


# OSCOR™ OSC-5000E

## OMNI SPECTRAL CORRELATOR

U.S. PATENTS: 4,399,556; 5,020,137; 5,241,699; 6,397,154; 7,058,530

# OSCOR™

The most comprehensive suite of technical capabilities available in one fully-integrated countersurveillance package.

- PATENTED AUTOMATICALLY SWITCHED ANTENNA ARRAY: RF (10KHZ-3GHZ) & INFRARED
- ANTENNA PRE-AMPS FOR IMPROVED SENSITIVITY
- MULTI-FORMAT VIDEO DISPLAY
- CARRIER CURRENT PROBE UTILIZING AC POWERLINE
- AUTOMATIC SPECTRUM TRACE CAPTURE, SIGNAL LOGGING AND CLASSIFICATION
- PROGRAM KEY FOR FIRMWARE UPGRADES
- BUILT-IN DEMODULATORS AND SELECTABLE IF BANDWIDTHS
- INTERNAL RECHARGEABLE BATTERY

- RF LOCATOR PROBE FOR LOCATING TRANSMITTERS
- PATENTED SONAR THREAT LOCATING SYSTEM
- USB PC INTERFACE, PC SOFTWARE INCLUDED
- BUILT-IN PRINTER
- INTERNAL HIGH-SENSITIVITY SPECTRUM ANALYZER
- CORRELATOR REFERENCE MICROPHONE FOR AUTOMATIC THREAT CLASSIFICATION
- USER-FRIENDLY CONTROLS
- COMPACT CARRYING CASE
- ONE-YEAR WARRANTY

The OSCOR is the only available security product that provides all of the above features in a single portable package.

# OSCOR™ OSC-5000E

## OMNI SPECTRAL CORRELATOR

**World's leading countersurveillance receiver, designed to detect and locate electronic eavesdropping devices.**

## High-Sensitivity Spectrum Analyzer

1. **PHASED LOCKED SUPER HETERODYNE SPECTRUM ANALYZER**
2. **FREQUENCY RANGE:** 10kHz to 3GHz (10kHz to 21GHz with optional Microwave Down Converter)
3. **AUTOMATICALLY SELECTED ANTENNA INPUTS.**
4. **SWEEPING IF BANDWIDTHS:** 250kHz, 15kHz, and 6kHz.
5. **FREQUENCY SPANS** can be programmed with single button control for rapid recall and automatic searching.


The OSCOR provides user-friendly controls and a high-quality digital graphic display.

The OSCOR is one of the few Spectrum Analyzers designed specifically for countersurveillance.

## Built-in Suite of Demodulators

**AUDIO DEMODULATORS**

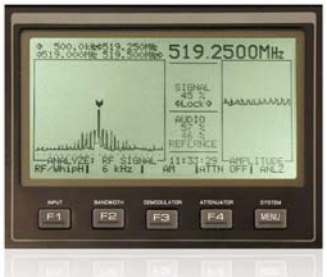
1. FM wideband
2. FM narrowband
3. AM wideband
4. AM narrowband
5. Sub-carrier
6. Single Sideband

**VIDEO FORMATS**

1. NTSC, PAL, SECAM
2. AM or FM demodulation
3. + or - synchronization pulse

**IF BANDWIDTHS**

1. Audio: 250kHz, 15kHz, and 6kHz
2. Video: 10MHz



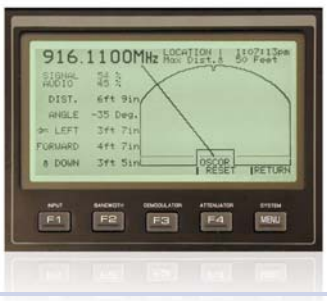

Built-in suite of demodulators and audio oscilloscope view of signals.

Monitor displays video signals for protection against covert video transmitters.

## Patented Threat Locating System

The Patented Threat Locating System uses sonic ranging and triangulation to locate the transmitter microphone.

*This patented system can only be used if an audio signal can be demodulated with the OSCOR.*




To locate a digitally demodulated transmitter, the OSCOR RF locator probe is utilized.

## Built-in Antenna Array

1. **ACTIVE WHIP ANTENNA:** 0.5-1505MHz frequency coverage.
2. **DISCONE ANTENNA:** 1500-3000MHz frequency coverage.
3. **LOOP ANTENNA:** 10-500kHz frequency coverage.
4. **INFRARED DETECTOR:** 360°; wavelengths of 850-1070nm and modulation from 10kHz-5MHz.
5. **STATUS INDICATORS:** Display the selected antenna.
6. **AC VLF:** (not shown in picture) The AC power cord serves as a probe for testing for carrier current type transmitters.
7. **BUILT-IN 20dB PRE-AMP:** Improves receiver sensitivity.


Patented fold-out antenna panel automatically selects the proper antenna. Pre-amp provides maximum sensitivity for the proper input. No unreliable cable connections or mismatched antenna inputs.

## Automatic Searching, Signal Detection, Spectrum Trace Acquisition, and Storage

1. **"LOAD FRIENDLY"** mode stores outside ambient signals and traces prior to performing a sweep.
2. **TARGET SWEEP AREA SIGNALS** are easily differentiated from ambient environment "Friendly Signals" and "Friendly Trace."
3. **ALL SIGNALS** are dated, classified, and stored for later retrieval and automatic tuning.
4. **SIGNAL AND TRACE DATABASES** can be stored for later comparison and analysis to determine if any new signals have been introduced into the environment.

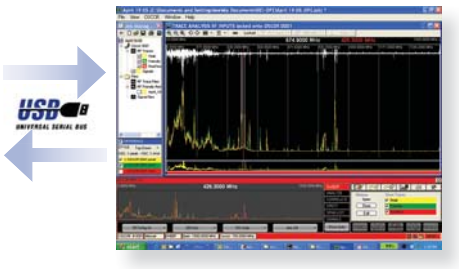
The OSCOR provides an automatic solution to rapidly logging and classifying the signals of your environment.

Quick Reference Guide provides a single chart that completely defines the programming process.

## Trace Analysis for Rapid Detection of Sophisticated transmitters

1. **OPTIMIZED SWEEP TIME FOR FAST ANALYSIS:** less than 5 seconds to complete one 1.5GHz pass.
2. **FRIENDLY SPECTRUM TRACE** provides reference trace for comparisons against sweep location trace.
3. **PEAK TRACE MINUS FRIENDLY TRACE** quickly shows evidence of analog and digital transmitters including frequency hopping and burst/packet transmitters.
4. **TRACES CAN BE COMPARED** for RF mapping of transmission sources within a building.
5. **DETAILED TRACE DATA IS STORED** using 120,000 data points across the Whip High, Discone, and MDC antennas.

Enhanced Trace Analysis provides ability to compare target sweep area traces to friendly traces, to quickly identify evidence of transmitters in the target sweep area (including frequency hopping and burst/packet transmitters). Trace and signal data can be further analyzed or stored on a computer via USB interface, for future comparisons or RF mapping.



## Automatic Threat Classification

1. **AUTOMATICALLY ANALYZES SIGNALS** using a patented sound pattern correlator.
2. **CORRELATOR PROCESS** is integrated over time to ensure accurate correlation.
3. **SIGNAL THREAT LEVEL ESTABLISHED ON A SCALE FROM 1 TO 5** based on the integrated correlation value.
4. **DIGITAL SIGNALS,** or signals that cannot be demodulated or correlated are flagged based on RSSI increase from Friendly reference.


For signals that are readily demodulated, the OSCOR easily classifies threatening signals. Signals that are not readily demodulated are flagged for manual inspection.

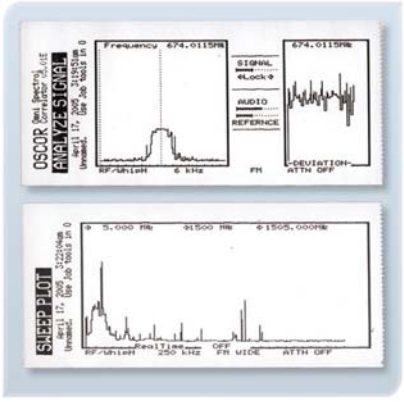
The patented OSCOR correlator provides signal classification by correlating the demodulated audio of a received signal to the ambient environment.

## Built-in Printer for Rapid Hardcopies

**Printouts can be generated of:**

1. Frequency Spectrum
2. Oscilloscope View
3. Correlation Results
4. Signal Database Listings
5. Frequency Span Listings
6. Threat Location Information
7. System Configuration

The OSCOR's built-in thermal printer provides a user-friendly "What You See is What You Get" method of generating print-outs of important sweep data.




The built in printer allows you to make quick printouts of suspicious signals, or complete spectrum traces.

## PC Interface and Remote Control of the OSCOR

The OSCOR OPC software provides enhanced analysis capabilities as well as the ability to create permanent *signal* databases and *trace* profiles of sweep environments for RF mapping and future comparisons. A Trace Sequence Recorder is also included for monitoring traces over time in a waterfall display. The software also provides professional report and graph capabilities.

**Software ADVANTAGES:**

1. **STORE, UPLOAD, AND DOWNLOAD** signal and trace info.
2. **PROGRAM THE OSCOR** for automatic operation.
3. **IMPROVED CONFIGURABLE USER INTERFACE.**
4. **SIGNAL CLASSIFICATION** using international frequency allocations.
5. **CUSTOMIZABLE REPORTS** and frequency spectrum graphs.
6. **COMPARE AND ANALYZE** historical signal and trace data to easily identify new signals detected in the sweep environment.
7. **HIGH RESOLUTION FULL-COLOR GRAPHICAL DISPLAY.**

**Software BENEFITS:**

1. **REMOTE CONTROL OF OSCOR** from PC computer.
2. **TRACE SEQUENCE RECORDER** provides waterfall trace display; allows user to "playback" recorded trace history files.
3. **RAPID THREAT INDICATION** using detailed comparison of stored RF spectrum *traces*.
4. **QUICKLY IDENTIFY SOPHISTICATED TRANSMITTERS** (frequency hopping & burst/packet) using peak difference trace analysis.


* OSCOR PC Software is included with the OSCOR; computer not included.

## Optional Microwave Downconverters (MDC-900/MDC-2100)

**The MDC-900 (3-9GHz) and MDC-2100 (3-21GHz) provide increased frequency range for the OSCOR.**

1. **COMPLETE SPECTRUM VIEW** from 3-21GHz (MDC-2100) using the OSCOR display or OPC software.
2. **DIRECT FREQUENCY CONTROL** and band selection from OSCOR.
3. **INTEGRATED HIGH GAIN LOG PERIODIC ANTENNAS** (MDC-2100 contains 3 unique integrated antennas).
4. **TRIPOD** provides stability for MDC antennas.

### TECHNICAL SPECS

#### MDC-2100 3-21GHz

OPERATION BANDS & FREQUENCY RANGES
**Conversion Output Frequency:** 5-3005MHz
**Frequency Range:** 3-21GHz
**Band 1:** 3-9GHz
**Band 2:** 9-15GHz
**Band 3:** 15-21GHz

ANTENNA GAIN (3 ANTENNAS)
**3-9GHz:** 6.1dB
**9-15GHz:** 5.3dB
**15-21GHz:** 8.4dB

MDS (MINIMUM DETECTABLE SIGNAL)
**Includes receiver sensitivity, antenna gain, & filtering losses** -122dBm

POWER
**Input Power:** 200 milliamps at 12 volts supplied by OSCOR

MECHANICAL
**Weight:** 1.1 lbs (0.5 kg)
**Dimensions:** 11.4 in x 3.1 in x 1.4 in (29 cm x 8 cm x 3.5 cm)

#### MDC-900 3-9GHz

OPERATION BANDS & FREQUENCY RANGES
**Conversion Output Frequency:** 5-3005MHz
**Frequency Range:** 3-9GHz

ANTENNA GAIN
**3-9GHz:** 6.1dB

MDS (MINIMUM DETECTABLE SIGNAL)
**Includes receiver sensitivity, antenna gain, & filtering losses** -122dBm

POWER
**Input Power:** 200 milliamps at 12 volts supplied by OSCOR

MECHANICAL
**Weight:** 1.1 lbs (0.5 kg)
**Dimensions:** 11.4 in x 3.1 in x 1.4 in (29 cm x 8 cm x 3.5 cm)

# OSCOR™ OSC-5000E

## OMNI SPECTRAL CORRELATOR

## OSCOR ADVANTAGES

**DIGITAL SPECTRUM ANALYZER**
DESIGNED SPECIFICALLY FOR COUNTERSURVEILLANCE

**AUTOMATICALLY SWITCHED ANTENNA ARRAY**
WITH BUILT-IN PRE-AMPS

**AUTOMATIC PROGRAMMABILITY**
CONTINUOUSLY SCANS, STORES SIGNALS AND TRACES, AND DETECTS THREAT SIGNALS

**ENHANCED TRACE ANALYSIS**
DETECTS SOPHISTICATED DEVICES SUCH AS FREQUENCY HOPPING AND BURST/PACKET TRANSMITTERS

**SIGNAL DATABASE**
PROVIDES STORAGE AND RECALL OF DETECTED SIGNALS AND SPECTRUM TRACES

**OPC SOFTWARE**
REMOTE CONTROL CAPABILITY AND ABILITY TO STORE SIGNAL AND TRACE PROFILES FOR FUTURE COMPARISON AND RF MAPPING

**AUDIO ANALYSIS MODE**
PROVIDES SUITE OF DEMODULATORS

**VIDEO DEMODULATOR AND MONITOR**
PROVIDES VIEWING OF COVERT VIDEO TRANSMITTERS

**ACOUSTIC CORRELATOR**
CLASSIFIES THREATENING SIGNALS

**BUILT-IN PRINTER**
PROVIDES HARDCOPY OF SIGNAL ANALYSIS INFORMATION

**MULTIPLE THREAT LOCATING SYSTEMS:**
PATENTED SONAR THREAT LOCATING SYSTEM AND RF LOCATOR PROBE

**COMPLETE PACKAGE OF SWEEP EQUIPMENT**
FOLDS INTO A DURABLE ATTACHE-STYLE CASE


**RESEARCH ELECTRONICS INTL.**
**455 SECURITY DRIVE**
**ALGOOD TN 38506 USA**
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**www.research-electronics.com**


## TECHNICAL SPECS

### RF SYSTEM

**Receiver:** Quad Conversion Super Heterodyne phase locked Spectrum Analyzer
**Frequency Coverage:** 10kHz - 3GHz
**Tuning Resolution:** 50Hz
**Sensitivity:** 0.8μ V typical with 15kHz bandwidth (+15dBm Max)
**Demodulators:** AM, FM Wide, FM Narrow, FM SC, SSB/CW
**IF Bandwidths:** 250kHz, 15kHz, 6kHz
**Attenuators:** 0, -20dB at Active Whip, Discone, and VLF-MF input
**Dynamic Range:** 90dB
**Subcarrier Tuning Range:** 15-250kHz
**Antenna Types:**
- **Balanced Loop:** 10-500kHz
- **Active Whip:** 500kHz-1500MHz
- **Discone:** 1500-3000MHz
- **Infrared Detector:** 10kHz-5MHz, 850-1070nm
- **AC Carrier Current:** 10kHz-5MHz (balanced across power line)

### AUDIO SYSTEM

**Frequency Response:** 50Hz-15kHz
**Voiceband Filter:** 300-3000Hz; 18dB/octave roll off
**AGC Dynamic Range:** 60dB
**Output Power:** 3W at 4Ω
**Headphone Output:** 0-2V rms
**Remote Contact:** Normally open (200mA/32V max)
**Balanced Auxiliary Input:** 0.5V rms nominal @ 600Ω
**Reference Audio Input:** 1mV-1V rms @ 3.9kΩ
**Sonic Correlator:** 50Hz-15kHz (frequency independent)
**Audio Alarm:** 3-level programmable 2-tone ringer
**Squelch:** Automatic digital or manual control over full display range
**Headphones:** Low acoustic leakage, 16Ω output limited to 105dBA

### VIDEO SYSTEM

**IF Bandwidth:** 10MHz
**Independent Control of Formats**
- **Protocols:** NTSC, PAL, SECAM
- **Demodulators:** AM or FM
- **Synchronization Pulse:** + or -

### SYSTEM INTERFACE

**Display:** 128 x 256 LCD
**Built-in Printer:** 192 dot graphics on 2-inch-wide thermal paper
**Rotary Tuning Dial:** 128 Pulse/Rev with variable count ratio
**USB Interface to PC**
**Removable Program Key for firmware updates**

### POWER SYSTEM

**AC Input:** 105-130VAC/210-260VAC, 50-60Hz, 24W
**External DC Input:** 12-18VDC, 1A max
**Internal Battery:** 12V, 2.9Ah 3-hour operation per charge typical

### MECHANICAL

**Size (HxWxD):** 6.25 in x 18.5 in x 14.5 in (15.9 cm x 47 cm x 36.8 cm)
**Weight:** 29 lbs (13.2 kg)

* PC Software is included with the OSCOR; computer is not included. MDC-900 and MDC-1200 sold seperately.