



# AN/USM-719

## Multi-Function Test Set

P/N: 90 000 121  
NSN: 6625-01-565-2569

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### Description

The AN/USM-719 is the next generation in ground support test equipment. Based on entirely new up-to-date technology and digital architecture; the AN/USM-719 is a leap forward in precision testing of the following systems:

- Transponder: Modes 1, 2, 3/A, C, 4 Mode S, EHS (Enhanced Surveillance) and Mode 5
- Interrogator: Modes 1, 2, 3/A, C, 4, Mode S, Mode 5, TCAS & ETCAS, Shipboard Processor
- ADS-B (Automatic Dependent Surveillance Broadcast) TX & RX
- TACAN (A/A, G/A and A/A Beacon)
- VSWR
- Built in powered KIV-78 Bay
- Available Accessory Package Option



**NOTICE**

*This commodity is intended for use subject to the International Traffic in Arms Regulations and may not be exported or transferred to a foreign party, either in their original form or after being incorporated into other end-items, without the prior written consent of the U.S. Department of State*

The AN/USM-719 Multi-Function Test Set provides unsurpassed reliability and ruggedness designed by an established and well recognized company with 50 years in the design and manufacture of aviation ground support and bench test equipment.



The AN/USM-719 large 4.75" x 3.5" in. color LCD (NVG compatible) screen and surrounding soft-keys and keyboard provides easy and quick access to a multiple of test screens menus, and display options affording single man operation, instant results, and a host of pre-programmed and manually variable parameters to meet the most demanding requirement's for testing of airborne navigation and secure transponder/interrogator systems.

### General Specifications

Packaging.....	MIL-PRF-28800F, Class 1
Size.....	16.25 W x 11.5 H x 11.0 D inches (max)
Weight.....	20 lbs. (operating) (max) 29.5 lbs (accessories and lid) (max)
Operating.....	Temperature -40° to +55° C
Battery Type.....	Lithium Ion (3)
Battery Life.....	8 Hours at 20% Duty Cycle
Battery Charger.....	Supplied
Power requirements.....	110 to 240 VAC, 50/60 Hz or 28 VDC ±20%, 20 Watts (No Crypto)

### Features

The AN/USM-719 is designed in a compact, waterproof and durable case. Instant one button GO/NO test can be performed based on stored parameters. The user also has the capability to manually select and vary parameters individualized for each system. All accessories are neatly stored in the Test Set cover and the battery charger is included.

Mode 4 and Mode 5 U.S. Department of Defense (DoD) AIMS International Program Office Approved.

Utilizes the KIV-78 appliqué for Mode 5 Interrogator and Transponder tests (not included).

Ideally suited for any temperature or region due to its self calibrating software.

Built-in battery charger and three (3) front panel replaceable "Lithium-Ion" batteries (included).

## Transponder Mode Specification

Transponder testing can be performed in an "AUTO" mode based on stored criteria or "Manual" Mode offering individually selected tests and detailed results.

Modes Tested:

- Mode 1
- Mode 2
- Mode 3A
- Mode C
- Mode S
- ELS (Elementary Surveillance)
- EHS (Enhanced Surveillance)
- ADS-B TX and RX
- Mode 4
- Mode 5
- EOR (End of Runway)

## Interrogator/TCAS Mode Specification

Interrogator testing can be performed in an "AUTO" mode based on stored criteria or "Manual" Mode offering individually selected tests and detailed results.

Modes Tested:

- Mode 1
- Mode 2
- Mode 3A
- Mode C
- Mode S
- Mode 4
- Mode 5
- TCAS/ETCAS
- Shipboard Processor Test
- OMNI/TAPER
- VSWR (Voltage Standing Wave Ratio)

## Transponder Test Specifications

### Test Set Transmitter\*

Output Frequency	1030 MHz / ±10 KHz
Output Power @ DC Port	-50 to -110 dBm / ±2 dBm
Output Power Radiated by Ant	10 to -68 dBm / ±3 dBm

### Interrogation PRF

#### Direct Connect

SIF	425 ± 5 Hz
Mode S short word	45-50 Hz
Mode S long word	13-16 Hz
Mode 5	212 ± 5 Hz

### Antenna Connect

SIF	235 ± 5 Hz
Mode S short word	45 – 50 Hz
Mode S long word	13 – 16 Hz
Mode 5	212 ± 5 Hz

### Test Set Receiver

#### Frequency

Measurement Range	1086.5 to 1093.5 MHz
Measurement Accuracy	±200 KHz

#### Power

Measurement Range	47 to 64 dBm
Measurement Accuracy	±2 dB (DC) ±3 dB (Ant-to-Ant)

#### Sensitivity (at UUT)

Measurement Range @ UUT Port	-50 to -100 dBm
Measurement Range @ UUT Ant	-50 to -100 dBm
Measurement Accuracy	±2 dB (DC) ±3 dB (Ant-to-Ant)

#### Reply Efficiency

Measurement Range	0 to 100%
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## Interrogator Test Specifications

### Test Set Transmitter\*

Output Frequency	1090 MHz / ±10 KHz
Output Power @ DC Port	-50 to -110 dBm / ±2 dBm
Output Power Radiated by Ant	10 to -68 dBm / ±3 dBm

### Test Set Receiver

#### Frequency

Measurement Range	1029.7 to 1030.3 MHz
Measurement Accuracy	±200 KHz

#### Power

Measurement Range	47 to 64 dBm
Measurement Accuracy	±2 dB (DC) ±3 dB (Ant-to-Ant)

#### Sensitivity (at UUT)

Measurement Range @ UUT Port	-50 to -100 dBm
Measurement Range @ UUT Ant	-50 to -100 dBm
Measurement Accuracy	±2 dB (DC) ±3 dB (Ant-to-Ant)

## TACAN

### Test Set Transmitter \*

Modes	A/A, G/A, A/A BCN (X & Y)
Channels	X and Y
Frequency Range	962 to 1213 MHz
Frequency Accuracy	± 10 kHz
Output Power @ DC Port	-30 to -110 dBm / ±2 dBm
Output Power Radiated by Ant	10 to -68 dBm / ±3 dBm
Bearing Accuracy	±1° (G/A & A/A BCN)
Range Accuracy	±0.5 nmi Typical, ±1.0 nmi
Velocity Accuracy	±3%

\*Output power depends on selected distance, antenna gain and cable loss

**VSWR** – Capability to conduct a sweep of 1025 MHz to 1035 MHz frequency range, displays a 9 point measurement and provides a PASS/FAIL indication. Measurements range from 1.2:1 to 5.0:1 with ± 2 dB accuracy in return loss.