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FCC Notice

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference to radio communications. However, there is no guarantee that the interference will not occur in a particular installation. If this equipment does cause harmful interference to the radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1. Reorient or relocate the receiving antenna.

2. Increase the separation between the equipment and receiver.

3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

4. Consult Optoelectronics or an experienced radio/TV technician for help

Note: Optoelectronics is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the users authority to operate the equipment.
Preface
Capabilities

The R11 is a completely unique Nearfield Test Receiver. It is not a single frequency radio receiver in the conventional sense, or a high speed scanner. It is actually a frequency sweeper using multiple swept harmonic LO frequencies to enable the R11 to lock on to virtually any two-way FM signal in less than one second. Its unique frequency conversion system allows it to search for and acquire new frequencies much more quickly than a conventional receiver.

Nearfield refers to the relative strength of a transmitter as compared with the background RF floor. The Nearfield refers to an approximate distance where the signal strength radiating from an antenna is relatively strong. As you approach the antenna, the observed signal strength increases to a point where its amplitude becomes greater than any other signal sources. At this point you are in the Nearfield of the transmitter. The R11 will pick up signals in the Nearfield of a transmitter.

Because of its high rate of sweeping, the R11 is essentially a self tuning receiver. The primary reason for a Nearfield Receiver is to trade distance for speed. A conventional scanning receiver will receive signals from greater distances than the R11 but suffers from being able to scan only 25 to 100 frequencies per second. It could take several minutes to several hours to tune an unknown frequency using a scanner. (An FCC database search shows over 5,000 licensed transmitters within 5 miles of the Optoelectronics facility.)
Battery Operation

The R11 uses a 6-cell, AA Nickel Cadmium shrink-wrapped battery pack when not connected to an external power source. These batteries should provide power to the R11 for a minimum of 4 hours. When the R11 is not connected to an external power source, the battery packs must be charged by reconnecting the unit to the supplied AC/DC wall charger. Plug the transformer into the power supply plug located on the top panel of the unit to initiate charging. A fully discharged battery pack takes approximately 12 hours to charge. Partially discharged pack time approximately 10 hours.

Battery packs are soldered into the R11 PC board. Contact Opoelectronics for replacement battery packs. Be sure to properly dispose of defective battery packs.

When batteries are not in use, they must be removed from the control box and placed in a storage container. This will prevent leakage and deterioration of the batteries.

The voltage regulator in the charging circuit senses battery voltage and automatically shuts the R11 down when a low battery is indicated.
Specifications

Frequency Range:
FM, Deviation <100KHz
300MHz - 2GHz (U.S. versions are cellular blocked)

50 - 300MHz
100aV @ 500MHz
<1 second

50 Ohm, -45dBM @ 100MHz, -20dBM @ 1GHz

Audio Level, Power, Squelch, Lockout, Lockouts on/off, Clear
Internal Speaker, Audio out jack

LEDs: Lock, Lockouts, Auto Hold, Frequency Range, Indicator

Power: 7.2V 600mA Hr. 4-hour operation

Enclosure: Powder coated sheet metal
4.25 H x 2.5 W x 1.25 D

Size:
continued use of the R11 will allow the user to determine the optimal switch settings.

1. Turning the switch down will allow the R11 to lock onto signals from the maximum distance possible, including deadlocks.

2. Turning the switch up will allow the R11 to lock onto signals from the maximum distance possible, including deadlocks.

When the R11 is sweeping the switch control may be adjusted up (turn pointer clockwise) or down (turn pointer counterclockwise).

SQU/CH/VOL/ME CONTROL

1. To turn the R11 on press the "ON" button. The unit will begin sweeping immediately, indicated by the LED's moving.

2. To turn the R11 off press and hold the "SHIFT" button down for four seconds.

POWER ON/OFF

OPERATION OF THE FRONT PANEL BUTTONS AND CONTROL KNOBS
**SHIFT**

The shift button performs four functions:

1. Press and hold the SHIFT button down for four seconds to turn the R11 off.
2. Press the SHIFT button so the LED next to the SHIFT button is illuminated, then press the LOCK OUT button to toggle lockouts on or off.
3. Press the SHIFT button so the LED next to the SHIFT button is illuminated, then press the SKIP button to clear all lockouts in memory.
4. Press the SHIFT button so the LED next to the SHIFT button is illuminated, then press the HOLD button to mute the audio.

**SKIP**

1. Pressing the SKIP button while the R11 is locked onto an active frequency will put the R11 in sweep mode.
2. Pressing the SKIP button while the SHIFT button LED is illuminated will clear all lockouts in memory.
LED lights up this indicates there are less than 100 lockouts in memory. If no lights are illuminated this indicates there are at least 100 but less than 200 lockouts in memory. If no lights are illuminated 0 lockouts are recorded into the RLU.

To determine how many frequencies are locked out press and hold the LOCKOUT button while counting the RLU.

Subsequent frequencies locked out will then drop the second frequency, third frequency and so on from the lock out menu. The RLU can look up to 1000 frequencies and will lockout the 1000 most recent frequencies. If the lock out menu-illuminated, then press the SHIFT button. All lock outs in memory will be cleared.

To clear all lock outs from the lock out menu press the SHIFT button so the LED next to the SHIFT button is illuminated. Then

2. To disable the lock out function press the SHIFT button so the LED next to the LOCK OUT button is illuminated. Then press the LOCK OUT button so the LED next to the LOCK OUT button is illuminated. Subsequent press of the LOCK OUT button will automatically lock out the present frequency.

1. To enable the lock out feature press the SHIFT button so the LED next to the LOCK OUT button is illuminated. Then

LOCK OUT

Operation Section Continued
HOLD

1. To automatically hold on a frequency press the HOLD button. The AUTO HOLD LED will then be illuminated indicating that the R11 will automatically hold on a frequency when captured. To resume sweeping press the SKIP button or press the HOLD button so the AUTO HOLD LED is no longer illuminated.

2. Pressing the HOLD button while the SHIFT LED is illuminated will mute the audio. To enable the audio again press the SHIFT button so the LED next to the SHIFT button is illuminated and then press the HOLD button. Audio will again be enabled.

LED INDICATORS

LOCK
When the LOCK LED is illuminated this indicates that the R11 is locked onto an active frequency.

LOCK OUT
When the LOCK OUT LED is illuminated this indicates that the R11’s lock out memory is active and will lock out the present frequency when the LOCK OUT button is pressed.

AUTO HOLD
When the AUTO HOLD LED is illuminated this indicates that the R11 will automatically stop and hold on an active frequency. It will remain on that frequency until the SKIP button is pushed or the AUTO HOLD function is disabled.
<table>
<thead>
<tr>
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<tr>
<td>10</td>
<td>1300MHz - 2000MHz</td>
</tr>
<tr>
<td>9</td>
<td>920MHz - 1300MHz</td>
</tr>
<tr>
<td>8</td>
<td>806MHz - 920MHz</td>
</tr>
<tr>
<td>7</td>
<td>470MHz - 806MHz</td>
</tr>
<tr>
<td>6</td>
<td>420MHz - 470MHz</td>
</tr>
<tr>
<td>5</td>
<td>148MHz - 420MHz</td>
</tr>
<tr>
<td>4</td>
<td>144MHz - 148MHz</td>
</tr>
<tr>
<td>3</td>
<td>108MHz - 144MHz</td>
</tr>
<tr>
<td>2</td>
<td>88MHz - 108MHz</td>
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<tr>
<td>1</td>
<td>30MHz - 88MHz</td>
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Diagram 1A LED Frequency Indicator: Operation Section Continued.
Quick Start

1. Press the Red **ON** button to turn the R11 on.

2. Press the **HOLD** button to manually lock onto a signal. This will put the unit in Auto Hold.
   To begin sweeping again press the **SKIP** button, or press the **HOLD** button to turn Auto Hold off.

3. To enable the Lockout function press the **SHIFT** button, this function is enabled when the LED is illuminated and controls the buttons secondary function. Press the **LOCK OUT** button to turn Lockouts On / Off.

The R11 automatically begins sweeping 30MHz - 2GHz indicated by the sweeping motion of the LED's on the front panel.

Secondary functions are labeled below the push button.
1. Push the button for 4 seconds to turn the R11 off.

2. The secondary function of the Shift button is power off. Press and hold the Shift button.

3. Adjusting switch and volume is done by using the knobs on the top panel.

4. To lockout an unwanted signal, press the Lock button. The R11 will hold 1000 ft.

5. To set the R11 in Multimode press the Hold button. Multimode function of the Hold button.

6. The secondary function of the Hold button.

7. The secondary function of the R11 button.
Reaction Tune with the Scout

The R11 is equipped with a 2.5mm CI-V mini jack located on the top panel. The CI-V jack allows connection to the Optoelectronics Scout frequency recorder for the purpose of Reaction Tune®. The Scout captures the frequency and passes the CI-V data to the R11 to tune the receiver to that frequency. Any version Scout will reaction tune the R11. Make certain the Scout is in CI-5 mode as indicated on the display upon turning the Scout on. The cable needed to interface the Scout and the R11 is referenced as an Optoelectronics part number, CBRT. The cost of the cable is $9 and can be ordered by calling the Optoelectronics orderline at 1-800-327-5912.

To put the R11 back into sweep mode:
Disconnect the Scout, turn the R11 off, then turn the R11 back on.
below 70MHz.
and increase the pick up distance for those above 800MHz. Use the RLF70 with the RDL70 or whenever your focus is
signals that were being masked. The RNF800 when used with an RFD600 antenna will eliminate all frequencies below
The N1000 FM broadcast notch filter will remove the influence from local FM stations and permit the R11 to pick up other
Filters
R11.

an extremely small dual band VHF/UHF antenna with a range of 150MHz - 1GHz is another excellent antenna for the
antennas that work well with the R11 include the TV100S (supplied with R11), RFD27, RFD40 and RFD800. The DB32.

The following paragraphs will help you choose the right antennas and accessories for your application.
To enhance the operation of the R11, a wide assortment of antennas and accessories are available from Optronics.

Accessories
Product Warranty

Optoelectronics, Inc. warrants all products and accessories for one (1) year against defects in materials and workmanship to the original purchaser. Products returned for warranty service will be repaired at Optoelectronics' option.

Specifically excluded are any products returned under this warranty that, upon examination, have been modified, had unauthorized repairs attempted, have suffered damage to the input circuitry from the application of an excessive input signal, have suffered damage to the charging circuitry or internal batteries from the application of excessive voltage, or show other evidence of misuse or abuse. Optoelectronics reserves sole right to make this determination.

No other warranties are expressed or implied, including but not limited to the implied warranties of merchantability and fitness for a particular purpose. Optoelectronics, Inc. is not liable for consequential damages.

Address all items to:

OPTOELECTRONICS, INC.
Service Department
5821 NE 14th Avenue
Fort Lauderdale, FL 33334

If in question, contact the factory for assistance:
Service Department (954) 771-2050
Factory Service