

AN/ARC-164A Starfire

Ultra high frequency (UHF) multi-band airborne radio communication system

The AN/ARC-164A is part of BAE Systems' new Starfire product line of high performance, software defined radios (SDR) with extensive design reserve capacity. Software upgradeable radio capabilities address obsolescence while providing a cost-effective path to future enhancements for the installed base of fixed and rotary wing platforms.

We pioneered HAVE QUICK, embedded, anti-jam, electronic counter-counter measures (ECCM), the predecessor of SATURN, which is the next generation of airborne radios. With more than 100,000 legacy systems fielded across 70 countries, our radio is positioned to provide enhanced communication capabilities for the most demanding environments. The Starfire product line supports new and third party control and flight management systems. The radio can communicate cipher text on all frequencies and modes when used in conjunction with external encryption such as TSEC/KY-58 VINSON or KY/SY-100M. The AN/ARC-164A provides warfighters with tactical battlefield advantage.



Features and benefits

- Small and lightweight, this SDR supports retransmission capability.
- The system offers excellent receiver sensitivity even when exposed to severe operating conditions.
- Automatic direction finding capability supports operations with external direction finding equipment.
- This SDR supports a broader range of waveforms and capabilities including potential for civil communications like APCO-25, and TETRA.
- Software programmability allows for a broad range of capability configurations with and without ECCM.
- Qualified to military standards, the radio meets domestic and international interoperable requirements for the U.S DoD, NATO services, and coalition airborne applications.

Physical characteristics

Nomenclature	Dimensions (inches)			Weight	Input power
	Height	Width	Depth	Max lbs.	Watts
MXF-4059 (RT)	4.840	4.950	7.730	9.00	200
C-11718	4.875	5.750	5.440	4.32	20
MXF-243	2.980	5.740	5.450	3.00	20
MT-4838	1.325	6.750	5.490	1.26	N/A

Radio system items

Nomenclature	Part No.	Description
MXF-4059	903148-801	Receiver/transmitter remote mount/HQ I/II/SATURN
C-11718	707793-806	Remote control (28 V lighting)
C-11718	707793-807	Remote control (5 V lighting)
MXF-243	902197-817	Remote control (5 V lighting)
MXF-243	902197-818	Remote control (28 V lighting)
MT-4838	707177-801	Mount

General characteristics

Frequency range	225 to 399.975 MHz (control dependent)
Channel spacing	5 kHz and 25 kHz 8.33 kHz with expanded VHF frequency range
Frequency accuracy	< 1 ppm
Remote mount	MIL-STD-1553, RS-422
Presets	99 channels (expandable)

Encryption

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

Transmitter

Power output	
AM	10 W
FM	16 W
Modulation	
AM	80%, 300-3,200 Hz
FM	5.6 kHz deviation, 300-3200 Hz
AM	80%; 16 kbps nonsecure/secure data

Modes of operation

AM	225 to 399.975 MHz
FM	225 to 399.975 MHz (control dependent)
Range	(max) 30MHz to 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, SINGGARS (available only with expanded VHF frequency range)
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 VDC-29 VDC

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