

# AVX-10K

## Military Flight Line Test Set

Performance verification testing of mission-critical avionics systems

The AVX-10K is a comprehensive flight line test solution that provides today's Avionics Technician with an easy-to-use instrument for testing communication, navigation, and surveillance systems. With an intuitive user interface, testing is simplified with built-in auto-tests for transponder applications. Guided tests can be created to replicate existing procedures to assist users for Navigation and AM/FM Communication system verification. Built-in VSWR, DTF and Cable Loss measurements aid in troubleshooting faults found during normal testing or reported by the operator.



### Features

- Configurable test capability
- Intuitive user interface
- Software-defined applications
- Guided Test for COMM's and Navigation Applications
- Built-in GPS receiver
- International test configurations

### Benefits

- Purchase only the test options that you need
- Time saving ease of operation
- Easily updated with future applications
- Efficient and repeatable testing
- Recall saved test sequences for future use
- Provides accurate positional data for ADS-B testing
- Compliant with global regulatory requirements

### Test Usage

- Replaces the following test sets
  - IFR4000
  - IFR4000AR
  - IFR6000
  - IFR6015
  - 3515 Airborne COMM's Testing including scripting\* capability

\* Early 2025

# The Future of Flight Line Avionic System Testing

Building on nearly 50 years of providing superior avionics test sets, the AVX-10K is a compact, durable tester capable of providing a wide range of quick airborne system auto-tests and in-depth troubleshooting using software specific applications.

Using over-the-air, direct and coupled connections the AVX-10K can provide testing for the following systems:

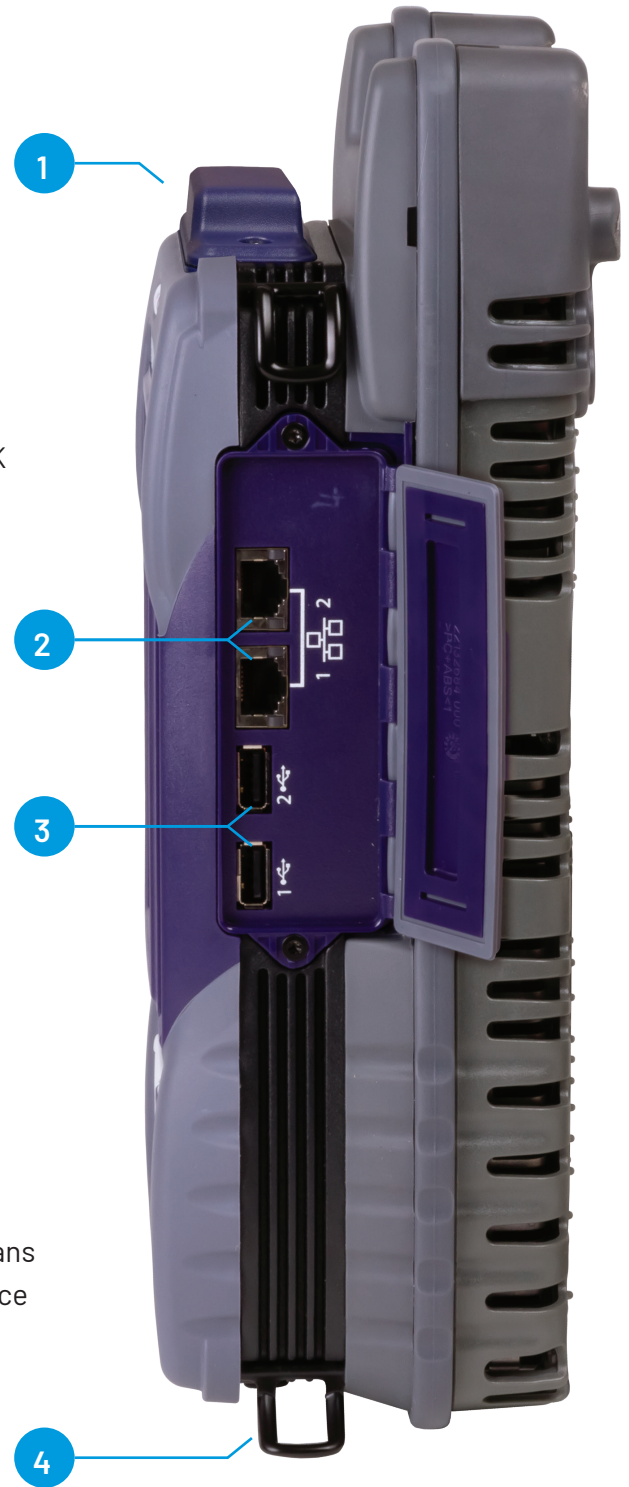
Communications	Navigation	Surveillance
<ul style="list-style-type: none"> <li>• AM (VHF)</li> <li>• FM (UHF)</li> <li>• SSB (HF)</li> <li>• SELCAL</li> </ul>	<ul style="list-style-type: none"> <li>• TACAN</li> <li>• DME</li> <li>• ILS                             <ul style="list-style-type: none"> <li>- LOC</li> <li>- GS</li> <li>- MB</li> </ul> </li> <li>• VOR</li> </ul>	<ul style="list-style-type: none"> <li>• Military Modes 1, 2 &amp; 3</li> <li>• Modes A, C, S</li> <li>• ADS-B Out</li> <li>• ADS-B In (Traffic - Target Gen)                             <ul style="list-style-type: none"> <li>- 1030 MHz (ADS-B, ADS-R, TIS-B)</li> <li>- 978 MHz UAT (ADS-B, TIS-B, FIS-B)</li> </ul> </li> <li>• ACAS - ETCAS/TCAS I/II and TAS testing</li> <li>• ADS-B Monitoring</li> <li>• GICB Monitoring</li> <li>• UAT Monitoring</li> </ul>

The added flexibility of software-based test configurations means the AVX-10K provides the right capabilities for every maintenance and troubleshooting need.



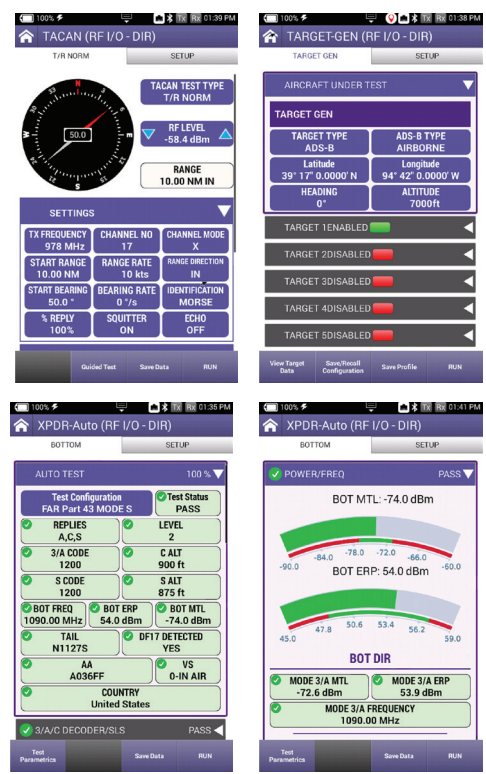
Transponder antenna couplers provide for a controlled test environment and eliminate the need for DD-1494 requirement.

## 2 AVX-10K Military Flight Line Test Set



### AVX-10K Side Detail

1. GPS Antenna
2. Dual Ethernet Ports
3. Dual USB Ports
4. Hand Strap Clips



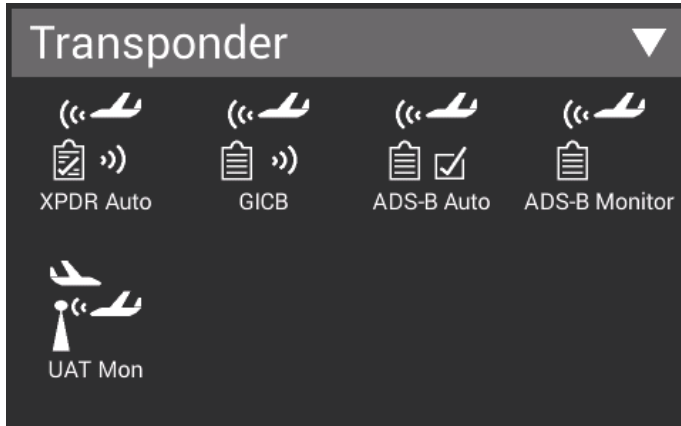
Simple and clean user interface provides clearly marked pass/fail results while expandable ribbons provide access to detailed data for further analysis.

**AVX-10K Front Detail**

- 5. Power Button
- 6. Speaker
- 7. Back Button
- 8. Home Button
- 9. Quick Tray Button
- 10. Cursor Control Keys
- 11. Function Keys
- 12. Full Color Touch Screen Display
- 13. Status Indicator Lights
- 14. GPS Antenna
- 15. Antenna (ANT) Port
- 16. Direct (RF/IO) Port
- 17. SWR Port

# Comprehensive All-In-One Test Set

## Transponder



**Transponder Auto** – This test function provides a selection of configured test options, including Military Transponder Modes 1,2 & 3, ATRBS, Mode S, Transponder FAR Part 43, and many more.

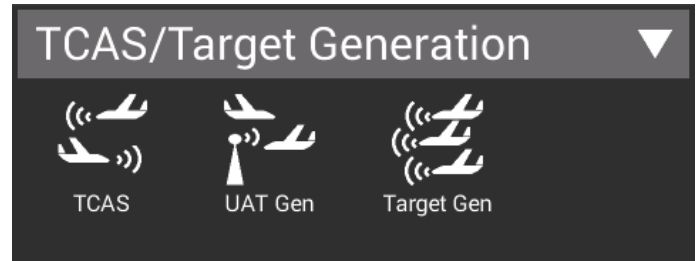
**GICB** – Testing the GICB capabilities can be performed in Simple Mode (known registers) or Advanced Mode (full register set).

**ADS-B Auto** – Available Test Types for this option include AC 20-165 and CS-ACNS. Testing supports both Airborne and Surface configurations.

**ADS-B Monitor** – GPS Position can be manually entered or can be determined with the built-in GPS Receiver. Monitoring supports both Airborne and Surface configurations.

**UAT Monitor** – Allows monitoring of received UAT messaging and will decode and display each received Aircraft Address and Payload Type Code.

## TCAS / Target Generation

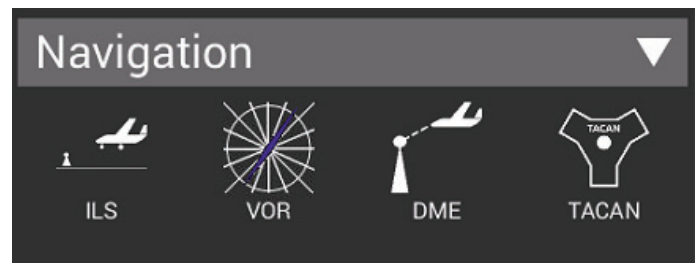


**ACAS-TCAS /E-TCAS** – This option lets you set up an intruder and run a scenario to ensure TCAS functionality. Intruder types includes either Mode S or ATRBS.

**UAT Gen** – Provides access to setup targets and run ADS-B, FIS-B and TIS-B testing for the UAT frequency.

**Target Gen** – This feature allows the user to set up and stimulate up to five static targets. Target types can be 1090 MHz ADS-B, ADS-R or TIS-B. Each target will be associated with the Aircraft Under Test's Latitude, Longitude, Heading and Position which are all configurable.

## Navigation



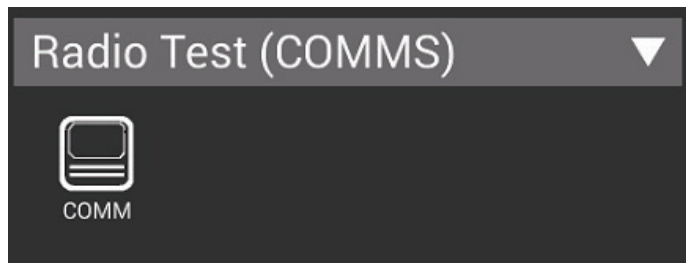
**ILS** – Provides simultaneous Localizer (with swept DDM), Glideslope and Marker Beacon Signals.

**VOR** – Generates signals over the VOR Band (108.00 to 117.95 MHz) with 30 Hz reference phase and 9960 Hz (sub-carrier frequency modulated with 30 Hz variable phase) amplitude modulated at 30% per tone. VOR bearing selection is provided in preset steps of 30° or variable steps of 0.1°.

DME – Single DME test screen provides control over DME Frequency/Channel, Range, Rate, RF level, % Reply, Squitter, Ident and Echo. UUT frequency, ERP, PRF P1/P2 width and Spacing are also displayed.

TACAN – Combines Range and Bearing control along with Range Rate and Bearing Rate including Air-to-air modes. Displays measured values on received signal.

**Radio Test (COMMS)**



COMM AM – Provides signal generation over the Range of 10.00 to 512.00 MHz in 1 kHz increments. Monitoring of transmitter power and modulation depth over the same range while directly connected. A calibrated 1020 Hz tone, amplitude modulated at 30%, is also provided. Frequency control is provided in 8.33 kHz/25 kHz channel steps or in 1 kHz variable steps. Audio output is available. Over-the-air measurements include metering for power (RSSI), frequency, AM modulation. User defined pass/fail limits can be added via Scripted Test application.

COMM FM – Provides signal generation over the Range of 10.00 to 512.00 MHz in 1 kHz increments and monitoring of transmitter power and modulation deviation over the same range while directly connected. A 1000 Hz tone, frequency modulated at 5 kHz, is also provided. Frequency control is provided in 12.5 kHz/25 kHz channel steps or in 1 kHz variable steps. Audio output is available. Over-the-air measurements include metering for power (RSSI), frequency range 30.00 to 512.00 MHz and FM deviation. User-defined pass/fail limits can be added via the Scripted Test application.

COMM OTA UUT Sensitivity Test – Provides 800 Hz/1200 Hz repeating tone pattern, allowing the operator in the cockpit to easily identify a tone pattern.

COMM SSB – Provides signal generation and monitoring of transmitter power and modulation depth over the range of 10.00 to 30.00 MHz. A 1000 Hz tone is also provided. Audio output is available.

SELCAL – Provides selectable consecutive amplitude modulated tone pulse pairs, which may be sent continuously or as a burst.

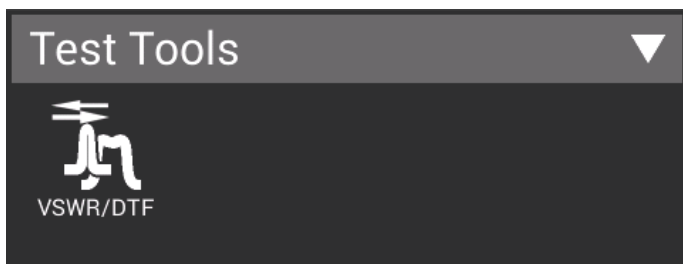
**ELT**



121.5/243 BEACON Modes – Provides monitoring for 121.5/243 MHz swept tone short range Beacons and displays transmitter frequency, power and start/stop tone frequencies. Audio output is available.

406 BEACON Mode – Provides monitoring for 406 MHz COPAS/SARSAT Emergency Locator Transmitter (ELT), Emergency Position Indicating Radio Beacons (EPIRB and Personal Locator) PLB Beacons. The Beacon utilizes BPSK data to transmit position information derived from a long-range navigation system or GPS receiver. The Protocol management and data field decode is automatically handled by the AVX-10K.

## Test Tools



**Cable Loss** – This feature helps identify problems, as the loss identified on a cable may not be correct causing erroneous readings in test set ups and also to identify issues with wiring that can contribute to poor system performance.

**Guided Test** – Available in the COMM's and NAVIGATION instruments, guided test allows you to create and save a test sequence by either manually stepping to the next test or automatically stepping to the next test based on a user set time interval. This is a user created test and is beneficial for replicating existing procedures for a consistent and repeatable test.

**Templates** – allows the user to save all set-up parameters for the entire test set and recall for a later use. This is useful should you have common repeatable set-up parameters across multiple test applications for a specific aircraft platform. Next time you test that platform, simply choose the desired template and all saved set-up parameters will be recalled, saving time.

**Secure Use** – This feature allows you to enable/disable wireless capability (WiFi/BT) under password control. These features allow you to control the AVX-10K using your mobile device using VIAVI's Mobile Tech App, and access VIAVI's cloud based StrataSync for asset and report management. Note - all military kit configurations are shipped from the factory with wireless capability disabled.

**VSWR/DTF** – This test tool is provided to assist in troubleshooting RF level issues. Test mode for both VSWR and Distance To Fault (DTF) testing can be set to VSWR or Return Loss.

Preconfigured Kits (■ = Standard Item, all other items optional)

AVX-10K Mil Configurations and Ordering Information

		AVX-10K-NAV-M 22182233	AVX-10K-SVLC-M 22182230	AVX-10K-MIL 22182232
		Equivalent IFR4000/AR NSNs 6625-01-559-2384 6625-01-553-1956 6625-01-516-4656 6625-01-515-0343  * Consult Factory for Availability	Equivalent IFR6000/6015 NSNs 6625-01-574-2423 6625-01-601-4034 6625-01-069-5582 6625-01-572-1213 6625-01-561-7078 6625-01-686-5638 6625-01-567-5667 6625-01-529-1369	AVX-10K-MIL Supports all capability and replaces all noted NSNs  * Consult Factory for Availability
Catalog No.	Item Description			
AVX-10K	AVX-10K Base Unit	■	■	■
<b>Software Options</b>				
AVX-10K-SXPDR	Transponder Modes A,C,S		■	■
AVX-10K-SADSB	ADS-B-In/Out/GICB/Target Gen/FIS-B		■	■
AVX-10K-STCAS	TCAS I/II		■	■
AVX-10K-SDME	DME	■	■	■
AVX-10K-SUAT	UAT In/Out			■
AVX-10K-SNAV	Navigation (ILS/MB/VOR)	■		■
AVX-10K-SELT	ELT 121.5/243/406 MHz	■		■
AVX-10K-SCOM	Radio Test AM/FM (Comms)	■		■
AVX-10K-SECOM	Radio Test Enhanced (Comms)	■		■
AVX-10K-STACAN	TACAN		■	■
AVX-10K-SETCAS	E-TCAS		■	■
AVX-10K-SM1/2/3	XPDR Military Modes 1/2/3		■	■
AVX-10K-SSECURE	Secure (Wireless disabled) Mode	■	■	■
<b>Accessories</b>				
AC10K-PWRADPTR	AC/DC Power Adapter	■	■	■
AC10K-HANDSTRAP	Hand Strap	■	■	■
AC10K-TRANSITCASE	Transit Case	■	■	■
AC10K-ADPTRKIT	Adapter Kit	■	■	■
AC10K-ANT-ILS	Antenna - ILS	■		■
AC10K-ANT-MB	Antenna 75 Mhz MB	■		■
AC10K-FPANT	Antenna, RF Flat Panel w/1' Cbl		■	■
AC10K-ATTEN	Attenuator	■		■
AC10K-UC-584	Shield/Coupler, UC-584 w/25' Cbl		■	■
AC10K-CBL6FT	Cable, Coax 6'	■	■	■
AC10K-HEADSETADPTR	Headset Adapter (Optional)	*		*
AC10K-OPSMNL	Operations Manual	■	■	■
AC10K-QSGUIDE	Quick Start Guide	■	■	■

## Optional Power Cords

Catalog No.	Item Description
AC10K-PWRCRD-AUSNZ	AC Power Cord - Australia/New Zealand
AC10K-PWRCRD-INDIA	AC Power Cord - India
AC10K-PWRCRD-UK/IRE	AC Power Cord - UK/Ireland
AC10K-PWRCRD-SWITZ	AC Power Cord - Switzerland

## Optional Accessories

Catalog No.	SERD/NSN	Item Description
<b>Antenna Couplers</b>		
113532		F-15 IFF Antenna Coupler Kit
140600	65530	F-16 IFF Antenna Coupler Kit
140889		TC-201A TCAS/XPDR Directional Antenna Coupler (Min. 110" fuselage)
22163082		TC-201B TCAS/XPDR Directional Antenna Coupler (Min. 92" fuselage)
112350	6625-01-656-1915	UC-584 L-Band Coupler Kit (Single)
112349	6625-01-656-1993	UC-584 L-Band Coupler Kit (Dual)
90106		UC-584S Coupler Placement Pole
<b>Optional Accessories</b>		
141589		TCAS Accessory Kit
AC10K-CC		Soft Side Carrying Case
AC10K-BATTERY		Internal Battery, Lithium Ion 7.3V 13Ah
AC10K-CBL12FT		Cable, Coax 12'
141131	4920-01-699-6237	Cable, Coax 25'
142839		Cable, Coax 50'



## Physical Characteristics

Test Set	12" H x 5.3" W x 3.75" D 30.48 cm x 13.5 cm x 9.5 cm
Transit Case Size	24.5" H x 19.3" W x 22.2" D 62.23 cm x 49.2 cm x 31 cm
Weight	6.5 lbs. (2.94 kg) test set only 32 lbs. (14.51 kg) shipping weight
Battery	>4 hrs continuous, > 8 hrs typical
Power	100 - 250 VAC, 1.5 A max, 47-63 hz

### Environmental

Operating Temp	-20° to 55° C (-4° to 131° F)
Storage Temp	-30° to 71° C (-22° to 159.8° F)

## General Specification

### Care Support Extended Warranty

AVX-10K-SILVER-5	5 Yr Total HW Warranty + Certified Calibrations - SILVER-5	60 Month
AVX-10K-SILVER-3	3 Yr Total HW Warranty + Certified Calibrations - SILVER-3	36 Month
AVX-10K-BRONZE-2	1 Yr Extended HW Warranty only - BRONZE-2	24 Month

### Certified Calibration Care Plan Add-ons (Requires corresponding Silver Care/MaxCare Plan)

CERT-CAL-DATA-3	Certified Calibration Data - Pre and Post Cal Data Report for Care Plans - First 3 Years
CERT-CAL-DATA-5	Certified Calibration Data - Pre and Post Cal Data Report

## Training

AVX-10K-TT	How to test with the AVX-10K - On-Site Instructor-Led Training, 1 day
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## Test Compatibility

Transponder	Modes 1, 2, 3/A, C, S ADS-B 1090 MHz In/Out/GICB UAT 978 MHz In/Out
TCAS/Target Generation	ACAS - ETCAS/TCAS I/II ADS-B In (Traffic - Target Gen) 1030 MHz (ADS-B, ADS-R, TIS-B) 978 MHz UAT (ADS-B, TIS-B, FIS-B)
Navigation	VOR, ILS (LOC/GS/MB), DME, TACAN
ELT	121.5, 243, 406 MHz Beacons
Radio Test (COMMS)	HF, VHF, UHF, SSB, AM/FM, SELCAL
Test Tools	Distance-To-Fault (DTF), VSWR, Cable Loss

## Certificates and Certifications

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AVX-10K Calibration Certificate (ISO 9001)(Included)

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AVX-10K Calibration Certificate with Test Data (ISO 9001)

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MIL-PRF-28800F Class 2

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MIL-STD-810F

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Note: See AVX-10K data sheet for a complete listing of certifications

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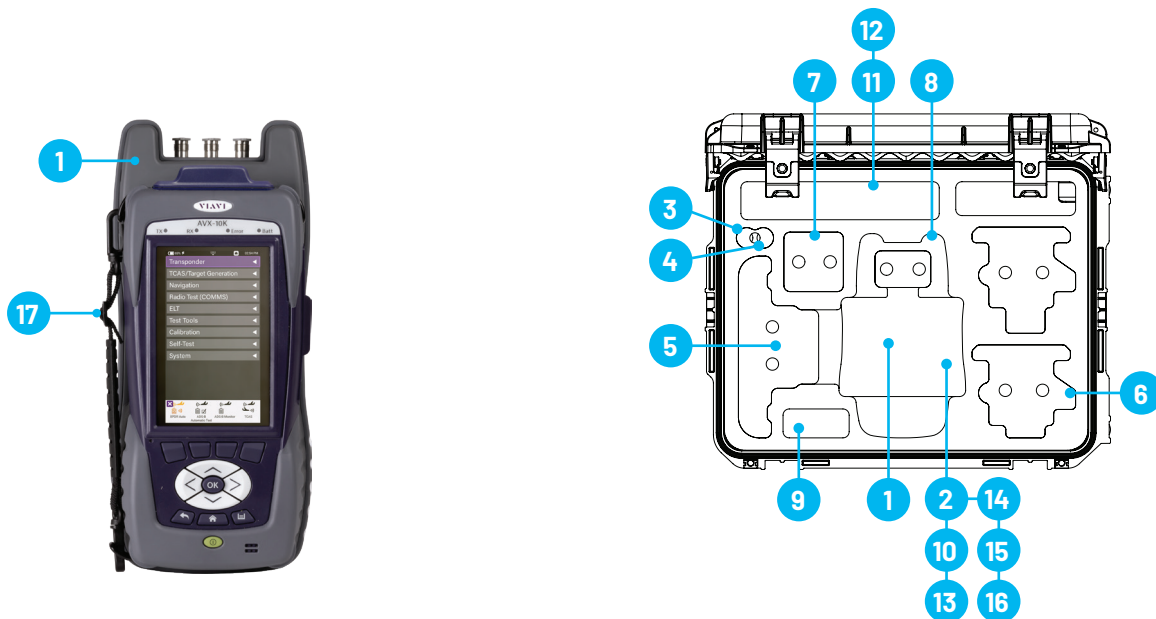
Ergonomic integrated kick stand makes running tests and reviewing results simple.



Flat panel antenna, whip antenna, or antenna couplers provide a variety of methods to connect to the system under test.

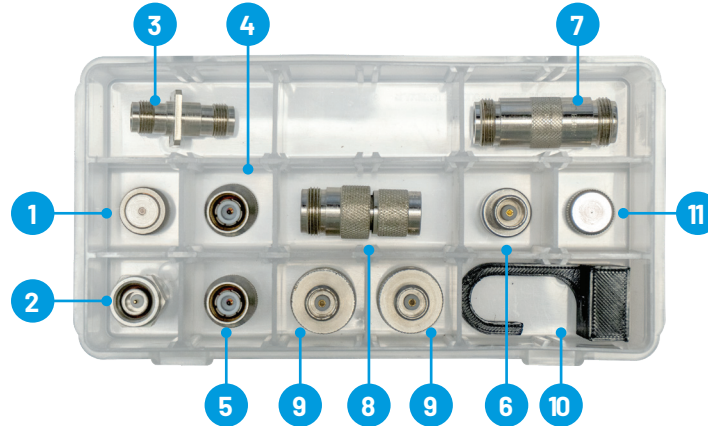
### CAGE: 51150 - AVX-10K Military Test Set Comprising Items List

Comprising Items List				AVX-10K-NAV-M 22182233	AVX-10K-SVLC-M 22182230	AVX-10K-MIL 22182232
ITEM #	QTY	PART #	DESCRIPTION	* Consult Factory for Availability		* Consult Factory for Availability
1	1	22137163	AVX-10K Base Unit	■	■	■
2	1	22146602	AC/DC Power Adapter	■	■	■
3	1	22153600	Antenna - ILS	■		■
4	1	22153599	Antenna 75 Mhz MB	■		■
5	1	22141787	Antenna, RF Flat Panel		■	■
6	1	87431	Shield/Coupler, UC-584		■	■
7	1	22183050	Attenuator	■		■
8	1	22183051	Headset Adapter (Optional)	*		*
9	1	AC10K-ADPTRKIT	Adapter Kit	■	■	■
10	1	62401	Cable, Coax 1'	■	■	■
11	1	22152432	Cable, Coax 6'	■	■	■
12	1	141131	Cable, Coax 25'	■	■	■
13	1	22022754	Power Cord - US	■	■	■
14	1	22022744	Power Cord - European	■	■	■
15	1	22141759	Operations Manual	■	■	■
16	1	22135253	Quick Start Guide	■	■	■
17	1	22142165	Handstrap	■	■	■



### CAGE: 51150 - AVX-10K Military Test Set Comprising Items List

AC10K-ADPTRKIT (22183132) Comprising Items List				AVX-10K-NAV-M 22182233	AVX-10K-SVLC-M 22182230	AVX-10K-MIL 22182232
ITEM #	QTY	PART #	DESCRIPTION			
1	1	24140	CAP, TNC, FEMALE SHORT	■	■	■
2	1	24141	Conn;Conn Acc;LOAD 50 Ohm; TNC/F; DC - 6.0 GHz	■	■	■
3	1	138598	Adapter, TNC-F to TNC-F	■	■	■
4	1	22183053	Adapter, TNC-M to BNC-M	■	■	■
5	1	23758	Adapter, TNC-M to BNC-F	■	■	■
6	1	22181865	Adapter, N-F to TNC-F	■		■
7	1	23773	Adapter, N-F to N-F	■		■
8	1	92553	Adapter, N-F to TNC-M	■		■
9	2	38589	Adapter, N-M to TNC-F	■		■
10	1	22183052	Hook, Cplr Placement		■	■
11	1	22183055	Cap, TNC Coupler Hook		■	■



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