UM SONOBUOYS

Passive Directional Multi-mode Sonobuoy

AN/SSQ-573

Key features

- Commandable DIFAR sonobuoy GPS
- A-size
- Dual-purpose to receive multistatic active echoes
- Dual-purpose passive and active receiver
- Provides exceptional passive performance
- LAU-126A SLC compatible
- CAD and gravity launch technique
- Retains 5Hz performance of Q-53D(3)
- Selectable analog and digital communication modes
- Compatible with most NATO sonobuoy processors

Overview

The Ultra Maritime SSQ-573 Directional Frequency Analysis and Recording (DIFAR) sonobuoy combines the proven passive acoustic performance of the SSQ-53D(3) DIFAR sonobuoy with an all-digital electronics design. The SSQ-573 is ideal for use as a receiver for multistatic active operations or as a passive receiver in high ambient noise conditions.

The SSQ-573 takes advantage of its digital signal processing capabilities to offer the user a choice of three communication modes: a low-noise analog DIFAR mode compatible with the SSQ-53D(3); an analog narrowband low-frequency active (LFA) mode with AGC; or a digital high-dynamic range mode. DIFAR mode is fully compatible with all NATO sonobuoy processors. In LFA mode the SSQ-573 receive band is matched to Ultra Maritime's SSQ-565 multistatic LFA source sonobuoy. LFA mode is supported by most sonobuoy processors. In the digital mode the SSQ-573 provides a high dynamic range GMSK digital signal.

Technical Specification

GPS position reporting is a standard capability provided in all three communication modes, greatly reducing operator workload by removing the need for frequent aircraft “ontops”. Both US and UK GPS reporting standards are available when in DIFAR and LFA modes.

The SSQ-573 incorporates both Command Function Select (CFS) and Electronic Function Select (EFS) capabilities. CFS commands allow the operator to select both communication and GPS reporting modes after launch. The SSQ-573 is powered by a seawater-activated battery.

Key benefits
Command Function Select (CFS):

- ITAR-free Canadian design
- Lightest A-size DIFAR sonobuoy on the market
- 5 year shelf life in sealed container
- 90 days unpacked storage life
- CFS Command Functions
- LFA mode with AGC for multistatic use
- Three operating modes: DIFAR, LFA, and Digital

Sonobuoy Characteristics

Description	Passive directional and MSA receive sonobuoy	
Mechanical Characteristics	‘A’ size Length:	914 mm (36.00 in)
	Diameter:	124 mm (4.875 in)
	Mass:	7.1 kg (15.6 lbs)
	C of G:	38.7 cm (15.25 in) from bottom end
	Ballistic Coefficient:	60 kg/m2
Power Source	Seawater-activated battery	
Deployment	Maximum Platform Speed:	370 kts
	Maximum Platform Altitude:	9,144 m (30,000 ft)
Temperature Range	Storage Temperature:	-40 °C to +70 °C
	Launch Air Temperature:	-20 °C to +55 °C
	Seawater Temperature:	-2 °C to +35 °C
Operating Depth	EFS programmable settings	
	Depths:	30m 60m 120m 300m
	Time to full stabilisation:	100s 125s 160s 240s
Operating Life	EFS programmable 0.5, 1, 2, 4, or 8 hours Scuttles after 8 hours regardless of life setting	
RF Channel	EFS programmable, 97 channels (136 MHz, 173.5 MHz, 376 kHZ spacing)	
VHF Radiated Power	1 Watt nominal	
Telemetry	DIFAR LA Mode:	FM (conventional DIFAR format)
	Digital Mode:	Coherent GMSK at 224 kbps
Acoustic Frequency Range and Sensitivity: DIFAR Mode	Frequency Response:	5 to 2400 Hz range
	Sensitivity, Directional:	122 ± 3 dB re 1 µPa at 100 Hz = 40 kHz peak dev
	Sensitivity, Omni-directional:	122 ± 3 dB re 1 µPa at 100 Hz = 25 kHz peak dev
LFA Mode	Frequency Response:	1411 to 2188 Hz range
	Maximum Deviation, Directional:	30 kHz peak deviation
	Maximum Deviation, Omni-directional:	16.5 kHz peak deviation
Digital Mode	Frequency Response:	5 Hz to 2010 Hz
	Extended Omni:	Sensitivity, 1 MSB=154.3 dB re 1 µPa 1 LSB (of 14)=76 dB re 1 µPa
CFS Commands	GPS mode, RF on/off. RF Channel, Scuttle, Operation	

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NATO STOCK NUMBER
SSQ-573: 5845-20-003-7766