Ultra ELECTRONICS

PASS II
PORTABLE ACOUSTIC SONOBUOY SIMULATOR

Flightline Systems' PASS II offers superior performance for integration or operational testing of airborne and shipboard Acoustic Systems in either demanding operational or controlled laboratory environments. It supports generation and reception of either RF modulated or baseband sonobuoy signals via radiated or direct connections.

APPLICATIONS

Specific applications of the PASS unit include:

- Evaluation and calibration of acoustic system performance
- Troubleshooting of acoustic suites individual Line Replaceable Units (LRUs) e.g. VHF antenna, receiver, UHF downlink, acoustic processor
- Acoustic Suite Health and Welfare / Preflight Operations Checks (end-to-end test of downlink transmitter, receiver, AP, and OTPI)
- Bit Error Rate Calculation for Flightline wideband sonobuoy receivers
- Signal source to aid in training technicians and operators

Sonobuoys supported include[1]:
DICASS, DIFAR, VLAD, LOFAR, BATHYTHERMOGRAPH, HIDAR, BARRA, ADAR, CAMBS, (Some sonobuoy simulations are export-controlled)

SONOBUOY SIMULATIONS

- Operator Defined – Operator selects individual parameters for sonobuoy simulations
- More Complex - Actual mission data can be formatted in a PASS II PC application and streamed from the PC or input through the GigE interface for playback

FEATURES

- Portable, MIL-STD-1472 one-man lift compliant
- Extremely stable baseband frequency and FM deviation levels
- Sunlight readable, menu-driven AMLCD touch panel
- Operates from 115 VAC, 28 VDC or internal Li-Ion battery

FUTURE ENHANCEMENTS

- SDSR Bit Error Rate Test
- ALFEA simulation
- AIS simulation
- User-generated simulations
- Store/Recall of multiple instrument setups
- Support of CAMBS commands
- Frequencies operable via external PC
- Pre-defined - an operator can command any of five (5) pre-defined simulations
- FSK Out for transfer of NRZ formatted digital data directly to an acoustic processor
- ADLFP future support
- AFLEA/SSQ-926 future support
- SSQ-125-ADLFP future support
- CAMBS future support

1 DIFAR/ SSQ-53F/GPS, 954 VLAD/SSQ-77, LOFAR-OMNI / SSQ-41, 906, SSQ-53F/GPS CSO (Constant Shallow Omni) Mode, SSQ-53F /CO/XCO (Calibrated Omni)/SSQ-57, BT SSQ-36, 536, 937, DICASS /SSQ-62, HIDAR/SSQ-955, CAMBS /SSQ-963, BARRA/SSQ-801,981, ADAR/SSQ-101

PORTABLE ACOUSTIC SONOBUOY SIMULATOR II

SIMULATIONS

SONOBUOY SIMULATIONS CAN BE PRE-DEFINED OR COMPLEX SIMULATIONS

Accurate/deterministic simulations of Active or Passive analog and digital Sonobuoys on any of the 99 operational sonobuoy frequencies. PASS II generated simulations include multiple single tone targets with range, speed and bearing information representative of the sonobuoy being simulated. Environmental variables such as noise, magnetic variation and target strength are also modeled. Additional capability of streaming precompiled simulations for both analog and digital buoys

ACOUSTIC CALIBRATION TONE

A signal frequency accurate to 0.01% and deviation accuracy of 0.1% can be generated for calibration of the acoustic suite.

RF OUTPUT SIGNAL PARAMETERS

- Touch panel input selection of any of 99 operational sonobuoy frequencies
- VHF Signal level strengths generated to 0 dBm supported, power amplification optional
- Direct digital modulation of FSK or GMSK digital sonobuoy types with shaped data for controlled RF spectrum

VHF RF SIGNAL GENERATION

- The PASS II produces a VHF RF signal modulated with data representative of the simulated sonobuoy
- Generation of CFS acknowledge response on VHF sonobuoy simulations

UHF DOWNLINK COMMAND GENERATION

- Generation of all CSG and CFS commands, activated by operator input to touch panel. Output is available as analog modulation signal or modulated RF

UHF DOWNLINK COMMAND RECEPTION

- Decoding of all CFS, CSG & CAMBS transmissions received
- Outputs demodulated baseband
- Provides calibrated received signal strength report
- Signal strength range up to -10 dBm

INTERFACES

- UHF Input to receive UHF command signals from platform's acoustic system
- VHF Uplink to transmit VHF signals to a platform acoustic system
- Modulation Output for transfer of baseband signals direct to an acoustic processor
- Headphone output for aural monitoring
- Computer and Control Interfaces include 2 USB(Master and remote), and GigE Ethernet
- External Input for receipt of baseband signals
- Self test of all RF & baseband signals assures tester confidence

CHARACTERISTICS

- Dimensions
  - Height = 9.56 IN (242.8 MM)
  - Width = 15.06 IN (382.5 MM)
  - Depth = 12.50 IN (317.5 MM)
- Weight <30 LBS (13.6 KG)
- Power
  - 50-400 HZ, 115–230 VAC
  - 28 VDC
  - Lithium Ion Battery
- Storage temperature range of -20°C TO +45°C
- Operating temperature range of -10°C TO +40°C
- UHF & VHF antennas included
- NEMA 4 rated LCD touch panel
- Signal Accuracy
  - Baseband and RF frequency TO 0.01%
  - FM deviation level to 0.1%