



ATC & COASTAL COMMUNICATION
PRODUCT AND APPLICATIONS CATALOGUE
FEBRUARY 2012



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ATC & COASTAL Products

VHF AM MULTIMODE RADIO

The Jotron 7000 series VHF Multimode Digital Radio, combines excellent RF performance in congested areas, with advanced digital signalling technique, to cover the future radio communication needs for civilian authorities. Output power adjustable from 1-50 Watt.

84700 TR-7750 VHF/AM Digital Multimode Transceiver 50W

Multi/Single Channel VHF/AM Transceiver in 19" sub-rack. 3U high. 99 Ch. fast recall store. AM voice. 25 and 8.33 kHz channel spacing. 118-137 MHz. LAN (SNMP), RS-232 or RS-485 serial interface, full digital control and diagnostics. Operates from AC mains with auto fail to 24V DC. Powersupply, sub rack and RJ-45 to KRONE interface included.



87500 TR-7750 LN VHF/AM Digital Multimode Transceiver 50W

Improved collocation characteristics. Multi/Single Channel VHF/AM Transceiver in 19" sub-rack. 3U high. 99 Ch. fast recall store. AM voice. 25 and 8.33 kHz channel spacing. 118-137 MHz. LAN (SNMP), RS-232 or RS-485 serial interface, full digital control and diagnostics. Operates from AC mains with auto fail to 24V DC. Powersupply, sub rack and RJ-45 to KRONE interface included.



84500 RA-7203 VHF/AM Digital Multimode Receiver

Multi/Single Channel VHF/AM Receiver in 19" sub-rack. 3U high. 99 Ch. fast recall store. AM voice. 25 and 8.33 kHz channel spacing. 118-137 MHz. LAN (SNMP), RS-232 or RS-485 serial interface, full digital control and diagnostics. Operates from AC mains with auto fail to 24V DC. Built in power supply. Sub rack is not included.



84000 TA-7650 VHF/AM Digital Multimode Transmitter 50W

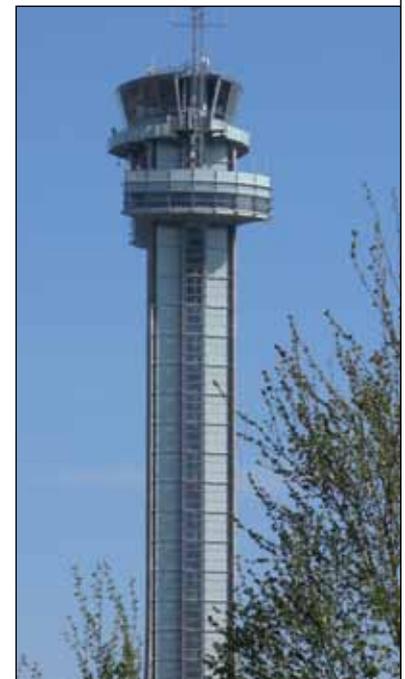
Multi/Single Channel VHF/AM Transmitter in 19" sub-rack. 3U high. 99 Ch. fast recall store. AM voice. 25 and 8.33 kHz channel spacing. 118-137 MHz. LAN (SNMP), RS-232 or RS-485 serial interface, full digital control and diagnostics. Operates from AC mains with auto fail to 24V DC. Power supply included. Sub rack is not included.

86500 TA-7650 LN VHF/AM Digital Multimode Transmitter 50W

Improved collocation characteristics. Multi/Single Channel VHF/AM Transmitter in 19" sub-rack. 3U high. 99 Ch. fast recall store. AM voice. 25 and 8.33 kHz channel spacing. 118-137 MHz. LAN (SNMP), RS-232 or RS-485 serial interface, full digital control and diagnostics. Operates from AC mains with auto fail to 24V DC. Power supply included. Sub rack is not included.

Software Options for above radios:

- 84357** VDL - VHF Data Link Applications
Enables the physical capability of the radio to receive and transmit VDL mode 2 packets using D8PSK modulation with 31.5 kbit/s data.
- 84358** Inband signalling (for TA-7650 and RA-7203, both as transceiver)
TR-7750



VHF AM MULTIMODE RADIO cont...

84360 118-144 MHz Extended frequency range

84361 118-156 MHz Extended frequency range

84362 Frequency Modulation (FM)

93809 Carrier offset 2,3,4 and 5

86290 VoIP

86884 Frequency Modulation (AM-MSK)

86885 Telsa Cavity Control

Spares:

86244 Spare part modules

82417 PSU 7002 Power Supply

82716 7000 to 7000 Multimode Radio interface

To be used when interfacing 7000 Digital Multimode Radio to previous 7000 series.

Accessories:

81860 ACU Antenna Change Over Unit , Main to Standby, 7000 series Multimode

82452 Sub Rack for RA-7203, includes RJ-45 to KRONE interface

82453 Sub Rack for TA-76xx w/PSU, includes RJ-45 to KRONE interface

98825 Sub Rack complete for 7000 series

86907 KRONE frame for Sub Rack (2 pcs for Transceiver)



7000 SERIES UHF AM DIGITAL RADIO

The Jotron series 7000 UHF digital radios are designed to provide ATC & COASTAL communication for professional users in the air defence frequency range. The radios provide excellent audio performance together with unmatched RF performance in tough electromagnetic environments.

86300 TR-7730U UHF/AM Digital Transceiver 30W
 Multi/Single channel UHF/AM Transceiver in 19" sub-rack, 3U high, 99 ch. fast recall store. AM voice. 25 and 12.5 kHz spacing in the band 225-400 MHz. LAN, RS-232 or RS-485 serial interface, full digital control and diagnostics. Operates from AC mains with auto fail to 24V DC. Powersupply, sub rack and RJ-45 to KRONE interface included.



87100 TR-7750U UHF/AM Digital Transceiver 50W
 Multi/Single channel UHF/AM Transceiver in 19" sub-rack, 3U high, 99 ch. fast recall store. AM voice. 25 and 12.5 kHz spacing in the band 225-400 MHz. LAN, RS-232 or RS-485 serial interface, full digital control and diagnostics. Operates from AC mains with auto fail to 24V DC. Powersupply, sub rack and RJ-45 to KRONE interface included.

86200 RA-7203U UHF/AM Digital Receiver
 Multi/Single channel UHF/AM Receiver in 19" sub-rack, 3U high, 99 ch. fast recall store. AM voice. 25 and 12.5 kHz spacing in the band 225 - 400MHz. LAN, RS-232 or RS-485 serial interface, full digital control and diagnostics. Operates from AC mains with auto fail to 24V DC. Sub rack is not included.



86100 TA-7630U UHF/AM Digital Transmitter 30W
 Multi/Single channel UHF/AM Transmitter in 19" sub-rack, 3U high, 99 ch. fast recall store. AM voice. 25 and 12.5 kHz spacing in the band 225-400 MHz. LAN, RS-232 or RS-485 serial interface, full digital control and diagnostics. Operates from AC mains with auto fail to 24V DC. Subrack is not included. Includes Power supply.



86400 TA-7650U UHF/AM Digital Transmitter 50W
 Multi/Single channel UHF/AM Transmitter in 19" sub-rack, 3U high, 99 ch. fast recall store. AM voice. 25 and 12.5 kHz spacing in the band 225-400 MHz. LAN, RS-232 or RS-485 serial interface, full digital control and diagnostics. Operates from AC mains with auto fail to 24V DC. Subrack is not included. Includes Power supply.

Software Options for above radios:

- 84358** Inband signalling
- 93809** Carrier offset 2,3,4 and 5
- 86290** VoIP
- 84362** Frequency modulation (FM)
- 86885** Telsa Cavity Control



7000 SERIES UHF AM DIGITAL RADIO cont...

Spares:

- 82417** PSU-7002 Power Supply
- 85712** PSU-7003 (for UHF 50W)
- 86244** Spare part modules for 7000U (30W)
- 86268** Spare part modules for 7000U (50W)

Accessories:

- 81860** ACU Antenna Change Over Unit, Main to Standby, 7000 series
- 86149** Sub rack complete for 7000 UHF series
- 86208** Sub Rack for RA-7230U
- 86209** Sub Rack for TA-76XXU
- 86907** KRONE frame for Sub Rack (2 pcs for Transceiver)



TR-810 VHF AM MULTI PURPOSE RADIO

The new TR-810 is designed to meet future demands for a lightweight, rugged and flexible radio, specially designed for vehicle and desk-top applications. The flexible design is achieved by making the Operators Control Panel (OCP) detachable from the compact base unit. Communication between the two units is via standard CAT-5 cable. By being able to separate the OCP from the base unit, it opens up for three main user applications.

Features:

- 10W output when used as vehicle installation or desk top mount
- Can operate on a wide DC voltage range from 10 to 28V
- Dedicated buttons on the OCP for fast recall of channels
- A bright and clear graphical display for easy readout
- Built-in loudspeaker with possibilities for an external loudspeaker through dedicated amplifier
- Front or rear connection for microphone input
- Tape recorder output
- Modular and compact design
- Easy to install
- ETSI and FCC approvals



83200VE TR-810 VE Transceiver Vehicle version 10W

Includes:

83200 TR-810 Transceiver Base Unit

86417 TR-810 VE Accessories

(incl. Microphone, Antenna with cable, Antenna adapter FME - BNC, Cable DC w/fuse, Front module bracket, Cable 5m extension between front (OCP) and transceiver module, External Loudspeaker, Console bracket and Manual).

83200DE TR-810 DE Transceiver Desktop version

Includes:

83200 TR-810 Transceiver Base Unit

86419 TR-810 DE Accessories

(incl. Microphone, Power AC/DC w/connector, Front module bracket, Antenna connector BNC – RG213, Console bracket and Manual).

83200MP TR-810 MP Transceiver Man Portable version

Includes:

83200 TR-810 Transceiver Base Unit

86416 TR-810 MP Accessories

(incl. Microphone, Carrying bag, Antenna bracket, Fasten bracket, Antenna and cable w/connector, Interconnection cable, DC power cable, Power AC/DC w/connector and Manual)

87130 BU-872

83200LR TR-810 LR Transceiver Last Resort version

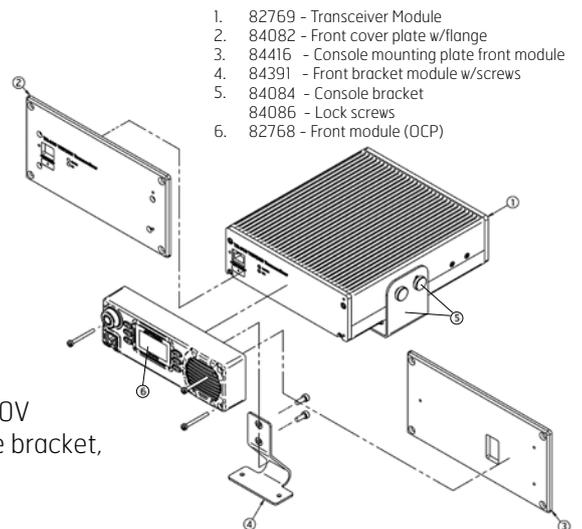
Includes:

83200 TR-810 Transceiver Base Unit

86418 TR-810 LR Accessories

(incl. Microphone, Power AC/DC w/connector, 220V AC cable w/plugs, Antenna adaptor BNC, Console bracket, Fasten bracket, Support knob and Manual).

87130 BU-872



TR-810 VHF AM MULTI PURPOSE RADIO

83200SR TR-810 SR Transceiver Sub Rack version

Includes:

83200 TR-810 Transceiver Base Unit

86898 TR-810 SR Accessories
(incl. 19"/2HU enclosure, Microphone,
220V AC cable w/plugs, DC plug and
Manual)

83200OF TR-810 OF Transceiver Offshore version

Includes:

83200 TR-810 Transceiver Base Unit

86420 TR-810 OF Accessories
(incl. Microphone, AC/DC power, antenna
adapter, 220V AC cable, 5m cable, console
bracket, console cover plate, front module
bracket, front cover plate with flange and manual)

Accessories:

91794 Antenna Procom CXL3-1LW for maritime
applications

97898 Coax cable RG-213 - 30m

98244 N-connector for RG-213 coax cable

82907 Antenna 1/2" flammable retardant cable (offshore)

82908 N-connector for 1/2" flammable retardant cable

80322 Antenna lightning protector

80592 RG-214 Coax Cable, per meter

86273 RG-214 N-male Connector

86402 Sennheiser HMD 46-3 PTT-M headset for
TR-810, including PTT

85558 External Loudspeaker

84317 Cable 5m extension between front (OCP) and
transceiver module

87130 BU-872

Spares:

82768T Front module (OCP)

82769T Transceiver Module

84092 Handheld microphone w/bracket

97976 Antenna whip for car applications

80577 Antenna adapter BNC - N

84329 Cable DC w/fuse

84391 Front module bracket (DIN 144, 192x96mm)

84330 Power AC/DC w/connector

85636 Carrying bag TR-810 MP

84545 DC/DC converter with separation

86875 Antenna for TR-810 MP



UHF / VHF MILITARY RADIO

The data operation of the radio can be done from a standard PC and Jotron system software or by Jotrons own Radio Controller unit. For AUDIO operation, Jotrons own ARC unit has to be included.

GENERAL INFORMATION - 4000 RADIO

Multi channel VHF/UHF/AM transceiver in a 3U -19" sub-rack. Fast frequency switching. Low noise transmitter. Low noise LO gives excellent large signal performance (RX). Up to 4 carrier offset (ICAO). RS-232 and Ethernet/LAN interface for remote control. Includes 60 to 15pin adapter for easy connection to remote equipment. 115/230VAC mains with auto fallback to 27VDC. The transceiver is prepared for Have Quick II, and compatible to Vinson and Link 11. Sub rack and power supply included.

81155 TR-4315 VHF and UHF Transceiver 15W
 25/8.33 kHz channel spacing in the band 118-137 MHz. 25/12.5 kHz channel spacing in the band 225-400 MHz.
 Look at page 11 for basic radio and options



81152 TR-4225 UHF AM Transceiver 25W
 25/12.5 kHz channel spacing in the band 225-400 MHz. Look at page 11 for basic radio and options

81151 RA-4202 UHF AM Receiver
 Look at page 11 for basic radio and options

81150 TA-4225 UHF AM Transmitter 25W
 Look at page 11 for basic radio and options

81147 TR-4150 VHF AM Transceiver 50W
 25/8.33 kHz channel spacing in the band 118-137 MHz. Look at page 11 for basic radio and options

81146 RA-4101 VHF AM Receiver
 See below for basic radio and options

81145 TA-4150 VHF AM Transmitter 50W
 See below for basic radio and options

Spares:
84388 Spare Part Modules 4000 radio



UHF / VHF MILITARY RADIO cont...

Basic radio series 4000 includes:

VHF-UHF AM basic radio in sub rack as:

- Combined VHF/UHF AM transceiver
- Separate UHF AM Transceivers , transmitters , receivers
- Separate VHF AM Transceivers , transmitters , receivers

83502 Connection kit (60 wires)

Enables easy connection of all the interface pins to a standard distribution frame

83500 Radio Controller

Full control of up to 32 radios connected to a common Local Area Network (LAN) and operating within the same logical multicast group. The colour display with touch-screen enables an easy and intuitive MMI to all radio parameters needed for operation and maintenance of the radio(s).



Options:

81315 Sub rack complete for 4000

85471 Sub rack for maritime use

84363 Interface to External parallel frequency control Have Quick Applique
For use with external frequency hopping (ECCM) or control systems

84362 Frequency Modulation (FM) Enables the radio for FM

84364 Wide Band AM

For use with secure voice systems (Vinson) or other application requiring wide band data transfer.

84365 FM Data

Includes wide band FM modulation (20kHz) and a faster T/R switch (pin diodes).
Used for FM data transfer, specifically Link 11

84366 Both Wide Band AM and FM data

84367 Extended VHF Frequency range 118-144 MHz (ex.freq.)

84368 Extended VHF Frequency range 118-156 MHz (ex.freq.)

83501 Radio Control PC Software

PC program for full access to all monitoring and control parameters on the radio.
Controls one or many radios

99467 Guard receiver module 121.5/243.0 MHz

Includes independent single channel guard receiver on selectable frequency 121.5 or 243.0 MHz. Guard receiver audio can be routed to independent or common line output.

81860 ACU Antenna Change Over Unit , Main to Standby, 4000 series

LAN switch is required when 1 radio/site controller operates several radios



REMOTE CONTROL

Remote Control Units 7000 series. The range of base station radios from JOTRON, are optimized for remote operation over trunk lines, LAN/WAN networks, serial interfaces or other line formats adapted or interfaced to the standards available on the radios. As radios comprising both 4W E&M and In-band signalling for audio, ie. VCCS providers can use preferred format for best system performance.

80380 ARC MkII / ARC MkII Mil (military variant to the right)

Audio Remote Control

The ARC is a remote control unit that uses 4W E&M format to transfer RX audio, TX audio, PTT and Squelch. The ARC has inter-com possibility: Several operators of the same radio can connect their ARC units in cascade as one master and several slave units. Internal loudspeaker with volume control, connection for head-phone and microphone. Operates from 220 VAC with auto fail to 24VDC. 19" sub-rack format, 3U high.



Spares:

81666 Spare Part Modules ARC MkII

92656 ORC

Operators Remote Control

The operator can select operating frequencies directly from the radio's channel store, and there is a read-out of frequency information. The channels must be programmed in advance. RS-232/RS-485 interface. The unit has 19"-3U rack format mounting. Power supplied from ARC module.



82737 RS485 Terminator Unit

Spares:

81900 Spare Part Modules ORC

92710 DRC

Data Remote Control (7000 only)

Digital control of the most important functions and diagnostics of the radio. RS-232/RS-485 interface. The unit has 19"-3U rack format mounting. Power supplied from ARC module.



82737 RS485 Terminator Unit

Spares:

93822 Spare Part Modules DRC

Options ARC, ORC and DRC:

93964 Desk top Box for mounting of ARC with blind plates or ARC + ORC/DRC

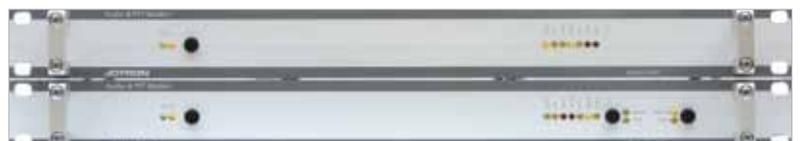
80486 ADAM- Repeater 232/485 (Where there is a difference of ground level)



80350 APM

Audio & PTT Data Long Distance Modem

For transmission of voice and data. Over a distance more than 2 km. To be used where there is a long distance between the radios and the operator unit (VCCS, ARC etc.). The local unit is mounted on the operator side while the remote unit is mounted on the radio side.



Spares:

86246 Spare part modules Local APM

86247 Spare part modules Remote APM



REMOTE CONTROL cont...

81860 ACU

Antenna Change Over Unit,
The antenna change over unit can be used either as external main/stby radio switch or a main/stby antenna switch. The change over unit is basically a RF relay with control circuit, interface and internal power supply. The unit can be hot wired to the alarm outputs from the radios, or controlled from a remote control unit.



87300 RRC 7700

Remote Radio Controller
Cost efficient and flexible solution for small and medium size airports, emergency systems, last resort solutions, portable shelters and towers
Multiple combinations of radios and operator control positions

- User-friendly, VoIP based remote system; touch-screen operated
- Operate several channels from a single remote position
- Multiple operators may utilize same radios from different positions
- Uses IP technology to transfer both Voice and control data
- Cost-effective alternative for operation of up to 6 radio transceivers
- Operates all types of radios in the Jotron TR-7700 basestation family



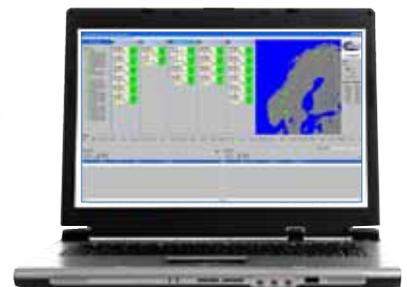
Delivered with 8.4" touch screen panel for panel mounting, stereo speakers and handheld microphone

Options:

- 86831** Handheld microphone HT2-ATC (USB) – delivered with the RRC
- 86832** Microphone holder for HT2-ATC – delivered with the RRC
- 86538** Headset AirTalk XD and PTT-13 (USB)
- 86543** AirTalk USB PTT-13 with Quick Disconnect (PTT button for headset)
- 86544** Airtalk XD HP/Mic with Quick Disconnect
- 86779** Loudspeakers for RRC7700 with brackets – delivered with the RRC
- 86902** Flex arm for RRC 7700

80606 RACS III Remote Control and Access System

MS Windows based PC program for remote control and supervision of radio systems. The software enables the user with full access to all monitoring and control parameters on all radios on all sites connected via LAN. The program has an intuitive graphical interface which gives the user instant status of the system down to module level in the radio. The program stores all the events, and reports instantly the historic availability of the system. PC is not supplied by Jotron. (see page 30 for further description)



87120 ICU

Interface Control Unit
Supervision of external and auxiliary equipment on a remote radio site
Monitored from Jotron RACS III
Alarm indication available via SMS message

87010 ICU

Interface Control Unit w/GSM connectivity
There is an optional GSM module available as an add-on for the ICU.
The purpose of this module is to deliver alarm messages from the ground station via SMS messages to the responsible personnel.

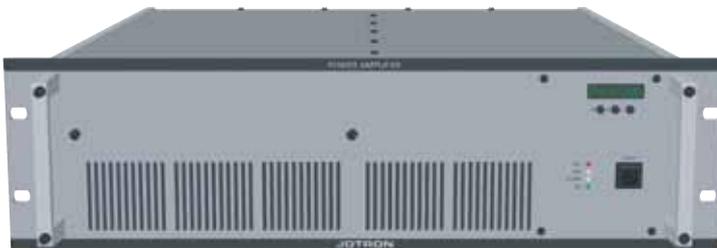


POWER AMPLIFIERS

For both the VHF and the UHF radios Jotron has produced its own power amplifier which makes it possible to reach a higher output power. Complies with ICAO and NATO standards, is Microcomputer controlled operation with alphanumeric display, has built in RS-485/RS-232 serial interface, can be monitored on remote sites with the Jotron RACS PC-Program (Remote Access & Control System) has Internal gain loop, provides very low distortion and excellent gain flatness over the whole operating frequency range. In the case of any failure, the cause will be displayed on the front panel or on the PC with the RACS program. Temperature controlled fan for lower noise and longer life, Internal bypass relays (Main/Standby & Transceiver set-up). Auto-switch to DC backup power in case of power failure. Rugged light alloy chassis, virtually maintenance free operation.

82067 PAV-100

VHF 100W Carrier Power Amplifier
 ICAO compliant, microprocessor controlled, with local and remote control facilities. Internal gain loop, very low distortion and excellent gain flatness. Temperature controlled fan for lower noise and longer life cycle. Internal by-pass relay. Auto switch from AC to DC power. Rugged light alloy chassis. Size: 19"-3U.



80780 PAV-200

VHF 200W Carrier Power Amplifier
 ICAO compliant, microprocessor controlled, with local and remote control facilities. Internal gain loop, very low distortion and excellent gain flatness. Temperature controlled fan for lower noise and longer life cycle. Internal by-pass relay. Auto switch from AC to DC power. Rugged light alloy chassis. Size: 19"-3U.

80770 PAU-100

UHF 100W Carrier Power Amplifier
 ICAO compliant, microprocessor controlled, with local and remote control facilities. Internal gain loop, very low distortion and excellent gain flatness. Temperature controlled fan for lower noise and longer life cycle. Internal by-pass relay. Auto switch from AC to DC power. Rugged light alloy chassis. Size: 19"-3U.

84377 PAU-100Mil

UHF 100W Carrier Power Amplifier
 NATO compliant, microprocessor controlled, with local and remote control facilities. Built in PIN switch for faster TX/TR switching. Internal gain loop, very low distortion and excellent gain flatness. Temperature controlled fan for lower noise and longer life cycle. Internal by-pass relay. Auto switch from AC to DC power. Rugged light alloy chassis. Size: 19"-3U.

Spares:

- 81735** Spare Part Modules for Power Amplifier VHF
- 82416** Spare Part Modules for Power Amplifier UHF



VHF COASTAL RADIO

7000 SERIES VHF COASTAL RADIO

TR-7750C is a complete transceiver consisting of 3 units (transmitter, receiver and power supply) and the total weight is only 6.0 kg. The modular and compact design makes the radio the perfect choice for distant sites that are hard to reach. Output power adjustable from 1-50 Watt.

84610 TR-7750C Maritime Multimode 50W VHF Transceiver with VoIP

Simplex/Duplex Channel VHF/FM Transmitter and Receiver unit in 19" card cage module. 3 U high. 99 Ch. fast recall store. FM voice with 25 and 12.5 kHz channel spacing and DSC Mode Ch 70. Frequency range: 156-174 MHz. LAN (remote control for TCP/IP, RS-232 or RS-485 serial interface, full digital control and diagnostics. Sub-Rack and power supply included.



84550 RA-7203C Maritime VHF Receiver

Simplex/Duplex Channel VHF/FM Receiver unit in 19" card cage module. 3 U high. 99 Ch. fast recall store. FM voice with 25 and 12.5 kHz channel spacing and DSC Mode Ch 70. Frequency range: 156-174 MHz. LAN (remote control for TCP/IP, RS-232 or RS-485 serial interface, full digital control and diagnostics. Sub-Rack and power supply included.



84555 TA-7650C Maritime VHF Transmitter 50W

Simplex/Duplex Channel VHF/FM Transmitter unit in 19" card cage module. 3 U high. 99 Ch. fast recall store. FM voice with 25 and 12.5 kHz channel spacing and DSC Mode Ch 70. Frequency range: 156-174 MHz. LAN (remote control for TCP/IP, RS-232 or RS-485 serial interface, full digital control and diagnostics. Sub-Rack and power supply included.



Software Options for above radios:

- 86290 VoIP
- 84358 In-band signalling
- 86885 Telsa Cacity Control

Spares:

- 86244 Spare part modules

Accessories:

- 81860 ACU Antenna Change Over Unit , Main to Standby, 7000 series Multimode



ACCESSORIES

Microphones

7000 serie Multimode:

- 82967 Peiker TM 110 Handheld Microphone
- 82968 Peiker TM 168 Gooseneck Microphone

ARC MkII:

- 80325 Peiker TM 110 Handheld Microphone
- 80327 Peiker TM 168 Gooseneck Microphone

4000 series:

- 81518 Peiker TM 110 Handheld Microphone

Headset and Adapter cables

Various other headsets are available on request

7000 series Multimode:

- 31030 Basic Headset std w/headband MT7H79A (need 84331 PTT adaptor)
- 84331 PTT Headset Adaptor Cable for Peltor Headset for connection to TR77xx (RJ45 style connector)
- 86289 Headset lightweight HMD 46-3 PTT-M (RJ45 style connector)

ARC MkII:

- 31030 Basic Headset std w/headband MT7H79A
- 81902 PTT Headset Adaptor Cable for ARC MkII
- 85916 Headset lightweight HMD 46-3 PTT-M
- 84287 Handset w/PTT/cradle/connector for ARC MkII
- 80321 Foot Switch/PTT

Network Equipment

- 82539 LAN switch 8 ports for DIN rail (EDS-208)
- 86303 LAN switch 16 ports for DIN rail (EDS-316)
- 85719 LAN switch 24 port 19" with front access
- 85774 SHDSL Ethernet Extender
- 84541 AC/DC Power Supply (required for LAN Switch EDS 208 and 316)

Accessories - Cabinets

Jotron supplies different sizes of cabinets for all radios. Rack mounting and wiring is prepared at Jotron factory

- | | | |
|-------|---------------------------|--|
| 93964 | Desk top box ARC, ORC/DRC | |
| 97518 | Desk top box 7000 series | 3U/463mm depth |
| 81978 | Desk top box 4000 series | 3U/500mm depth |
| 80337 | Cabinet 6 HU Schroff | 600mm depth |
| 80334 | Cabinet 16 HU Schroff | 800mm depth, power dist.panel+Krone armature |
| 80332 | Cabinet 25HU Schroff | 800mm depth, power dist.panel+Krone armature |
| 80331 | Cabinet 34HU Schroff | 800mm depth, power dist.panel+Krone armature |
| 80329 | Cabinet 43HU Schroff | 800mm depth, power dist.panel+Krone armature |
| 80601 | Cabinet 47HU Schroff | 800mm depth, power dist.panel+Krone armature |

Various other cabinet sizes are available on request.

Cabinet back doors are included and cabinet front doors are available on request



ACCESSORIES cont...

	VHF Antenna	Frequency range	Gain	Wind rating	Power
82839	Telsa T01110402	118 – 137MHz	0dBd	200km/h	500W
91794	Procom CXL3-1LW	118 – 137MHz	0dBd	160km/h	150W
85855	Telsa T01110401,	108-156Mhz	0dBd	200km/h	500W
80612	Procom CXL3-2C	110-140Mhz	0dBd	160km/h	500W
82413	Sinclair SD212	118-138MHz	5dBd	225km/h	300W
82549	Sinclair SC6172	118-137MHz	-1dBd	636km/h	250W
85392	Skymast 438.02.50.00	108-156	0dBd	160km/h	500W

	VHF Coastal Antenna	Frequency range	Gain	Wind rating	Power
82484	Procom CXL2-1LW/H	155 – 175MHz	0dBd	160km/h	150W

	UHF Antenna	Frequency range	Gain	Wind rating	Power
94768	Procom CXL 225-450C	225-450Mhz	0dBd	160km/h	200W
85351	Telsa T01110601	225-400Mhz	0dBd	200km/h	500W
82047	Sinclair SC6185	225-400MHz	1dBd	440km/h	100W
85393	Skymast 470.02.05.00	225-400MHz	0dBd	160km/h	1000W

	Combined VHF / UHF	Frequency range	Gain	Wind rating	Power
80522	Comrod AC 10 single connector	115-1500Mhz	0dBd	200km/h	500W
93866	Jaybeam 7177 single connector	100-500Mhz	0dBd	160km/h	250W

For all antennas: Other suppliers and variants available on request

	Antenna Feeder Cable	
85689	Coax cable 30 mtr RG214 w/connectors mounted	Loss 2.5 dB (VHF)
84807	Coax cable 10 mtr RG214 w/connectors mounted	
95178	Aircom 50 Low Loss Feeder Cable	Loss per 100 meter 4dB (VHF)
95546	Connector type MALE for Aircom 50	
82846	1/2" Coax Cable	Loss per 100 meter 2,4dB (VHF)
82849	N-connector for 1/2" coaxial cable	
82848	RF 7/8" -50 coaxial antenna cable 7/8"	Loss per 100 meter 1,3dB (VHF)
82851	N-connector for 7/8" coaxial cable	
82324	Cell flex cable 1/2"	Loss per 100 meter 2,4dB (VHF)
82556	Connector for 1/2" cell flex cable	
80592	RG-214 (per meter)	
86273	RG-214 N-male connector	

	Antenna Lightning Protection
80322	Lightning protector



ANTENNA CAVITY FILTERS, COMBINERS, MULTICOUPLERS AND SPLITTERS

External cavity filters and isolators are used to avoid noise interference, receiver blocking and inter modulation. In addition we can configure the cavity filters as RX or TX combiners to enable several channels on a single antenna.

A cavity filter is a resonant filter and can be tuned to obtain different frequency response curves (band-pass, pass reject, low/high pass, and notch) to either pass or reject a frequency or band of frequencies. The tuning is depending of the actual configuration and the need for filtering.

Noise interference and receiver blocking is first of all relevant on collocated sites. Minimum RX-TX antenna separation to avoid filters is approx. 500 metres. If the antenna separation is less than 500 metres, the need for filtering is depending of the antenna separation (metres) and channel separation (kHz). To be able to perform a detailed filter calculation these parameters are essential. If the antennas are installed very close (<10 metres), vertical antenna separation should be considered to increase the path loss (and to reduce the need for filtering).

To avoid TX inter modulation we recommend to use isolators on the transmitters. Depending of the potential inter modulation products we use single or dual isolators.

The filters can be configured as single channel or RX or TX combiners. Usually a TX combiner is fitted with a dual isolator on each channel. The combiner has at least one cavity filter per channel. In addition, extra cavity filters might be needed on some channels depending on the frequency and RX-TX antenna separation.

Combiner systems are available on request.

VHF

80296	Procom 5HU Single filter BPF 3/1 200-SHT Bandpass Filter	117-137 MHz
80293	Procom 5HU Double filter BPF 3/2 200-SHT Bandpass Filter	117-137 MHz
80297	Procom Single Isolator PRO-IS.125S	
81991	Procom Double Isolator PRO-IS-125D	
80627	Sinclair FP20107-E3150 Shortened Single Cavity filter	550mm w/rod extended
80980	Sinclair FP20207-E3150 Shortened Dual Cavity filter	550mm w/rod extended
85348	Telsa 4HU T05110426 Single Cavity filter w/panel and mounting bracket	118-156 MHz
86408	Telsa 4HU T05120442 Dual Cavity filter w/panel and mounting bracket	118-156 MHz
86031	Telsa 5HU T05110403 Single Cavity filter w/panel and mounting bracket	118-156 MHz
82854	Telsa 5HU T05120409 Dual Cavity filter w/panel and mounting bracket	118-156 MHz
82857	Telsa 4HU T05110438 Single Automatic Cavity filter	118-156 MHz
86744	Telsa 5HU T05120410 Dual Automatic Cavity filter	118-156 MHz
85853	Telsa Single VHF Circulator + dummy load	
86421	Telsa Dual VHF Circulator + dummy load	

Other VHF filters and components are available on request.



ANTENNA CAVITY FILTERS, COMBINERS, MULTICOUPLERS AND SPLITTERS

UHF

80299	Procom Single filter BPF 1/1 200-L Bandpass Filter Wide Band	
80298	Procom Double filter BPF ffl 200-L Bandpass Filter Wide Band	
80300	Procom Single Isolator PRO-IS-250-S	
81992	Procom Double Isolator PRO-IS-250-D	
82862	Sinclair FP30109- Single Cavity filter	502mm w/rod extended
82863	Sinclair FP30209- Dual Cavity filter	502mm w/rod extended
86778	Telsa 4HU T05110619 Single Cavity filter w/panel and mounting bracket	225-400 MHz
86908	Telsa 4HU T05120622 Dual Cavity filter w/panel and mounting bracket	225-400 MHz
86030	Telsa 5HU T05110623 Single Cavity filter w/panel and mounting bracket	225-400 MHz
82861	Telsa 5HU T05120601 Dual Cavity filter w/panel and mounting bracket	225-400 MHz
86777	Telsa 4HU T05110630 Single Automatic Cavity filter	225-400 MHz
86395	Telsa 5HU T05110626 Single Automatic Cavity filter	225-400 MHz
85854	Telsa Single UHF Circulator + dummy load	
86422	Telsa Dual UHF Circulator + dummy load	

Other UHF filters and components are available on request.

Multicoupler and combiner for VHF/UHF

VHF

85686	Telsa T13060401 VHF receiver Multicoupler 8-ways (21.6-31.2VDC)
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UHF

85687	Telsa T13060601 UHF receiver Multicoupler 8-ways (21.6-31.2VDC)
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VHF/UHF/Coastal

80828	Procom PRO-AR8G-N, VHF/UHF/Coastal receiver Multicoupler 8-ways (24 VDC (also available in 110 VAC and 220 VAC))
80831	Procom PRO-AR16G-N, VHF/UHF/Coastal receiver Multicoupler 16-ways (24 VDC (also available in 110 VAC and 220 VAC))
85688	Telsa T13083008 VHF-UHF Broadband Receiver Multicoupler 16 Ways (230VAC)

Coastal

86908	Procom PRO-PHY-150-3DI 3-channel hybrid combiner with dual isolator
86909	Procom PRO-PHY-150-2DI 2-channel hybrid combiner with dual isolator
86910	Procom DPF 2/6-150H Duplex filter

Other Multicouplers and combiners are available on request.



BATTERY BACKUP, UNINTERRUPTIBLE POWER SUPPLY AND HANDHELD COMMUNICATION

Battery Backup

ELTEK Battery Back-Up UP 30V. 24Ah, w/automatic charging and control. This battery back-up is designed to fit into standard 19"/3HU housing. Switch mode technology is used to minimize volume and weight and obtain a fast output voltage regulation. The unit is delivered with maintenance free batteries for power back-up and automatic charging and control. System alarms will activate dry relay contacts; it can also be monitored over SNMP and through a WEB interface.

The backup got 12 configurable load breakers that is connected to 12 individual load outputs with Amp-henol connector similar as found on the radios. There is also a connection for external battery if more than 24Ah is needed for the system.

The battery backup has capacity to power up one TR-7750 (50 watt transceiver) for minimum 12 hours operation at normal conditions (10% TX and 90% RX).

86855 Battery backup UP 30V, 24Ah, 3U

Other Battery backup systems are available on request.



UPS - Uninterruptible Power Supply

The APC Uninterruptible Power Supply (UPS) is designed to prevent blackouts, brownouts, sags, and surges from reaching your computer and other valuable electronic equipment. The UPS filters small utility line fluctuations and isolates your equipment from large disturbances by internally disconnecting from the utility line. The UPS provides continuous power from its internal battery until the utility line returns to safe levels or the battery is discharged.

- 85633** APC Smart-UPS 1500VA
- 85634** APC Smart-UPS 2200VA

Other UPS systems are available on request



Handheld Communication

IC-A6E VHF/AM Handheld Radio

IC-A6E has simple one handed operation. 200 Memory channels, One-touch selection of the 121.5 MHz emergency frequency, Storage of the last 10 channels used. NOAA weather channel and Duplex operation. Waterresistant construction. (IPX4, equivalent to IEC 60529 (2001) 5W PEP output power, ANL (automatic noise limiter) function to reduce pulse-type noise, Low Battery Indicator. Includes: Antenna, Belt Clips, Wall Charger, Ni-Cad Battery pack, Charger Adapter Cable, Operators Manual.

82235 IC-A6E

Options:

- 82238** Charger
- 82237** Battery
- 82240** Leather Case
- 31030** Basic Headset w/headband MT7H79A
- 82813** PTT for IC-A6 handheld radio



ATC & COASTAL Applications

7000 Multimode Digital Radio Series

Excellent RF performance in congested areas

Careful analogue design is still the key issue to achieve the best collocation capabilities possible. The 7000 series of radios are 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 GtA applications.

VoIP

All 7000 series radios are now available as an option with voice over IP according to ED137.

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 means 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 v.2 (Simple Network Management Protocol) over UDP (User Datagram Protocol), which together with 100BaseT Ethernet 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, set up and control can be done using the serial RS232 or RS485 ports.

The 7000 series transceiver includes separate Receiver (RX) and Transmitter (TX) modules (Fig. 1). Each module has facilities for being connected to other modules as a part of a main/standby chain, and as a transceiver configuration.

Transceiver



Fig. 1

No Tuneable Parts

There are no tuneable parts inside the radio units. No tuning, nor special tools are necessary when changing frequency / modulation or to maintain the radio.

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 graphic display, menu buttons and switches that are used to set up the radio – no external equipment like a PC or a signal generator are necessary to control the frequency or to adjust any parameter internally in the radio.



AM and D8PSK / VDL operation

The radio can be operated in the following modes: AM voice, AM data (ACARS) or D8PSK (VDL mode 2). The AM channel bandwidth for voice operation (8.33 or 25 kHz) is automatically selected by the frequency choice. AM-MSK mode is used when the radio is operated as the physical layer of an ACARS ground station. The D8PSK mode is used when the radio is operated as the physical layer of a VDL ground station.

BITE system that detects failures

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 configurable in-band tone signalling both ways: PTT and squelch with any tones between 100 and 5000 Hz 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 are available using the standard temperature controlled oscillator in the transmitter. 5 carrier offset require an upgraded oscillator.

For Main/Standby configuration with one common antenna

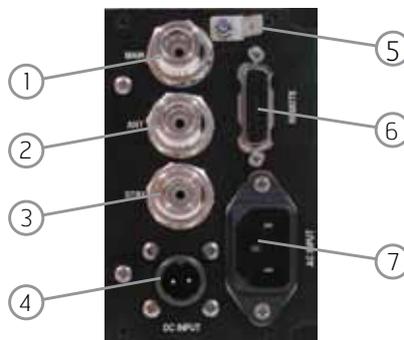
When one antenna is used for Main/Standby configuration, an antenna-changeover unit is required to handle switching between main and standby radio. Alarm output and a Select input for automatic and/or manual main/standby selection. The transmitters have a Key/Mute output used to mute associated receivers during transmitting periods.

Antenna Change Over Unit

The antenna change over unit can be used in several applications, either as external main/standby radio switch or a main/standby antenna switch. The unit is 14 TE wide and is mounted in a 19" sub-rack. (can room ex. 6 units) The change over unit is basically a RF relay with control circuit, interface and internal power supply. The RF relay has three connectors (common, NC (main) and NO (standby)). The unit can be hot wired to the alarm outputs from the radios, or controlled from a remote control unit. For maximum flexibility the input signals are optocouplers that covers a large voltage range. In addition the control logic can be inverted. The unit has several outputs that can be used for monitoring the current status or controlling external units. Logic outputs: Relay, dry contact that closes when active.



- 1. RF con. N-female - Radio Main
- 2. RF con. N-female - Ant.
- 3. RF con. N-female - Radio Stby
- 4. DC con.
- 5. GND tag
- 6. Remote con
- 7. AC con.



Single Radio Setup, general:

The radio modules can be controlled directly from the front panel and via a range of remote equipment and accessories.

Remote audio and control over IP

The Jotron RRC 7700 offers a simple and easy operation of the Jotron 7000 series radios over IP. The unique features are as follows:

- User-friendly, VoIP based remote system –touchscreen operated
- Frequency selection
- Operate several channels from a single remote position
- Multiple operators may utilize same radios from different positions
- Uses IP technology to transfer both Voice and control data
- Cost-effective alternative for operation of up to 6 radio transceivers
- Operates all types of radios in the Jotron TR7700 basestation family

Operator A



Operator B



Operator C

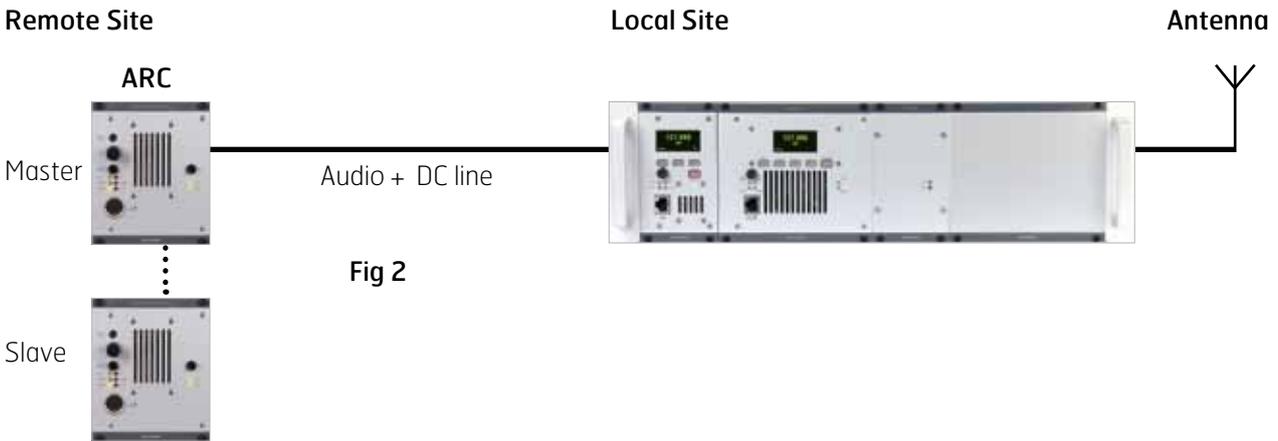


Remote Audio and PTT only:

The Operator at the remote site(s) is able to monitor traffic, and to communicate on the current frequency of the local transceiver, through the Audio Remote Control unit (ARC MkII). A red LED indicator on the ARC will alert the operator if there is an alarm on the local radio unit. (Fig. 2).

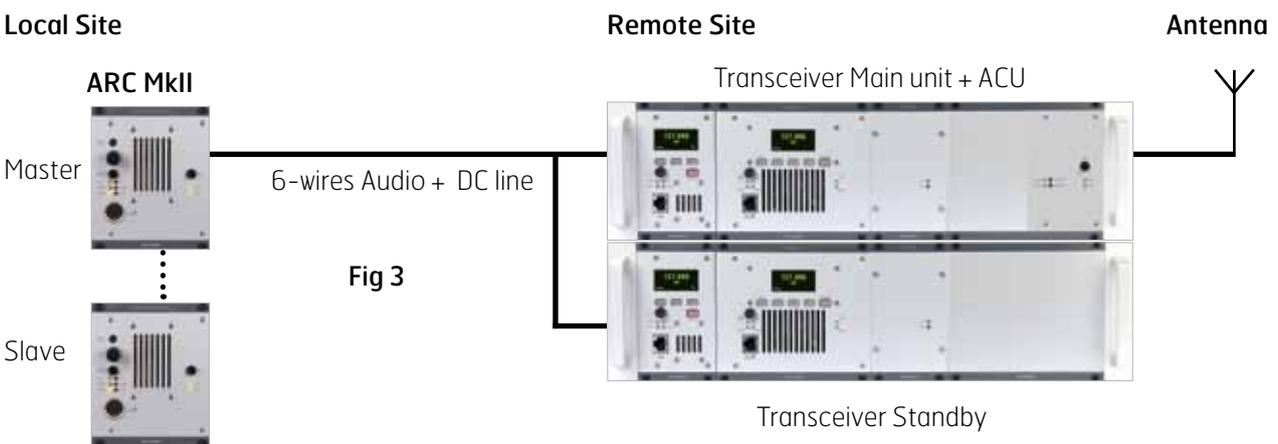
It is possible to connect more than one ARC to the same radio. In a master/slave configuration the number of wires between master and slave can be reduced to two wires, but the slave ARC will have reduced functionality (the sq, alarm indicator will not be available).

It is possible to connect several slave units. With more than one ARC, off-air intercom is available between the units.



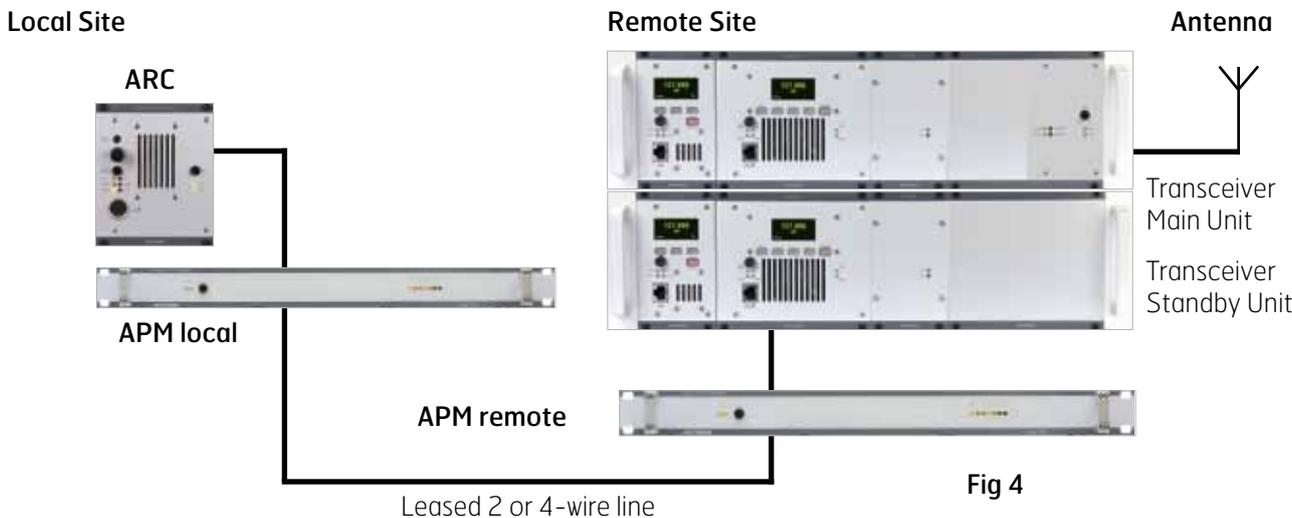
The maximum distance between ARC and radio unit is approximately 2 km, provided a high quality screened cable is used.

To connect a pair of radio units as main/standby, the alarm output from the main unit is connected to the select input of the standby unit. Also, the initial main unit must be configured as a "MAIN" unit via its user interface in order to switch its operation into the standby unit in case of an alarm. The standby radio unit is automatically selected if there is an alarm on the main unit. The switch is a built-in coaxial relay. The selection may also be done manually from the front panel of the ARC MkII (Fig. 3).



Long Range Audio and PTT

Communication via leased lines is made possible by use of the Audio/PTT modem, APM (Fig. 4). One APM unit is able to access two transceivers (i.e. Main + Standby unit). In the below example with the APM modem, the APM uses inband and FSK signalling and demands uncom-pressed audio line.

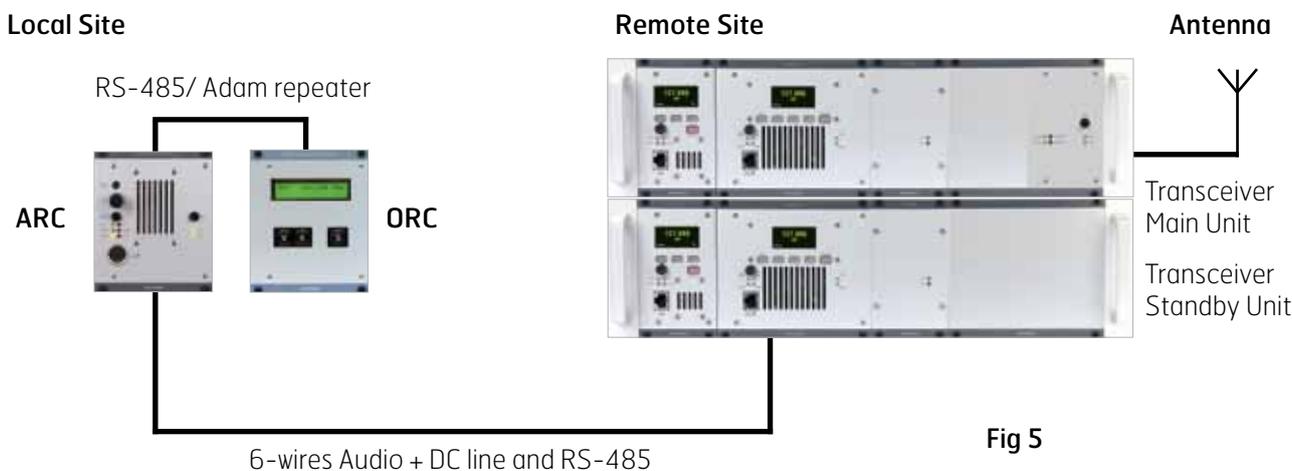


The Audio/PTT modem uses in-band tones for transfer of Squelch and PTT. Alarm (Main and Standby unit) and Main/Standby selection uses FSK data. 4 wire communication gives better audio quality and more stable communication and are recommended for challenging lines. The number of wires must be specified in the order (2 or 4 wire).

Limited Remote Access to Radio Control:

Adding an Operators Remote Control unit (ORC) to the set-up shown in Fig. 3, enables the operator to toggle between the frequencies, which have been programmed into the radios (Fig. 5). With the use of this configuration it is recommended to use an ADAM-4510/4510S repeater. This unit simply amplifies, or boosts, existing RS-422/485 signals to enable them to cover longer distances. It extends the communication distance by 4000 ft (1200 m) or increases the maximum number of connected nodes by 32. In addition the 4510S version provides galvanic isolation between input and output so that any difference in GND potential between each end of the RS485 line will be compensated for.

By the below example you may choose if you would like common audio – or separate RX/TX audio.





Full Remote Access to Radio Control

Adding a Data Remote Control unit (DRC) to the set-up shown in Fig. 3, gives the operator access to enter any frequency (Fig. 6). The configuration shown will work for distances up to 2000m between the radios and the operator position. For distances over 2 km, the Audio and PTT modem is required.

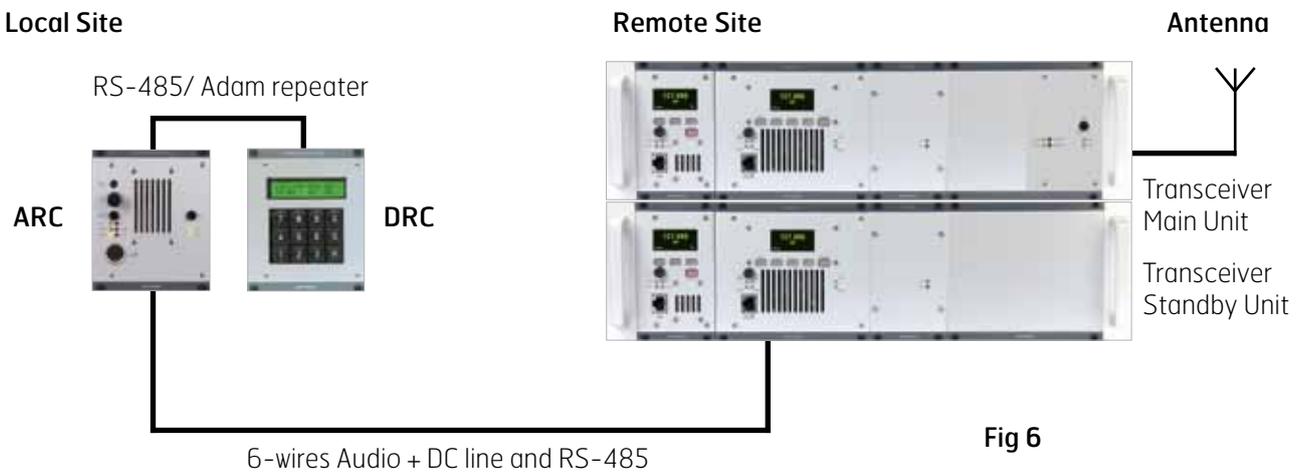


Fig 6

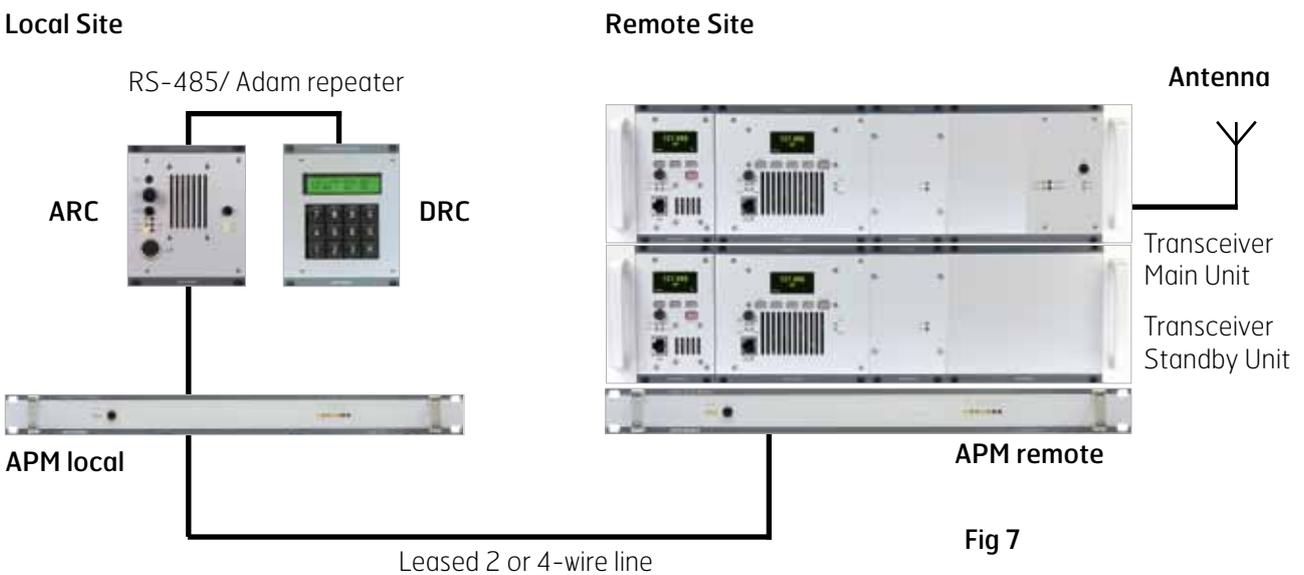


Fig 7



Long Range Remote Access through PC and RACS programme

The Site Controller Unit (SCU) hardware, acts as a remote interface unit between radio units on a site and a central computer or VCCS. One site control unit can handle up to 64 radio modules at the same location. The unit will continuously monitor all operating aspects of the connected modules and give an alarm if any unit reports an error. The SCU communicates with the central control system on a LAN/WAN using UDP/IP or on a RS-232 serial link, either directly or via modem and telephone lines. Communication with the local radio units is on a multi-drop RS-485 bus to the 7000 MKI and MkII series radios, and an Ethernet 802.3 connection to the 3000/4000 radios and 7000 series MkIII (VDL).

The PC must have RACS (Remote Access and Control System) licensed programme installed. (Fig. 8). The Site controller unit can give access to up to 64 radio units. The system automatically recognises radio units added to the network and reports these in the central management program.

Audio and PTT is either assumed to be controlled by a VCCS, or by the APM, which gives access to one pair of radio units (Main/Standby Transceiver). Additional APM and ARC units must be added as number of radio units increases. Alternatively, a Com260 and TE10-39 controller panels can be used (Ref. Fig. 9).

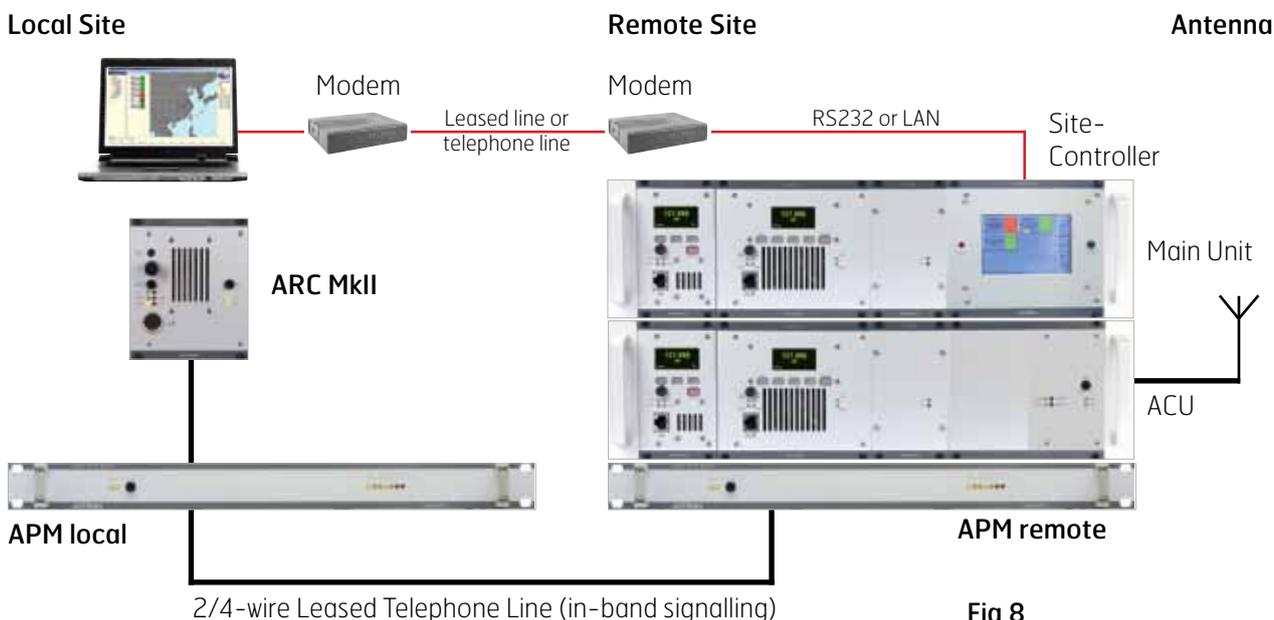
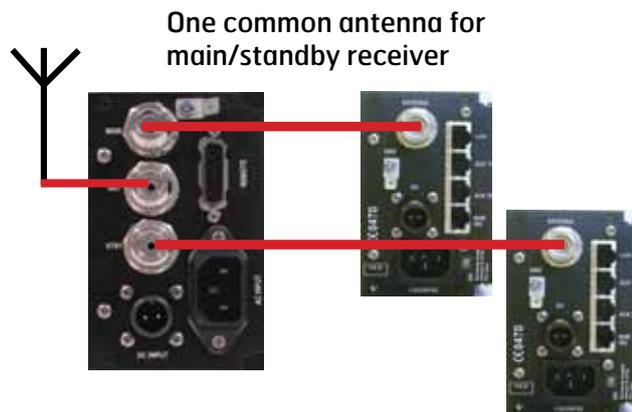
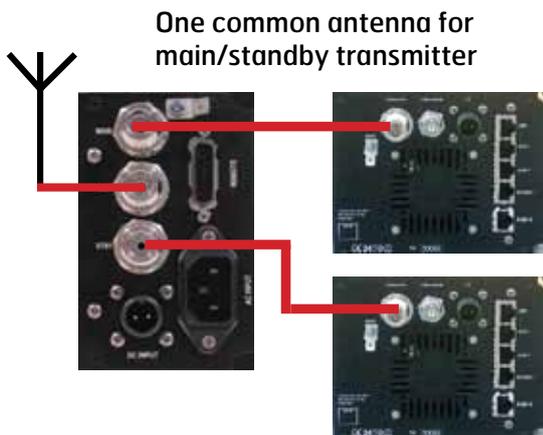
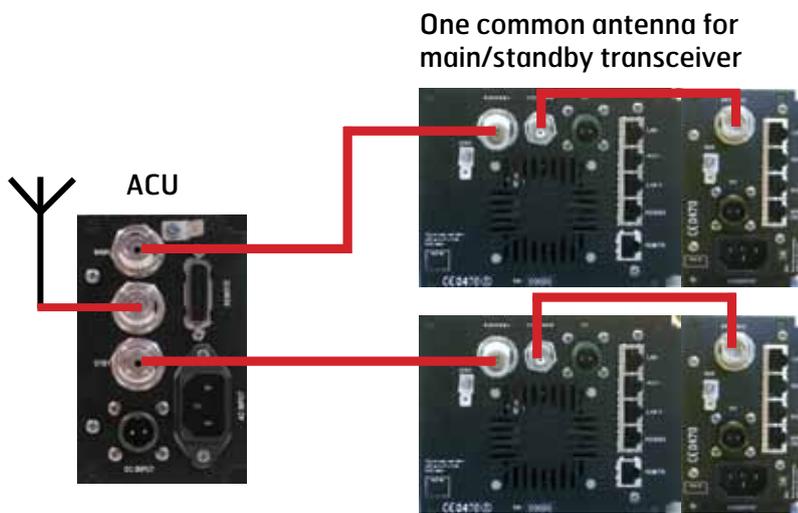


Fig 8



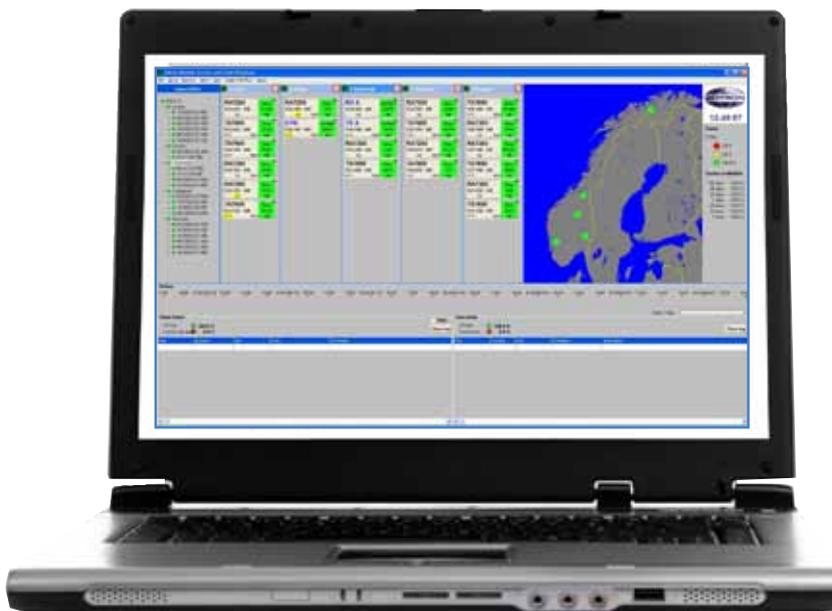
Antenna Configurations Series 7000 Main/Standby Transceiver



System Description RACS III

The technical management system (RACS III) is used to monitor, and perform regular control of each individual radio and the complete radio system. The system is based on Ethernet connections to the different radios via an existing LAN/WAN where UDP multicast and point-to-point messages are allowed to flow through the LAN/WAN between the radio sites and the computer(s).

One computer placed in a central location is used as the main server and is used for logging events and to keep historical data for the radios. This computer will run the server version of the RACS III software. The server computer will be able to show system status for each radio, each site and the complete system, as well as setting various parameters on each radio. Other computers will run the client version of the software and will be able to do the same tasks as the server, but need an IP connection to the server to show historical data for the radios. The user level is defined by passwords and is used to differ between the various tasks the users are allowed to perform.



www.jotron.com

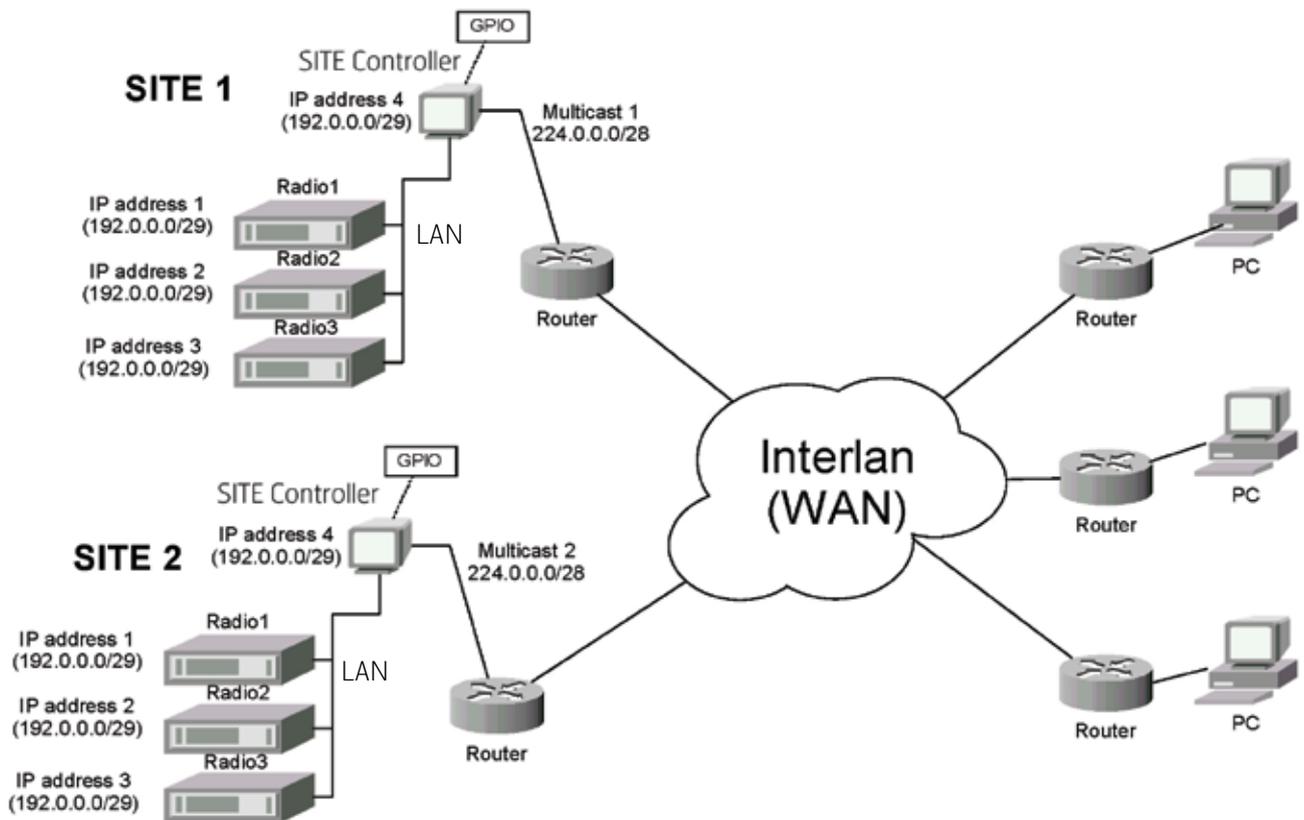


Figure 16. Configuration technical management system with VHF radios (RACS III)

An example hardware configuration with only 2 sites is shown in Figure 16. The addressing scheme of the system is based on using Class-C IP networks for all radios and local controllers. Each radio must be assigned a unique IP address, which is defined during installation. In addition a radio group (site) must be assigned a common multicast address where all messages from the radio are sent. This multicast address is used to separate the different sites from each other on the management system.

All routers in the system must be enabled for multicast traffic; usually this can easily be accomplished with newer Cisco routers.

The PC's shown in the diagram are the workstations that allow monitoring and control of the radios. Each workstation must be configured to receive messages on the multicast addresses defined and will automatically detect all the radios on a specific site.



Applications requiring filter

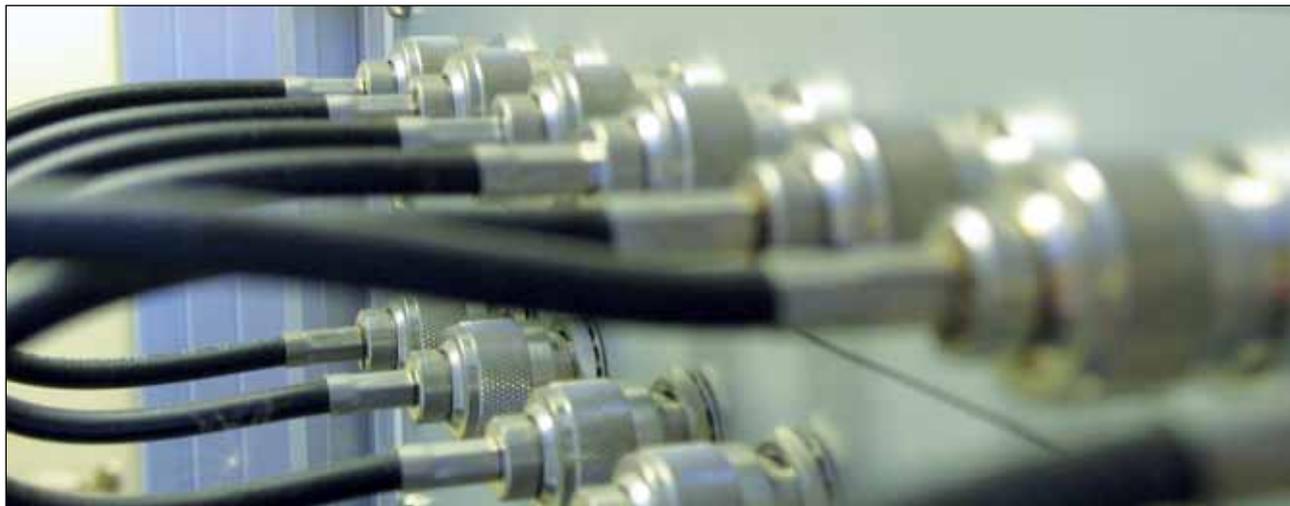
Interference

When operating on more than one channel and TX and RX antennas are colocated, cavity filters are required to avoid interference.

Cavity Combiners

If several TX or RX shall share the same antenna, cavity combiners can be used to combine the radios to one common antenna connection.

Jotron AS supply different types of filters, multicouplers, combiners and splitters for both the VHF and the UHF equipment. Jotron tailor a system to your needs that will fully comply to your critical co-location and frequency allocations.



Third-party products



- Antennas - VHF/UHF
- Filters



- Antennas - VHF/UHF



- Antennas
- Filters
- Combiners
- Multicouplers



- Filters
- Multicouplers



- Antennas - VHF/UHF



- Antennas - VHF/UHF
- Filters
- Combiners
- Isolators
- Multicouplers



- Battery Backup



- Network equipment





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