

LT-3100

Satellite Communications System Technical Product Presentation for Partners

LT-3100 System



LT-3100 Features

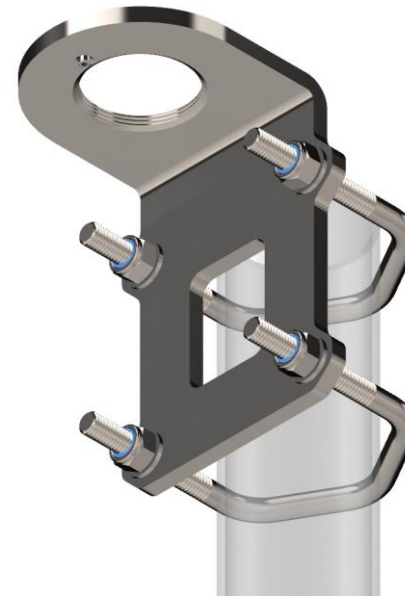
Features

- Voice, SMS, and Modem Data (incl. Win Dial-up Networking)
- 2.4 kbps modem data
- Support Onsatmail (AST) and SkyFile[®] Mail (Marlink)
- Single antenna cable solution (up to 500 m)
- High-performance GNSS/GPS receiver
- High quality microphone, speaker, and equalizer for improved audio performance
- Large 4.3" TFT-LCD display supporting day and night modes
- Voice prompt audio feedback
- Firewall and user authentication for high level of security
- Web server for configuration and maintenance
- Support external SIP PABX and SIP handsets (and POTS)
- RedPort Optimizer (GMN) / Iridium[®] Mail & Web App
- Vessel tracking (SBD, SMS, and E-mail)
- Configuration of GNSS/GPS receiver
- Remote Management of Vessel Tracking
- NMEA 0183 GNSS/GPS data via RS-422
- Bluetooth interface supporting:
 - Personal Area Network (PAN), IP-based traffic
 - Supporting SIP Voice and Messaging

LT-3130 Antenna Unit (AU) Mounts

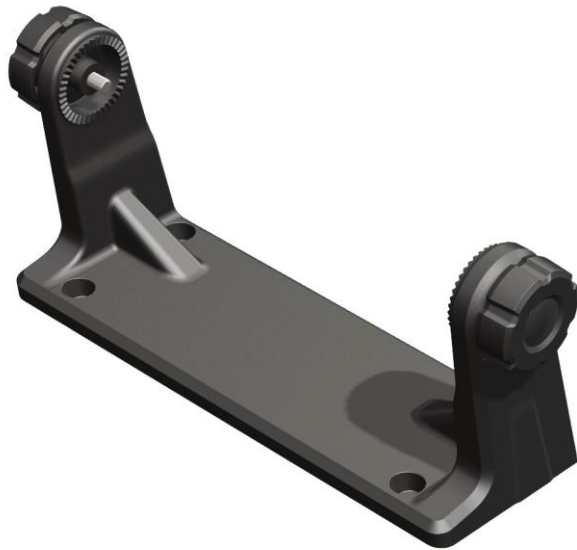


Pole Mount (1.5" pipe), Antenna Unit
P/N: 91-100774



Bracket Mount (1.5" to 2.5" pipe), Antenna Unit
P/N: 91-100773

LT-3110 Control Unit (CU) Mounts

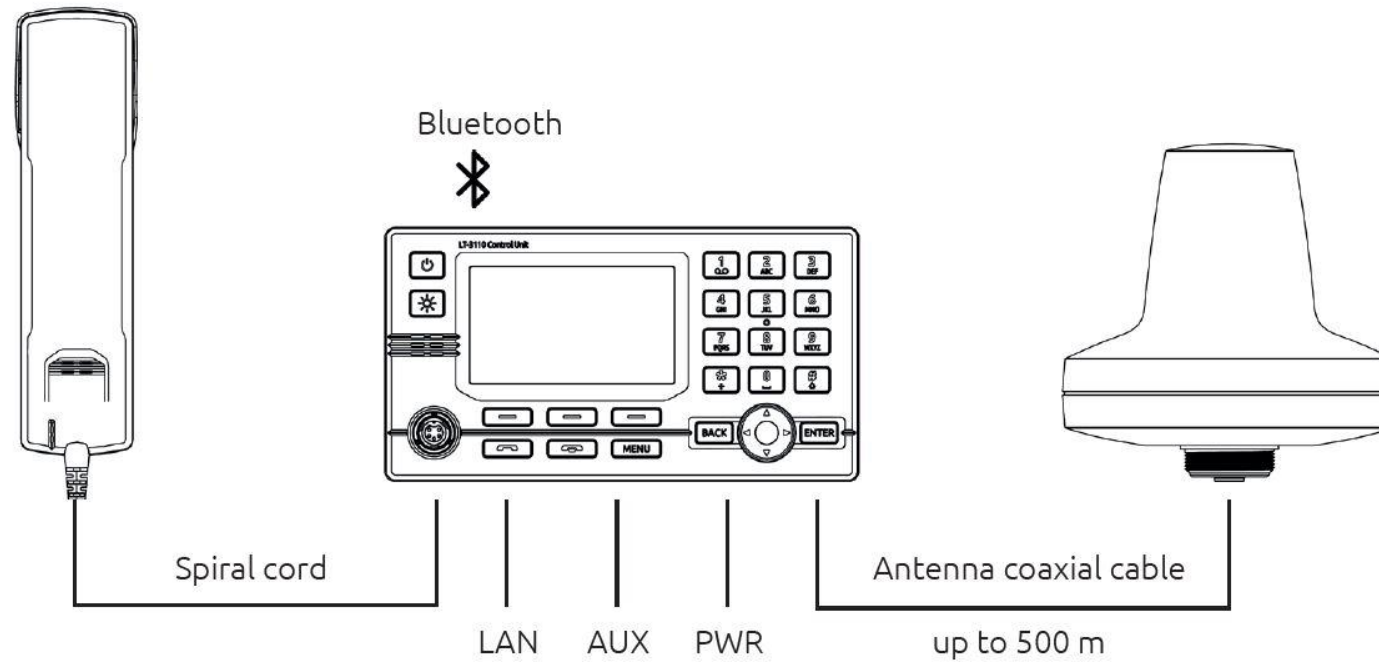


Bracket Mount, Control Unit
P/N: 91-100771



Flush Mount, Control Unit
P/N: 91-100772

LT-3100 Configuration/Wiring



LT-3100 Coaxial Cable (length)

- Up to 500 meters of coaxial cable can be used between the LT-3110 CU and the LT-3130 AU
- The following coaxial cables are available from Lars Thrane A/S:
 - 91-101183 Coxial Cable Ø4.9mm, 10m
 - 91-101184 Coxial Cable Ø4.9mm, 25m
 - 91-101137 Coxial Cable Ø10.3mm, 10m
 - 91-101138 Coxial Cable Ø10.3mm, 25m
 - 91-101139 Coxial Cable Ø10.3mm, 50m
- The table on this slide illustrates the maximum cable lengths on 12 and 24 VDC (input voltage)

RF Coaxial Cable



Cable Type	12 VDC Supply Max Cable Length	24 VDC Supply Max Cable Length
FF195LSFROH (4.9mm) (~RG-58)	70 m	285 m
FF400LSFROH (10.3mm) (~RG-214)	265 m	500 m

LT-3110 Control Unit (front view)



LT-3110 Control Unit (back view)

- LT-3110 CU (back) interfaces:
 - Coaxial type N-Conn. (female). One cable solution supporting power and communication to the antenna
 - Chassis ground connector
 - Input Voltage: 10 – 32 VDC
 - Auxiliary (10-pin) supporting RS-422, radio silence, and external ringer
 - Ethernet LAN (RJ45). Connectivity for data, Voice (SIP), and service and maintenance (web server)
 - SIM card behind rubber dust cover for easy insertion and replacement



LT-3100 In-The-Box / Accessories

In-The-Box

- LT-3110 Control Unit
- LT-3120 Handset
- LT-3121 Cradle
- LT-3130 Antenna Unit
- Bracket Mount, Control Unit
- Power Cable, 3m
- User & Installation Manual
- Unit Test Sheets

Accessories

- Pole Mount (1.5" pipe), Antenna Unit
- Bracket Mount (1.5" to 2.5" pipe), Antenna Unit
- Flush Mount, Antenna Unit
- AUX Cable, 3m

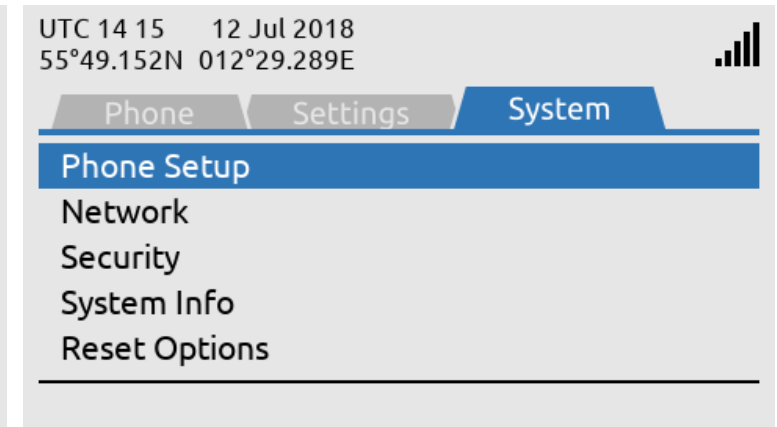
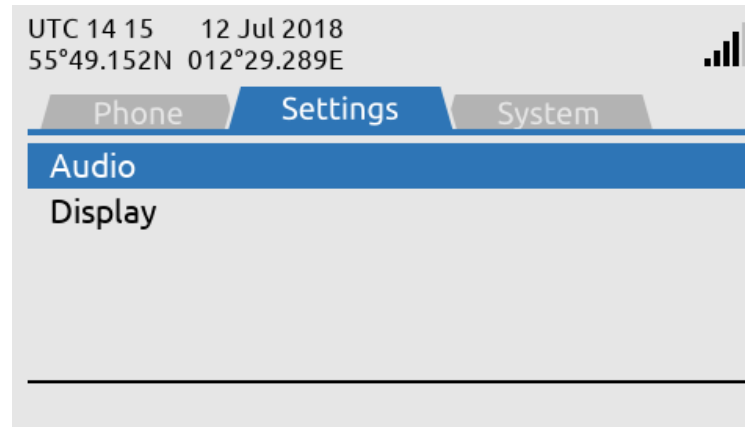
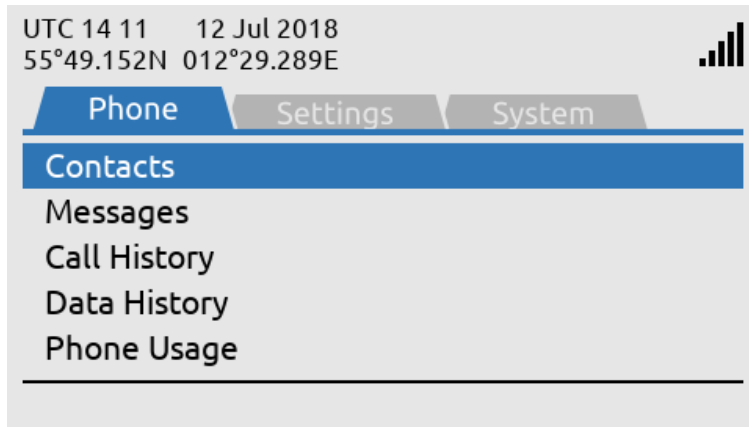
Note: Accessories needs to be ordered separately

LT-3100 4.3' Display

- The LT-3100 has a 4.3" TFT-LCD display, which is providing a good interface for operating the terminal
- The display can be configured to day or night mode as illustrated on this slide
- Brightness (backlight intensity) and day/night mode can be configured directly from the 'brightness key' on the front of the LT-3110 CU, short or long press



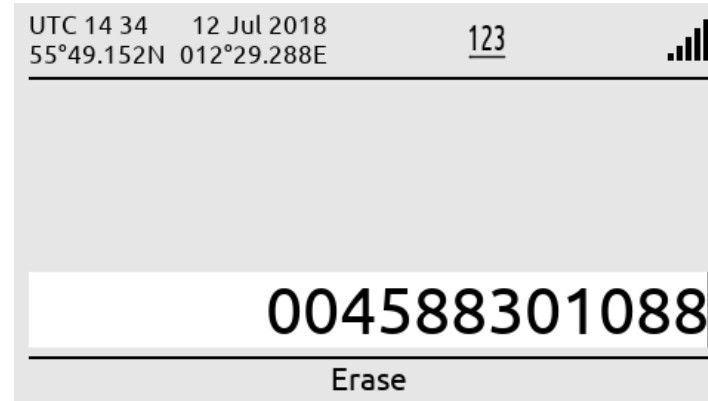
LT-3100 4.3' Display (main menu)



- The LT-3110 CU menu layout currently has three sub-menus: Phone, Stettings, and System
- Navigating in the menu tree is done by using the 'navigation keys' (push buttons: arrow, enter, and back)
- Additional sub-menus and functionality will be available when new software is released (these pictures reflects LT-3100 SW v1.05 (adding the SMS functionality))

LT-3100 Voice (Dial-up)

- The LT-3100 system is supporting Voice calls from the connected LT-3120 Handset
- The pictures on this slide illustrates the states of a Voice call:
 - Dialing
 - Connecting
 - Established
 - Call ended
- Voice call via Ethernet (SIP) is also supported
- Bluetooth (headset profile) will be supported in a later software release



LT-3100 Contacts, Call History, and Phone Usage

UTC 14:33 12 Jul 2018
55°49.152N 012°29.288E

Contacts

Test Phone 1	004588301088
Test Phone 2	004588301089

New Delete

UTC 14:32 12 Jul 2018
55°49.152N 012°29.290E

Call History

Unknown +818079369627	12 Jul 2018 14:31	Missed
Test Phone 2 +4588301088	12 Jul 2018 14:30	04 sec
Unknown 004520128291	12 Jul 2018 14:16	04 sec

New Contact Show Missed

- Contacts and Call History can be accessed directly from the display (via soft keys)
- The 'Phonebook' Contacts can contain +500 entries
- Call History will illustrate out-going, incoming, or missed call with an unique symbol
- Call History will display date and time of day, and call duration of the specific call

UTC 14:36 12 Jul 2018
55°49.152N 012°29.290E

Trip Usage

Voice Total	0:00:39
Voice Outgoing	0:00:36
Voice Incoming	0:00:03
SMS Sent	4
SMS Received	4

Reset Show Lifetime

UTC 14:36 12 Jul 2018
55°49.152N 012°29.290E

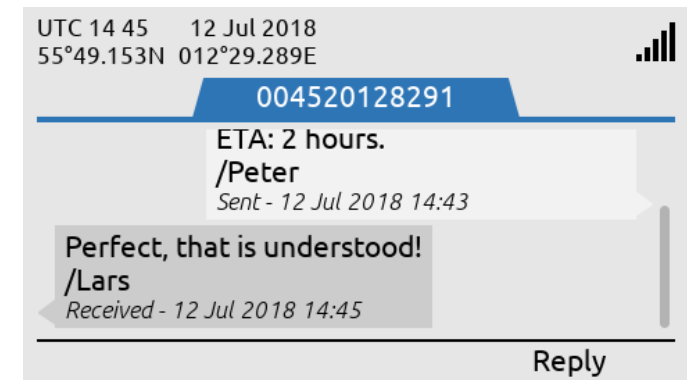
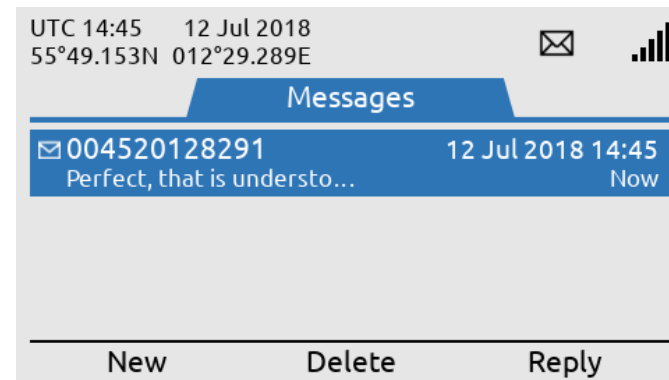
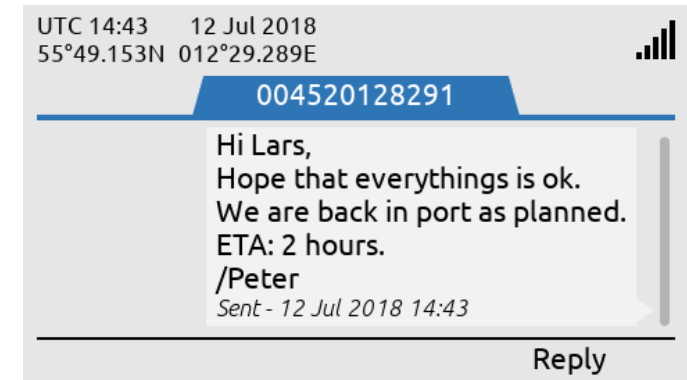
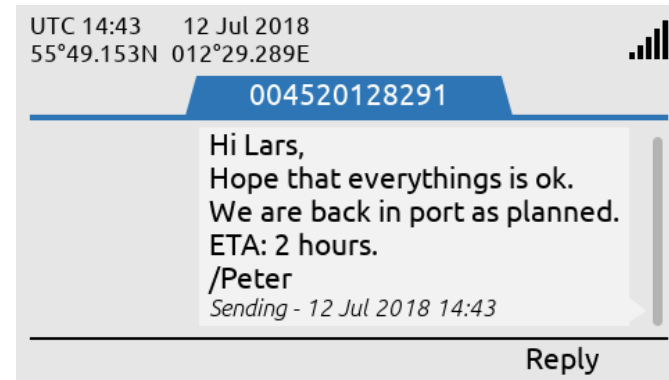
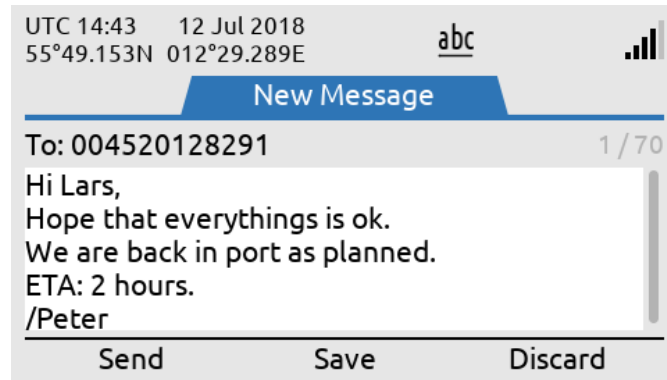
Trip Usage

Data Total	0:00:00 / 0.000 kB
Data Outgoing	0:00:00 / 0.000 kB
Data Incoming	0:00:00 / 0.000 kB
SBD Sent	0 / 0.000 kB
SBD Received	0 / 0.000 kB

Reset Show Lifetime

- Phone Usage counters available for: Voice, SMS, Modem Data, and SBD
- Two sets of Phone Usage counters are available: Trip and Lifetime Usage counters
- The Trip Usage counters can be reset under the the Trip Usage sub-menu
- The Lifetime Usage counters can be reset, if the terminal is 'Factory Reset'

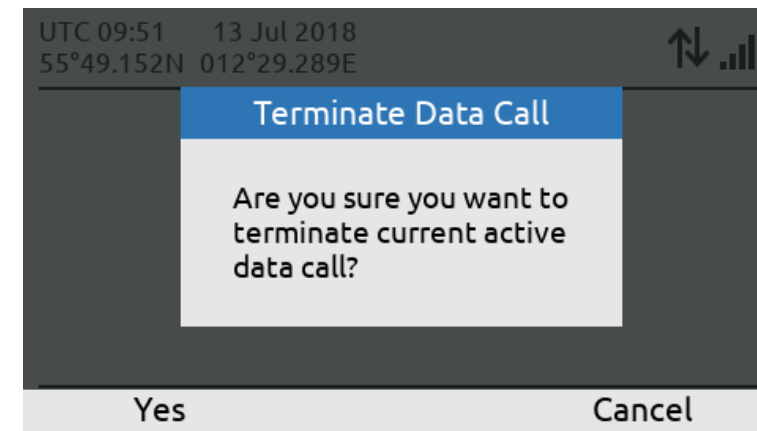
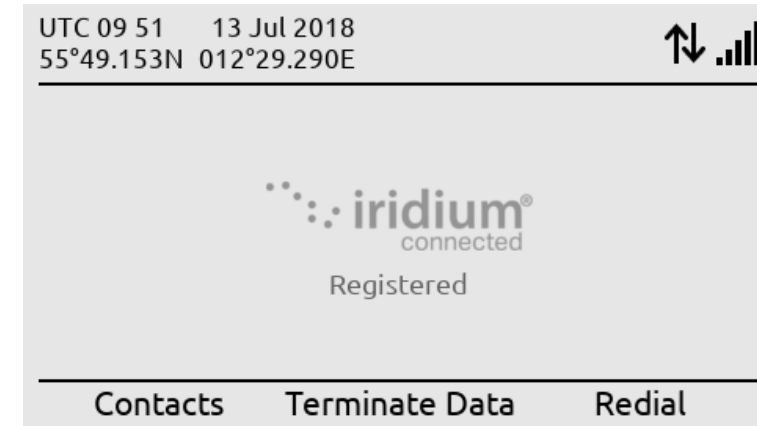
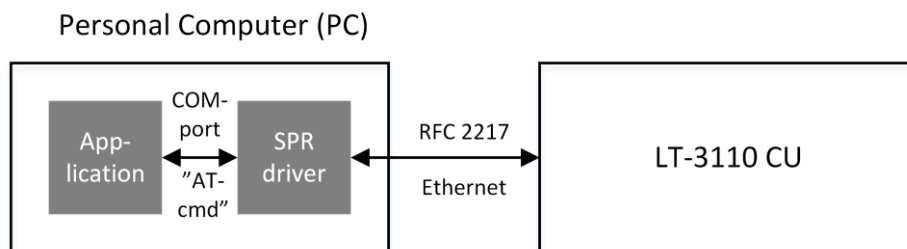
LT-3100 SMS



- SMS is supported from LT-3100 SW v1.05
- SMS' can be created/read from the LT-3110 CU display (Menu -> Messages)
- The SMS' will be structured in SMS threads
- The LT-3100 system can store up to 1000 SMS'

LT-3100 Modem Data

- The LT-3100 System supports Iridium® Modem Data (RUDICS) via the AT-command interface
- The AT-command interface is accessible via the Ethernet interface, which is also supporting SBD and SMS (supporting the Iridium® 9523N AT-command set)
- It is recommended to use the RFC 2217 telnet protocol for carrying the modem control signals
- Serial port (COM port) enabled PC applications requires a virtual serial port driver (i.e. Serial Port Redirector)
- When a Modem Data connection is established a data symbol (two arrows) is shown in the symbol bar
- An active Modem Data connection can always be terminated from a soft key 'Terminate Data'



LT-3100 Supported & Tested Mail Programs

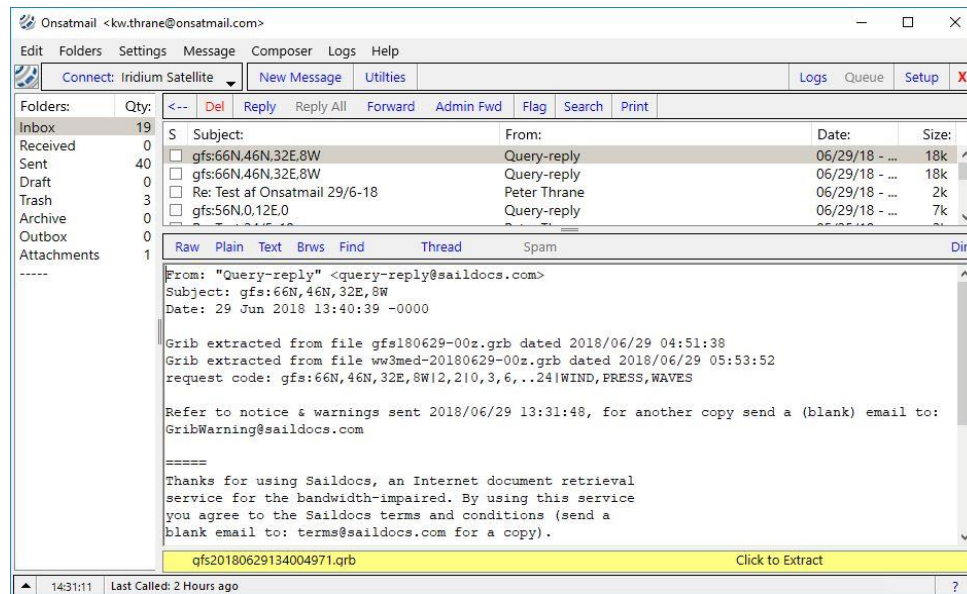


ONSATMAIL

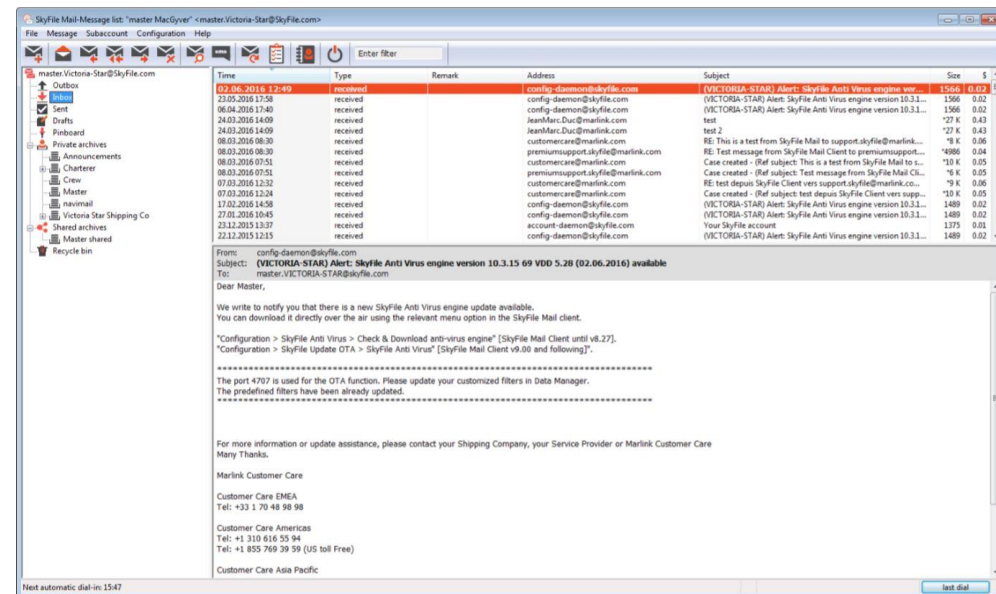


SkyFile® Mail

SKYFILE MAIL



Link to ONSATMAIL: [Link](#)

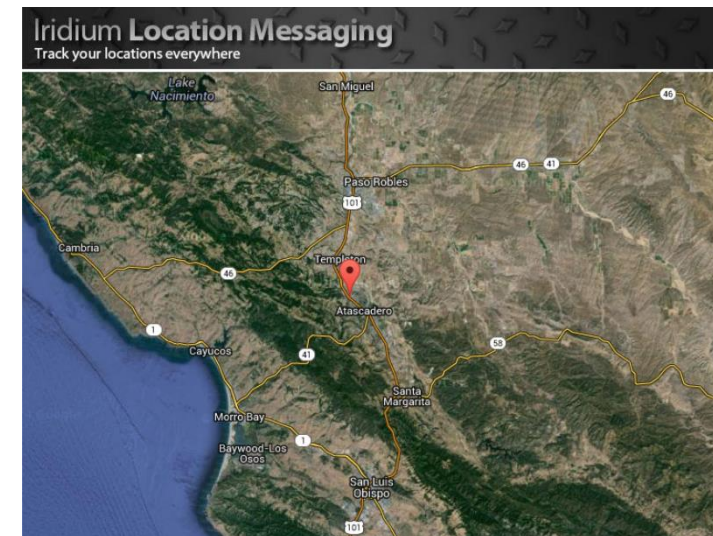


Link to SkyFile® Mail: [Link](#)

LT-3100 Tracking

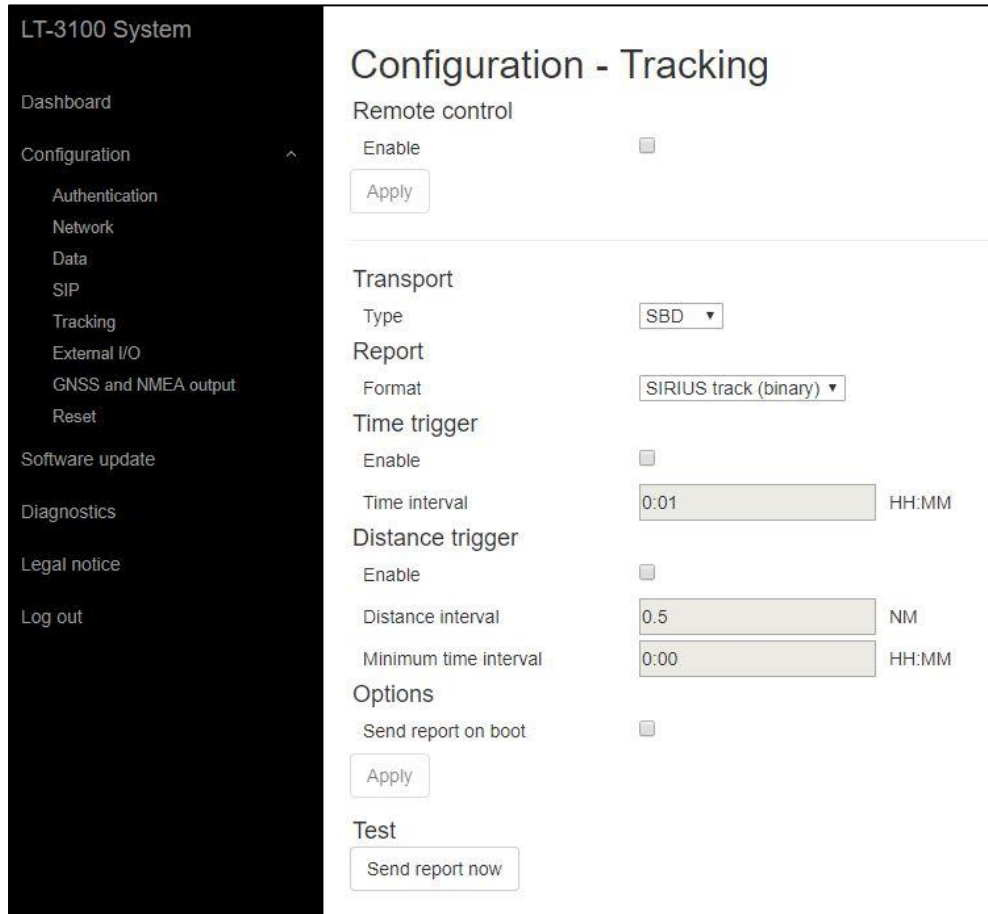
- LT-Tracking (high-lights):
 - Format:
 - Binary and ASCII
 - SBD, SMS, and E-mail (SMS)
 - 10-bytes compact and text format
 - Web server configuration
 - Over-The-Air (OTA) with password:
 - Tracking Report enable/disable
 - Tracking Report configuration
 - Tracking Report poll request
 - GUI/display:
 - Tracking Status page
 - Tracking history
 - Send manual position report

UTC 14 03 23 Oct 2018		📶
55°49.151N 012°29.291E		
Tracking		
Status	Enabled	
GNSS Fix	3D	
Reports Pending	0	
Latest Report	1 min ago	
Send Position	Details	



Manual activated position reports from the LT-3100 system (GUI) will be sent via SMS and includes a link to: <http://map.iridium.com> (similar as to other Iridium products)

LT-3100 Tracking Configuration



The screenshot shows the 'Configuration - Tracking' page for the LT-3100 system. The left sidebar contains navigation options: Dashboard, Configuration (expanded), Authentication, Network, Data, SIP, Tracking, External I/O, GNSS and NMEA output, Reset, Software update, Diagnostics, Legal notice, and Log out. The main content area is titled 'Configuration - Tracking' and includes the following sections:

- Remote control:** An 'Enable' checkbox is checked. An 'Apply' button is present below.
- Transport:** A 'Type' dropdown menu is set to 'SBD'.
- Report:** A 'Format' dropdown menu is set to 'SIRIUS track (binary)'.
- Time trigger:** An 'Enable' checkbox is checked. The 'Time interval' is set to '0:01' (HH:MM).
- Distance trigger:** An 'Enable' checkbox is checked. The 'Distance interval' is set to '0.5' (NM). The 'Minimum time interval' is set to '0:00' (HH:MM).
- Options:** A 'Send report on boot' checkbox is checked. An 'Apply' button is present below.
- Test:** A 'Send report now' button is present.

- This is an example of configuration of periodic tracking functionality in the LT-3100 system
- The LT-3100 has been configured for SBD - 'SIRIUS track (binary)'. SMS and Email Transport Types also available
- Time and distance trigger conditions can be configured
- The 'Send report now' button can be used to test the periodic tracking functionality during installation

LT-3100 GNSS/NMEA output Configuration

LT-3100 System

- Dashboard
- Configuration ^
 - Authentication
 - Network
 - Data
 - SIP
 - Tracking
 - External I/O
 - GNSS and NMEA output
 - Reset
- Software update
- Diagnostics
- Legal notice
- Log out

Configuration - GNSS module

Module configuration

Satellite system(s) GPS, SBAS, GLONASS ▾

Configuration - NMEA output

Port configuration

Enable

Baud rate 4800 ▾

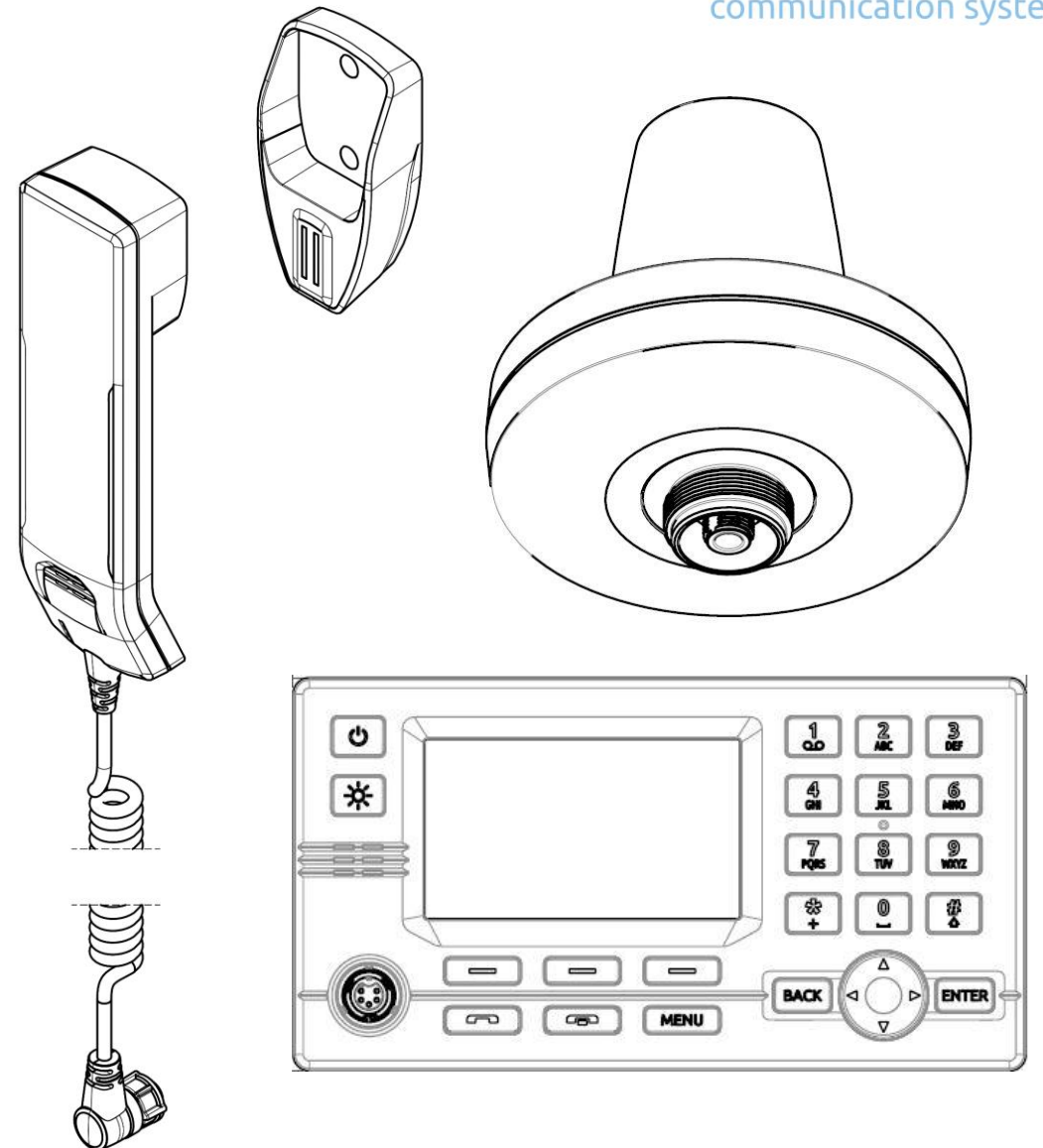
Sentences

DTM	<input checked="" type="checkbox"/>
GGA	<input checked="" type="checkbox"/>
GLL	<input checked="" type="checkbox"/>
GSA	<input checked="" type="checkbox"/>
GSV	<input type="checkbox"/>
RMC	<input checked="" type="checkbox"/>
VTG	<input checked="" type="checkbox"/>
ZDA	<input checked="" type="checkbox"/>

- From LT-3100 SW v1.09 it will be possible to configure the built-in GNSS module (GPS, SBAS, GLONASS, or Beidou)
- It will be possible to output the GNSS data over NMEA 0183 (RS-422 interface), AUX connector
- The GNSS NMEA output data has to be enabled during installation
- The GNSS' output data can be configured to 4800 or 38400 baud
- The sentences can individually be selected

LT-3100 Specifications

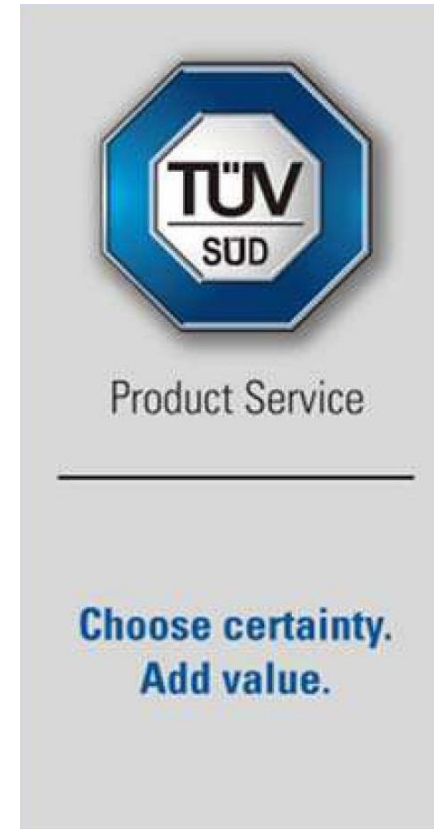
- LT-3110 Control Unit
 - Weight: 658 g (1.45 lbs)
 - Dimensions: 224.0 x 120.0 x 70.0 mm (8.82 x 4.72 x 2.76 in)
 - Temperature, operational: -15°C to +55°C (+5°F to +131°F)
 - IP rating, dust and water: IP32
- LT-3120 Handset Unit
 - Weight: 290 g (0.64 lbs)
 - Dimensions: 208.8 x 52.8 x 38.2 mm (8.22 x 2.08 x 1.50 in)
 - Temperature, operational: -15°C to +55°C (+5°F to +131°F)
 - IP rating, dust and water: IP32
- LT-3130 Antenna Unit
 - Weight: 687 g (1.51 lbs)
 - Dimensions: 151.1 x Ø 149.5 mm (5.95 x Ø 5.89 in)
 - Temperature, operational: -25°C to +55°C (-13°F to +131°F)
 - IP rating, dust and water: IP67



LT-3100 Certification Approvals

Certification Approval status:

- Lars Thrane A/S has received officially signed Safety, EMC, and Environmental test reports from TÜV SÜD (accredited test house in UK).
- The TÜV SÜD test reports formally shows that the LT-3100 Satellite Communications System is compliant to the RED directive 2014/53/EU and compliance with the CE, FCC and IC marks.
- TÜV SÜD EU-Type Examination Certificate, FCC-TCB Certificate, IC-TCB certificate, Notified Body
- Summary test reports are available from Lars Thrane A/S
- Australia/New Zealand RCM approval
- Russian Marine Register (RMRS) approval is ongoing



CE
FCC
IC

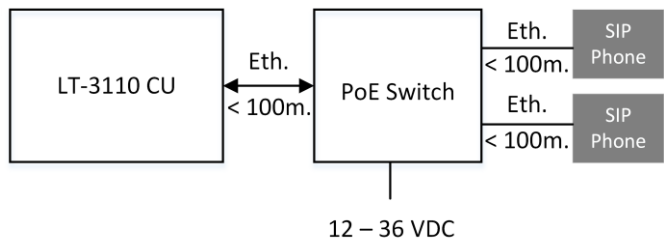
LT-3100 System – Planned Software

Software	Date	Status	Description
v1.05	Jul-18	Released	SMS
v1.06	Sep-18	Released	External SIP Phones (up to 8) / POTS Adaptor
V1.07	Oct-18	Released	RedPort Optimizer, Iridium Mail & Web Apps VoIP Softphones (e.g. linphone, XGate phone) via WAP
v1.08	Dec-18	Released	LT-Tracking protocol via SBD, SMS, and Email
v1.09	May-19	Released	NMEA 0183 GNSS/GPS output data via RS-422 Support for Remote Mangement and SMS poll request Bluetooth (PAN profile) SIP Voice & Messaging
v1.10		Not planned	Bluetooth (Headset profile)

LT-3100 Accredited Solutions: SIP/POTS

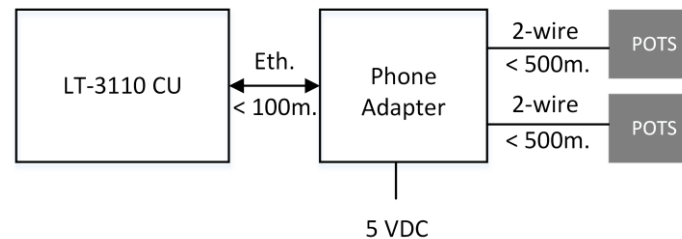
SIP Phones via PoE Switch

- High Power 5 port Gigabit 802.3at PoE Switch with 12-36V DC Input (TP-SW5G-24HP)
- Cisco SPA502G 1-Line IP Phone (example)
- Up to 8 external SIP phones or PABX SIP trunk



Analogue Phone Adapter

- Cisco SPA112 2-Port Phone Adapter
- Connect 2 x POTS Phone (2-wire)
- The POTS phone are registered as SIP phones in the LT-3110 CU



SIP Status Page:

SIP Status		
1100	SIP Phone 1	Registered
1102	SIP Phone 3	Registered
1103	Analog 1	Registered
1104	Analog 2	Registered

LT-3100 Accredited Solution: Wi-Fi boxes

RedPort Optimizer (GMN)

- Auto-detection of the LT-3100 system when Ethernet is connected
- Iridium[®] Mail & Web App's / XGate
- Supporting: Optimized Email, send Photo, Point Weather, PredictWind Lite, Twitter, Tracking, IP-data connection, and Firewall



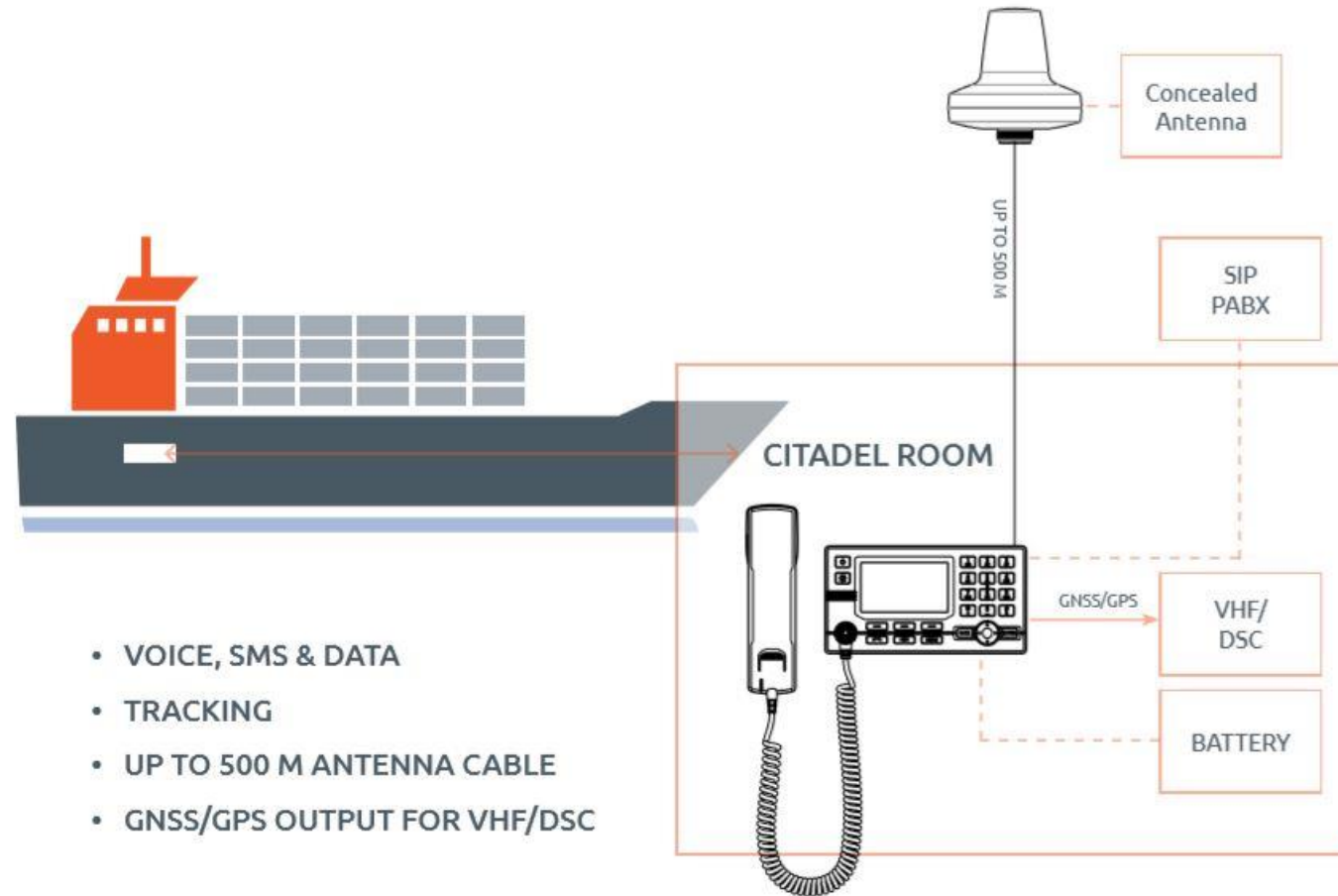
RED BOX (mailasail)

- Auto-detection of the LT-3100 system when Ethernet is connected
- Integrated with teleport-ip
- Supporting: Email, Weather, Tracking, SIP Voice, IP-data connection, and Firewall



LT-3100 Citadel

- The LT-3100 System is used in different Citadel solutions
- Coaxial cable run up to 500 m gives high flexibility
- Built-in GNSS/GPS receiver with position read-out in the LT-3110 CU display
- Optional solution for LT-3100 Citadel:
 - SIP phone / PABX for daily usage
 - Battery
 - Concealed antenna

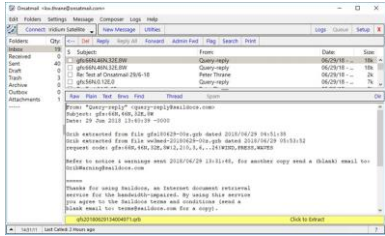


LT-3100 Citadel Solution (example)



LT-3100 - 3rd Party Functionality

Mail programs



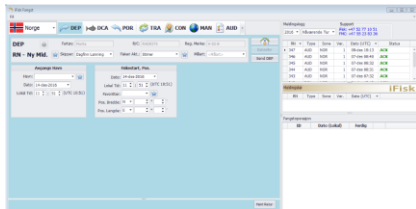
Desktop Applications



SIP Softphones & Text
(Bluetooth & WiFi)



Fishery Reports



WiFi Routers



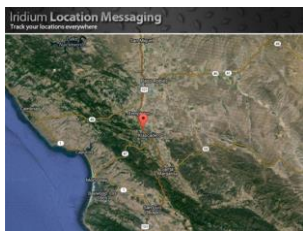
RedPort



RED BOX



Tracking Portals



Weather



Routers (~PoE)



SIP Phones



POTS adaptor



POTS phone



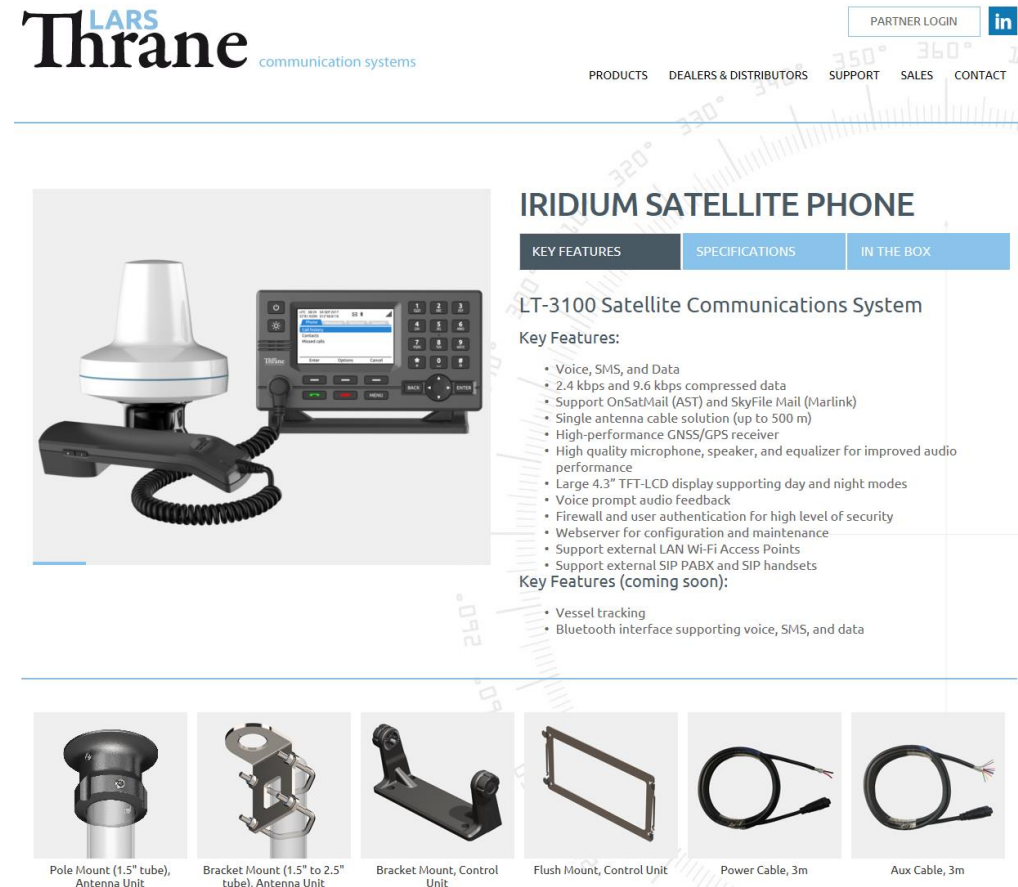
LT-3100 Accredited Solutions Available

- Smartphone (via Bluetooth or Wi-Fi)
- Analog Telephone Adaptor
- SIP Phone
- GNSS/GPS NMEA 0183 Output Data
- OnSatMail Mail
- SkyFile Mail
- SIRIUS track
- Iridium Mail & Web (via RedPort Optimizer)


<https://thrane.eu/lt-3100-iridium/> (DETAILS -> Accredited Solution)

LT Website & Partner Area

- Newest LT-3100 SW is always available for download at the website: [Link](#)
- LT-3100 Product Sheets and Manuals also available on the website
- Login to LT Partner Area to get additional documents and information: Certification Reports, 3D CAD drawings, Outline Drawings, etc.



LARS Thrane communication systems

PARTNER LOGIN 

PRODUCTS DEALERS & DISTRIBUTORS SUPPORT SALES CONTACT

IRIDIUM SATELLITE PHONE

KEY FEATURES SPECIFICATIONS IN THE BOX

LT-3100 Satellite Communications System

Key Features:

- Voice, SMS, and Data
- 2.4 kbps and 9.6 kbps compressed data
- Support OnSatMail (AST) and SkyFile Mail (Marlink)
- Single antenna cable solution (up to 500 m)
- High-performance GNSS/GPS receiver
- High quality microphone, speaker, and equalizer for improved audio performance
- Large 4.3" TFT-LCD display supporting day and night modes
- Voice prompt audio feedback
- Firewall and user authentication for high level of security
- Webserver for configuration and maintenance
- Support external LAN Wi-Fi Access Points
- Support external SIP PABX and SIP handsets

Key Features (coming soon):

- Vessel tracking
- Bluetooth interface supporting voice, SMS, and data

Pole Mount (1.5" tube), Antenna Unit

Bracket Mount (1.5" to 2.5" tube), Antenna Unit

Bracket Mount, Control Unit

Flush Mount, Control Unit

Power Cable, 3m

Aux Cable, 3m



END