



**MARITIME/OIL & GAS**  
**PRODUCT AND APPLICATIONS CATALOGUE**  
**JANUARY 2010**



[www.jotron.com](http://www.jotron.com)



MARITIME/OIL & GAS



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## Tron 40S MkII

GMDSS float-free satellite emergency position-indicating radio beacon, EPIRB.

5 years warranty. Non hazardous battery. Compact model. Flexible mounting. Designed for fast and easy service and maintenance. Operates on the COSPAS - SARSAT frequency 406 MHz. Identification and positioning via satellite. Transmits also on the air traffic emergency frequency 121,5 MHz for homing. Complies with IMO/SOLAS/GMDSS regulations. MED and FCC approved. Service stations worldwide.

### 83050 Tron 40S MkII Complete main unit

Includes:

82819 User manual (can be downloaded from [www.jotron.com](http://www.jotron.com))

#### Options:

99897 Programming (Country, Call Sign, MMSI)

85216 FB-6 Float-free Bracket, automatic release, w/protective cover

Includes: 80414 Hydrostatic release mechanism

95471 FB-4 Float-free Bracket, automatic release

Includes:

97821 Hydrostatic release mechanism

97777 FBH-4 Float-free Bracket, automatic release, with heating

Includes:

97821 Hydrostatic release mechanism

92410 Thermostat in junction box

#### Spare parts:

83051 Tron 40S MkII, electronic unit

83056 Battery, Tron 40S MkII, 5 years maintenance kit

Includes:

Battery unit

91476 Rubber gasket

91478 U-bolt

83062 Label, operation

91477 Equator ring

91479 Safety pin

83063 Label, battery

80414 Hydrostatic release mechanism for FB-5/FB-6

Includes:

Special bolt with washer & cotter pin

97821 Hydrostatic release mechanism for FB-4

Includes: 97745 Special bolt with washer

98204 Release kit for FB-4



FB-4



FB-6





## Tron 40GPS MkII

GMDSS float free satellite emergency position-indicating radio beacon, EPIRB

5 years warranty. Non hazardous battery. Compact model. Flexible mounting. Designed for fast and easy service and maintenance. Integrated 12 channel GPS module for maximum positional accuracy. Operates on the COSPAS - SARSAT frequency 406 MHz. Identification and positioning via satellite. Transmits also on the air traffic emergency frequency 121,5 MHz for homing. Complies with IMO/SOLAS/GMDSS regulations. MED and FCC approved. Service stations worldwide.

- 83060 **Tron 40GPS MkII** Complete main unit  
EPIRB unit with integrated GPS receiver

Includes:

82823 User manual (can be downloaded from [www.jotron.com](http://www.jotron.com))

### Options:

- 99897 Programming (Country, Call Sign, MMSI)  
85216 FB-6 Float-free Bracket, automatic release, w/protective cover  
Includes: 80414 Hydrostatic release mechanism  
95471 FB-4 Float-free Bracket, automatic release  
Includes:  
97821 Hydrostatic release mechanism  
97777 FBH-4 Float-free Bracket, automatic release, with heating  
Includes:  
97821 Hydrostatic release mechanism  
92410 Thermostat in junction box

### Spare parts:

- 83061 Tron 40GPS MkII, electronic unit  
83056 Battery, Tron 40S MkII, 5 years maintenance kit  
Includes:  
Battery unit  
91476 Rubber gasket  
91478 U-bolt  
83062 Label, operation  
91477 Equator ring  
91479 Safety pin  
83063 Label, battery  
80414 Hydrostatic release mechanism for FB-5/FB-6  
Includes:  
Special bolt with washer & cotter pin



FB-4



FB-6



## Tron S-VDR CAPSULE

This multipurpose float free maritime safety product contains both a conventional GMDSS satellite position-indicating radio beacon, EPIRB and also a storage media for VDR (Voyage Data Recorder). Approved according to IMO A810 (19), IEC-61996 annex D and other relevant product standard.

### Built in EPIRB:

GMDSS float-free satellite emergency position-indicating radio beacon, EPIRB with build-in GPS. Operates on the COSPAS - SARSAT frequency 406 MHz. Identification and positioning via satellite. Transmits also on the air traffic emergency frequency 121,5 MHz for homing. Exceed IMO/SOLAS/GMDSS regulations as it will transmit for 7 days.

### Built in VDR storage media:

Tron S-VDR CAPSULE will at all times have in store a loop of the latest 12 hours recorded data provided from the VDR-system installed on board the vessel. Floats to the surface keeping the VDR information available even if the vessel should sink. No expensive and time consuming under water search for ship mounted memory bank (FRM – Final Recording Media) required. Tron S-VDR CAPSULE can be connected to most existing VDR systems on the market. Standard Ethernet interfacing. Service and installation can easily be done at one of Jotron's authorised service stations worldwide.

### 83700 Tron S-VDR CAPSULE Complete main unit

Includes:

83750 FBR-3 Float-free bracket

82310 User manual (can be downloaded from [www.jotron.com](http://www.jotron.com))

### Options:

99897 Programming (Country, Call Sign, MMSI)

### Spare parts:

81847 Lower Capsule Assembly with batteries

Includes:

91476 Rubber gasket

91478 U-bolt

98739 Silica gel 5g

91477 Equator ring

91479 Locking pin

83750 FBR-3 Float-free Bracket w/integrated data and power connector

Includes:

95134 Hydrostatic release mechanism

82170 Junction box

82295 Power and data cable 3 m

82170 Junction box module

95134 Hydrostatic release mechanism for FBR-3

Includes: 95136 Special bolt with washer



## Tron 45SX

### Manual satellite emergency position-indicating radio beacon, EPIRB

Easy mounting with bulkhead mounting bracket. Optional container for alternative use. Manual or seawater activation. Manual switch panel and strobe light. Light weight and small size. Standard 48 hours operation time. Operates on the COSPAS - SARSAT frequency 406 MHz. Identification and positioning via satellite. Transmits also on the air traffic emergency frequency 121,5 MHz for homing. Complies with IMO/SOLAS/GMDSS regulations. MED approved. Service stations worldwide.

#### 97800 Tron 45SX Complete main unit

Includes:

97802 Container

98955 User manual (can be downloaded from [www.jotron.com](http://www.jotron.com))

#### Options:

99897 Programming (Country, Call Sign, MMSI)

97801 Bracket, manual release

#### Spare parts:

97801 Bracket, manual release

97812 Electronic unit, complete

97770 Battery, Tron 45SX, 5 years maintenance kit

84524 Battery, Tron 45SX, 5 years SBM maintenance kit

Includes:

Relevant maintenance articles and labels

97814 Antenna



## Tron 45S

### Manual satellite emergency position-indicating radio beacon, EPIRB

Designed for small vessels and various other applications. Manual or seawater activation. Manual switch panel and strobe light. Light weight and small size. Standard 24 hours operation time. Operates on the COSPAS - SARSAT frequency 406 MHz. Identification and positioning via satellite. Transmits also on the air traffic emergency frequency 121,5 MHz for homing. Service stations worldwide.

#### 97796 Tron 45S PLB Complete main unit

Includes:

82224 Bracket

98955 User manual (can be downloaded from [www.jotron.com](http://www.jotron.com))

#### Options:

99897 Programming (Country, Call Sign, MMSI)

82224 Bulkhead bracket, manual release

82226 MB-45 Protective cover, wall mount version

82370 Safety grab bag

#### Spare parts:

97812 Electronic unit, complete

97769 Battery, Tron 45S, 5 years maintenance kit

82224 Bulkhead bracket, manual release

97814 Antenna



## WORLD NEWS! Tron AIS-SART

- Tron AIS-SART gives the exact location, with GPS precision
- VHF signals are being transmitted on AIS Channel A and B
- Position update – every minute

GMDSS Search and rescue transmitter

5 years warranty. Non hazardous battery.

Tron AIS-SART (search and rescue transmitter) is designed for use in search and rescue operations.

Complies with IMO/SOLAS/GMDSS regulations. MED and FCC approved pending. Service stations worldwide.

### 85037 Tron AIS-SART Main unit

Includes:

- 82746 Wall bracket
- 85355 User manual (can be downloaded from [www.jotron.com](http://www.jotron.com))

### Options:

- 84065 Lifeboat bracket
- 82900 Pole bracket

### Spare parts:

- 82615 Battery, Tron AIS-SART, 5 years maintenance kit

Includes:

- Battery unit
- 82790 O-ring
- 82957 Label, battery
- 82989 Label, battery seal

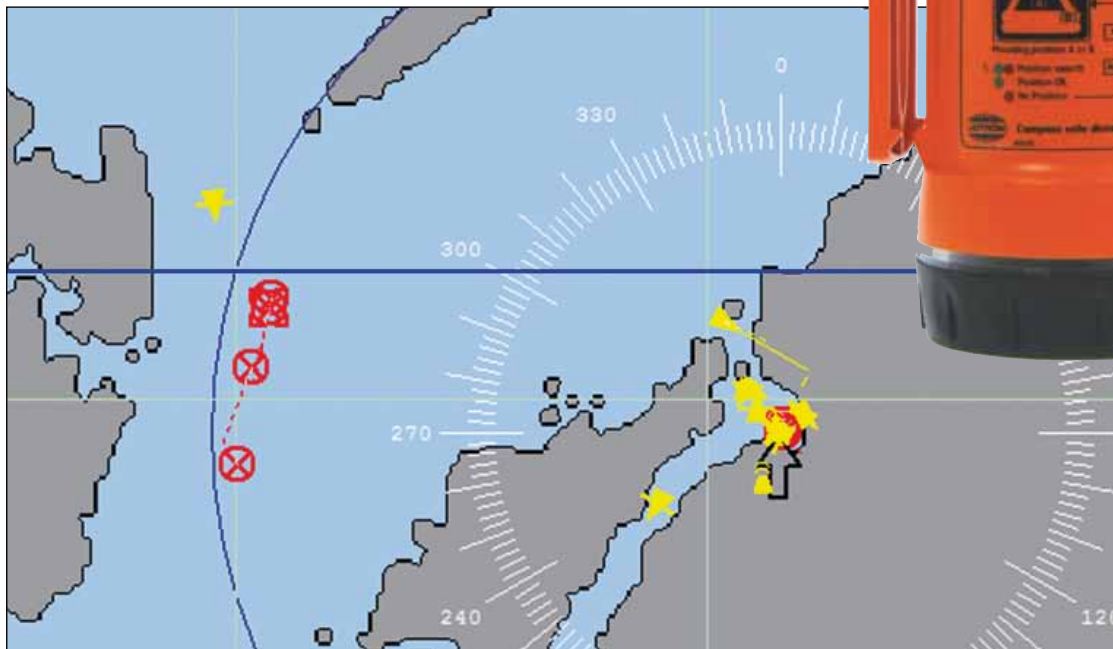
- 82746 Bulkhead bracket



Bracket 82746

Bracket 84065

Bracket 82900





## Tron SART20

GMDSS 9 GHz radar transponder

5 years warranty. Non hazardous battery.

Tron SART20 (search and rescue radar transponder) is designed for use in search and rescue operations. Tron SART20 gives the exact location of the distressed indicated on the radar X-band display of any nearby ship, SAR vessels and aircrafts. Complies with IMO/SOLAS/GMDSS regulations. MED and FCC approved. Service stations worldwide.

### 83010 **Tron SART20** Main unit

Includes:

82746 Wall bracket

84145 User manual (can be downloaded from [www.jotron.com](http://www.jotron.com))

#### **Options:**

84065 Lifeboat bracket

82900 Pole bracket

#### **Spare parts:**

82615 Battery, Tron SART20, 5 years maintenance kit

Includes:

Battery unit

82790 O-ring

82957 Label, battery

82989 Label, battery seal

82746 Bulkhead bracket



Bracket 82746



Bracket 84065



Bracket 82900



# Tron UAIS TR-2500

## Universal automatic identification system

Tron UAIS TR-2500 is a VHF transponder system continuously exchanging own ship information with information from all UAIS-equipped ships within VHF range. Broadcasting identification, position, course and speed over ground as well as static and voyage related information to vessels and shore base stations.

### 80400 Tron UAIS TR-2500

Complete Tron UAIS TR-2500 Transponder unit.

Includes:

- 80400 Transponder unit
- 80560 Junction box
- 81533 Plug Kit (Incl. pilot plug)
- 81540 Standard Bracket Mounting Kit
- 82693 Operator and Installation Manual (can be downloaded from [www.jotron.com](http://www.jotron.com))
- 81650 Grafical viewer w/manual (CD-R)

### Options:

- 80587 19" Rack Tray Mounting Kit
- 82325 AC/DC External Switch Mode Power Supply
- 82157 9-pin D-sub to RJ45 LAN Adaptor

### Antenna alt. 1:

- 84401 GPS/VHF combined antenna. Type AC-Marine
- 81768 Antenna signal splitter
- 80138 Plug kit for antenna 84401 and antenna signal splitter 81768

### Antenna alt. 2:

- 82484 VHF antenna. Type Procom CXL 2-1 LW/H
- 80611 GPS antenna w/mounting bracket. Type Procom GPS4 w/FLG bracket
- 81534 Plug kit for VHF & GPS antenna

### Spare parts:

- 80560 Junction box



# RA-2500 AIS Receiver

## Automatic identification system Receiver

RA-2500 is a VHF receiver continuously detection ship information on all channels from all UAIS-equipped ships within VHF range, like identification, position, course and speed over ground as well as static and voyage related information from vessels and shore base stations. The built-in display and keyboard allows it to be a stand alone unit but it can also be directly connected to a LAN or RS-422 interface.

### 80500 RA-2500 AIS Receiver

Complete Receiver

Includes:

- 80500 Receiver unit
- 80593 9-pin D-sub cover
- 80594 15-pin D-sub cover
- 82092 RS232 cable, 2.5 m
- 81540 Standard Bracket Mounting Kit
- 82325 AC/DC External Switch Mode Power Supply w/DC Power Connector
- 82694 Operator and Installation Manual (can be downloaded from [www.jotron.com](http://www.jotron.com))
- 81650 Grafical viewer w/manual (CD-R)



### Options:

Hubs and switches can be supplied upon request

- 82157 9-pin D-sub to RJ45 LAN Adaptor

### Antenna alt. 1:

- 81903 GPS/VHF combined antenna

### Antenna alt. 2:

- 84401 GPS/VHF combined antenna. Type AC Marine
- 81768 Antenna signal splitter
- 80138 Plug kit for antenna 84401 and antenna signal splitter 81768

### Antenna alt. 3:

- 82579 VHF antenna w/mounting bracket. Type Transvoice
- 80618 GPS antenna w/mounting bracket. Type Transvoice w/bracket
- 81534 Plug kit for VHF & GPS antenna

### Spare parts:

- 82325 AC/DC External Switch Mode Power Supply w/DC Power Conn.





# Tron AIS TR-2600

## Automatic identification system

### Shore Station Systems

Tron AIS TR-2600 is a Base Station Transponder designed to meet or exceed current specifications from IMO, IEEE and IALA. The TR-2600 can operate as a stand-alone unit, or together with a standby unit in a hot standby configuration. If configured, the standby unit will automatically continue operation if the main unit fails, or is disabled for maintenance purposes.

#### 83000 Tron AIS TR-2600 Complete Base Station Transponder

##### Includes:

- 83000 Transponder unit
- 82417 PSU-7002
- 82190 Complete I/O board R0549
- 82188 Compl. subrack
- 82399 Plug kit
- 82695 Operator and Installation Manual (can be downloaded from [www.jotron.com](http://www.jotron.com))



##### Options:

- 81860 Change over unit, automatic antenna switch
- PC module for Base Station Controller
- Cavity Filters – Spec. depending on application

##### Spare parts:

- 82417 PSU-7002 Power supply



## Tron TR20

### Hand portable maritime VHF

Rugged VHF radio for emergency situations and regular use for onboard communications. Easy to operate by one hand or wearing gloves. Both display and keys have back light facility to ease operation in low light conditions. Service stations worldwide. Possible to program additional 20 selected channels. Service stations worldwide.

#### 99930 Tron TR20 GMDSS

Designed to GMDSS applications on convention vessels.  
Channels: 21 channels, including channel 16 plus private and regional channels as appropriate (only simplex channels).  
Watertight to IP67. Complies to IMO/SOLAS/GMDSS regulations.  
MED and FCC approved.

##### Includes:

80060 Lithium battery/84101 Antenna/80083 Wrist strap/  
80078 User manual (can be downloaded from [www.jotron.com](http://www.jotron.com))

##### Options:

99920 RCH-20, dual slot rapid charger, 12 – 24 VDC

Includes: 80084 DC cable

80080 AC adaptor for RCH-20, 220VAC, EU style

80081 AC adaptor for RCH-20, 220VAC, UK style

80082 AC adaptor for RCH-20, 110VAC, US style

97861 AC adaptor for RCH-20, 110VAC, EU style

80059 NiMH battery, 7.2V / 1500mAh

80060 Emergency lithium battery, 5 years service life

80364 Carrier case, neoprene, red or black

84090 Wall bracket

99951 Carton for lithium battery to be mounted in the wall bracket

##### Spare parts:

80060 Emergency lithium battery, 5 years service life

80098 Test battery for Tron TR20 GMDSS

80059 NiMH battery, 7.2V / 1500mAh

84101 Antenna





# 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



832000F

## TR-810 OF Transceiver Offshore version

Includes:

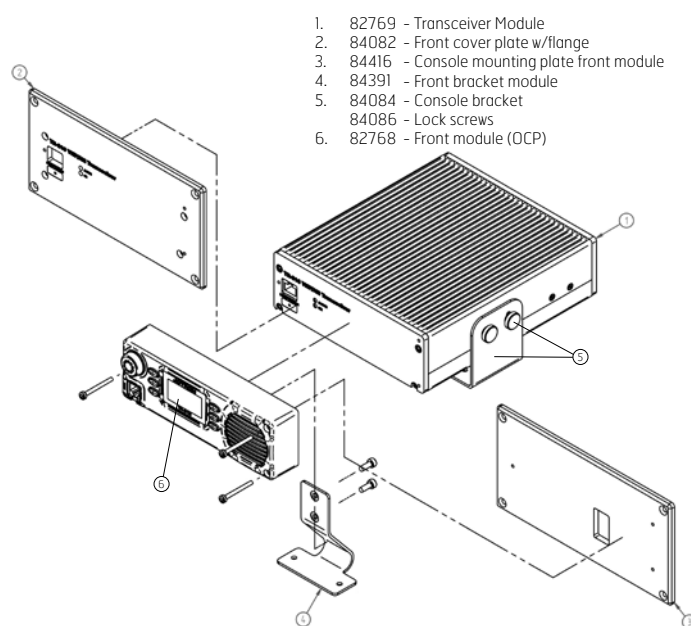
- 83200 TR-810 Transceiver Base Unit  
(incl. 84092 Microphone, 84084 Console bracket, 84086 Lock screws)
- 84330 Power AC/DC w/connector
- 84391 Front module bracket TR-810
- 84317 Cable 5m extension between front (OCP) and transceiver module
- 80577 Antenna connector BNC – RG213
- 84082 Front cover plate w/flange
- 84416 Console cover plate
- 84417 Manual
- 85558 External Loudspeaker

## Additional cables and accessories:

- 91794 Antenna 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

## Spare parts and other accessories:

- 82769 Transceiver Module (incl. 84092 Microphone, 84084 Console bracket, 84086 Lock screws, )
- 82768 Front module (OCP)
- 84092 Handheld microphone w/bracket
- 84084 Console bracket
- 84391 Front module bracket (DIN 144, 92x96mm)
- 84317 Cable 5m extension between front and transceiver module
- 84330 Power AC/DC w/connector
- 84545 DC/DC converter with separation
- 80577 Antenna adapter BNC – N
- 84082 Front cover plate w/flange
- 84416 Console cover plate
- 31030 Basic Headset w/headband MT7H79A
- 84318 PTT adaptor for headset
- 82967 Hand held microphone TM110TF





# TR-7710

## Air band transceiver

Multi/single channel VHF/AM Transceiver in 19" sub-rack 3U high, 99 channel fast recall store, 8.33 (25) kHz channel spacing in the band 117.975-137 MHz, RS-485 serial interface, full digital control and diagnostics. Operates from AC mains with auto fail to 24V DC.

### 84700 TR-7710 10W VHF/AM Digital Transceiver

#### Includes:

84000	Transmitter TA-7610
82417	PSU-7002 Power supply
84500	Receiver RA-7203
98825	Sub rack
82951	Technical manual CD
84307	Plug kit



#### Optional versions:

TR-7725 25W VHF Transceiver

TR-7750 50W VHF Transceiver

80380 **ARC MkII** Audio Remote Communication unit in 19" sub-rack format. Operates PTT and Audio. Internal loudspeaker with volume control. Intercom capability between several ARC's connected in a cascade. Operates from AC mains with auto fail to 24V DC control. Connections for headphone and microphone.

92710 **DRC** Digital Remote Control Unit in 19" sub-rack format. 3U high, RS-232/RS-485 interface, full digital control of all ARC or radio modules.

#### Options:

91794	CXL3-1LW Antenna for maritime applications
80325	Peiker TM110TF handheld microphone, complete for ARC
82967	Peiker TM110TF handheld microphone, complete for TR-77xx
97518	Desk top cabinet, 3U/463mm depth
93964	Desk top box for ARC+DRC or separate ARC

**More about this airband receiver as an offshore application on page 28.**



# VHF COASTAL RADIO

## NEW 7000 SERIES VHF COASTAL RADIO

### 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.



#### Optional versions:

84610 **TR-7725C** Transceiver 25W  
Transceivers 25W / 50W without VoIP

### 84550 **RA-7203C 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 VHF Transmitter**

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.



#### Options:

- 84358 Inband signalling (for TA-7650C and RA-7203C)  
Inband signalling option that enables keying of the transmitter with a user selectable inband tone and selectable inband tones on the receiver to signal squelch status.
- 81860 ACU Antenna Change Over Unit, Main to Standby, 7000 series
- 84884 VHF Cavity Combiner 4 channel Tx, dual filter, dual isolator
- 84885 Bandpass/Band Rejectfilter, (1,5 MHz)
- 80828 Receiver Multicoupler 8 channel
- 84887 Receiver Multicoupler 4 channel
- 84886 Single Cavity Filter (one for each RX ch. + bracket)
- 82484 VHF Antenna
- 82846 1/2" Coax Cable
- 80332 Lightning Protector
- 82849 Connectors for 1/2 Coax Cable
- 80601 Equipment Rack 47 U (pre-wired)
- 82967 Peiker TM110TF Handheld microphone
- 82968 Peiker TM168 Gooseneck microphone

Cabinet doors are available on request





[www.jotron.com](http://www.jotron.com)



# COSPAS - SARSAT 406 MHz EPIRB TESTER

According to MSC/Circ. 1040

## 99790 Tron UNIDEC

406.000 – 406.100 MHz EPIRB Tester

To be connected to PC

Complies with MSC/Circ. 1040

Includes:

99810 User Manual (can be downloaded from [www.jotron.com](http://www.jotron.com))

99815 PC software Tron UNIDEC, Windows

### Options:

81745 USB cable to Serial Adapter

## 99790B Tron UNIDEC EXCHANGE UNIT

For use when 2-years calibration is due

Old unit by return will generate a credit note



## PROGRAMMING ACCESSORIES

### 98899 Tron STAT MkIII Programming Station with Tron UNIDEC

Programming, reprogramming and decoding station for

Tron 30S MkII, Tron 40S MkII/40GPS MkII, Tron 40S/GPS, Tron 45S/SX, Tron TR20

Complete with training course

Computer not included

### 84112 PRU-USB IR Programmer

Programming interface for Tron 40S MkII/40GPS MkII, Tron 40S/40GPS, Tron 45S/SX, Tron TR20

# Shore-based maintenance of satellite EPIRBs MSC/Circ. 1039

## JOTRON EPIRBs ARE TESTED EXCEEDING MSC/Circ.1039 REQUIREMENTS

Implemented as part of the final production process Jotron test all own EPIRB models exceeding the guidelines for shore-based maintenance of satellite EPIRBs, MSC/Circ.1039, approved by the Maritime Safety Committee. MSC/Circ.1039 should now be carried out at intervals specified by the flag administration and not exceeding 5 years. Jotron recommend that the next shore-based maintenance should be performed at the time when the battery is to be changed. Battery expiry is indicated on separate label placed on the EPIRBs battery/lower part.

IMPORTANT: Do not break the seal on an EPIRB. Broken seal make test approval void.

### Test according to MSC/Circ.1039

#### Shore-based maintenance of satellite EPIRBs

As an alternative to replace the EPIRB with a new unit, Jotron offer to test the EPIRB at our factory. Test will be performed according to the guidelines for shore-based maintenance of satellite EPIRBs, MSC/Circ.1039, approved by the Maritime Safety Committee.

Test report will follow the EPIRB.

### Test according to MSC/Circ.1040

#### Annual testing of 406 MHz satellite EPIRBs

Test will be performed according to the Guidelines on annual testing of

406 MHz satellite EPIRBs, as required by SOLAS regulation IV/15.9, which entered into force on 1 July 2002.

Test report will follow the EPIRB.



## SPARES FOR HISTORIC PRODUCTS

### Tron VHF/AIR

- 93080 Tron Charge battery charger, 220V AC as standard
- 93030 Rechargeable NiCad battery 400 mAh (Makes the unit floating)
- 93003 Rechargeable NiCad battery 1100 mAh (Makes the unit non floating)
- 93002 Emergency lithium battery, Tron AIR,  
4 years service life  
(Makes the unit floating)



### Tron 40S

- 97780 Battery, Tron 40S, 5 years maintenance kit
- 84523 Battery Tron 40S, 5 years SBM maintenance kit  
Includes:  
Relevant maintenance articles and labels

### Tron SART

- 96978 Battery, Tron SART, 4 years maintenance kit  
Includes:  
New battery, operators panel with indicators, lower  
housing, sealing, safety pin, cables, connectors and:  
90624 O-ring  
96996 Label, operating and battery
- 92424 Lifeboat bracket
- 93494 Outside mounted lifeboat bracket
- 95270 Life raft mounting pole



### Tron 30S MkII

- 94469 Battery Tron 30S MkII, 4 years maintenance kit
- 84525 Battery, Tron 30S MkII, 4 years SBM maintenance kit  
Includes:  
Relevant maintenance articles and labels
- 95134 Hydrostatic release mechanism for FB-3  
Includes: 95136 Special bolt with washer

### Tron 1K

- 90634 Battery for Tron 1K, type 97-04

### Tron 1E MkII

- 94479 Battery exchange kit



# MISCELLANEOUS

**Certificates:**

- 99825 Certificate of Conformity (together with the goods)
- 99825- Certificate of Conformity (ordered after delivery)
- 99362 Certificate of Origin (together with the goods)
- 99362- Certificate of Origin (ordered after delivery)
- 81211 Cert. legalized by Chamber of Commerce, original
- 81211- Cert. legalized by Chamber of Commerce, copy
- 84531 Cert. legalized by Embassy
- 82752 Russian Certificate 1,25% of invoice value, minimum
- 84393 EUR 1 Movement Certificate

**DUMMIES** (Includes: User manual)

- |                                 |  |
|---------------------------------|--|
| 84233 Dummy Tron 40S/40GPS MkII | (80180 FB-5/95471 FB-4 Bracket not included) |
| 99633 Dummy Tron S-VDR CAPSULE  | (83750 FBR-3 VDR bracket not included)       |
| 84229 Dummy Tron SART20         | Includes: 82746 Wall bracket                 |
| 97806 Dummy Tron 45SX           | Includes: 97802 Container                    |
| 97807 Dummy Tron 45S            | Includes: 82224 Bulkhead bracket             |
| 99911 Dummy Tron TR20 GMDSS     | (99920 Charger not included)                 |

Jotron AS company code: N0969  
**NATO STOCK NR**

Part No	Name	NATO STOCK NR	NATO part No.
80400	Tron UAIS TR-2500	5820-25-150-8821	
98545	Tron AIR	N/A	
95475	Tron 40S	5895-25-148-0381	
97777	FBH-4	5342-25-148-0405	
97821	Hydrostat	4220-25-148-0406	
99930	Tron 20 GMDSS	5820-25-151-1960	
96960	Tron SART	5895-25-145-1727	
91671	AQ-4 Personal Strobe light	6230-25-138-7110	AQ4 std
	MIL green	4220-99-991-1241	
91852	Tron 4F Lifebuoy Light	6230-25-119-9799	Tron 4F
92472	MF-1112 Marking flasher	6230-25-127-7786	MF-1112
91600	MF-1114, Marking flasher	6230-25-114-1985	MF-1114
95455	MF-1117, Marking flasher	6230-22-606-0503	MF-1117
95465	MF-1119, Marking flasher	6230-25-150-9056	MF-1119





# SURVIVAL LIGHTS

**NEW** Solas approved lights - available 1st quarter 2010

## Tron SL-100 series

### 86210 LIFE VEST LIGHT

- Comply to SOLAS
- Sealed, small and compact
- 5-years sealed battery (non dangerous goods)
- Self-activated by tilt-switch
- 1 candela light intensity
- Unbreakable high intensity LED



## Tron SL-300 series

### 86230 LIFE BUOY LIGHT

- Comply to SOLAS
- Sealed, small and compact
- 5-years sealed battery (non dangerous goods)
- Self-activated by tilt-switch
- 2 candela light intensity
- Unbreakable LED



## Tron SL-400 series

### 86240 LIFE BOAT LIGHT

- Comply to SOLAS
- 12-24 VDC external power
- High intensity LED
- Flange mount
- Sealed, small and compact



# Emergency Marker Lights

## AQ-4

### Personal strobe light

Personal emergency and multi purpose marking flasher. Manually activated. High intensity xenon flash strobe light. Light weight. Waterproof to 300m. Flash rate: 50 flash per minute. 12 hours continuous operation endurance. Designed for personal safety and various applications such as diving, fire fighting, marking of personnel, objects, vessels, vehicles, targets and safety lifejacket marking. Battery; 1 x standard 1,5V C-cell alkaline (not included).

91671 **AQ-4** Standard with clear lens and yellow housing

Includes:  
82625 Velcro strap

#### Options:

91671 **AQ-4** w /amber, blue, red or green lens

91671 **AQ-4** Daylight switch incorporated w /velcro strap

91671 **AQ-4** w /military green housing and strap



## AQ-5

### Personal multi purpose strobe light

Personal emergency and multi purpose marking flasher with integrated low power torch. Manual or seawater activated. High intensity xenon flash strobe light combined with low power, high intensity white LED. Comes with belt clip and clear lens. Light weight. Waterproof to 30m. Flash rate: 50 flash per minute. 12 hours continuous operation endurance as strobe and more than 60 hours continuous endurance as torch. Designed for personal safety and various applications. Battery; 2 x standard 1,5V AA/LR6-cell alkaline (not included).

80100 **AQ-5** Standard (yellow housing)

80130 **AQ-5** With seawater activation (orange housing)

#### Options:

80100 **AQ-5** Standard (green housing)







[www.jotron.com](http://www.jotron.com)



## MF-1112 / -1111B / -1111 LED

### Marking flasher

Marking light. Manually activated. Light weight. Waterproof to 500m. Flash rate: 25 flash per minute. Daylight switch incorporated. Optional colour lenses, velcro strap and floater available. Designed for marking of fishing equipment, seismic cables, anchor chains and moorings, oil cables, fish farms etc and also for underwater installations for diving, offshore etc. Battery; 3 x standard 1,5V D-cell alkaline (not included).

#### 92472 MF-1112 Complete

High intensity xenon flash strobe light.

Long battery endurance: 175 hours @ 0°C. <sup>1</sup>

Includes:

90701 Clear lens / 96742 Screw ring / 96743 O-ring

#### 91182 MF-1111B Complete

3,6 km surface visibility. Anti-vibration bulb.

Long battery endurance: 230 hours @ 0°C. <sup>1</sup>

Includes:

90701 Clear lens / 96742 Screw ring / 96743 O-ring

#### 81050 MF-1111 LED Complete

3,6 km surface visibility.

Very long life LED bulb. Standard bulb colour, white.

Very long battery endurance: 1500 hours @ 0°C. <sup>1</sup>

Includes:

90701 Clear lens / 96742 Screw ring / 96743 O-ring

#### 82712 MF-1111 LED Continuous Light Complete

3,6 km surface visibility.

Very long life LED bulb. Standard bulb colour, white.

Includes:

90701 Clear lens / 96742 Screw ring / 96743 O-ring

#### Options:

98885 Floater complete

96732 Amber lens

#### Spare parts:

92553 Electronic unit MF-11112

91178 Electronic unit MF-1111B

81049 Electronic unit MF-1111 LED

82713 Electronic unit MF-1111 LED Continuous light

90701 Clear lens



# MF-1114

## Marking flasher

Marking light. Daylight switch activated. High intensity xenon flash strobe light. Long life operation. Flash rate: 12 flash per minute. Waterproof to 500m. Optional colour lenses and floater available. Designed for marking of fishing equipment, seismic cables, anchor chains and moorings, oil cables, fish farms etc. and also for underwater installations for diving, offshore etc. Battery: 1 x Jotron type 97-15, alkaline.

### 91600 MF-1114 Complete

Long battery endurance: 2300 hours @ 0°C. <sup>1</sup>

Includes:

- 90701 Clear lens
- 96742 Screw ring
- 96743 O-ring
- 91585 Battery
- 92554 Aluminium tube

### 81961 MF-1114 LED Complete

Very long life LED bulb. Standard bulb colour, white.

Long battery endurance: 10500 hours @ 0°C. <sup>1</sup>

Includes:

- 90701 Clear lens
- 96742 Screw ring
- 96743 O-ring
- 91585 Battery
- 92554 Aluminium tube

### Options:

- 96732 Amber lens

### Spare parts:

- 92557 Electronic unit MF-1114
- 81840 Electronic unit MF-1114 LED
- 91585 Battery 97-15
- 92554 Aluminium tube
- 90701 Clear lens

<sup>1</sup> Typical capacity versus temperature for alkaline cells are 100% @ 20°C, 75% @ 0°C and 37,5% @ -20°C



Optional floater for MF-1114 available on request



## MF-1117

### Marking flasher

High intensity xenon flash strobe light. Requires external power, 12-24V DC. Water resistant to IP 68. Flash rate: 90 flash per minute. Optional colour lenses available. For marking on top of masts or wheel houses, as an alert light in engine room or on deck, as an anti-collision light in harbours or to mark factory pipes or large antennas.

95455 **MF-1117** Complete with 5 m cable

Includes:  
90701 Clear lens  
96742 Screw ring  
96743 O-ring

#### Options:

96732 Amber lens

#### Spare parts:

90701 Clear lens



## MF-1118

### Marking flasher

Daylight switch activated. High intensity xenon flash strobe light. Requires external power, 12-24V DC. Water resistant to IP 68. Flash rate: 16 flash per minute. Lenses with optional colours available. Designed to mark fish farms, both fixed and floating installations. Also to mark anchor buoys and other emergency and floating buoys where a battery is installed.

95460 **MF-1118** Complete with 5 m cable

Includes:  
96732 Amber lens  
96742 Screw ring  
96743 O-ring

#### Options:

90701 Clear lens

#### Spare parts:

96732 Amber lens





# MF-1119

## Programmable marking flasher

Emergency and marking light. Daylight switch activated. High intensity xenon flash strobe light. Requires external power, 12-24V DC. Water resistant to IP 68. Common flash rates available. New flash character can be designed on request. Lenses with optional colours available. Designed to mark fish farms, both fixed and floating installations. Also to mark anchor buoys and other emergency and floating buoys where power is available. Designed as marking and distress light on top of masts or wheelhouses, as an alert light in engine room or on deck, as an anti collision light in harbours or to mark factory pipes and large antennas.

95465 **MF-1119** Complete with 5 m cable

Includes:

96732 Amber lens

96742 Screw ring

96743 O-ring

### Options:

90701 Clear lens

### Spare parts:

96732 Amber lens



# Offshore Applications

## VHF/AM transceiver – TR-7710/25/50

### TR-7710 – VHF/AM Transceiver (10W)

Compact Modular Design: 2 Transmitters with power supplies fit in one 3U 19" sub rack or 6 receivers fit in one 3U 19" sub rack. Transmitters have low inter modulation, broadband noise, spurious and harmonics and excellent large signal capabilities, giving excellent collocation capabilities. Frequency coverage up to 156Mhz available. Proven high reliability design.

Up to 4 carriers offset according with ICAO annex 10. (optional) Built in antenna relay for easy main/standby configuration. Both operational parameters and diagnostics available from remote interface Audio Remote control and operators remote control or optionally on request JOTRON RACS surveillance and control system (PC-software)

This is a multi/single channel VHF/AM transceiver, mounted in a 19" sub-rack or in a desktop cabinet. The unit is 3U high and has 99 Ch fast recall store. The channel spacing is standard 8.33 kHz in the band 117.975-137 MHz. The radio has RS-485 serial interface and full digital control and diagnostics. It operates from AC mains with auto fail to 24VDC. The output power is dependent on version 10/25 or 50W.

TR-7710/25/50 complies with ETSI specifications:  
EN 300 676 technical characteristics  
EN 301489 EMC standard



Peiker TM 110 Handheld microphone  
CXL3-1LW VHF/AM antenna  
RG213 Low Loss antenna feeder cable w/male and female connectors mounted

## Remote Control Unit for VHF/AM 7000

1) When operator is to control the audio of the radio from another room/location than where the radio is physically placed we recommend the use of the below ARC.

### ARC – MK II Audio Remote Control

The ARC is an audio remote control that uses 4wire E&M format to transfer RX audio, TX audio, PTT and Squelch. The ARC has intercom-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 and connections for headphone and microphone. It operates from 220V AC with auto fail to 24V DC.

2) When the operator also needs to control the frequency from the same remote position, we recommend to use the below ORC.



## ORC – Operators Remote Control

The unit has a 19" sub rack format and is 3U high. The ORC has RS-232/RS-485 interface. The operator can select operating frequency directly from radio's channel store, and there is a read-out of frequency information. The power is supplied from ARC or Radio modules.

3) When the distance from the radio to the ARC and ORC is more than 500 meters, we recommend the use of the below Audio and PTT Modem.



## Audio and PTT and Data Long Distance Modem



For long distance remote control of audio, PTT and control signals through a two/four wire leased telephone line.

Desktop box for ARC + ORC or separate ARC



Desktop Cabinet for 19" 3U installation



## Headset combinations

There is a possibility to connect any requested headset of Peltor to either the ARC or the TR-7710 /TR-710 via a special designed PTT cable. There are also different headset combinations for handheld radios available.

- Special headset for noise environment
- Standard headset, headset with ambient sound and EX Headset
- Headband, helmet clips or neckband-types
- Dynamic, noise cancelling microphone

Jotron supply different types of cabinets, antennas, antenna-filters, multi couplers, combiners, splitters and power amplifiers for both the VHF and the UHF equipment. We tailor a system to your needs which will fully comply to your critical co-location and frequency allocations.



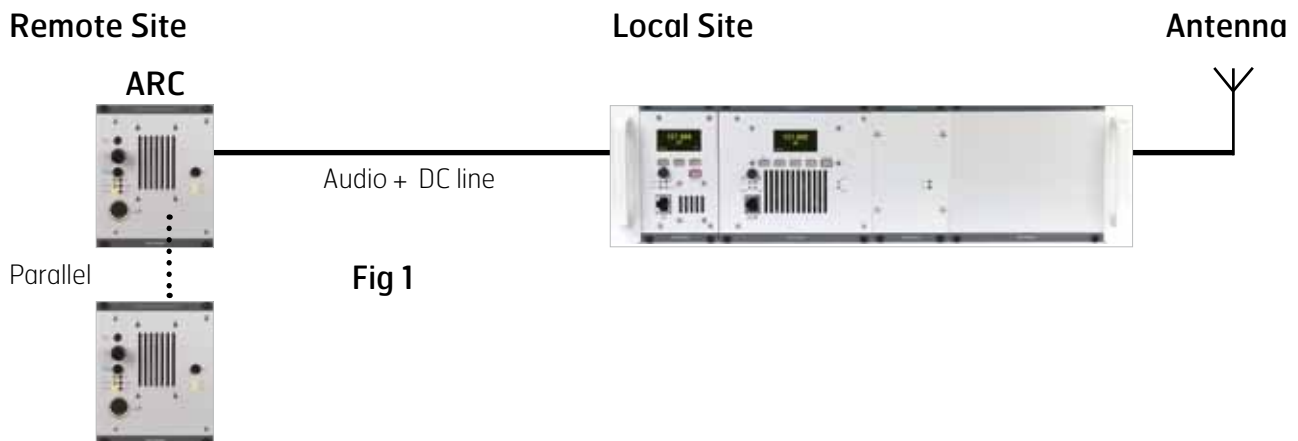


## Single Radio Setup, general:

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

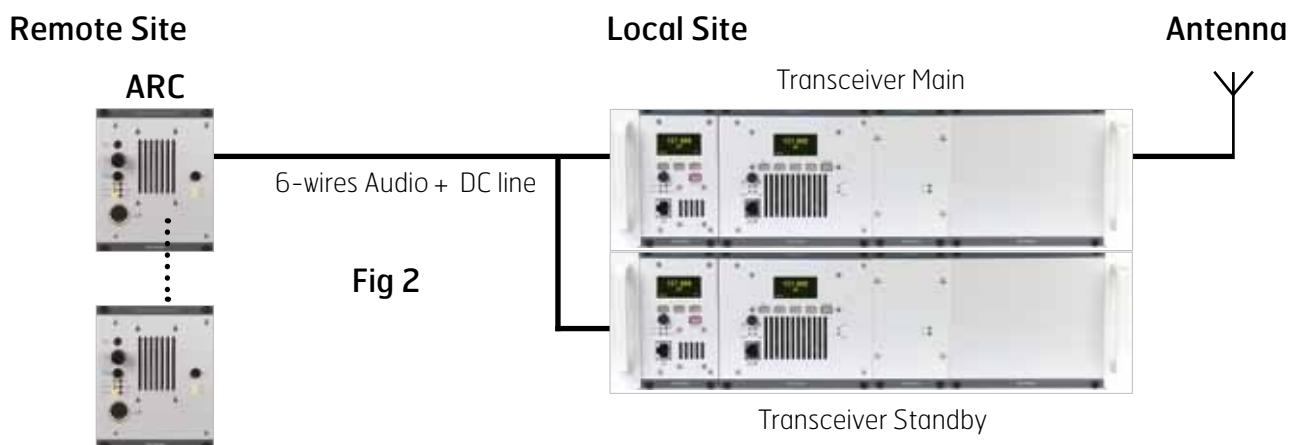
### Remote Audio and PTT only:

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). A red LED indicator on the ARC will alert the operator if there is an alarm on the local radio unit. (Fig. 1). It is possible to connect more than one ARC to the same radio. The number of wires can be reduced to two wires, but in this case the ARC will lose functionality (the sq, alarm indicator will not be available).



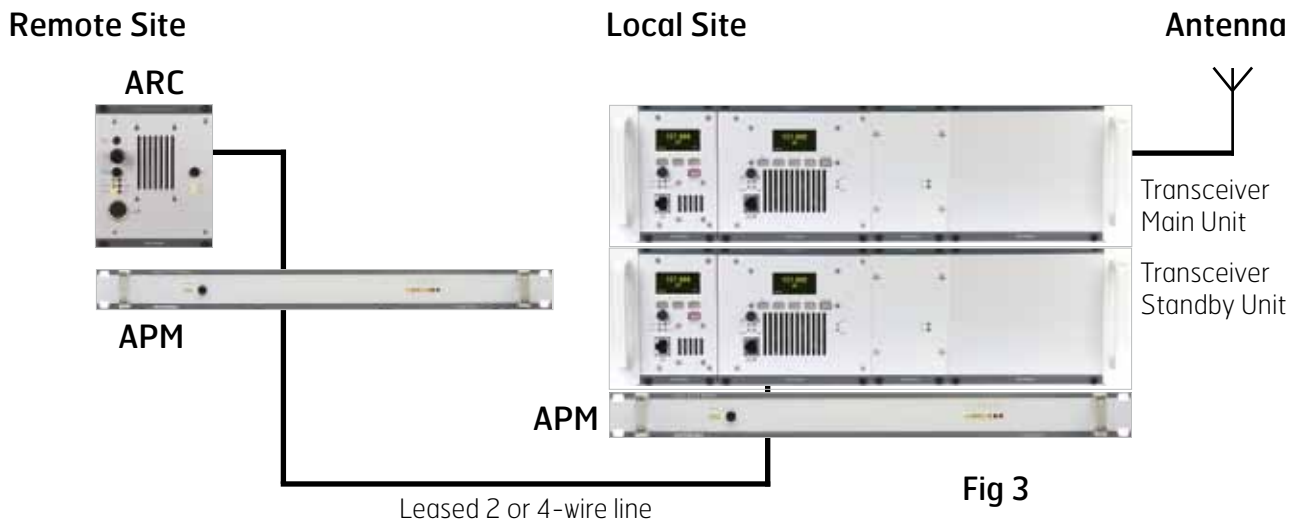
The maximum distance between ARC and radio unit is approximately 2 km, provided a high quality screened cable is used.

To connect a pair of radio units as main/standby, the alarm output from main unit is connected to the select input of the standby unit. Also, the initial main unit must be told that it is the main unit by accessing its configuration programme and set its operation to Main. The standby radio unit is automatically selected if there is an alarm on the main unit. The switch is a built-in coaxial relay. Selection can also be done manually from the ARC (Fig. 2).



## Long Range Audio and PTT

Communication via leased lines is made possible by use of the Audio/PTT modem, APM (Fig. 3). 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.

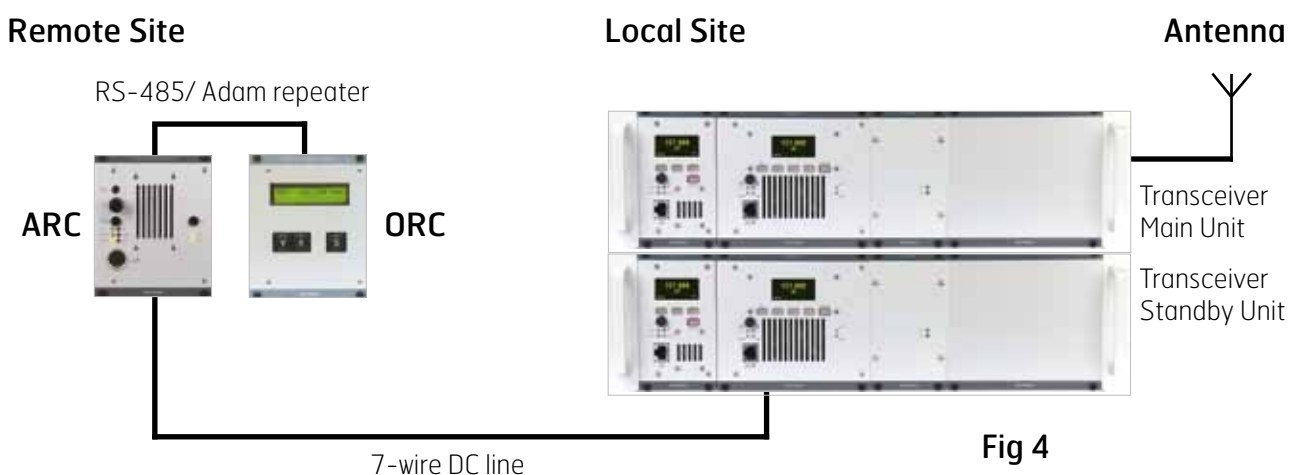


The Audio/PTT modem uses in-band tones for transfer of Squelch and PTT. Alarm (Main and Standby unit) and Main/Standby selection uses FSK data. The 2 or 4 wires must be ordered specific as this is not standard.

## Limited Remote Access to Radio Control:

Adding an Operators Remote Control unit (ORC) to the set-up shown in Fig. 2, enables the operator to toggle between the frequencies, which have been programmed into the radios. (Fig. 4) 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 covers 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.



# Phontech Internal Communication Systems

## NEW – Public Address and Alarm System – PAGA 1700

The Phontech 1700 PAGA is designed to meet the tough requirements for PAGA systems to the oil and gas – and other industrial applications, both offshore and onshore. The system will distribute messages and alarms with special focus on ease of operation and safety, speech intelligibility, reliability and fault tolerance. In addition, the system has built in self test and monitoring functions for easy and cost efficient maintenance.

Based on plant incidents, the 1700 PAGA is designed to provide zone area switching and access priority of live voice inputs and automatically generated alarm inputs. Distribution of pre-recorded messages and speech storage and replay are also implemented.

### System

The basic system consists of a main controller including I/O cards and dual power supplies, a hardwired emergency unit including a separate tone generator and a number of 400 W Class D amplifiers covering the amount of effect needed. The emergency unit retains operation if the main controller fails. Total reliability is achieved by duplicating systems. The Phontech 1700 system has all the functions necessary to facilitate this. In addition we have the microphone operator stations combining programmable tactile feedback buttons and programmable 7 inch touch screens. Finally a 15 inch touch panel configuration unit mounted in one of the electronic racks. Microphone operator stations can be delivered as desktop units or 19 inch rack-mount units.

### Data

- X86 based HW platform
- All I/O and audio through PXI or PCI add-on boards
- Choice of XP Embedded, Linux or RTOS OS.  
(Limited functionality on Linux and RTOS)
- LabView based application SW
- Touch screen LCD panel
- Power efficient class "D" audio amplifiers



## Public Address – MPA 1600



The MPA 1600 system is a marine and offshore Public Address System especially designed to meet the requirements for PA/GA and entertainment distribution onboard ships and mobile offshore units. The system is in conformity to SOLAS, IMO and IEC regulations. Based on modular design and flexible configuration, the system covers a wide range of installations complexities from small single loop to fully duplicated systems utilizing total redundancy.

### System features:

- Modular design
- Flexible system configuration
- Built-in loudspeaker, to monitor activity on zones
- Up to 6 zones, selectable in any configuration
- Up to 6 MPA 1601 control units connected
- Up to 2 emergency microphones connected
- External paging facility (from DICS/PABX etc.)
- Prepared for A/B dual loop system, with alarm synchronisation
- Interfaces for manual and/or automatic alarms
- 2 entertainment sources, with free zone selection
- 7 audio outputs, with unlimited amplifier expansion
- Output for activation of external GA system
- Synchronisation of external GA tones
- Up to 6 MPA 1603 Alarm Panels, with up to 4 different alarms
- Compact – size 19", 1U, weight only 3 kg
- Low power consumption





## Control Unit MPA 1601

### Features:

- 6 Zone-selection keys
- PTT, General Call, and Dimmer keys with integrated LED indicators
- Status-Led for system A and system B
- Dimmable Backlight and indication Leds
- Local Mute Relays
- MPA 1601



MPA 1601

## Alarm Unit MPA 1603

### Features:

- 4 configurable Alarm keys, with integrated LED indicators
- Cancel key
- 6 leds indicating alarm status in each zone
- MPA 1603
- Power Amplifier AMP 1670

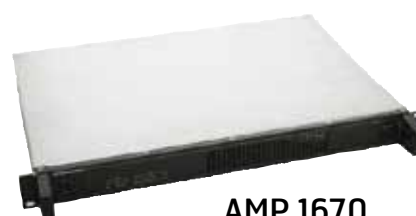


MPA 1603

## Power Amplifier AMP 1670

### Features:

- High performance, unique design for all demanding PA/GA applications.
- Power Output: 400 Watts RMS into 100 Volt line
- Two balanced line level inputs, normal and priority
- Operates from a 48VDC power supply
- Max power consumption only 480W at rated power output
- Compact - size 19\*, 1U high, weight only 6.5kg
- AMP 1670



AMP 1670

## Other Phontech Communications Systems:



9001



HP-15



DICS 6101



MPA 1601 gooseneck

- Intercom Systems
  - DICS 6100 integrated communication system is a digital communication system meeting all aspects of internal and external communication onboard ships. Based on the latest technology its flexible configuration is a cost effective solution. For Intercom, Telephone, Public Address, Alarm, Loud-hailing and Entertainment
  - Command intercom systems: CIS 3000
- Amplified Batteryless telephone systems BTS - 4000
- Small public address system - SPA 1500
- Sound reception system - SR 8200
- Marine antenna system - ARGO A1
- Wireless Paging System - 27.300Hz - WP-900 HF - developed to increase the accessibility and security of the crew who frequently moves at work. WP 900 can be fully integrated with Phontech Communication systems to increase the efficiency of the crew operation



# Consultas Maritime Software

## C-Loading

### - new generation loading computer

Consultas has been a Loading Computer manufacturer since the company was founded in 1972. Since then more than 2000 installations have been made on a wide range of vessels.

Jotron Consultas proudly presents **C-LOADING** - a brand new Loading Computer system, in which all calculations are based on a 3D geometric model of the hull and inner structure.



For more information about Jotron Consultas products, [www.jotron.com](http://www.jotron.com)



**C-LOADING** is a modular software system consisting of a wide range of function modules which can be assembled together with great flexibility. The modularity yields a Loading Computer solution which is tailored to the needs and requirements of each particular vessel type.

**C-LOADING's** main features are as follows:

- Calculation of dead weight and displacement
- Calculation and monitoring of floating position
- Calculation and monitoring of intact stability
- Calculation and monitoring of longitudinal and local strength

- Calculation of damage stability
- Extensive cargo calculations for oil and gas
- Extensive reporting functionality
- Online interfaces to tank level gauging systems and other ship systems
- Planning while the online condition is running continuously in the background
- All calculations are carried out on the basis of a 3D geometric model of the hull and its inner structure
- Office solutions providing the possibility to easily switch between the various ships, exchange loading conditions with individual ships and to reproduce the onboard loading conditions exactly and vice versa.

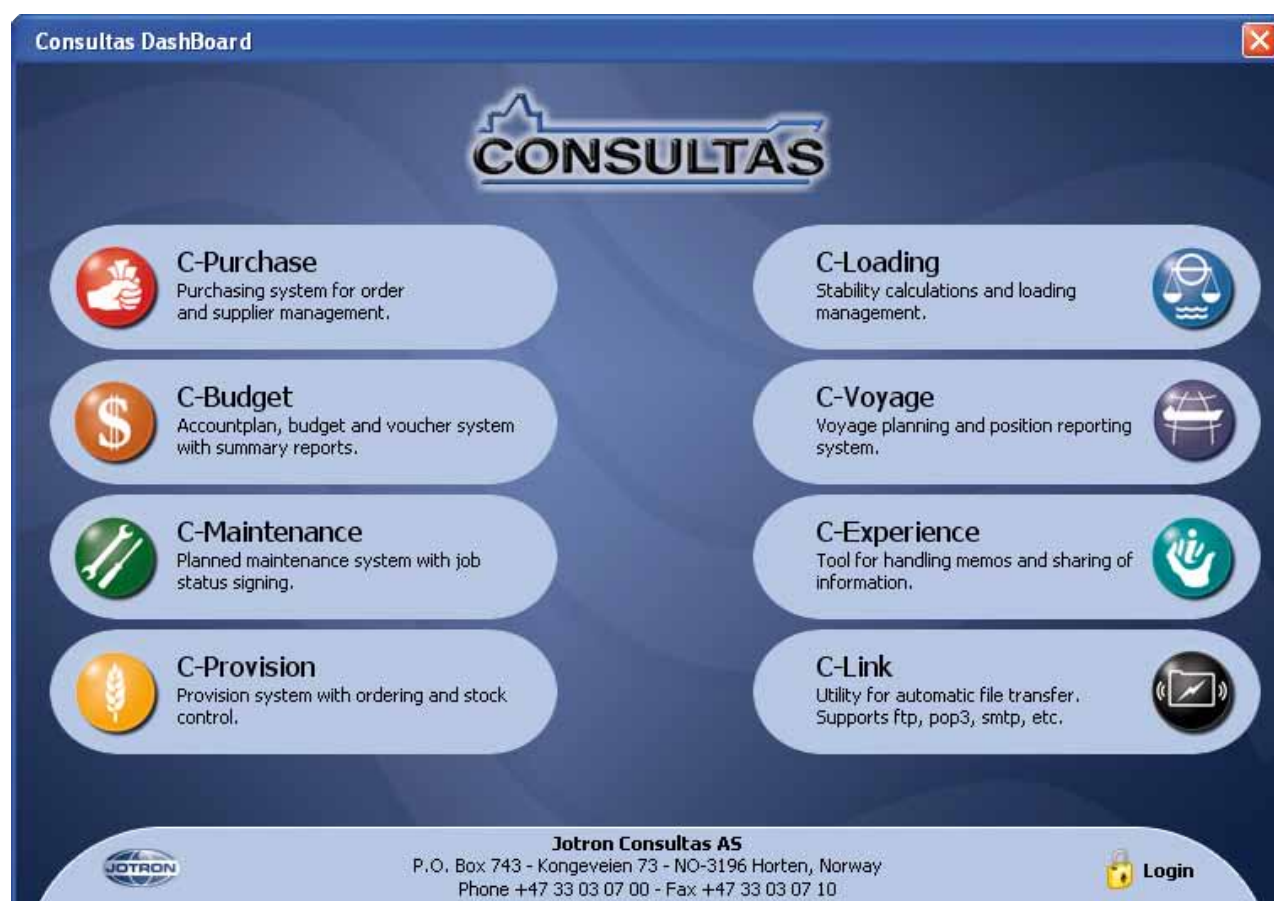


# Consultas Maritime Software

## Ship Management Software

Jotron Consultas is now releasing ver.4 of the Consultas suite supporting a variety of ship management tasks. Current solutions are re-built on new SQL platform with strengthened capabilities to handle:

- all fleetsizes
- two ways flow of data supporting both centralized and decentralized management
- rolebased user management
- dashboard



### Other services:

Jotron Consultas PMS consultancy team offers value added services to our clients such as:

- spare part and maintenance database population and harmonization
- onboard vessel "hands-on" training and expert assistance
- standard or tailored training courses







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