Wide Band Systems, Inc.

Technical Bulletin

SUMMARY OF SPECIFICATIONS
IFM RECEIVER 0.5 –18.0GHz

ELECTRICAL OPERATING SPECIFICATION

Frequency Measurements Requirements

Operating Frequency Range	**0.5 – 18.0GHz**
Unambiguous Bandwidth	**18.0GHz minimum**
Mean Frequency Resolution	**3.0MHz**
Frequency Accuracy	**6.0MHz RMS**
Signal Level Range	**-50 to +10dBm**

Amplitude Measurement Requirements

Minimum Number of Bits	**8 (eight)**
Resolution	**0.5 dB/bit nominal**
Linearity	**Equal or better than 2dB**
Absolute Accuracy	**4dB maximum**
Monotonicity	**For any increase in signal level of 1.0dB, the measured signal must not decrease**

Time-of-Arrival (TOA) Measurement Requirements

Minimum Number of Bits	**32 (thirty-two)**
Resolution	**Programmable from 25ns to 800ns, min**

Pulse Width Measurement Requirements

Minimum Number of Bits	**16 (sixteen)**
Resolution	**25ns, minimum**
Range	**100ns to CW**
Accuracy	**50ns, maximum**

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Timing Requirements

Throughput Time	**The time from when the RF enters the IFM until a DATA READY indication must be 550ns maximum**
Recovery Time	**The unit must recover to full sensitivity within 100ns after the end of a CW input at +6 dBm.**
Processing Blind Time	**The unit must process two separated pulsed signals when the time between the leading edge of DATA ACKNOWLEDGE and the leading edge of the subsequent DATA ACKNOWLEDGE is greater than 250ns**
Standard Video Timing	**The time from when the RF enters IFM until a STANDARD VIDEO indication is issued must be 500ns maximum**
Fast Threshold Timing	**The time from when the RF enters the IFM until a FAST THRESHOLD indication is issued must be 200ns maximum**
Data Ready Timing	**The time from when a STANDARD VIDEO indication is issued until a DATA READY indication is issued must be 50 10ns**
Duty Cycle	**The combination of pulse width, pulse amplitude, or duty cycle cannot cause the false generation of a DATA READY output**
Minimum Input S/N Ratio	**+3dB minimum for full accuracy**
Maximum RF Input Power	**+17dBm CW maximum (no damage)**
RF Input VSWR	**2.0 : 1 typical**

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External Threshold Level **A 8-bit input data word**

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INPUT/OUTPUT INTERFACE

Control Input Logic Requirement

Data Acknowledge	**Logic "H" = normal state. When DATA ACK transitions to logic "L" state, the output data must be held in the output registers until the DATA ACK returns to logic "H" state. Pulse width of DATA ACKNOWLEDGE must be 50ns to 100ns**

Output Logic Requirement

Fast Threshold	**Logic "L" <100ns from RF input leading edge**
Standard Video	**Logic "L" <500ns from RF input leading edge**
Data Ready	**Logic "H" initially. This must change to logic "L" when the frequency data has settled, and return to logic "H" when DATA ACKNOWLEDGE is supplied to IFM**
Out Of Band Flag	**Active low when RF input frequency is more than 50MHz above or below band edge**
CW Flag	**Active low when RF input pulse width exceeds a preset limit. Limit must be settable, via serial interface, from 6.4 micro seconds to 102.4micro seconds**
Data Invalid Flag	**Active low when data produced is of questionable accuracy**
Pulse-on-Pulse Flag	**Active high**
Pulse-on-CW	**Active high**

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MECHANICAL SPECIFICATIONS

Physical Dimensions	**15 x 10 x 5in. maximum**
Weight	**12lbs. maximum**
Cooling	**Conduction cooling at mounting surface**

ENVIRONMENTAL CONDITIONS

Temperature

Storage Environment	**-55° C to +85° C**
Mounting Surface (operating)	**-50° C to +85° C**

Vibration	**MIL-E-5400T Fig. 2 Curve lla 5 to 500Hz 0.1 inch pp or 2G**
Shock	**MIL-E-5400T 3.2.24.6.1 15 G x 11ms, 3 times x6 directions**
Relative Humidity	**MIL-E-5400T 3.2.24.4, 95% RH**
Altitude	**0 to 3000m**

WARRANTY

Wide Band Systems, Inc. warrants against IFM deterioration of performance specified above for twelve (12) months after delivery, except in the case of failures attributed to the user.

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