

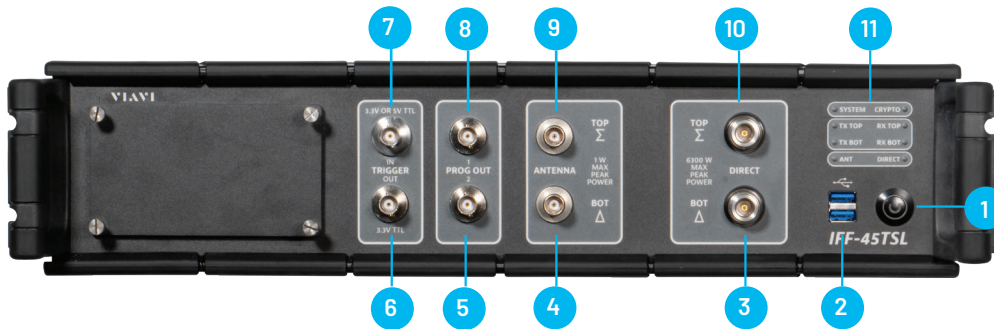
IFF-45TSL

MK XIIB and TACAN Bench Test Set



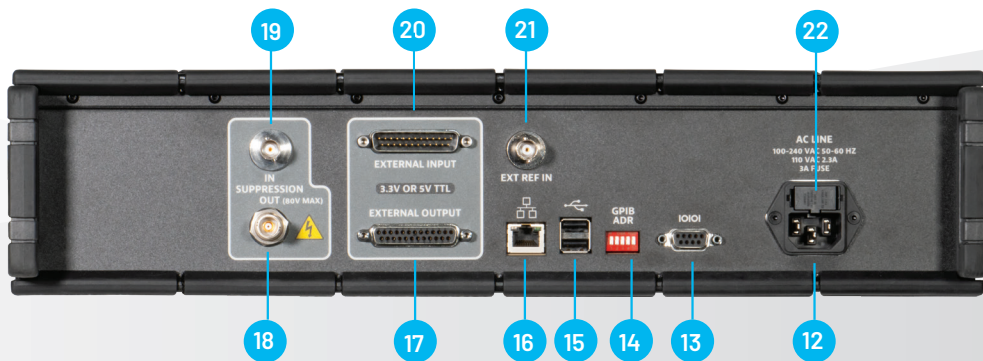
A next-generation RF signal generator/receiver designed for engineering, manufacturing and return-to-service applications.

The IFF-45TSL test set provides RF signal generation and parametric measurement of MK XIIB and TACAN equipment. Replies and interrogations can be individually configured to support MK XIIB testing requirements. ADS-B Out testing monitors ADS-B, TIS-B, ADS-R and acquisition squitters. The IFF-45TSL emulates either a TACAN ground transponder or a TACAN airborne interrogator.



IFF-45TSL Mode 5 Bench Test Set - Front Panel

1. Power Switch
2. USB Ports
3. Direct Bottom Port
4. Antenna Bottom Port
5. Program Out 2 Port
6. Trigger Out Port
7. Trigger In Port
8. Program Out 1 Port
9. Antenna Top Port
10. Direct Top Port
11. Status LEDs



IFF-45TSL Mode 5 Bench Test Set - Back Panel

12. AC IN Port
13. RS-232 Port
14. GPIB Address DIP
15. USB Ports
16. Ethernet Port
17. External Output Port
18. Suppression Out Port
19. Suppression In Port
20. External Input Port
21. External Reference In Port
22. Fuses

New IFF-45TSL Features

- New front panel LED Status Indicators (PWR, System, Crypto, TX/RX top and bottom, Direct vs. Antenna)
- New Target Generator Instrument Option available (IFF-45TSL-STG)
 - Mode 5 Level 2-B "In" and ADS-B "In" (with options IFF-45TSL-SM5L2B and IFF-45TSL-SM5) available in the Target Generator Instrument
 - Support for 8 configurable transponder like static targets
 - Ownship position configurable
 - Each Target is configurable for: Flight ID, aircraft address, bearing, range, altitude, Interrogation Modes and squitters supported. Additional Mode S and Mode 5L2/L2-B reply and squitter data configurable
 - Supermode interrogations will be handled
 - Each target will have capability to:
 - Transmit squitters (DF17, DF18, ADS-B "In", M5L2-B "In")
 - Transmit real-time replies appropriate to the random interrogation received (Modes 1, 2, 3/A, C, S, 4 and 5)

New IFF-45TSL Features continued

- Much improved processing capability (DSP, FPGA, Processor, Memory)
- Improved transmitter On/Off ratio performance
- Modernized RF circuitry (no tuning required and more stable)
- AIMS 17-1000 certification
- Mode 5 Level 2-B “Out” (with IFF-45TSL-SM5L2B and IFF-45TSL-SM5 options)
- Better support of Transponder Box Test (bench) for tests needing burst mode type tests (up to 128 interrogation sequence with IFF-45TSL-SSEQ option)
- Better support of Interrogator Box Test (bench) by checking interrogator’s ability to handle all Mode S reply types and that it can be programmed to operate using all II and SI codes transmitted in both all-call and roll-call interrogations
- Better Interrogator Installation (ramp) test capability allowing for verification that the interrogator can be programmed to operate using all II and SI codes and that both sets of codes are transmitted in both all-call and roll-call interrogations
- Ability to increase the max squitter rate (ADS-B and M5L2)(current maximum of 2 Hz – test mode, non-conforming to AIMS)
- Support Fixed Waveform operation for Mode 5
- Ability to modify Mode S preamble pulse positions/widths
- Backward compatibility with legacy Remote-Control Interface (RS-232, Ethernet and GPIB)
- Improved GUI
- Standard 2U enclosure (old unit was 2U+ which required 3U of space)
- Improved cooling

Carry Over IFF-45TS Features

- All features from the existing IFF-45TS will be carried over, including:
 - Mode 5 testing without actual cryptographic applique and keys using integral mode 5 emulator
 - Supports DoD AIMS 04-900A Option A - KIV-78 and QRTK6 NG (with Airbus DS QRTK6 NG adapter) and Option B - KIV-77 and SIT-2010 crypto appliques, KIV-79
 - Separate connections for direct or over-the-air testing
 - Test ranges of up to 3 km with appropriate antennas
 - ADS-B Out
 - GPIB control with Type A GPIB to USB adapter
 - Firmware download capability via GPIB type A adapter
- Over-the-air platform testing of MK XIIA equipment including Mode 5, ADS-B beacons and TACAN interrogators



Ordering Information

Hardware

Order Number	Description
IFF-45TSL	Base unit hardware only

Software Options

Order Number	Description
IFF-45TSL-SXPDR	<p>IFF Transponder Test Instrument Software Option</p> <ul style="list-style-type: none"> Includes Modes 1,2,3/A,C,S Must also purchase at least one of IFF-45TSL-SM5 or IFF-45TSL-SNSM options
IFF-45TSL-SINTGR	<p>IFF Interrogator Test Instrument Software Option</p> <ul style="list-style-type: none"> Includes Modes 1,2,3/A,C,S
IFF-45TSL-STG	<p>IFF Target Generator Instrument Software Option</p> <ul style="list-style-type: none"> Modes 1,2,3/A,C,S Must also purchase at least one of IFF-45TSL-SM5 or IFF-45TSL-SNSM options
IFF-45TSL-STACAN	<p>TACAN Test Instrument Software Option</p> <ul style="list-style-type: none"> DME/TACAN
IFF-45TSL-SSEQ	<p>Sequence Mode Instrument Option</p> <ul style="list-style-type: none"> Must have IFF-45TSL-SXPDR option to purchase For burst mode tests in DO-181F and AIMS standards
IFF-45TSL-SADSB	<p>ADS-B Out Test Instrument Software Option</p> <p>Also enables:</p> <ul style="list-style-type: none"> ADS-B Out capability in IFF-45TSL-SXPDR Test Instrument (MS_Extended_Squitter tab) ADS-B In capability in IFF-45TSL-SINTGR and IFF-45TSL-STG test instruments
IFF-45TSL-SM5L2B	<p>IFF Mode 5 Level 2-B Out Test Instrument Software Option</p> <ul style="list-style-type: none"> Must have IFF-45TSL-SM5 option <p>Also enables:</p> <ul style="list-style-type: none"> M5L2-B "In" in IFF-45TSL-STG Instrument M5L2-B "Out" in IFF-45TSL-SXPDR Test Instrument (M5L2-B Squitter tab)
IFF-45TSL-SNSM	<p>National Secure Mode Software Option</p> <ul style="list-style-type: none"> Global turn-on option that enables NSM in: IFF-45TSL-SXPDR, IFF-45TSL-SINTGR, and IFF-45TSL-STG instruments
IFF-45TSL-SM5	<p>Mode 5 Software Option</p> <ul style="list-style-type: none"> Global turn-on option that enables Mode 5 in: IFF-45TSL-SXPDR, IFF-45TSL-SINTGR, IFF-45TSL-STG, and IFF-45TSL-M5L2B instruments

Ordering Information Cont.

Versions and Options

Standard Accessories	
IFF-45TSL-GUI	PC Windows-based GUI App
IFF-45TSL-OPSM	Operation Manual (CD)
IFF-45TSL-GSM	Getting Started Manual
AC Power Cord	
62302	110 V
62315	220 V
30050	Serial data cable, 9 pin D, 1.5 meters

Extended Warranty

Order Number	Description
IFF-45TSL-SILVER-5	5 Yr Total HW Warranty + Certified Calibrations - SILVER-5 60 Month
IFF-45TSL-SILVER-3	3 Yr Total HW Warranty + Certified Calibrations - SILVER-3 36 Month
IFF-45TSL-BRONZE-2	1 Yr Extended HW Warranty only - BRONZE-2 24 Month

Optional Accessories

Order Number	Description
88631	KIV 77 adapter (Opt B)
89879	KIT/KIR-1A/C adapter
86075	KIV 78/KIV 6 adapter (Opt A)
IFF-45TSL-CNTRLR-TS-MON-5	Controller w/touch-screen monitor, GUI
112349	UC-584 coupler kit, dual antenna
112350	UC-584 coupler kit, single antenna
IFF-45TSL-ATC	Transit case for test set and controller
IFF-45TSL-ATC2	Compact transit case for test set only
IFF-45TSL-MM*	Maintenance Manual
112684	Mechanical Assembly; Antenna with GPS
87593	GPIO to USB adapter
IFF-45TSL-KIV79ADPTR	KIV 77 to KIV 79 adapter

*Includes remote program GUI



Physical Characteristics

2U Rackmount Compatible (2U compatible when bumpers and feet are removed)

Size	3.5" H x 19" W x 21.5" D (8.89 x 48.26 x 54.61 cm)
Weight	26 lbs (11.79 kg)

Benchtop (with handles, feet, and bezels)

Size	4.5" H x 19" W x 21.5" D (11.43 x 48.26 x 54.61 cm)
Weight	27 lbs (12.27 kg)

Environmental

Operational Temperature	-10° to +55°C (+14° to +131°F)
Storage Temperature	-10° to +55°C (+14° to +131°F)

Test Set Certifications

UL

CE

DoD AIMS MK XIIB (Pending)

For complete certification list see IFF-45TSL Specification Sheet



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