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[AIS AtoN] MANDO - 301/303



FEATURES

- Type 1: MANDO – 301
Type 3: MANDO – 303
- Fully satisfies the technical standards for AIS AtoN, IEC 62320-2
- Ultra low power consumption
- Remote configuration control (Type 3 only)
- Support meteorological & hydrological message
- Support lantern monitoring
- Slim PCB module and robust housing (IP67)
- Design flexibility upon customer's request

Specifications

STANDARD COMPLIANCE

IEC 60945
IEC 61162-1
IEC 62320-2
IEC 61108-1/2
ITU-R M.1371
IALA A-126

POWER SUPPLY

Input Voltage 12V DC nominal

POWER CONSUMPTION @ 12V DC

FATDMA $\leq 0.4\text{Ah/day}^*$
RATDMA $\leq 1.1\text{Ah/day}^*$
* At 12.5W; single channel; transmission scheduled every 3 min

TRANSMITTER PERFORMANCE

TX Frequency Range 156.025 MHz - 162.025 MHz
Frequency Accuracy ± 3 ppm
Channel Space 25 KHz
Channel Protection 1 sec max on air
Modulation GMSK / FM
Data Rate 9,600 bps
TX Power Control 2 / 5 / 12.5 watts (programmable)
Carrier Power Error 1.5 dB (normal)
Nominal Impedance 50 Ω

RECEIVER PERFORMANCE (Type 3 only)

Number of Receivers 2
RX Frequency Range 156.025 MHz - 162.025 MHz
Frequency Stability ± 3 ppm
Data Rate 9,600 bps
PER 20% at -107 dBm
Co-Channel Rejection 10 dB at 10 KHz offset
Adj. Channel Rejection 70 dB at 25 KHz
Nominal Impedance 50 Ω

GPS RECEIVER

Receiving Channels 50 channels
Tracking & Navigation Sensitivity ≥ -159 dBm
Reacquisition Sensitivity ≥ -159 dBm
Horizontal Position < 2.5m Autonomous
< 2.0m SBAS
Receiver Type SBAS: WAAS, EGNOS, MSAS, GAGANZ

ENVIRONMENTAL

Operating Temperature $-25^{\circ}\text{C} \sim +55^{\circ}\text{C}$
Storage Temperature $-30^{\circ}\text{C} \sim +70^{\circ}\text{C}$
Relative Humidity 95% RH at 40°C

- 1) One RS-232 port for configuration
- 2) One RS-232 port (optional)
- 3) One isolated control output – N.C. relay for alarm indication (default) or other control
- 4) One isolated status input channel w/ 5 mA constant current sink for external device status input (e.g. read light fault, light on/off, etc.)
- 5) Four ADC channels for external sensors

CONNECTOR

- 1) VHF connector (M type)
- 2) GPS connector (TNC type)

PHYSICAL

Size in mm(w) 140 mm
Size in mm(h) 155 mm
Size in mm(d) 60 mm
Weight ≤ 1.5 kg
Case Material Aluminium Alloy