

RANGER 3

COUNTER SURVEILLANCE RECEIVER



Approachable and menu-driven - a host of features for the counter-surveillance specialist! There is in-depth analysis of the RF environment. The spectrum is scanned using a number of internal receivers simultaneously. There are automatic and manual modes of operation. By selecting the automatic mode a range of detection and verification routines are conducted without further intervention. However, the power of the system is in its range of software-controlled manual modes of operation, putting at the fingertips of the user an advanced and extremely comprehensive toolkit. The Ranger 3 'learns' its ambient RF environment. This data, stored in memory can be reviewed at any time and recalled on each successive room sweep. The Ranger 3 displays accurate distances to detected transmitters. An ultrasonic tone can be switched on and will not alert the eavesdropper. The sonic labelling technique, pioneered by Ranger, is a powerful method for detecting the microphones of room transmitters, ideal for use when monitoring sensitive sites.

- Continuous passive monitoring of the RF spectrum selectable to cover DC-3GHz (to 6GHz with optional probe)
- Automatic or manual verification of suspect signals.
- User interface is enhanced by its user-friendly software design.
- Quartz crystal stabilised tuning.
- Settings can be stored and recalled from memory whenever the equipment is switched on.
- Room frequency spectrum characteristic ('signature') is stored in memory and can be updated at any time.
- Facility to upload a 'signature' from, or download to a remote personal computer.
- 4 receiving circuits are in operation simultaneously. In addition to a wideband IF channel for the detection of FM and sub carrier signals there is also a narrowband IF detector with a steep sided selectivity characteristic.

- An ultrasonic tone is used to sense nearby surveillance devices without alerting those who placed them. This is undertaken for detection and distance measurements purposes.
- Very Low Frequency devices such as those using power and telephone cable as a conduit can be monitored.

RANGER 3 SPECIFICATIONS

FREQUENCY RANGE:	DC to over 3GHz in two bands VLF: DC-10MHz VHF: 10MHz- 3GHz
FREQUENCY DISPLAY:	direct digital readout of receiver frequency up to 10MHz. above 10MHz digitally displays LO frequency. 1KHz display resolution.
FREQUENCY STABILITY:	quartz frequency control eliminates long term tuning drift.
SENSITIVITY:	VLF: typically 2uV VHF: typically -80dBm
TUNING METHOD:	manual (with 3 tuning rates), automatic sweep or 'lock to strongest signal' (VHF band only)
SIGNAL TYPES:	demodulates signals using AM, FM (wide and narrow band) and FM with sub-carrier modulation using any sub carrier frequency.
DEMODULATORS:	FM, NFM, AM and SC
SELECTIVITY:	FM, SC: 350kHz AM, NFM: 30kHz, steep skirts for good anti-snuggling performance
TONE FREQUENCIES:	up to 20kHz
DISPLAYS:	
MAIN DISPLAY:	2x40 character alphanumeric liquid crystal display with electro-luminescent backlighting and with contrast and brightness controls.
RED 'ALERT' LEDs:	'TNE ALERT' illuminates when the tone detectors have confirmed a 'hit' 'SIG ALERT' illuminates when signal strength analysis shows a 'hit'.
GREEN 'CHARGING' LED:	flashes when battery needs recharging, stays on while charging current flows into batteries.
CONTROLS:	
KNOBS:	'TUNING', 'VOLUME' (both are software controlled shaft encoders which also have secondary functions).

'SOFT KEYS':	seven push buttons whose functions are software controlled and are labelled by the display screen.
OTHER KEYS:	'ON/OFF', 'VIEW' (used to assess the results of a sweep);
TOGGLE SWITCHES:	'SQU' (lets the volume control set the squelch threshold) tuning rate (3 positions), 'squeal' (3 position, controls audible signal strength indication)
CONNECTORS:	
BNC CONNECTORS:	'ANT' for whip or other antenna, 'PRB' optional input for VLF receiver (automatically selected by plugging in possible future accessory unit)
JACK SOCKET:	'Personal stereo' headphone jack
CHARGER SOCKET:	standard concentric input for mains charger unit or car cigarette lighter cable.
ACCESSORY CONNECTOR:	7-pin DIN socket for ranging probe loudspeaker and with digital and analogue interface for possible future expansion
POWER SUPPLY:	
BATTERY PACK:	built in 2.2Ah NiCad battery using 6 replaceable cells provides over 8 hours operation when fully charged.
INTERNAL CHARGING CIRCUIT:	constant current (250mA) with over voltage limit. Full recharge 'from flat' takes 14 hours.
CHARGING SOURCE:	accessory mains adaptor (Model MPU); car cigarette lighter socket via accessory cable; or external 12V supply.
PHYSICAL	Ranger 3 is built into a fully RFI screened aluminium case.
DIMENSIONS:	253 x 95 x 280mm
WEIGHT:	3.8kg
ACCESSORIES:	ranging probe, telescopic whip antenna with BNC plug, antenna extension lead, mains charging adaptor (model MPU), headphones, and operation instructions.