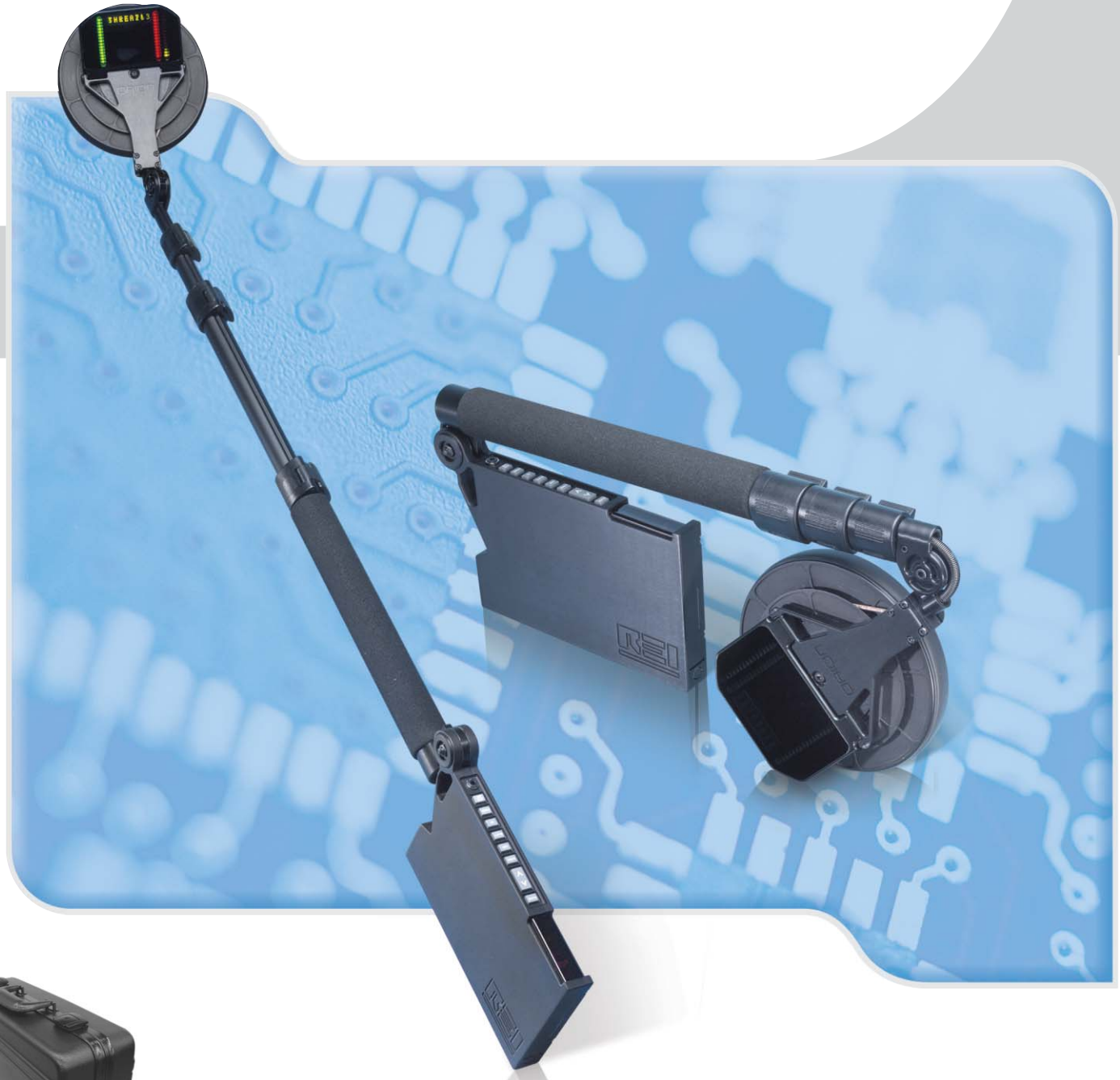


ORION™ NJE-4000

NON-LINEAR JUNCTION EVALUATOR

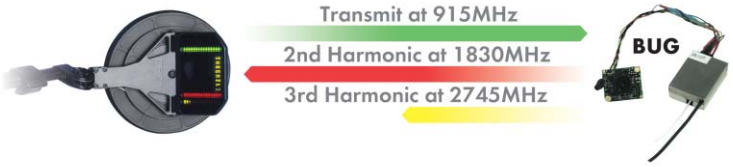
US. PATENTS: 5,815,122; 6,057,765; 6,163,259

ORION™ NJE-4000

NON-LINEAR JUNCTION EVALUATOR

Orion Advancements

The ORION is a state-of-the-art Non-Linear Junction Detector which evaluates hidden electronic devices. A Non-Linear Junction Detector transmits a signal and receives Harmonic returns to detect the presence of electronics, regardless of whether or not the electronic device is radiating, hardwired, or even turned on.



Technical Advancements

1. **ADVANCED DIGITAL SIGNAL PROCESSING ALGORITHMS** provide up to 18dB increase in detection sensitivity.
2. **MANUAL OR AUTOMATIC POWER CONTROL** ranges from 14 milliwatts to 1.4 watts.
3. **SYNTHESIZED TRANSCEIVER** provides frequency stability and agility to automatically search for clean operating frequencies (880–1,005MHz; 902.2–927.8MHz for USA).
4. **CIRCULAR, POLARIZED TRANSMIT AND RECEIVE ANTENNA** removes risk of missing a threat due to incorrect antenna polarization.
5. **AUDIO DEMODULATION** includes AM and FM as well as tone identification modes.

The patented technical advancements in the ORION are not paralleled in any other product in the world.

Ergonomic Advancements

1. **BALANCED, LIGHTWEIGHT DESIGN** with integrated transceiver, extension pole, antenna, and display.
2. **OPERATIONAL WEIGHT** is 3.3 lbs (1.5 kg). Carrying case is slightly larger than a briefcase.
3. **ALL TRANSMIT AND RECEIVE SIGNALS** are multi-plexed onto a single concealed cable eliminating assembly and tangled cords. Wireless infrared headphones eliminate audio cables.
4. **CAMCORDER-STYLE BATTERIES** are included with an external charger. (The four batteries operate for 1 hour at maximum power).

Until the ORION, Non-Linear Junction Detectors were bulky, difficult to use, and difficult to transport.

OPERATIONAL MODES

Search 2 & 3 Mode

Provides evaluation of both 2nd and 3rd Harmonic returns.
Strong 2nd Harmonic (red) indicates electronic components while Strong 3rd Harmonic (yellow) indicates corrosive (false) junctions.

- **Search CW** - continuous wave operation
- **Search 2 & 3** - pulsing operation
- **Search HOP** - Frequency hopping operation (provides increased detection reliability)

ID Mode

Provides detection of non-linear junctions using an audible tone. This mode is optimized for long-range detection of non-linear junctions.

- Produces 1kHz FM modulated tone
- Provides listening of 2nd & 3rd Harmonics

Using the ORION's audible tone to detect a junction takes advantage of the discrimination capability of the human ear.

Listen Mode

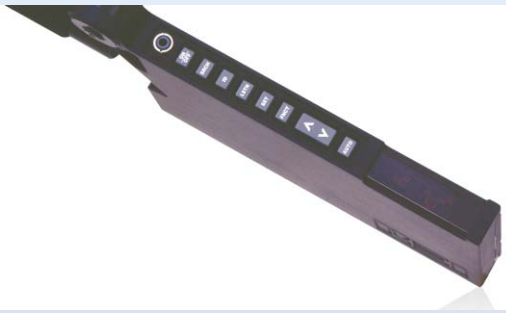
Provides detection and discrimination of non-linear junctions using demodulation for both 2nd and 3rd Harmonics.

Demodulation:
- AM
- FM
- 20kHz Pulsing Mode

This mode provides excellent discrimination functions by relying on audio characteristic sounds associated with non-linear junctions or active devices.

Additional Control Functions

Control functions are easily adjusted using the ORION keypad.
- Volume
- Signal Processing Gain
- Trip Point Warning Settings
- Transmit Power
- Frequency Selection



Wireless Headphones

1. Wireless IR headphones eliminate cables that can interfere with search activities.
2. Headphones can be plugged into the main unit or the IR receiver.
3. Volume control is adjusted via the main unit.

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

ORION™ NJE-4000
NON-LINEAR JUNCTION EVALUATOR

TECHNICAL SPECS

ORION ADVANTAGE

MINIMUM SET-UP TIME
NO CABLES OR BULKY TRANSCEIVER UNITS TO CARRY

LIGHT WEIGHT
BALANCED ERGONOMIC DESIGN FOR EASE OF USE

HIGH TRANSMIT POWER
FOR RAPIDLY SEARCHING A LARGE AREA WITH GREATER PENETRATION

PROGRAMMABLE DIGITAL SIGNAL PROCESSING
PROVIDES INCREASED SENSITIVITY

CIRCULARLY POLARIZED ANTENNA
REDUCES SEARCH TIME AND IMPROVES RELIABILITY

DUAL HARMONIC WITH DISCRIMINATION ALGORITHMS
MINIMIZES FALSE ALARMS

CAMCORDER-STYLE BATTERY
WITH LONG USE TIME AND DUAL QUICK CHARGE FUNCTION

WIRELESS HEADPHONES AND GRAPHIC DISPLAY
FOR SIMULTANEOUS AUDIO AND VISUAL INFORMATION

455 SECURITY PLACE
ALGOOD TN 38506
TEL 931.537.6032
800.824.3190 (US ONLY)
FAX 931.537.6089
www.research-electronics.com

TRANSMITTER

Frequency Bands: 880–1005MHz in 200kHz steps. USA: 902.2–927.8MHz
Transmit Power: 14 milliwatts minimum, 1.4 watts peak (effective radiated power)
Power Control: Manual or auto control with 30 dB range. Pulsed operation limits average output to meet USA FCC requirements

RECEIVER

Frequency Bands: Second Harmonic (1760–2010MHz) or Third Harmonic (2640–3015MHz)
Sensitivity: -133dBm for both harmonics
DSP S/W Integration: Programmable between 6 and 18dB gain in sensitivity performance
Receiver Bandwidth: 3kHz

MECHANICAL

Extension Lengths: 16–51 in (40.6–129.5 cm)
Case Dimensions: 6.25 in x 14.9 in x 18.5 in (15.9 cm x 37.8 cm x 47.0 cm)
Weight with Battery: 3.3 lbs (1.5 kg)
Case Weight: 11.5 lbs (5.2 kg)
Weight with Tool Kit: 23.1 lbs (10.5 kg)

BATTERY

Input AC: 100–240V, 50–60Hz
Run Time: 1 hour, 20 min
Charge Time: 4.5 min
Batteries: (4) 7.2V NiCad

TOOL KIT OPTION

- Borescope with built-in light and right-angle viewing for inspection of walls and furniture
- Combination stud finder and metal detector for non-destructive wall evaluation
- RF Wire Tracer and Multi-meter for wire evaluation.
- Rubber-tipped hammer to evaluate the stability of a junction under physical vibration
- Multi-purpose geared screwdriver furnished with small drill bit for use with Borescope
- **Miscellaneous Tools:** pliers, wire cutters, Leatherman™, inspection mirrors, measuring tape, flashlight, UV light, UV pen, drill bits for walls

RCM-4000 ORION REMOTE CONTROL OPTION

This accessory allows operation of the ORION from 20 meters away.

- Allows pre-screening of suspicious packages prior to X-Ray
- Serves in prolonging long-term covert monitoring of a fixed location
- The RCM-4000 provides power for the ORION through the use of a standard 7.2V NiCd ORION Battery or an external DC input from 9–24 volts.
- Available with a heavy-duty tripod and mounting bracket for stabilizing the ORION

Remote Dimensions: 4.2 in x 7.75 in (106 mm x 190 mm)
Power Source: ORION battery or 9–24V external DC @ 1.5A
Cable Length: 65 ft (20 meters) of industrial data cable
Audio Output: 3.5 mm headphone jack