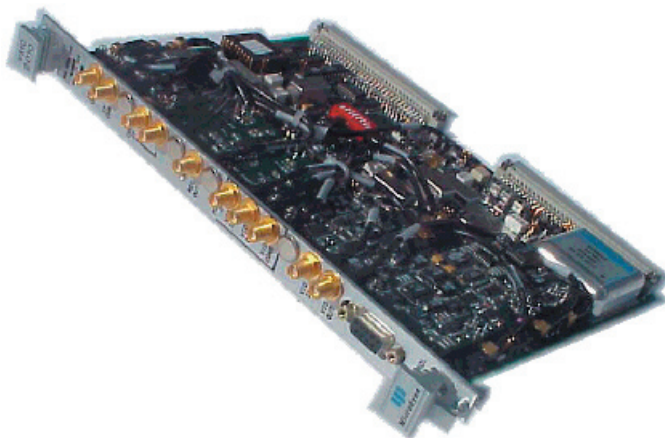




FEATURES

- Compact VME-Based Simultaneous Pre and Post Detection Combining
- Combiner systems can provide a +9 dB link margin over a single channel system
- Optimal Ratio Combining with AM + AGC Control for high fade rate performance
- Wide bandwidth input works with all receiver 70 MHz IF bandwidths
- Unit has automatic Pre-D input level adjustment
- Processes PCM/FM NRZ-L Data Rates from 1.0 Mbps to greater than 20 Mbps
- Compatible with VMR-2000 Wideband Receivers
- Complete Remote Control with Extensive Status Functions
- CE Certified as Compliant to 89/336/EEC
- Field Proven Design

DESCRIPTION

The VMC-2070 VME based Telemetry Combiner is designed to work with two VMR-2000 WB Receivers and provide the user with Optimal Ratio simultaneous Pre and Post Detection Combining.

Applications include all types Combining such as Polarization, Space, and Frequency Diversity. An integral dual bandwidth FM Demodulator handles data rates from 1.0 Mbps to over 20 Mbps.

The unit provides up to +3dB static S/N improvement with equal input S/N ratios.



communications

Specifications

General..... Simultaneous Pre and Post Detection Dual Channel Combiner, AGC Controlled, including an integral AM AGC system to maintain optimal ratio combining at extremely fast fade rates

Combiner Mode Selection..... Dual Channel Optimal Ratio, Optimal Select (Selects the strongest Ch 1 or Ch 2), Channel 1 only select, and Channel 2 only select

Signal-to-Noise Improvement

Equal S/N ratio 2.5 dB minimum

Unequal S/N ratios $S/N \text{ Combined} = 10 \log (Pr_1 + Pr_2) - .5 \text{ dB}$, Pr_1 and $Pr_2 = C/N$ power ratio in each Channel

Common Mode Rejection/

Control Signal Rejection..... Less than .5 dB variation in output with variations of AGC inputs over their full range

AGC Control Input 0 to -5.0 Vdc, Ch 1 pin 3, Ch 2 pin 4 of front panel D connector, 10k ohm input Impedance

AGC Input Slope Approximately Logarithmic, Scaled at 20 dB/Volt

AGC Level AGC Input Level control is monitored on the status bus

Combined AGC Output on pin 7 of front panel D connector, Level 0 to -5 Vdc, Maximum load 1k ohm or greater

Post Detection Combiner Mode

Input / Output Frequency 10 Hz to 5 MHz

Input Level 0.5 to 2.0 Vpp

Input / Output Monitor Ch 1, Ch 2, & Comb Level on status bus

Output Level Control The Output Level Programmable in 1 dB steps 0 to 20 dB

Input / Output Connector SMA female, two each, one for Ch 1 and Ch 2

Input / Output Impedance 75 ohms, VSWR 2.1:1 Maximum

Output Level 0.5 to 2.0 Vpp (programmable)

Pre-Detection Combiner Mode

Input/Output Frequency 70.0 MHz, Input Bandwidth = 40 MHz

Input Level -10 dBm ± 5 dB

Input Impedance 50 ohms, VSWR 2.1:1 Maximum

Input Connector SMA female, two each, one for Ch 1 and Ch 2

Combined IF Output 70 MHz at -10 dBm

Output Connector SMA female, 50 ohms, VSWR 2.1:1 Maximum

Tracking Range ± 150 kHz sweep and tracking range

Demodulation Demodulator (FM only)
Dual Bandwidth, Med. and Wide Selectable

Demodulation Response 15 MHz analog, 20 Mbps PCM/FM NRZ-L codes

Video Output Level 4 Vpp Max. adjustable over 63 dB in 1 dB steps

Video Output Impedance 75 ohms unbalanced

Video Output Coupling AC or DC programmable

Video Output Filters Four Selectable plus Bypass.
Bandwidth determined by IF bandwidth or customer specified

Video Output Connector Front Panel SMA Female

Pre-D Record Output

Frequency Single Output Customer Specified

Pre-D Output Impedance 75 Ohms

Pre-D Output Level 2 Vpp, minimum

Pre-D Data Bandwidth $\pm 90\%$ of Center Frequency
Typical

Ch 1 LED

Ch 2 LED

Comb LED

Select LED

Lock LED

OPR LED

RFI/EMI

Power Consumption

VME Communications

Size

Operating Temperature

Storage Temperature

Operating Altitude

Storage Altitude

Operating Humidity

Channel 1 selected for output

Channel 2 selected for output

Combined selected for output

Best Signal Selected for output

Pre-D Combiner is phase locked

Not used

CE certified and tested to:
89/336EEC

25 Watts Typical

A16/D08(E0) Register-Based

Single Slot 6U, "B" size card

0 to +50 degrees C

-55 to +65 degrees C

To 15,000 feet

To 50,000 feet

Up to 95% non-condensing

Monitor & Control Functions

Combiner Mode Select	Ch 1/Ch 2 AGC Level	Combined AGC Level
Post-D Video Out	Ch 1/Ch 2 Post-D Video Levels	Post-D Comb Video Output
Pre-D Combiner Lock	Demodulator Video Bandwidth	Demodulator Video Bandwidth Level
Internal/External Demodulator Select	Demodulator Video Polarity	FM Demod Auto Zero
Auto/Manual Video DC Offset	Demodulator Video Coupling	Demodulator Deviation Monitor
	Demodulator Tuning Meter	Demodulator FM Bandwidth



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