



TR-7750U

UHF AM DIGITAL RADIO



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▶ Jotron 7000 Series

- Excellent RF performance in congested areas
- Advanced digital signal processing (DSP)
- Remote control over Ethernet /RS232 /RS485
- Easy set-up and control
- Compact Design
- In band signalling for PTT and squelch
- Continuous duty cycle
- Offset operation
- VoIP
- Start-up time <6 sec
- IP - seamless operation on all interfaces (mic, E&M and VoIP)

TR-7750U Transceiver



TA-7650U Transmitter



RA-7203U Receiver



Excellent RF performance in congested areas

Careful analogue design is the key issue to achieve the best collocation capabilities possible. The 7000 series of radios is designed with no compromises regarding the synthesizers and analogue front end. This together with a linear power amplifier design, strictly controlled by an ultra fast digital signal processor, makes the radio the ultimate choice for professional Ground to Air applications.

Advanced digital signal processing (DSP)

The receiver and transmitter use the most powerful digital signal processors to perform the intermediate frequency (IF) and the audio frequency (AF) filtering. In addition, all the modulation and demodulation tasks are performed in the signal processor. This me-

ans improved product control, less tuneable parts and improved reliability.

Remote control over Ethernet / RS232 / RS485

The radio units have alternative ways of being remotely controlled, making them easy to fit into an existing infrastructure already available on the site. The radio units are controlled using SNMP (Simple Network Management Protocol) over UDP (User Datagram Protocol), this together with interface makes it easy to control the radios. Either by using Jotron's dedicated Radio Access and Control System -RACS III or by a standard SNMP management application. Alternatively, setup and control may be done using either TCP/IP on the ethernet, or the RS232/RS485 ports. Built in web-server for historical and current status of the radios. Radio support DHCP and IPv6. The radios are also fully compliant with the ED-137 standard.

Easy set-up and control

All parameters can be set and adjusted electronically from the front panel or from the remote interface. The front panel contains a graphical display, menu buttons and switches that are used to set up the radio.

Compact Design

The receiver unit is a complete stand-alone receiver with built in power supply weighting only 1.8 kg. The transmitter unit weights only 3.8 kg. A complete transceiver consists of 3 units (transmitter, receiver and power supply) and the total weight is only 7.0 kg. The modular and compact design makes the radio the perfect choice for distant sites that are hard to reach.



BITE system

The BITE system continuously monitors vital points in the radio units. An error is instantly detected and reported in multiple ways. The unique main/standby concept of the Jotron 7000 series can automatically switch the operation to a standby set upon an error, providing seamless communication for the user.

Keying options

Keying options available in the transmitter includes positive and negative voltages (up to 50V), keying to ground and phantom keying on the audio line. In addition the keying option includes in-band tone signalling with configurable tones for easy integration with any VCCS system.

Continuous duty cycle

The transmitter is designed for continuous duty cycle. This makes the radio the perfect choice for VOLMET and ATIS applications requiring continuous transmission. The unique cooling concept used on the transmitter, keeps the temperature low, and the operational lifetime of the equipment high.

Offset operation

Setting the offset carrier is just as easy as setting the frequency of the transmitter. Up to 4 carriers offset is available using the standard temperature controlled oscillator in the transmitter. 5 carrier offset available upon request.

Squelch options

The squelch system consist of a level and a noise compensated S/N squelch. Levels on both are adjustable which is useful in RF congested areas.

Squelch options on the receiver are flexible. Relay contacts with configurable logic and in-band signals are available.



TECHNICAL SPECIFICATIONS

General – All units	AM 25 kHz	AM 12,5 kHz	FM
Frequency range	225-400 MHz		
RF Modes	6K80A3EJN	5K00A3EJN	
Keying time	< 25ms		
Frequency response	300-3400 Hz	350-2500 Hz	300-3400 Hz
Frequency stability	<1.0 ppm		
Data ports	RS232, RS485, Ethernet (100BaseT)		
Protocol	Remote Control: SNMP (UDP/IP), Jotron monitoring (TCP/IP) Voice over IP: RTP (ED 137)		
BITE monitoring	VSWR, Voltages, Currents, Levels, Lock detect, Temperature, Output power, Reflected power, a.o.		
Supply voltage, AC	115/230VAC +15/-10% / 50-60Hz		
Supply voltage, DC	21.6 - 31.2VDC negative ground		
MTBF	>10 years / unit		
MTTR	<30 minutes at lowest replaceable unit		

Transmitter (TA-7650U)	AM 25 kHz	AM 12,5 kHz	FM
Output power	1-50W		
Adjacent channel power	>65 dBc	>60 dBc	>65 dBc
Modulation level	up to 95%		
Distortion	< 5%		
Line input	600Ω, -40 - +10dBm		
Intermodulation attenuation	>70 dB when interfering signal is decoupled with at least 30 dB		
Tx timeout	10s to 5 min in 10s step		
Inband keying	Configurable tones: 2000-4000Hz		
Carrier offset	2,3 or 4		
Differential group delay	<60μs		
VSWR	1 : Infinity		
Duty cycle	100% continuous operation @ ambient below 40°C		
Power consumption	<400VA		
Dimension Transmitter unit	142mm(28TE)(W) * 330mm(D) * 128mm (H), Weight 3.8 kg		
Dimension PSU unit	71mm (14TE)(W) * 303mm(D) * 128mm (H), Weight 1.3 kg		
Broadband noise	<150dBc/Hz @1% offset		
Spurious emissions	<-80dBc		

Receiver (RA-7203U)	AM 25 kHz	AM 12,5 kHz	FM
Sensitivity analogue @1μV / 30% pd	10dB SINAD (CCITT)		
Adjacent channel rejection	>75dB	>70dB	>80dB
Intermodulation	>75 dBc		
IF bandwidth	+/- 11kHz	+/- 3.5 kHz	+/- 11 kHz
Image and IF frequency response	>110 dB		
Squelch operation	Adjustable -112 dBm to -65 dBm/ 5 dB S/N to 20 dB S/N Combination of RF level and Signal/Noise (digital coherent squelch) Activation time <20ms Hysteresis typical 2 - 3 dB		
Audio AGC	30% - 90%, <1dB variation		
Signal / Noise	>45dB on any output @100μV, 30%		
Distortion	<5% @ 90% modulation		
AGC range	-107dBm to +5dBm		
AGC attach time	<30ms		NA
AGC decay time	<200ms		NA
Differential group delay	<60μs		
Inband squelch signal	Configurable tones: 100 to 5000 Hz		
Line output	600Ω, -36 - +10dBm @90% modulation		
Harmonic distortion	<5% @90% AM (line output)		
Cross-modulation	>95dB @ 1MHz frequency offset		
Blocking	>100dB @1MHz offset, >110 dB out of band signals		
Dynamic range	>120dB		
Spurious response rejection	>80dB		
Dimension Receiver unit	71mm (14TE)(W) * 330mm(D) * 128mm (H), Weight 1.8 kg		

Standards

EN302 617(AM) , ICAO Annex 10

Environmental

Temperature range: -20°C to +55°C (operating)
-40°C to +70°C (storage)
Humidity: 90% @ +40°C (non condensing)
Shock: Transport: IEC-721-3-2, Class 2M3
Vibration: Transport: IEC-68-2-32, Class 2M3, IEC-68-2-6
EMC: EN 301 489 – part 22
SAFETY: IEC 60950-1, CSA-C22.2 No. 60950



Agent/Distributor:

Jotron AS reserves the right to change the design and/or specifications at any time without prior notice. Reservations are also taken towards any general errors that may occur.

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