

AN/ARC-232A MXF-4058

Very High Frequency / Ultra High Frequency (VHF/UHF) multi-band, multi-mode airborne radio communication system

The AN/ARC-232A, MXF-4058 radio is part of BAE Systems' new Starfire product line of software-defined radios (SDR). This modernized high performance VHF/UHF multiband, multi-mode communications radio is designed with extensive reserve capacity to support future enhancements across many fixed and rotary wing platforms.

Originally designed as an upgrade for the ARC-164 and ARC-232 radio systems, the new ARC-232A maintains the same form-factor and control interfaces and can utilize the same ancillaries, such as external cryptographic devices and the legacy remote control units. Some other key features in the AN/ARC-232A is the Automatic Direction Finding (ADF) and a repeater/retransmit capability.

This SDR provides the U.S. Department of Defense (DoD), NATO and coalition partners with interoperable, 30 to 400 MHz, fixed frequency, and modernized Electronic Counter-Counter Measures (ECCM) anti-jam capabilities for air-to-air and air-to-ground, operational, mission voice and data communications. With future capabilities in design, the first of many software-only enhancements will be the addition of the SATURN ECCM, which is driven by a mandate transition from HAVE QUICK I/II. Starfire airborne radios provide VHF 30 to 88 MHz, 108 to 174 MHz, and UHF 225 to 400 MHz frequency coverage. Designed to support military, maritime, and air traffic control (ATC) AM and FM voice and data communications with the potential to expand coverage to 2GHz. Field proven, the AN/ARC-232A communications system provides warfighters with tactical battlefield advantage for today and the flexibility needed for the future.



Features and benefits

- Software programmability permits a broad range of configurations with or without ECCM, such as SATURN, HAVE QUICK, SINCGARS, or a national ECCM.
- ADF capability supports operations with external direction finding equipment.
- Supports retransmission capability in repeater and cross-banding modes, enhancing flexibility.
- Future implementation of civil communications, such as APCO 25 and TETRA, will enable users from different agencies to communicate directly with each other.
- Small and lightweight, form and fit enhancement with extensive reserve capacity.
- SDR design allows for software-only enhancements and expandability, thus minimizing platform impact.

Physical characteristics

Nomenclature	Dimensions (inches)			Weight	Input power
	Height	Width	Depth	Max lbs.	Watts
MXF-4058 (RT)	4.840	4.950	7.730*	9.00	200
C-11718	2.240	5.250	5.440**	2.50	18***
MXF-243	3.000	5.750	5.450**	3.00	15***
MT-4838	1.325	6.750	5.490*	1.26	N/A
MT-6422	6037	6.750	8.250*	1.77	N/A

* Excluding handle hold-downs, and connector protrusions

** Protrusion behind panel (not including connectors)

*** Not including panel lighting

Radio system items

Nomenclature	Part No.	Description
MXF-4058	903148-801	Receiver/transmitter remote mount/HQ I/II/SATURN
C-12623	902319-80X	Remote Control (w/o Fill Port)
C-12624	902394-80X	Remote control (w/Fill Port)
MT-4838	707177-801	Mount
MXF-243	707597-801	Mount (w/Cooling Shroud)

"X" values above vary with lighting voltage and color options

General characteristics

Frequency range	30 to 87.975 MHz, 108 to 173.975 MHz, 225 to 399.975 MHz (expandable to 2GHz)
Channel spacing	8.33 kHz, 5 kHz and 25 kHz
Frequency accuracy	< 1 ppm
Remote mount	MIL-STD-1553, RS-422, Ethernet (optional)
Presets	99 Channels (expandable)

Encryption

Internal (optional)	Commercial AES
External	Compatible with KY-58/M, KY-100/M, & SY-100
Fill Port	DS 102 (ECCM/TRANSEC Fill)

Transmitter Characteristics

Power output	
AM	9 W
FM	20 W
Modulation	
AM	80%, 300 – 3200 Hz
FM	5.6 kHz Deviation, 300 – 3200 Hz
AM	80%, 16 kbps nonsecure/secure data

Modes of operation

AM	108 to 155.975 MHz, 225 to 399.975 MHz
FM	30 to 87.975 MHz, 130 to 173.975 MHz, 225 to 399.995 MHz
Freq. Range (max)	30 MHz – 2 GHz (optional)
Plain voice	A3E or F3E
Ciphered voice	A1D or F1D
Data transmission	A1D or F1D
ECCM options	HAVE QUICK I/II, SATURN, RPW, SINCGARS
Retransmit capability	Baseband Voice and Data, Guard Channel
General test method	MIL-E-5400 Class 1 (modified)
Temperature range	-40°C to 71°C operating
Altitude	55,000 ft
Random vibration	15 Hz to 2 kHz
Operational	11.5 g rms
Endurance	12.6 g rms
Other	Crash safety
Humidity	95%, 10 days
EMI/EMC	MIL-STD-461G
Primary power	MIL-STD-704A, 22 – 29 VDC

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