COMMUNICATIONS RECEIVER

IC-R8600

HIGH PERFORMANCE SOFTWARE DEFINED RECEIVER

- 10 kHz – 3.0 GHz Super Wideband
- P25, NXDN™, dPMR™, D-STAR Mode
- Real-time Spectrum Scope with Waterfall
- Software Demodulation by FPGA Processing
The IC-R8600 is a super wideband 10 kHz to 3 GHz communication receiver that enables you to hear and see a wide variety of signals in various ways. Not only does it decode diverse digital communication signals, but the advanced FPGA processing technologies implemented provide clarity and accuracy of received signals. With the optional remote control software for a Windows® PC, received audio and spectrum scope data can be transferred through an IP network for monitoring from remote locations.

**Superior Performance**

- **10 kHz to 3 GHz Super Wideband Coverage**
  
  The IC-R8600 decodes various digital protocol signals including P25 (Phase 1), NXDN™, dPMR™, D-STAR, Japanese DCR (Digital Convergence Radio) as well as receives conventional analog signals such as USB, LSB, FSK, CW, AM, S-AM (Synchronous-AM), FM and WFM modes, covering 10 kHz to 3 GHz wideband in 1 Hz steps.

- **Absolute Value of RSSI (Received Signal Strength Indicator)**
  
  The IC-R8600 shows S-meter, dBµ, dBµ (emf) and dBm meter types in the RSSI. The dBµ, dBµ (emf) and dBm meter has a high ±3 dB accuracy* (between 0.5–1100 MHz) that can be used for measuring signal strength level.

  * ± Less than ±6 dB between 1100–3000 MHz.

- **Software Demodulation in FPGA Processing**
  
  The IC-R8600 utilizes FPGA (Field Programmable Gate Array) and DSP units for demodulation, decoding and most of signal processing. Direct HF signals and intermediate frequency signals, which are converted from VHF/UHF signals, are digitized in a 14-bit A/D converter and transferred to the FPGA and DSP for optimal processing. The high-rate 122.88 MHz sampling frequency used for the A/D converter results in superior aliasing and image reception reduction.

- **AM/FM signals, which are converted from VHF/UHF signals, are digitized in a 14-bit A/D converter and transferred to the FPGA and DSP for optimal processing.**

- **Variety of Scan Functions**
  
  A variety of scan functions effectively and thoroughly search for desired stations. The IC-R8600 scans up to 100 channels per second in the memory scan mode.

  - Program scan/Fine program scan
  - IF scan/IF fine scan
  - Priority scan
  - Memory scan
  - Selected memory scan
  - Selected mode memory scan
  - Auto memory write scan

**Extensive Rich Features**

- **SD Card Slot for Receiver Recorder**
  
  The recorder function can record received audio onto an SD card in WAV format. The recorded voice audio can be played back on the receiver or a PC. When a 32 GB SD card is used, up to 270 hours of recording is possible. In addition, the screen capture function saves a snap shot of the screen in PNG or BMP format on the SD card.

- **Remote Control Function through IP Network or USB Cable**
  
  The optional RS-R8600 PC remote control software allows you to listen to received audio and control most of the receiver functions, including the spectrum scope, through an IP network or USB cable.

**Intuitive Operation**

- **Real-time Spectrum Scope with Waterfall Function**
  
  The high-resolution real-time spectrum scope provides class-leading performance in resolution, maximum 30 frames per second* fast sweep speed, ±2.5 MHz wide scope span (display range) and 110 dB dynamic range (at ±5.5 kHz span). The waterfall screen allows you to find weak signals by showing the spectrum change over time. When tapping the spectrum scope or waterfall screen, the tapped area can be selected as the operating frequency. The peak search function finds several peak frequencies within the scope range, and helps you to select these. (* Approximate)

- **Quick, Smooth and Intuitive Operation**
  
  To efficiently acquire intended signals, the IC-R8600 user interface provides quick and accurate operation. The large 4.3-inch color display, with touch screen function, is configured to collect operating information. By tapping indications and icons on the screen, the setting menu will pop up and parameters can easily be adjusted. When either the DIAL A, B or C multi-function control knobs is pushed, various functions, such as scan speed, RF gain, audio tone, display backlight or other menus will pop up on the display.

**Other Features**

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- **Other Features**
  
  - 3 antenna connectors: an SO-239 type and a phono (RCA) connector for HF and a type-N connector
  - Clock and NTP function
  - Center treble and de-emphasis
  - Decode multiple digital code used in digital mode
  - CI-V function improves 3rd order intercept point performance
  - Man dial friction adjustment
  - Dial lock and panel lock
  - CI-V remote control commands

**SD Card Slot for Receiver Recorder**

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**I/Q Signal Output**

- **The SD card slot** allows you to derive digital IF signals from the I/Q output jack. It can be used for analyzing spectrum or decoding signals.

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SPECIFICATIONS

GENERAL

Frequency coverage
USA 0.010000–821.999999*, 851.000000–866.999999, 896.000000–3000.000000 MHz
EXP 0.010000–3000.000000 MHz
("Guaranteed range: 0.10000–3000.000000 MHz")

Antenna connector
ANT 1 (0–3000 MHz): Type-N (50 Ω)
ANT 2 (0.01–30 MHz): PL-289 (50 Ω)
ANT 3 (0.01–30 MHz): RCA (50 Ω)

Frequency stability
Less than ±0.5 ppm (at 25 °C; after warm-up)

Mode
USB, LSB, CW, FSK, AM, FM, WFM, Direct (D-STAR, P25 Phase 1, NXDN, dPMR, DCR)

Scan types
Programmed, memory, selected memory, selected mode, auto memory write, priority scan and .1 scan

Power supply requirement
13.8 V DC

DC current drain
Stand-by: 1.8 A, Maximum audio: 2.0 A

Operating temperature range
-10 °C to +60 °C, 14 °F to 140 °F

Frequency resolution
1 Hz

Dimensions (W × H × D)
220 × 90 × 230 mm; 8.7 × 3.5 × 9.1 in

Weight (approximately)
4.3 kg; 9.5 lb

Supplied accessories:
- DC power cable
- Fuses
- Plugs

Some options may not be available in some countries. Please ask your dealer for details.

OPTIONS

- DC power cable
- Fuses
- Plugs

RECEIVER

Receiver system
0.010–29.999 MHz
30.000–499.999 MHz
500.000–1099.999 MHz
1100.000–1499.999 MHz
1500.000–3000.000 MHz

Sensitivity** (Preamp ON)
0.6 dB
0.5 dB
0.5 dB
0.5 dB
0.5 dB
0.5 dB

Selectivity
More than 30 dB
More than 40 dB
More than 50 dB
More than 40 dB
More than 40 dB
More than 40 dB

Spurious and image rejection
0.010–29.999 MHz
More than 70 dB
30.000–1099.999 MHz
More than 50 dB
1100.000–2499.999 MHz
More than 40 dB
2500.000–3000.000 MHz
More than 40 dB**

Audio output power
More than 4 W (8 Ω, 10% distortion)

All stated specifications are subject to change without notice or obligation.

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