

MARITIME PATROL AIRCRAFT AND SHIPBOARD MULTI-CHANNEL SONOBUOY RECEIVER

AN/ARR 502B

SHIPBOARD AND FIXED WING MARITIME PATROL AIRCRAFT

The AN/ARR-502B Multi-Channel Sonobuoy Receiver System is Flightline Systems' original 502 style Sonobuoy Receiver. This Receiver, designed to satisfy the requirements of both current and future Fixed-Wing Maritime Patrol Aircraft and shipboard use, offers excellent RF and acoustic performance.

World-class Receiver - a 16 acoustic channel receiver

- Excellent reception of very weak signals
- Direction Finding/Sonobuoy Positioning System

FLEXIBLE, POWERFUL TECHNOLOGY

- Internal acoustic processor
- Acoustic Test Signal Generator (ATSG), On Top Positioning Indicator (OTPI) support
- AM demodulation
- Sonobuoy compatibility: DIFAR, LOFAR, RANGER, BT, CASS, DICASS, VLAD, CAMBS, BARRA, ERAPS, HLA, ATAC, HIDAR, etc.



FEATURES

- Standard 99 RF channels
- Up to 32 acoustic channels analog and or digital sonobuoys
- Base frequency range: 136 MHz - 174 MHz
- Receiver sensitivity -113 dBm
- Dynamic range of > 100 dB
- Acoustic Test Signal Generator (ATSG)

AN/ARR 502B



KEY CHARACTERISTICS

- Standard 99 RF channels (495 subchannels supported)
- 16 simultaneous acoustic channels with any mix of analog or digital sonobuoys
- Noise figure: 5 dB
- Base frequency range: 136 MHz - 174 MHz
- Accommodates RF signals over the range of -113 dBm to -7 dBm
- Voltage standing wave ratio (VSWR) doesn't exceed 2.0:1 over the base frequency range
- D73 dB third order inter-modulation
- FM receiver sensitivity: A minimum signal-plus-noise/noise ratio of 12 dB at a 0.5 μV input level, of 20 dB at a 1.0 μV input level
- AM immunity: progressive AGC with programmable time constants for improved multipath immunity
- Audio Distortion is < 1% from 2 Hz to 5 kHz, and <3% from 5 kHz to 50 kHz for input levels of 10 to 100,000 μV
- Interference rejection: Greater than 125 dB out of band; Greater than 80 dB in band
- Sonobuoy compatibility: DIFAR, LOFAR, RANGER, BT, CASS, DICASS, VLAD, CAMBS, BARRA, ERAPS, HLA, ATAC, HIDAR, etc.
- RS-422 data bus. optional 1553 or ethernet control interface
- RF Scan (clear channel for RFI mitigation)
- Input Power: 115 VAC 400Hz 3 Phase WYE
- Power Consumption: ~ 220W

SUPPORTABILITY

- Comprehensive built-in-test (BIT) provides Go/No Go indication, system maintenance, and fault isolation capability
- No special test equipment required

GENERAL CHARACTERISTICS

- Extremely low acoustic receiver baseband noise floor
- Active mixer technology for exceptional third order inter-modulation and spurious response performance
- Threshold-extending FM detector with programmable time characteristics for sonobuoy type optimization

- Extended acoustic base band frequency response yields superior low frequency response and outstanding infrasonic performance
- Provides the best bearing accuracy for multiplexed sonobuoys and best data error rate for digital sonobuoys
- High resolution, self-calibrating signal strength indication
- Resistance to microphony: Excellent
- Internal acoustic pre-amplifier
- Exceptional EMI/EMC performance
- High resolution local oscillator tuning to optimize performance with off-tuned sonobuoys and for operating in a countermeasure environment
- Internal forced-air systems cooling, no external cooling systems required

PHYSICAL CHARACTERISTICS

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WEIGHT	< 51.0 LBS (< 23 KG)
LENGTH	19.11 IN (485.5 MM)
HEIGHT	9.76 IN (247.9 MM)
DEPTH	15.10 IN (383.5 MM)

RELIABILITY/MAINTAINABILITY FEATURES

Category	Specification
MTBF	> 1,500 HOURS @ AIC + 25° C PREDICTED
MTBCF	> 10,000 HOURS @ AIC + 25°C PREDICTED
MTTR	16 MINUTES FOR LEVEL 1, BASED ON LRU REPLACEMENT ON AIRCRAFT MAINTENANCE PHILOSOPHY: LEVEL 1 LRU REPLACEMENT ON AIRCRAFT; LEVEL 2 SRA REPLACEMENT OFF AIRCRAFT