PARADISE DATACOM

PCMA-70

Satellite Bandwidth Extender

OPTIMIZE YOUR SPACE SEGMENT COST

Cut bandwidth costs and increase the capacity of your satellite networks with the PCMA-70 Series of Satellite Bandwidth Extenders from Paradise Datacom. This unit uses ViaSat's patented Paired Carrier Multiple Access (PCMA) technology to reduce satellite bandwidth needs by up to 50 percent.

By simply adding the device to your satellite network, you can expand the capacity of transponders, free up bandwidth for more applications, and lower your network's operating costs. For example, while satellite space segment costs can vary greatly depending on location and usage, a network operator paying $5,000 per MHz per month for 20MHz can save up to $600,000 per year on bandwidth by using the PCMA-70.

The PCMA-70 boosts the capacity of your satellite transponder space by combining the uplink and downlink transmissions into the same bandwidth. While most satellite transmissions require separate frequencies to transmit and receive, this device enables two different signals to overlap in frequency, which increases the bandwidth available to the system.

The appliance uses an adaptive self-interference cancellation technique to subtract your transmitted signal to recover the desired signal. The canceller works with all modulation and FEC techniques on "bent pipe", non-cross-strapped satellite networks to enhance the benefits of any advanced modulation techniques or turbo coding you may already use.

With a 1RU form factor, the PCMA-70 fits into a standard rack and interfaces with any digital satellite modem. The device cancels signals with bandwidths of 1 to 36 MHz.

FOR BANDWIDTH-LIMITED NETWORKS

Overlap Satellite Signals for Bandwidth Savings

- Cut satellite space segment costs
- Increase network capacity
- Free up bandwidth for new applications
- Lower the cost of satellite networking

One Device for Multiple Network Applications

- Star (Hub/Spoke; One-to-Many)
- FDMA Mesh (Single Satellite Hop; Many-to-Many)
- Hybrid Star Mesh
- Single Carrier Per Channel (SCPC)
- Co-located multi-carrier
- Demand Assigned Multiple Access (DAMA) voice and data networks

Broad Compatibility

- Modem and waveform agnostic
- Works with all standard modulation types (Spread, BPSK, QPSK, 8-PSK, 16-ary, etc.)
- Coding independent (works with Viterbi, Reed-Solomon, LDPC, Turbo, DVB-S2, etc.)

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SPECIFICATIONS

WAVEFORM AND PERFORMANCE SPECIFICATION

Compatibility	Modem and waveform agnostic; Standard modulation types (Spread, BPSK, QPSK, 8-PSK, 16-ary, etc); Coding-independent (works with Viterbi, Reed-Solomon, LDPC, Turbo, DVB-S2, etc.)
Frequency Range	70 MHz (52 to 88 MHz)
Frequency Tunability	1 kHz steps
Signal Bandwidth	1-36 MHz
Acquisition Time	< 50 milliseconds
Self-interference Suppression	> 25 dB (typically 30 dB)
Phase Noise Added	< 1 degree rms integrated to 20 MHz
Receive IF Input Level	-30 to +10 dBm
Reference IF Input Level	-35 to -5 dBm
IF Output Level	-35 to -5 dBm

CHANNEL CONDITIONS SUPPORTED

Frequency Error	up to ±100 kHz
Channel Gain Change Rate	up to 1 dB per second
Round Trip Propagation Time	User selectable from 0 to 300 msec
Adjacent Carrier Interference	Suppression performance does not degrade in presence of adjacent channels
Non-Linear Transponder Operation	May be operated in the non-linear region of transponder

HARDWARE

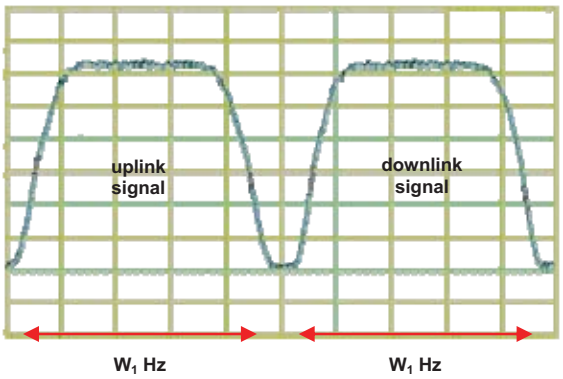
Packaging	1RU 19 inch rack mountable
Power	90 to 264 V AC 50/60 Hz (auto-sense) 110 Watts
Weight	6.8 lbs (3.1 kg)
Cooling	Forced air
Operational Temperature	0 to 45 °C
Non-Operational Temperature	-20 to 60 °C
Humidity	10 to 95% non-condensing
Altitude	0 to 3050 meters operational; 0 to 12,200 meters non-operational
Electro-Magnetic Compatibility	Tested to EN 55022 and FCC Class A Power supply certified to FCC/CE
Input and Output Connectors	BNC Female 75 ohm unbalanced
Management Interface	Ethernet 10/100 Base-T; SNMP
Built-in Diagnostics	Included
Redundancy	Configurable for 1:1 redundancy

MODELS

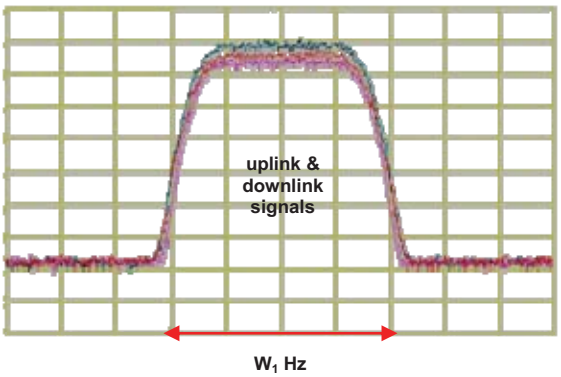
PCMA-70-2	2 MHz range
PCMA-70-5	5 MHz range
PCMA-70-10	10 MHz range
PCMA-70-20	20 MHz range
PCMA-70-36	36 MHz range

Redundant kits are available in the 10, 20 and 36 MHz ranges and include (2) PCMA-70 units plus a redundant switch and associated cabling.

OVERLAP TRANSMIT AND RECEIVE CHANNELS FOR BANDWIDTH SAVINGS



Typical satellite transmission with separate uplink and downlink frequencies



Paired-Carrier enabled transmission; Can save 50% on space segment

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