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 FPGP 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.

* ±3 dB accuracy (between 0.5–1100 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.

**Ample Memory Channels**

The IC-R8600 has up to 2000 regular memory channels assignable to 100 groups. In addition to the regular memory channels, up to 100 scan skip channels and 50 pairs of program scan edges can be set. The auto memory write scan automatically stores busy frequencies in the auto memory write channels (up to 200 channels). These memory channels and various settings can be edited with the optional CS-R8600 programming software on a Windows® PC.

**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
- S and scan/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 WAVE 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.

- **I/O Signal Output**
  
  The I/Q signal output function allows you to derive digital IF signals from the I/O output jack. It can be used for analyzing spectrum or decoding signals. This function will be provided with future firmware update. A third-party software may be required separately.

**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 of dynamic range (at ±2.5 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.

**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.
**IC-R8600 COMMUNICATIONS RECEIVER**

### SPECIFICATIONS

#### GENERAL
- **Frequency coverage**
  - USA: 0.010000–821.999999 MHz, 851.000000–866.999999 MHz
  - EXP: 0.010000–3000.000000 MHz
  - Guaranteed range: 0.100000–821.999999 MHz
- **Antenna connector**
  - ANT 1 (0.01–300 MHz): Type-N (50 Ω)
  - ANT 2 (0.01–30 MHz): PL-286 (50 Ω)
  - ANT 3 (0.01–30 MHz): RCA (500 Ω)
- **Frequency stability**
  - Less than ±0.5 ppm (at 25˚C after warm up)
- **Mode**
  - USB, LSB, CW, FSK, AM, FM, WFM, Digital (D-STAR, NXDN, dPMR, DCR)
- **Number of channels**
  - 2000 regular with 100 groups, 200 auto memory write, 100 skip and 100 scan edge channels
- **Scan types**
  - Programmed, memory, selected memory, selected mode, auto memory write, priority scan and .1 scan
- **Power supply requirement**
  - Stand-by: 1.8 A, Maximum audio: 2.0 A
- **DC current drain**
  - 13.8 V DC ±15%
- **Operating temperature range**
  - -10˚C to +60 ˚C; 14 ˚F to 140 ˚F
- **Dimensions (W x H x D)**
  - 220 x 90 x 230 mm; 8.7 x 3.5 x 9.1 in
- **Weight (approximately)**
  - 4.3 kg; 9.5 lb

**Supplied accessories**
- • DC power cable
- • Fuses
- • Plugs

#### OPTIONS
- Some options may not be available in some countries. Please ask your dealer for details.
- **AH-8000 SUPER WIDEBAND OMNI-DIRECTIONAL ANTENNA**
  - Frequency coverage: 100–3335 MHz
- **MB-123 CARRYING HANDLE**
- **CS-R8600 PROGRAMMING SOFTWARE for Windows® PC**
- **RS-R8600 REMOTE CONTROL SOFTWARE for Windows® PC**

### RECEPTOR
- **Receiver system**
  - **0.010–29.999 MHz**
    - Direct sampling
  - **30.000–499.999 MHz**
    - Double heterodyne (IF: 778.7, 46.35 MHz)
  - **500.000–1099.999 MHz**
    - Double heterodyne (IF: 278.7, 46.35 MHz)
  - **1100.000–1499.999 MHz**
    - Triple heterodyne (IF: 900–500,000,00001, 278.7, 46.35 MHz)
  - **1500.000–3000.000 MHz**
    - Triple heterodyne (IF: 1000–500, 278.7, 46.35 MHz)

**Sensitivity**
- **(Preamp ON)**
  - 0.1–1.799 MHz
    - 10 dB SINAD
  - 1.8–15 MHz
    - 10 dB SINAD
  - 15–1099.999 MHz
    - 15 dB SINAD
  - 1100–2999.999 MHz
    - More than 40 dB
  - 3000–3000.000 MHz
    - 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
- **1100.000–2999.999 MHz**
  - More than 40 dB
- **2500.000–3000.000 MHz**
  - More than 40 dB

**Audio output power**
- More than 2.0 W (8 Ω load, 10% distortion)

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

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