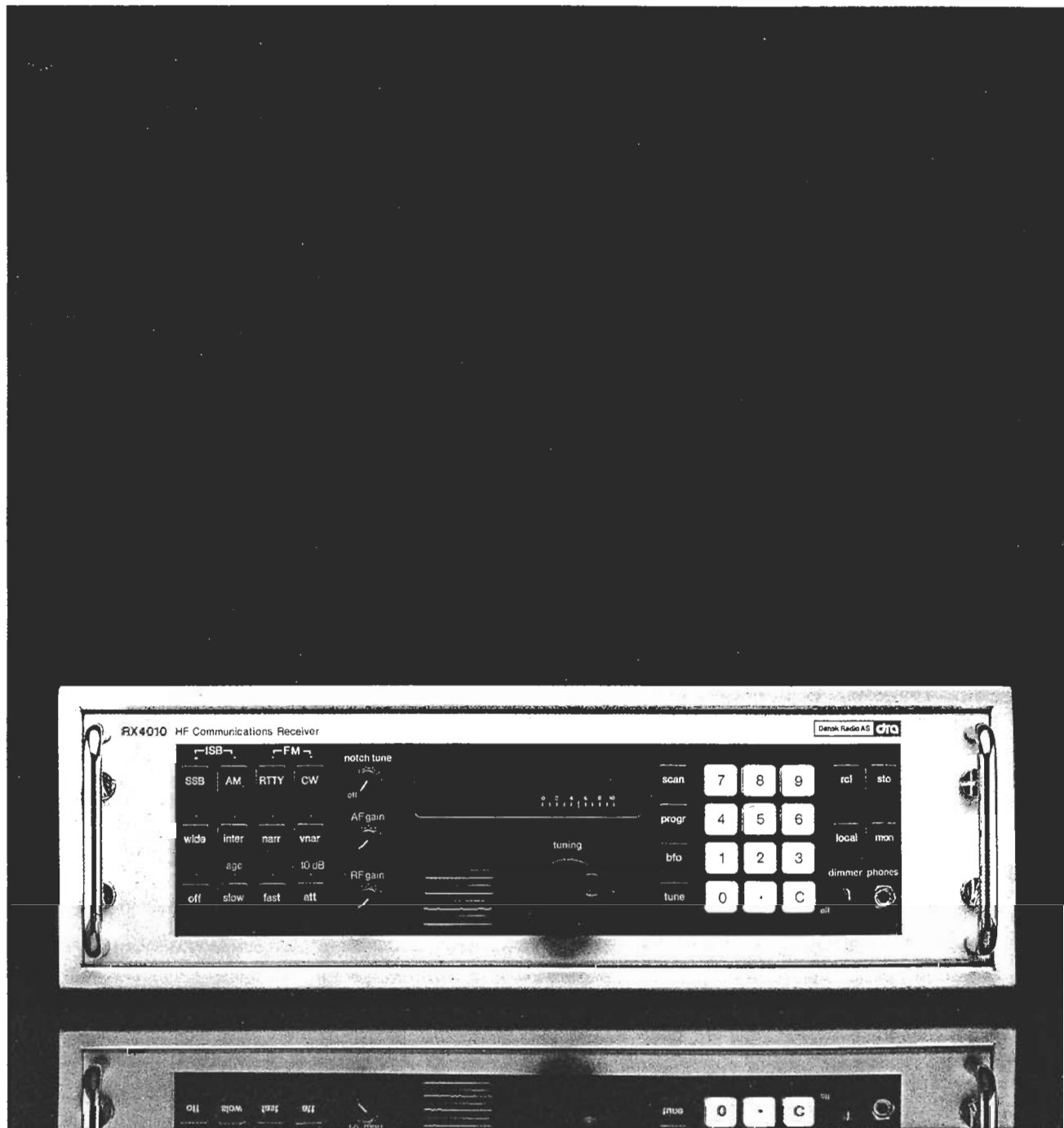


HF RECEIVER RX4010

for communication, surveillance and monitoring



HF Scanning ISB/SSB Receiver
Highly professional and cost effective
Full remote control

Dansk Radio AS



HF RECEIVER RX4010

DESCRIPTION

RX4010 is a highly professional receiver for communication, surveillance and monitoring.

Microprocessor control and logic ensure fast and reliable signal handling plus an abundance of extra features – at no extra cost.

Clear and rational front panel layout makes the RX4010 easy to operate for the untrained, at the same time giving optimal convenience to the experienced operator.

High MTBF, extensive selftest programme and sturdy, modular construction ensure many years of problem-free operation even in a rough environment.

The RX4010 has various optional remote control facilities.

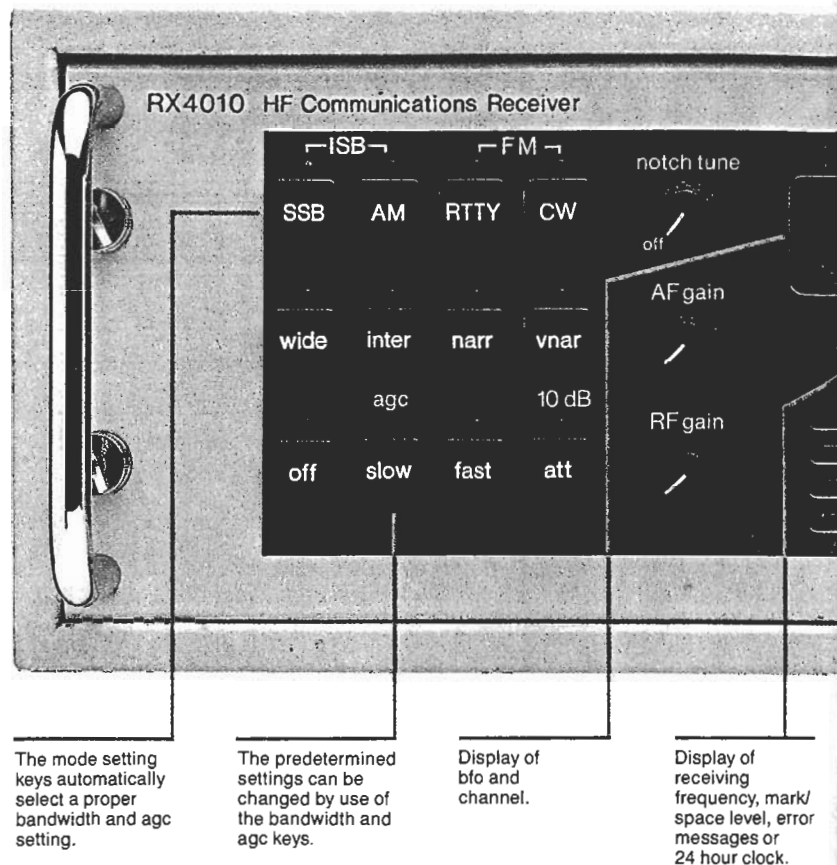
APPLICATIONS

When designing the RX4010 great consideration was given to the requirements of a large number of applications, such as:

- Fixed or mobile military stations
- Surveillance
- Monitoring
- Coast stations
- PTT networks
- Diplomatic networks
- Air traffic control
- Offshore communication
- News agencies
- Meteorological information systems
- Semi and fully automatic system networks.

TECHNICAL FEATURES

- Frequency range 15 kHz-30 MHz in 10 Hz resolution. (15-100 kHz reduced performance)
- ISB, USB, LSB, AM, RTTY and CW
- Digital AGC
- Oven stabilized master oscillator
- Fast tuning synthesizer
- Synthesized BFO ± 7 kHz with 10 Hz resolution
- Scanning with dwell times between 0,1-9 sec.
- 1.4 MHz IF output for auxiliary equipment
- Meets CEPT regulations, designed according to CCIR recommendations.

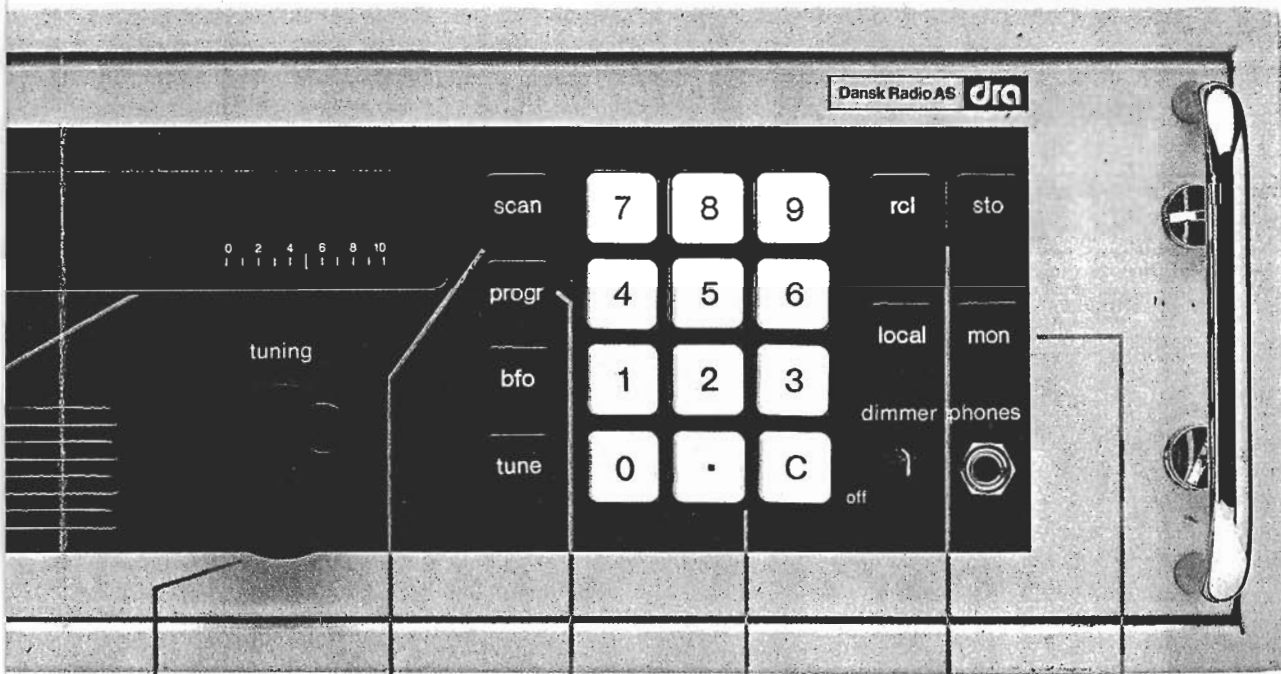


OPERATIONAL FEATURES

- Clear display gives all information about channel no., frequency BFO and signal levels
- Fast and easy frequency and mode set-up
- Flywheel tuning in 10 Hz, 100 Hz or 1 kHz steps
- 99 users programmable channels incl. filter, AGC and BFO
- All 433 CCIR channels pre-programmed
- Extensive scanning capability of private channels, CCIR channels, frequencies and programmes
- 49 scan programmes, specified and operated by the user
- 24 hour clock and up to 24 pre-settings of time and action:
 - muting of the receiver
 - change of frequency, mode etc.
 - start of scanning sequence
- Squelch function by signal threshold level for noise suppression between stations and for fast scanning
- Recovery on same frequency after power failure
- Notch tune interference filter
- Instant erase of total memory.

OPTIONS

- 004 Built-in demodulator for FSK telex. Mark and space signal display for easy tuning.
- 008 24 V DC power supply with automatic mains switch-over.
- 009 Remote control RC4010 allows full control of 8 RX4010 units via its built-in modem and, with an additional external modem, 31 receivers.
- 010 Up to 4 eight-line monitor cards can be fitted in RC4010 for simultaneous audio monitoring of the controlled receivers.
- 011 Computer interface 600-9600 bps. RS232C, RS422 & RS485.
- 012 Up to 1500 customer specified memory channels with fixed spacing in 6 groups.
- 013 Automatic control of tape recorder.
- 014 FM.
- 015 Customer specified IF filters.
- 016 TCXO Temperature controlled master oscillator.



Free tuning of receive frequency in 1000, 100 or 10 Hz steps and manual scanning also reverse.

Scanning in groups of memory channels, of programmed frequency ranges or programmed sequences.

Programming of clock, clock-alarms, action upon clockalarms and various scanprograms.

Numeric keys for entry of frequency, bfo, channel number, programming and clock information.

Memory access keys.

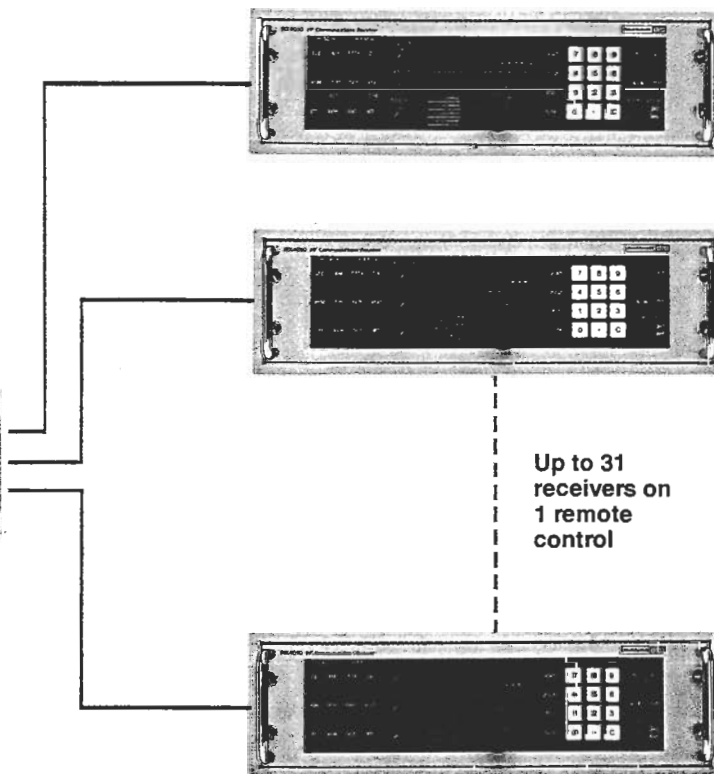
Selection of monitored sideband in ISB modes.

Receiver RX4010

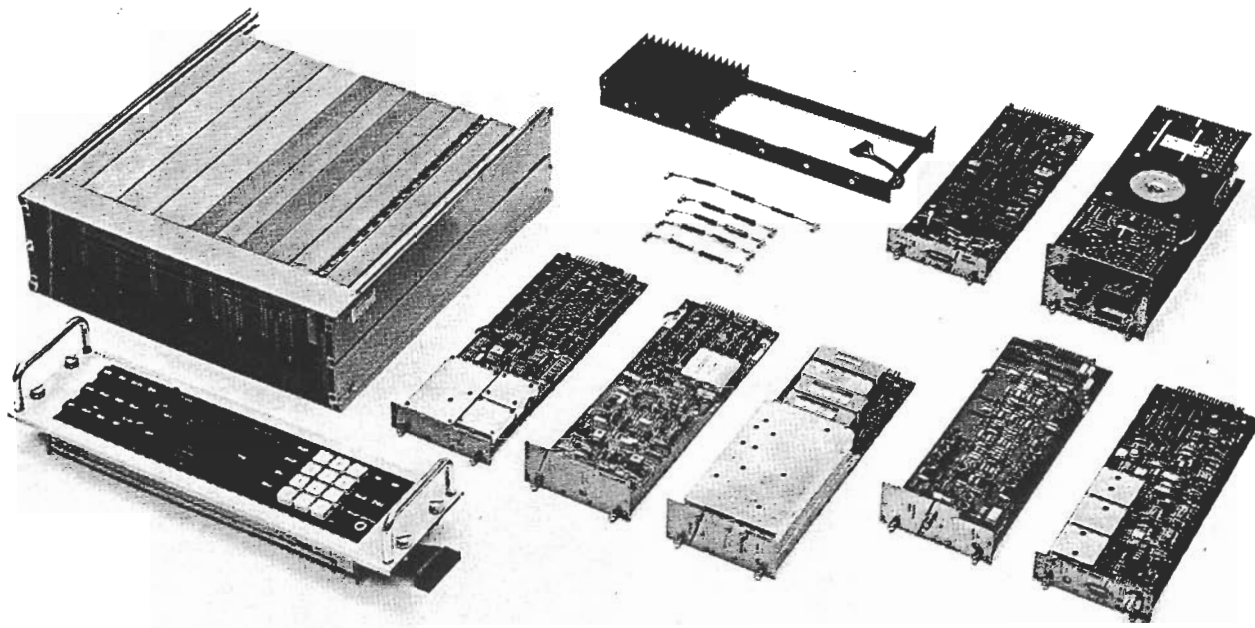
REMOTE CONTROL

The RX4010 can be remotely controlled from the RC4010 as shown. Remote control can also easily be performed from a Personal Computer or other computer system.

Remote Control RC4010



Up to 31 receivers on 1 remote control



RX4010 Main specifications

Frequency Range

15 kHz to 30 MHz in 10 Hz increments
(15 kHz to 100 kHz with reduced performance).

Frequency Stability

0.1 ppm - 15 to +50° C.
0.3 ppm - 25 to +55° C.
aging <0.1 ppm/year.

Frequency Tune Time

Typical 10 msec.

Operating Modes

ISB, USB, LSB, AM, RTTY and CW.

IF Selectivity

SSB: -6 dB at 350 and 2700 Hz.
AM, RTTY, CW:
Wide: -6 dB at ±2.7 kHz.
Inter: -6 dB at ±1.2 kHz.
Narrow: -6 dB at ±0.5 kHz.
Very narrow: -6 dB at ±0.1 kHz.

Antenna Impedance

50 ohm, BNC female connector,
SWR < 2.

Input Protection

100 V EMF for up to 15 minutes.
35 V EMF continuously.

Input Selectivity

Built-in sub-octave filters.

Sensitivity

< 0.7 μV EMF for 10 dB SINAD in SSB.
< 3.5 μV EMF for 10 dB SINAD in AM.

Intermodulation

100 dBμV EMF per signal produces less than an equivalent input signal of 40 dBμV EMF.

Line Intermodulation (In-band)

Less than -45 dB relative to either of two 94 dBμV EMF signals (With RF Attenuator in "OFF").

Cross Modulation

With a wanted signal of 60 dBμV EMF, an unwanted signal of 110 dBμV EMF/30 % mod. 400 Hz produces cross modulation output 30 dB below wanted signal level.

Blocking

With a wanted signal of 60 dBμV EMF, an unwanted signal of 110 dBμV EMF causes less than 3 dB change in output level.

Reciprocal Mixing

An unwanted signal removed 20 kHz or more from the tuned frequency must be more than 90 dB stronger than a signal of 0.5 μV EMF at the tuned frequency to give equal audio output. (2.4 kHz bandwidth, SSB).

Image Rejection

Greater than 90 dB.

IF Rejection

Greater than 90 dB.

Spurious Response Rejection

Greater than 80 dB.

Internally Generated Spurious Response

Internally generated spurious signals will not produce a S/N ratio greater than 10 dB (2.4 kHz BW).

Spurious Emission

Less than 10 μV/50 ohm at antenna connector.

Automatic Gain Control

Less than 4 dB change in output for input signal variation from 6 dBμV to 106 dBμV.

RF Attenuator

0 dB or 10 dB.

BFO

Variable in 10 Hz steps over ±7 kHz.

Notch Tune Filter

30 dB variable from 300 to 3400 Hz.

IF Output

1.4 MHz at -20 dBm.

Audio Output

Speaker: 4 W/4 ohm.
Phones: 10 mW/500 ohm.
Line: 10 dBm/600 ohm (adjustable).

Input Power

110-125 V and 220-240 V AC ± 10 %,
45-65 Hz, 70 VA.

Environmental Conditions

Temperature range:
Nominal: 0° to +50° C.
Operating: -25° to +55° C.
Storage: -40° to +70° C.
Relative humidity: up to 95 %/40° C.
Vibration: 3 directions 0.32 grms,
10-150 Hz, 30 min/direction
acc. to IEC 68-2-36 Test Fbd
operating.
Shock: 3 directions, 5 g, 16 msec
500 bump/direction
acc. to IEC 68-2-29 Test Eb
operating.

Dimensions and Weight

Height: 133 mm (5 1/4").
Width: 483 mm (19").
Depth: 439 (17 1/4").
Weight: 15 kg excl. cabinet.
24 kg incl. cabinet.

As our products are subject to current improvements, the equipment may vary in details from specifications and descriptions given in this publication.

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