

FREEDOM

COMMUNICATIONS SYSTEM
ANALYZER FAMILY



R8100
Communications System Analyzer

R8000C
Communications System Analyzer

We ARE LMR Test Equipment.

OUR TRADITION OF INNOVATION

Our heritage in LMR test equipment dates to the late 1970's and the industry's first all-in-one test solution: The R2001. From then to now, our products have set the standard for LMR test equipment.

The R2600 series, introduced in 1989, was the industry standard for nearly a quarter-century. We followed up a few years later with the R2670, which was the first test set to support both APCO Project 16 and Project 25. And in 2004 we invented the concept of automated testing and alignment with our revolutionary "AutoTest" option for Motorola radios.



R2001



R2670



R2670B

1979

The R2001 – the industry's first LMR service monitor – is introduced

1989

R2600 - 2nd generation platform – is introduced

1992

R2670A introduced. The R2670 was the first analyzer to test both APCO Project 16 and Project 25.

2000

R2670B introduced – the first analyzer with full color LCD display.

In 2009, we introduced the first generation of today's market leader: The R8000. The first full-function service monitor light enough to also serve as a portable tool, it too quickly became the industry benchmark. In addition to being the only portable system analyzer, it was also the first LMR test instrument based on software defined radio architecture.

From inventing the LMR service monitor to inventing the first portable service monitor, we've been on the leading edge of LMR testing for decades. And now, with the introduction of the R8100 we are leading the way again with the first fully-functioning service monitor with an internal battery.

The addition of the R8100 extends the FCT product family to customers with a critical need for portability. With its internal field-swappable battery and MIL-SPEC shock and vibration rating, it offers the ultimate in portability without sacrificing the industry-leading specifications of the R8000 platform. Whether your needs include sophisticated digital infrastructure maintenance or just traditional analog LMR, FCT offers a product with a feature set and price point to meet your needs.



R8000C



R8100

2004

"AutoTest" – The first automated test and alignment software for LMR radios – is introduced.

2009

R8000A introduced – The first fully portable, software-defined LMR test set.

2012

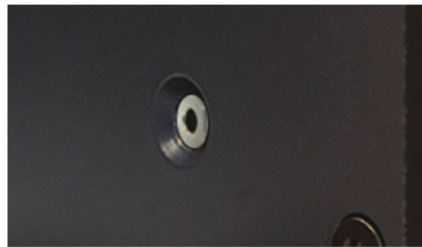
R8000B introduced. The first LMR service monitor with lab grade spectral purity.

2016

R8000C and R8100 Introduced. R8100 is the first full features LMR service monitor with an internal battery

THE R8100 THE PREMIUM ULTRA-PORTABLE CHOICE

The new R8100 has the same industry-leading spectral purity and test capabilities as the R8000, plus several additional features.



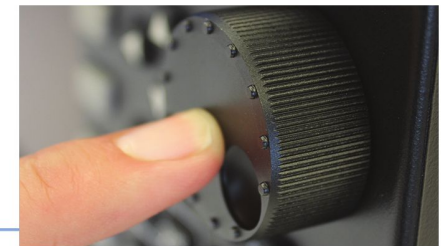
Headphone jack for high-noise environments



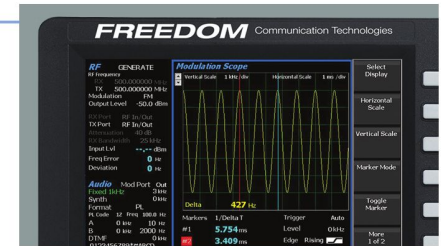
Internal, field-swappable Lithium Ion battery



Rugged handle



Tuning knob also serves as a data entry key



Brilliant, color-enhanced display



Foreign language soft key support: French, German and Spanish

Every R8100 is also equipped with these premium features **standard**:

- High Performance Tracking Generator
- Cable Fault Locator
- Enhanced Spectrum Analyzer with 4 markers and our "Dual Display" that shows the carrier signal and modulation scope simultaneously

R8000 THE INDUSTRY STANDARD SINCE 2009

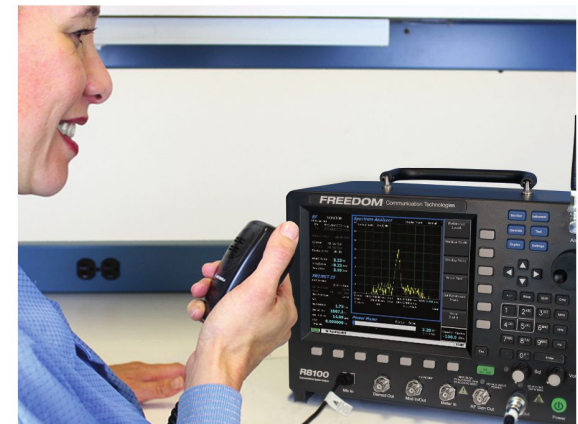
- Spectrum Analyzer
- Signal Strength Meter
- Signal Generator
- Broad & Narrow Band Power Meters
- Measurement Receiver
- Audio Counter
- Tracking Generator Option
- Audio Generator
- SINAD Meter
- AC/DC Voltmeters
- Distortion Meter
- Return Loss/VSWR Bridge Option
- Modulation Scope
- P25 Conventional & Trunking Options
- Frequency Error Meter
- DMR Option
- Cable Fault Locator
- NXDN Conventional & Trunking Options
- AM Modulation Meter
- AutoTune Automated Test & Alignment Options



THE R8100 AND R8000 COMMUNICATIONS SYSTEM ANALYZERS: FLEXIBILITY, POWER AND PORTABILITY

THE R8000 AND R8100 ARE EQUALLY SUITED TO THE FIELD OR THE TECHNICIAN'S BENCH:
BENCHTOP POWER IN A PORTABLE PACKAGE

- Weighs less than 15 lbs
- Accepts up to 150W without need for an external attenuator
- Industry-leading spectral purity
- Internal, field-swappable battery (R8100)
- High performance, ultra-fast tracking generator
- Add new features and protocols from the front panel in less than 30 seconds
- Firmware upgrades available from our web site free for the life of the unit



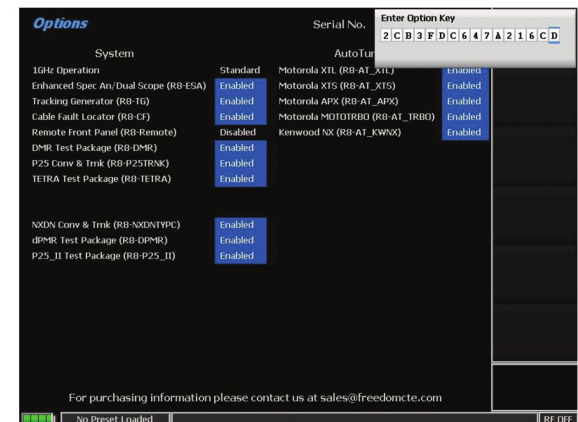
Enhanced Spectrum Analyzer



Internal battery (R8100)



Weighs less than 15 lbs.

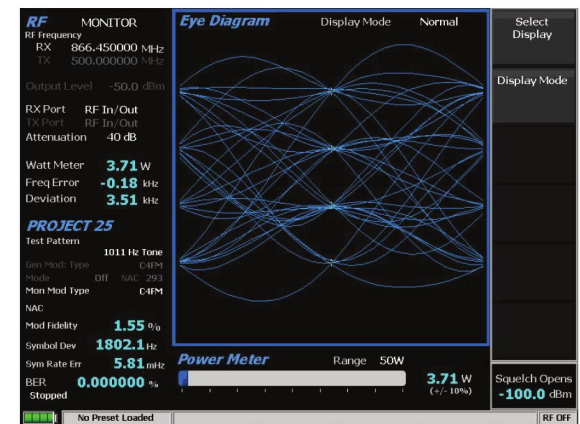


Field Upgradeable

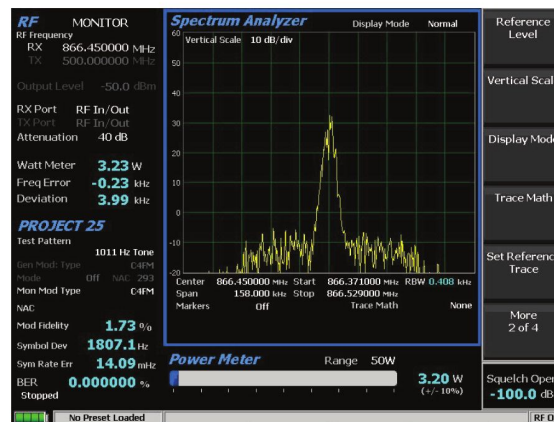
THE R8100 AND R8000: THE ONLY CHOICE FOR DIGITAL LMR TESTING AND ANALYSIS

The R8000 and R8100 comprehensively support every major LMR protocol. Our test suites for both P25 Phase 1 and 2 are fully compliant with the TIA/EIA specification and employ every modulation and test pattern called out in the specification. And our P25 Phase 1 trunking option allows the test set to emulate a base station and trunking controller.

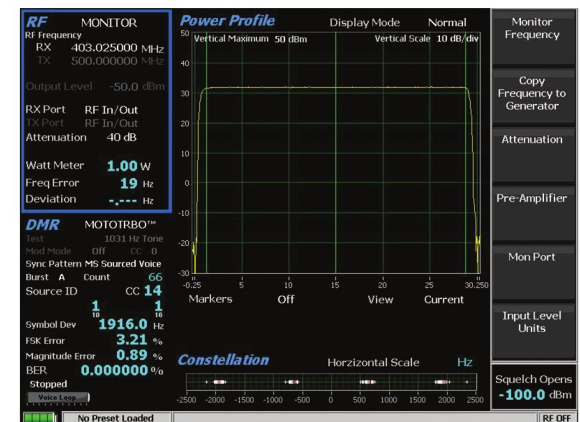
Our analyzers also lead the way in testing the new 6.25kHz and 6.25kHz channel equivalent technologies. Our NXDN and DMR test modes fully conform to the applicable specifications. NXDN "Type C" Trunking simulates the functions of an NXDN central controller. Options for TETRA DMO mode subscriber test and dPMR test are also available.



APCO P25 Phase1 Eye Diagram



APCO P25 Phase 1 Trunking



DMR Power Profile

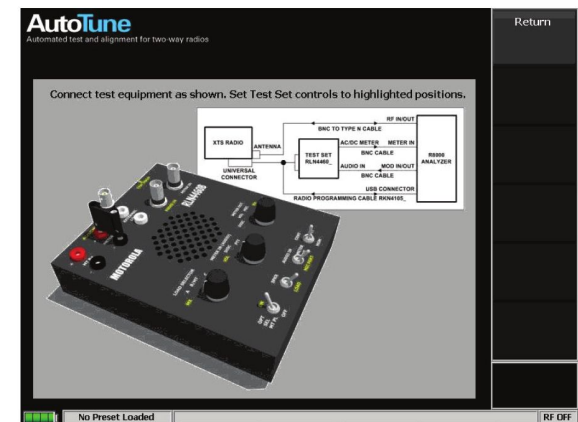
AutoTune™ AUTOMATED RADIO TEST AND ALIGNMENT

Our AutoTune™ option performs all recommended factory test and alignment procedures in a fraction of the time needed to perform them manually. Just select your radio model and connect as shown on the unit, choose the tests and alignments you wish to perform, then enter your operator ID and press the “start button.”

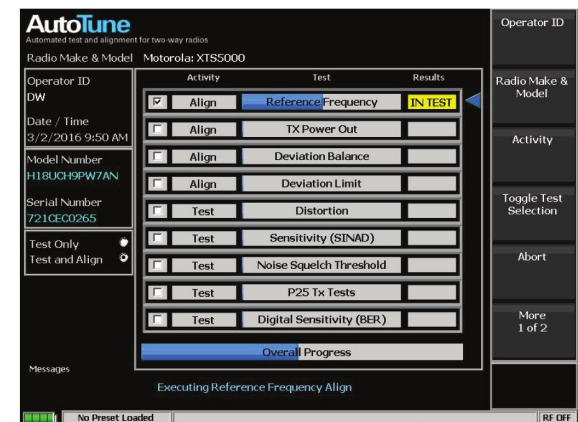
BENEFITS

- Test time reduced by over 80%
- Consistent manufacturer specified alignments among radios
- Accurate and repeatable test results
- Comprehensive test reports show before & after readings, time, date and operator identification
- Pass/Fail indicators flag radio defects
- Little or no technical expertise required
- Results are stored on the unit and can be exported to a USB drive for analysis with PC spreadsheet software

The test set automatically reads key radio information such as model number and serial number, and makes the measurements and alignments needed to bring the radio within factory specifications. Within minutes you have a complete record of your test session stored on the unit in comma delimited form for quick and easy recall. Over time you will build a complete test history for every radio – ideal for large fleets with formal Preventative Maintenance programs. Test reports can be conveniently viewed on the unit or exported for further analysis using spreadsheets and other data manipulation programs.



XTS AutoTune Setup Diagram



MOTOTRBO AutoTune Status Screen

Reduces radio test and alignment time from an hour or more to 10-12 minutes!

TEST AND ALIGNMENTS PERFORMED:

TRANSMITTER TESTS

- Bit Error Rate (BER)
- Reference Frequency
- RF Output Power

ALIGNMENTS

- Reference Oscillator
- Transmit Deviation Balance
- Transmit Deviation Limit
- Transmit Power Level

RECEIVER TEST

- Rated Audio
- Distortion
- SINAD Sensitivity
- Noise squelch
- Voice Modulation

XLT5000 AutoTune Test Report



R8000 AutoTune is now available for:

- Motorola TRBO™ Mobiles & Portables
- Motorola XTL™ Series Mobiles
- Motorola XTS1500/2500/5000™ Portables
- Motorola APX™ Mobiles & Portables
- Kenwood NX™ Series Mobiles & Portables
- Harris XG-75™ Mobiles & Portables

ACCESSORIES INCLUDED WITH EVERY UNIT:

- Antenna
- Microphone
- Oscilloscope Probe
- Power Cord
- Internal Lithium Ion Battery (R8100 only)
- 24V to 12V Converter (R8000C only)



ADDITIONAL ACCESSORIES SOLD SEPARATELY:

- R8-FC Soft carrying case
- R8-HC Protective Glove Case
- R8-TC Transit case
- R8-TSC Transit case with molding for soft case
- BATT8100 Spare internal battery for R8100
- CHR8100 Charger for R8100 battery
- R8-VSWR Bridge Kit
- R8-FT7 Field Test 7 Coverage Mapping Kit



Transit case with molding for soft case



Soft carrying case



Spare internal battery and charger for R8100



VSWR Bridge Kit

ORDERING INFORMATION:

MODEL	DESCRIPTION MODEL	PART NUMBER	DESCRIPTION	R8100	R8000C	R8000C 1GHZ PREMIER	R8000C 3GHZ PREMIER
R8100	Ultra-Portable Communications System Analyzer	R8-TG	Tracking Generator	✓	Optional	✓	✓
R8000C	Communications System Analyzer, 1GHz	R8-CF	Cable Fault Locator	✓	Optional	✓	✓
R8000C-1GHz Premier	1 GHz Premier Package w/ highlighted options	R8-ESA	Dual Display/Enhanced Spectrum Analyzer	✓	Optional	✓	✓
R8000C-3GHz Premier	3 GHz Premier Package w/ highlighted options	R8-REMOTE	Remote Front Panel	Optional	Optional	✓	✓
		R8-3G	3GHz Capability	Optional	Optional	Optional	✓
		R8-DMR	DMR Test	Optional	Optional	Optional	Optional
		R8-P25	P25 Phase 1 Test	Optional	Optional	Optional	Optional
		R8-P25TRNK	P25 Phase 1 Trunking Test	Optional	Optional	Optional	Optional
		R8-P25_II	P25 Phase 2 Test	Optional	Optional	Optional	Optional
		R8-NXDN	NXDN Test	Optional	Optional	Optional	Optional
		R8-NXDNTYPC	NXDN Type C Trunking Test	Optional	Optional	Optional	Optional
		R8-TETRA	TETRA Subscriber Test	Optional	Optional	Optional	Optional
		R8-DPMR	dPMR Test	Optional	Optional	Optional	Optional
		R8-AT_XTS	AutoTune for Motorola XTS2500/5000	Optional	Optional	Optional	Optional
		R8-AT_XTL	AutoTune for Motorola XTL Series Mobiles	Optional	Optional	Optional	Optional
		R8-AT_APX	AutoTune for Motorola APX Mobiles & Portables	Optional	Optional	Optional	Optional
		R8-AT_TRBO	AutoTune for MOTOTRBO Mobiles & Portables	Optional	Optional	Optional	Optional
		R8-AT_KWNX	AutoTune for Kenwood NX Series	Optional	Optional	Optional	Optional
		R8-AT_XG75	AutoTune for Harris XG-75 Mobiles & Portables	Optional	Optional	Optional	Optional
		BATT8100	Internal Lithium Ion Battery	✓	NA	NA	NA
		CHRG8100	Charger for R8100 Battery	Optional	NA	NA	NA
		202907-01	External Lithium Ion Battery (North America)	NA	NA	Optional	Optional
		202908-01	External Lithium Ion Battery (International)	NA	NA	Optional	Optional
		R8-VSWR	VSWR Bridge Kit	Optional	Optional	Optional	Optional
		R8-FT7	"Field Test 7" Coverage Mapping Kit	Optional	Optional	Optional	Optional
		R8-HC	Protective "Glove Case"	Optional	Optional	Optional	Optional
		R8-SC	Soft Carrying Case	Optional	Optional	✓	✓
		R8-TSC	Transit Case With Foam Molding for Soft Case	Optional	Optional	Optional	Optional
		R8-TC	Transit Case With Foam Molding for R8000/R8100	Optional	Optional	Optional	Optional
			Foreign Language Soft-key Support	✓	NA	NA	NA
			MIL-PRF-28800F Class 3 Shock & Vibration Rating	✓	NA	NA	NA
			Color Enhanced Display	✓	NA	NA	NA
			Data Entry Capable Tuning Knob	✓	NA	NA	NA
			Scalable Power Meter Bar Graphs	✓	NA	NA	NA
		R8-3Y	3 Year Service Plan (incl. 2 annual calibrations)	Optional	Optional	✓	Optional
		R8-5Y	5 Year Service Plan (incl. 4 annual calibrations)	Optional	Optional	Optional	Optional

Data Sheets including specifications can be found at www.freedomcte.com

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FREEDOM
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