

Passive Search Sonobuoy and variants (HIDAR)

AN/SSQ-955 and Variants



Key features

- ITAR -free
- High performance passive directional sonobuoy for littoral and deep water operations
- G-size
- Designed for high noise environments and multistatic operations
- Performance rated for sea-state 5 operation and sea-state 7 survival
- Dual mode: DIFAR compatible legacy mode and Digital mode for multistatics.
- Autonomous Function Select (AFS): Sonobuoy operational parameters are selectable by two buttons and LED display prior to launch.

Overview

The Ultra Maritime SSQ-955 High Instantaneous Dynamic range Analysis and Recording (HIDAR) sonobuoy combines the world's best DIFAR sensor with an all-digital electronics design in a lightweight G-size package. This combination takes full advantage of digital signal processing to offer a buoy that outputs distortion-free acoustic data with a high dynamic range and superb linearity across an extended acoustic spectrum.

- All digital design
- Ideal for high ambient noise conditions
- Fast recovery in transient overload conditions
- Well suited to low frequency active receiver for multistatic operations

Technical Specification

The SSQ-955 is designed for internal carriage and release from maritime patrol aircraft and maritime helicopters, so all buoy settings are simple to choose and set manually through the AFS selector.

After release from the aircraft, a parachute limits the rate of descent to approximately 30 m/s. On water entry, a surface float is deployed, containing a VHF transmitter for acoustic data telemetry. Omni-directional and directional acoustic sensor signals are transmitted to an airborne or ship-based acoustic processor for passive detection of narrowband, broadband and transient submarine acoustic emissions. The buoy will also detect low frequency active emissions and echoes in a multistatic or active adjunct role.

Key benefits

- In the 'HIDAR' or 'H' mode, digitised acoustic data is transmitted with 14-bit precision.
- RF spectrum shaping allows operation on adjacent RF channels.
- The digitally synthesised 'Standard' or 'S' mode is fully compatible with existing DIFAR processors.
- Offers all the advantages of in-buoy digital processing, and extended dynamic range and bandwidth.
- Safety mechanisms are included to prevent actuation or deployment.

Sonobuoy Characteristics

Description	Passive directional sonobuoy			
Dimensions	'G' size Length:	419.1 mm (16.5 in)		
	Diameter:	123.825 mm (4.875 in)		
	Weight:	5.6 kg (12.3 lbs)		
Deployment	Platform speed:	50 kts to 375 kts		
	Platform altitude:	55 m to 9144 m (180 ft to 30,000 ft)		
Operating Depth	AFS programmable settings			
	SSQ 955 A/B:	30 m	140 m	300 m
	SSQ 955C:	15 m	30 m	60 m
	Time to full stabilisation:	100 s	180 s	240 s
	Alternate depth settings:	15 m	30 m	60 m
Operating Life	AFS programmable 1, 2, 3, 4, 5 and 6 hours. (Scuttles at end of life)			
RF Channel	Programmable Channels 1 to 99 (136 MHz to 173.5 MHz, 375 kHz spacing)			
Telemetry Mode	AFS Programmable			
	'HIDAR':	Coherent Gaussian FSK at 224 kbps		
	'Standard':	FM (conventional DIFAR compatible format)		
VHF Radiated RF Power	1 Watt nominal			
Acoustic Frequency Range (HIDAR mode)	Directional sonics telemetry:	5 Hz to 2000 Hz		
	Extended Omni (transient detection):	Up to 4000 Hz		
Acoustic Frequency Range (Standard mode)	Telemetry:	5 Hz to 3375 Hz		
	Full specification:	5 Hz to 2900 Hz		
	Improved bearing accuracy:	5 Hz to 2400 Hz		
Variants	SSQ 955A:	Calibrated buoy for Sound Pressure Level measurement		
	SSQ 955B:	Global Positioning System (GPS)		
	SSQ 955C:	Coastal Surveillance buoy with low salinity and shallow hydrophone depth settings for ice-edge or estuarine operations		



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NATO STOCK NUMBER
SSQ-955: 5845-99-210-2398
SSQ-955A: 5845-99-549-4947
SSQ-955B: 5845-99-131-8288
SSQ-955C: 5845-99-471-4425