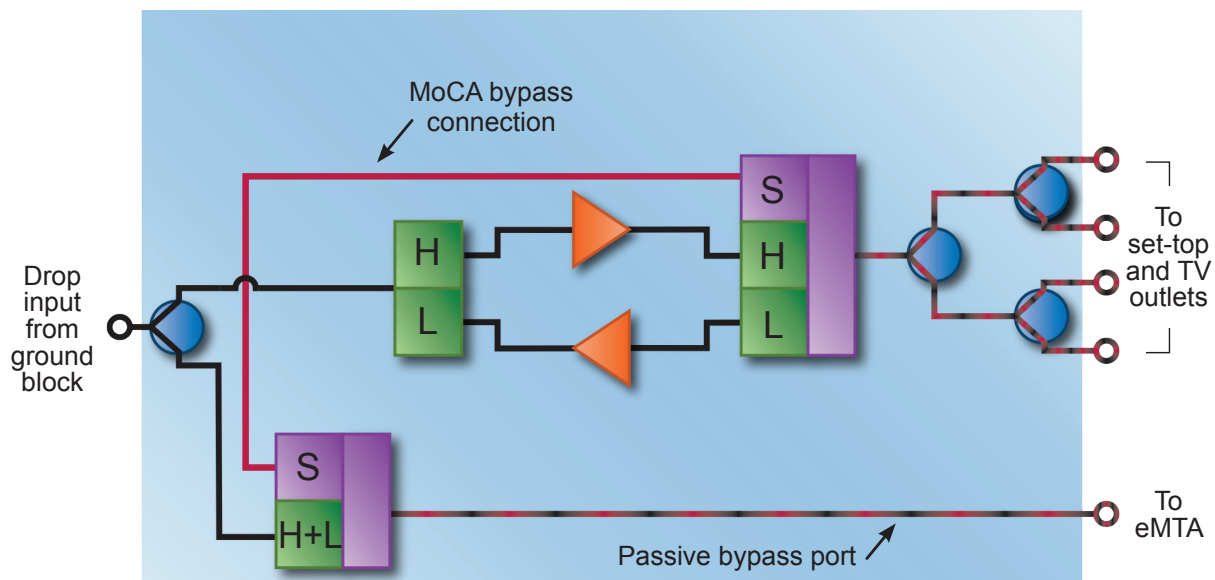
## INTRODUCTION

PCT's MoCA bypass drop amplifier is designed to provide the ability to use MoCA technology to communicate to all the amplifier output ports from the modem port, bypassing the amplifier itself. The built-in triplex filter constrains the MoCA signals to the home network while providing the necessary MoCA bypass connection around the amplifier to enable in-home networking between eMTA, set-top boxes and other devices (for example: gaming consoles, PCs, laptops, tablets, etc.).

The passive modem bypass port supports critical applications, such as telephony, requiring high reliability networks to provide uninterrupted service even in the event of power outages and / or amplifier failure.

## Applications

- ✓ Distribution of video in the house for applications with a multi-room DVR
- ✓ Home high speed networking
  - » Allows internet service, videos and gaming to share bandwidth without losing speed and quality
- ✓ High definition video streaming from the internet



Passbands (MHz): S 1125 to 1525; H+L 5 to 1002; H 54 to 1002; L 5 to 42



## Features and Benefits

- ✓ **Integrated MoCA triplex filter**
  - All ports “talking” – MoCA devices on the bypass port can communicate to all other output ports
  - Benefits
    - Use of MoCA Wi-Fi extenders
    - Use of MoCA enabled IP set-top boxes
    - Eliminates need for separate MoCA POE filter
    - Keeps MoCA signals within the home network and blocks them from going up the drop
    - Reduces the loss of MoCA passband frequencies (1125 to 1525 MHz) within the in-home network
- ✓ **Unity gain – upstream and downstream**
  - Compensates for splitter loss
  - 0 dB gain maintains optimal QAM levels for better SNR
- ✓ **Patented DSM seizure technology provides increased spring retention for better surface contact**
  - Patented design to increase spring retention for better surface contact, even after repeated entry, across maximum to minimum center conductor diameters
  - Gold-plated, beryllium copper construction for better corrosion resistance, impedance matching and less common path distortion
- ✓ **Passive bypass port**
  - Supports critical applications
  - Ensures high reliability
  - Eliminates loss of service due to power outages or amplifier failure
- ✓ **Remote powering**
- ✓ **Dual mount housing**
  - Vertical - all ports down
  - Horizontal - all ports out

## Ordering Information

- ✓ PCT-VC-F15U Bypass Amplifier, 5-Ports (4+1)  
Unity Gain with MoCA Triplex Filter

## Specifications

Parameters	Unit	PCT-VC-F15U Details
<b>Downstream</b>		
Forward Path Frequency Range	MHz	54 to 1002
Amplification Device	--	RF Amplification IC – GaAs pHEMT
Gain (Typical)	dB	0
Gain Tolerance	dB	+ 2 / - 1
Flatness (Peak-to-Valley)	dB	± 1.0
Return Loss	dB	≥ 18
Isolation	1125 to 1525 MHz	≥ 22
	54 to 60 MHz	< 20 / 3.58 MHz
Group Delay	61 to 66 MHz	< 10 / 3.58 MHz
	67 to 1002 MHz	< 5 / 3.58 MHz
Effective Noise Figure (Max.) <sup>1</sup>	dB	10
Composite Second Order Distortions <sup>2</sup>	dBc	< -62
Composite Triple Beat Distortions <sup>2</sup>	dBc	< -73
Cross Modulation Distortions	dBc	< -75
Hum Modulation	dBc	< -75
<b>Upstream</b>		
Return Path Frequency Range	MHz	5 to 42
Amplification Device	dB	Push-Pull Amplifier
Gain/Loss (Typical)	dB	0
Gain Tolerance	dB	+ 2 / - 1
Flatness (Peak-to-Valley)	dB	± 0.8
Return Loss	dB	≥ 18
Isolation	5 to 15 MHz	> 22
	40 to 42 MHz	> 25
	16 to 40 MHz	> 25
Group Delay	5 to 10 MHz	< 20 / 1 MHz
	36 to 42 MHz	< 5 / 1 MHz
	10 to 36 MHz	< 5 / 1 MHz
Effective Noise Figure (Max.) <sup>1</sup>	dB	14
Discrete Second Order Distortions <sup>3</sup>	dBc	< -68
Discrete Third Order Distortions <sup>3</sup>	dBc	< -62
Hum Modulation	dBc	< -75
<b>Modem Port Path</b>		
Frequency Range	MHz	5 to 1002
Insertion Loss	dB	< 6.5
Return Loss	dB	≥ 18
<b>MoCA (Multimedia over Coax Alliance)</b>		
Frequency Range	MHz	1125 to 1525
Insertion Loss (Between Output Ports)	dB	< 32
Insertion Loss (Modem Port to any Output Port)	dB	< 30
Isolation <sup>4</sup> (any output ports to input port)	dB	≥ 36
Isolation <sup>5</sup> (input port 1125 to 1225 MHz to any output ports)	dB	≥ 23
	1225 to 1525 MHz	≥ 26
Isolation <sup>6</sup> (between modem port and input port)	dB	≥ 28
<b>General</b>		
Input Voltage	VDC	12 to 16
Power	--	A-PA-1260515U
Power Consumption	W	6.5
RFI Shielding	dB	≥ 110
Nominal Impedance	Ohm	75
Operating Temperature	°C (°F)	-40 to +60 (-40 to 140)
Surge Withstand	RF Ports & Power Adapter Power Port	Conforms to ANSI/SCTE 81 2012, IEEE C62.41 Cat. B3 Waveform Conforms to ANSI/SCTE 81 2012, IEEE C62.41 Cat. A3 Waveform
F-Port Tightening Torque Withstand	in lbs	> 60
F-Port	-	≥ ±15 PSIG; Patented DSM® Digital Seizure Mechanism
Regulatory Standards	-	RoHS Compliant. CE Compliant. (EN50083-2:2006)

Notes: 1: Includes IC noise figure plus passive loss from input port to IC input. 2: 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. 3: Test condition - 2 ch at rated output. 4: Minimum upstream isolation, any amplified output port to input port. 5: Minimum downstream isolation, input port to any amplified output port. 6: Minimum bi-directional isolation, passive modem port < > input port.



DSM: Pat No. 6,450,836 B1 and Pat. No. 6,250,960



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