

# TESTEM RDW

## - FM telemetry diversity receiver -

e.g. for applications in telemetry and data link systems, avionics and marine

- wide frequency range: VHF, P band and UHF versions available
- fully programmable via serial Interface
- industrial temperature range
- ruggedized for harsh environments
- 10<sup>th</sup> order base band filter programmable
- baseband response may include DC
- software controlled smart diversity combiner generates soft transition between the two channels and improves the S/N up to 3 dB
- high sensitivity
- high dynamic range
- altitude unlimited
- different data output
- 10 to 36 V DC isolated power supply

### SPECIFICATIONS:

#### GENERAL

Description FM telemetry diversity receiver  
 Device type RDW

#### RF SECTION

Frequency range (version V) 220 ... 400 MHz  
 Frequency range (version U) 380 ... 480 MHz  
 Frequency range (version K) 100 ... 200 MHz  
 Synthesizer step width 25 kHz (12.5 kHz Vers.S)  
 Antenna impedance 50 Ω  
 VSWR 2:1 (maximum)  
 Reference oscillator stability 5 ppm (1 ppm typical)  
 Noise figure ≤ 6 dB (4 dB typical)  
 Image & spurious rejection ≥ 70 dB (minimum)  
 Local oscillator radiation -57dBm (max.)@ 0-1GHz  
 -47dBm (max.)@ >1-4GHz

#### MODULATION

FM deviation (version H) ± 50 kHz to ± 500 kHz  
 FM deviation (version M) ± 10 kHz to ± 100 kHz  
 FM deviation (version N) ± 2 kHz to ± 10 kHz  
 FM deviation (version S) ± 2 kHz to ± 3 kHz  
 Frequency response (vers.H) 500 kHz (-0.5 dB)  
 Frequency response (vers.M) 160 kHz (-0.5 dB)  
 Frequency response (vers.N) 10 kHz (-0.5 dB)  
 Frequency response (vers.S) 2.5 kHz (-0.5 dB)  
 low-end frequ. response (vers.A) 1 Hz (-1 dB)  
 low-end frequ. response (vers.D) DC

#### SYSTEM CHARACTERISTICS

Tuning method PLL synthesizer  
 Temperature compensation digital  
 Isolation isolated power supply inp.

#### OUTPUTS

Digital modulation output TTL / RS422  
 Analog output (differential) 1 – 10 Vpp (programmable)  
 Analog output (single ended) 0.5 – 5 Vpp (programmable)  
 Status output H=ok, L=warning/error Field  
 strength output (RSSI) 50mV/dB(-100dBm=1.5V)  
 Analog output impedance 50 Ω  
 Modulation sense polarity programmable



#### INPUTS

Multi function I/O default = ON / STANDBY

#### POWER SUPPLY

Supply voltage 10 ... 36.0 V DC (isolated)  
 Supply current 400 mA @ 12V  
 190 mA @ 28V  
 Reverse polarity protection max. 47 V DC (no time limit)

#### ESD PROTECTION

Peak voltage (IEC 1000-4-2) ±8 kV (contact discharge)  
 Peak voltage (MIL 833-3015.7) ±15 kV  
 Peak current (Supply Voltage) 100 A (8/20µs)  
 Peak current (all other I/O pins) 20 A (8/20µs)

#### ENVIRONMENTAL

Operating temperature -40 °C ... +85 °C (case temp.)  
 Humidity 95% RH  
 Altitude unlimited  
 Vibration (random) 0.1 g<sup>2</sup>/Hz (20Hz-2kHz)  
 Vibration (sine) 20g (20Hz-2kHz)  
 Shock (½ sine) 100 g peak (11ms)

#### PHYSICAL

##### CHARACTERISTICS

Dimensions(excl. connectors) 140 x 80 x 20 mm  
 Supply/signal connector DSUB-15-HighDensity male  
 AMP AMLIMITE HD-20  
 Antenna connector 2 x SMA female,  
 optionally 2 x BNC/TNC