SAILOR SC4150
Installation Manual
Single-channel Unit

Introduction

Congratulations on your new Iridium handset or PSTN (Public Switched Telephone Network) telephone.

Your Iridium system is a modular system that consists of an antenna, transmitter/receiver, handset and/or desk unit, and optional PSTN telephone/PBX (Private Branch Exchange) switchboard.

You can operate the Iridium system in voice mode from a handset, desk unit, and/or PSTN telephone. To the system you can connect up to five handsets or desk units **and** one PSTN telephone or PBX switchboard.

Sailor marine equipment is specially designed for the extremely rugged conditions on board a ship, based on more than 50 years of experience with all kinds of boats, from small pleasure crafts, over fishing boats working under all climatic conditions, to the biggest ships.

S.P. Radio A/S is one of Europe's leading manufacturers of maritime radio communication equipment, a position which has been maintained by means of constant and extensive product development. We have a worldwide network of dealers with general agencies in more than fifty countries. All our dealers are specially trained to service all your Sailor products.

Please note

Any responsibility or liability for loss or damage in connection with the use of this product and the accompanying documentation is disclaimed. The information in this manual is furnished for informational use only, is subject to change without notice, may contain errors or inaccuracies, and represents no commitment whatsoever. This agreement is governed by the laws of Denmark.
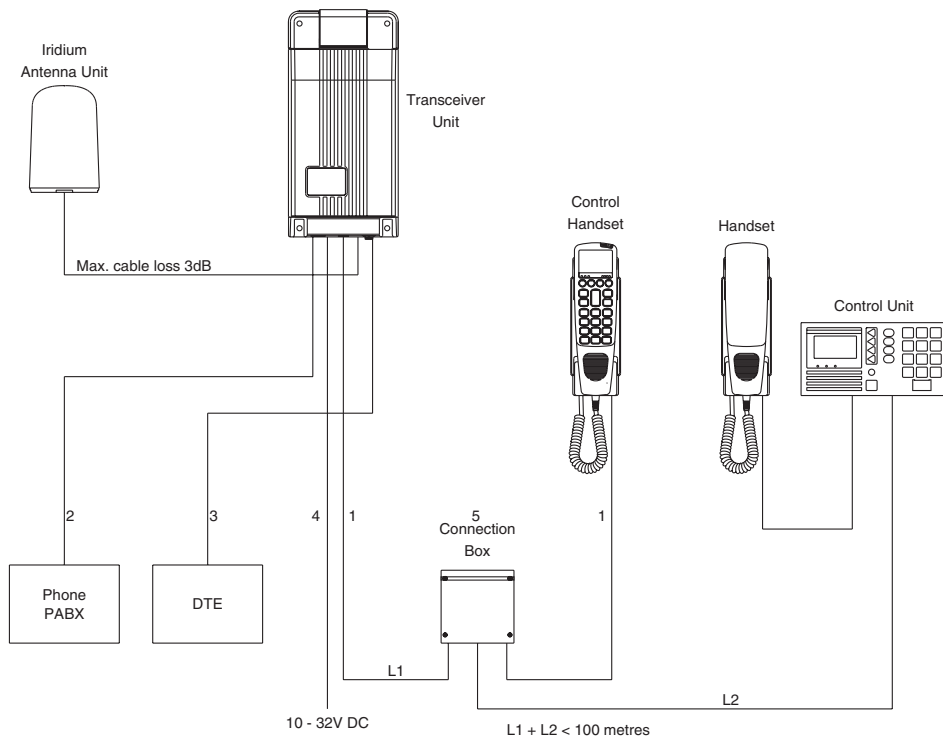
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Contents

1   Configuration of Single-Channel Unit

Iridium
Antenna Unit

Transceiver
Unit

Control
Handset

Handset

Control Unit

Max. cable loss 3dB

2   3   4 1   5   1
                                      Connection
                                         Box

Phone
PABX   DTE

L1

10 - 32V DC   L1 + L2 < 100 metres

L2

35423C

2   Installation

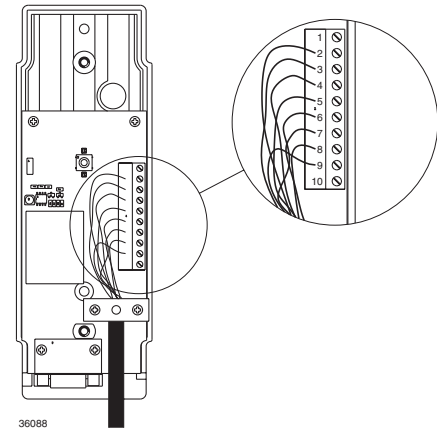## 2.1   Cable Overview

Cable 1
Scanbus
Cable: 9*0.22 mm^2 shielded
                                      shield connected to ground

Cable connector type: 9 pole sub-d male

Transceiver	Description	Handset	Colour	
1	NC	1		
2	data+	2	white	Twisted
3	data-	3	brown	pairs
4	AF+	4	green	Twisted
5	AF-	5	yellow	pairs
6	GND	6	grey	Twisted
7	+24V DC	7	pink	pairs
8	RX_AF+	8	blue	Twisted
9	RX_AF-	9	red	pairs
shield	GND	shield		

36088

Cable 2
Phone
Cable connector type: RJ 11

Transceiver	Description	Veritas
1	NC	1
2	phone1+	2
3	phone1-	3
4	NC	4

Cable 3
Data
Cable: 9*0.22 mm^2 shielded
                                                          shield connected to ground

Cable connector type: 9 pole sub-d male

Transceiver	Description	Veritas
1	DCD	1
2	received data	2
3	transmitted data	3
4	data terminal ready	4
5	serial GND	5
6	data set ready	6
7	request to send	7
8	clear to send	8
9	RI	9
shield	GND	shield

Cable 4
Power supply

Front view

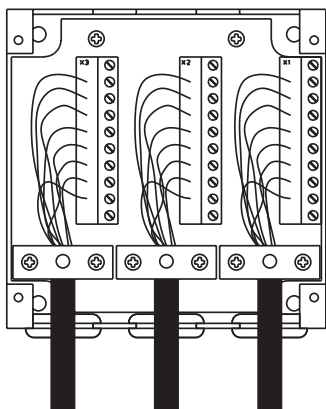| Pin no.	Description	Colour
1	10-32V DC	red
2	NC	blue
3	0V DC	black
4	GND	yellow/green
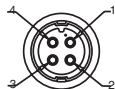
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Cable 5
Description of connections to T-connection H4196
The wire terminal blocks are connected in parallel.

36090

2.2   Where to Place the Satellite Transceiver Box

Mount the satellite transceiver box in a place where it is sheltered from the wind, protected from the salty and humid sea atmosphere. The temperature must not exceed 55° C.

To ensure that the SIM card is easily accessible, do not place the satellite transceiver box higher than 1.5 m above the floor.

2.3   How to Mount the Satellite Transceiver Box

Fix the satellite transceiver box to the wall using the four screws included in the package. The screws are positioned as shown below:
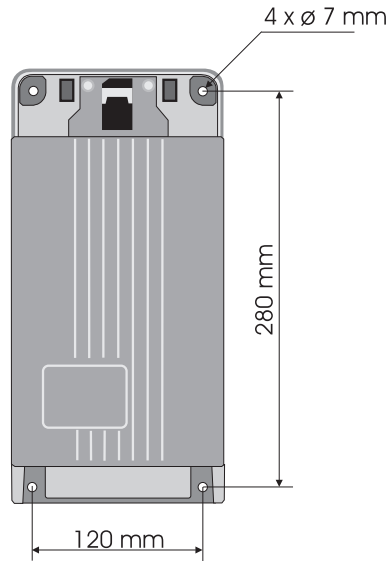
First tighten three of the screws. The wall surface should be plane. If there is a discrepancy in planeness exceeding 1 mm, level the discrepancy up by shims or washers under the fourth screw before this is tightened.
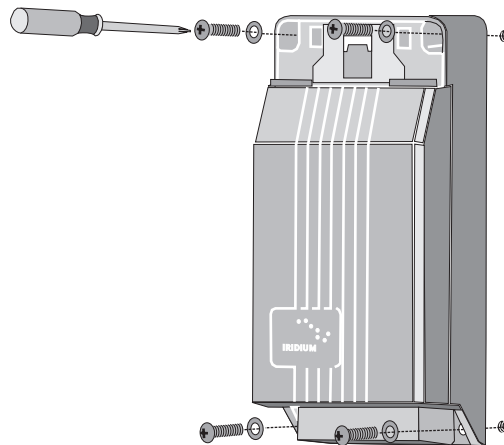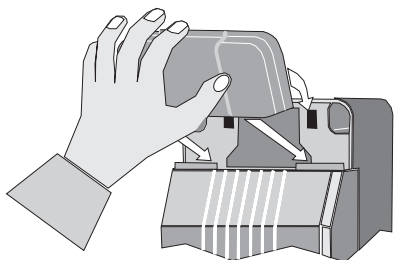
2.4   How to Put on the Finishing Cover

When the satellite transceiver box has been mounted on the wall, put on the finishing cover.

The small lid in the finishing cover should be shut. Press the hooks inside the finishing cover down on the two thin edges of the satellite transceiver box. While pressing, let the two plastic spears inside the finishing cover into the two square holes of the satellite transceiver box.
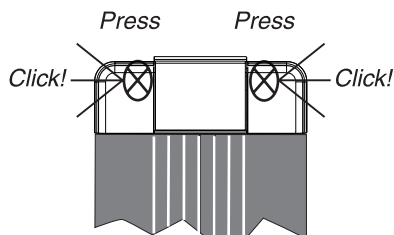
①

②

Inside of finishing cover:

Hooks

Spears
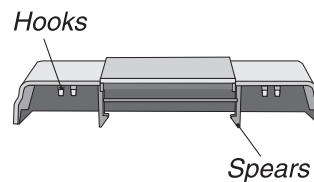
Press hard on the spots shown in the picture below until a loud click is heard.
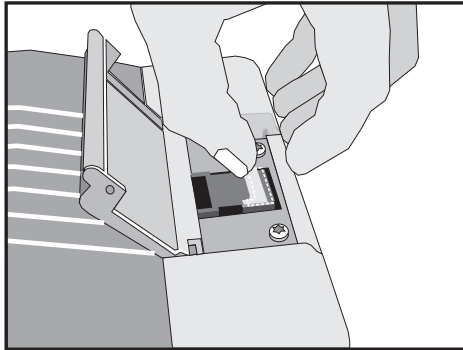
③

Press   *Press*

Click!   *Click!*

When putting on the finishing cover, do not use any tools – only your hands.

2.5   How to Insert the SIM Card

First, open the small lid in the finishing cover protecting the SIM card reader. Then go through each of the following steps:
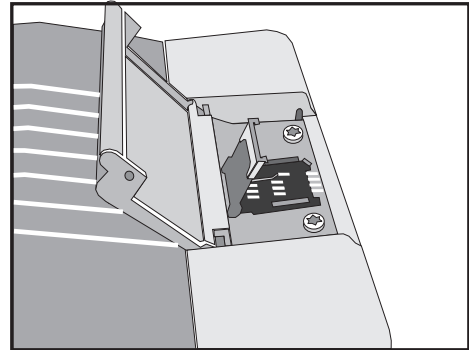
Unlock the SIM card holder by pushing the lock with your finger nail.
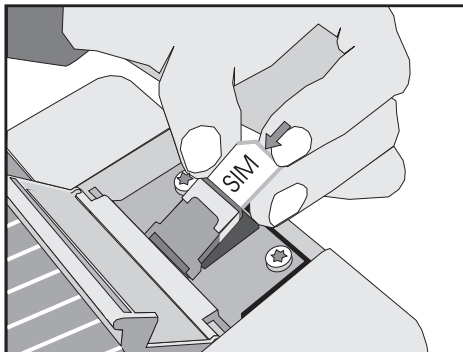
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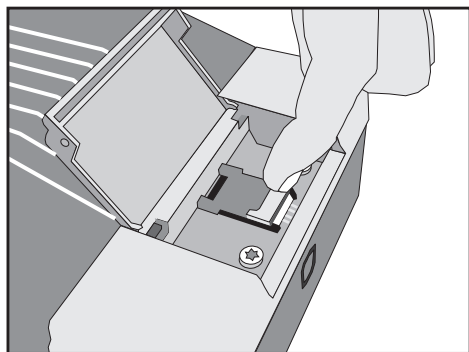Lift the SIM card holder so that the slot points upwards.

②

Insert the SIM card in the slot. Make sure that the cut-off corner of the card is placed as shown in the picture.

③

Push the SIM card holder back down, and lock it by pushing the lock with a finger nail.

④

Finally, shut the lid again.

2.6   How to Remove the Finishing Cover

You may need to dismount the satellite transceiver box from the wall, e.g. in connection with service.

For access to the mounting screws, the finishing cover can be removed from the satellite transceiver box as follows:

① Put a screwdriver into the slot in the printed circuit board beside the SIM card reader, and press gently to unhook the plastic spear.

② While pressing with the screwdriver, lift up the same side of the finishing cover slightly to loosen it.

③ Repeat this procedure on the other side of the finishing cover.

④ You can now detach the finishing cover from the satellite transceiver box by pulling it gently upwards.
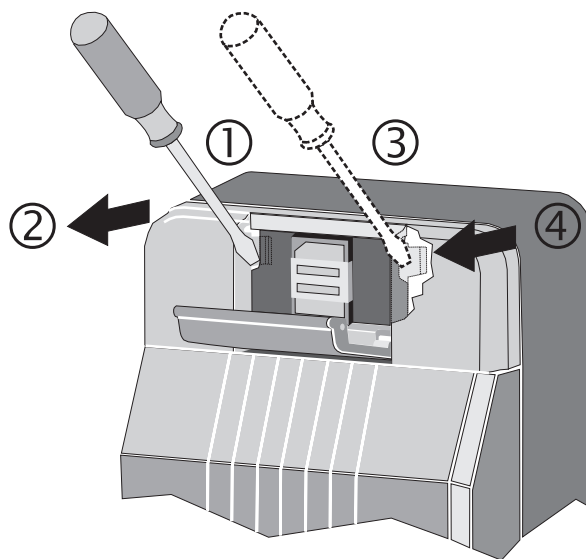
## 2.7   How to Change the Antenna Cable Position

In some installations, it may be convenient to change the antenna connection to a position at the top of the satellite transceiver box.

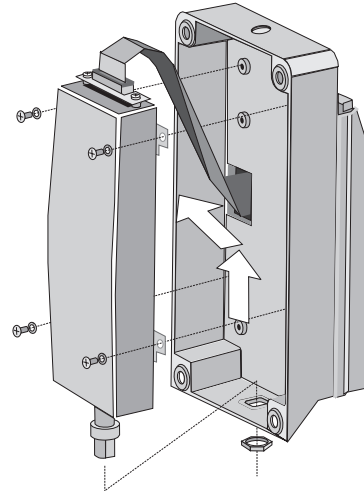First face the back of the satellite transceiver box.

Now, unscrew the four screws holding the L-band transceiver (LBT) unit. Note that you will need both the screws and the spring washers later on. Unscrew the antenna connection bush at the bottom of the satellite transceiver box by turning the slimline nut anticlockwise.

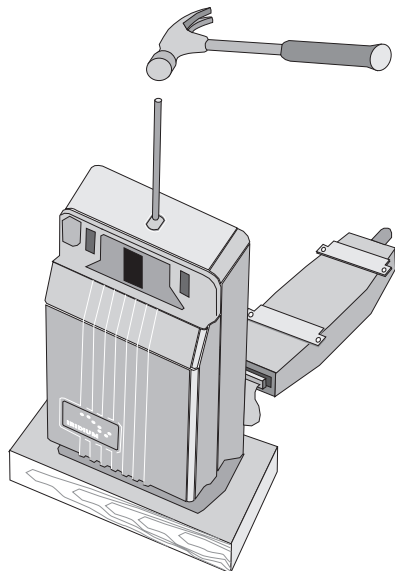Next, untangle the LBT unit by pulling the antenna bush easily upwards and out of the hole.
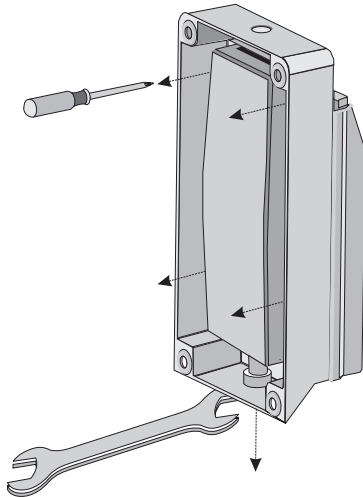
Place the demounted LBT unit near the satellite transceiver box, without disconnecting it. Rest the bottom of the satellite transceiver box on a block of soft wood. Use a hammer and a mandrel to hammer out the brick indicated by a recess in the top of the aluminium case. Be careful not to pinch, squeeze, or in other ways damage the ribbon cable. If the hole is not "clean", use a file or pliers to remove the rest.

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④

The transceiver box can now be mounted on the wall. Follow the instructions given above on "How to mount the satellite transceiver box".
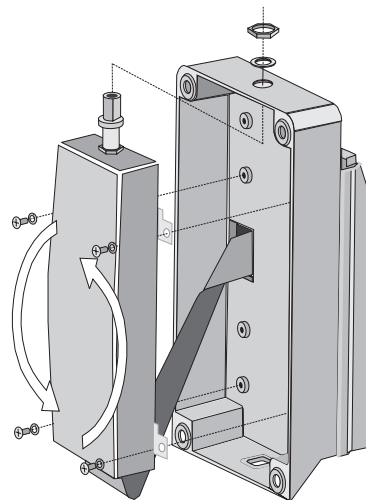
⑤

Turn the LBT unit upside down, and put it into the satellite transceiver box, pushing the antenna bush up through the newly made hole. Make sure the ribbon cable is folded nicely and not pinched under the brackets of the LBT.

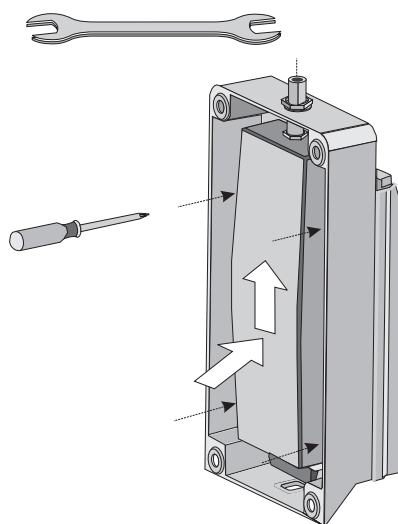Fit the big spring washer and slimline nut on the antenna bush, and tighten it.

Finally, fasten the LBT unit in the new position using the four screws and the spring washers.

2.8   Installation of the Antenna

One of the advantages of this equipment is the easy-to-handle, lightweight and rugged antenna. Because the IRIDIUM ® system is characterised by a good link margin, the antenna is a passive quadrifillar helix type, requiring no external power supply and consisting of only nonmoving parts.

The following figures show the antenna and the two different mounting accessories available:

The mounting bracket in fig. 1 can be used in two different ways - mounted on either a rail or a pole.

The fitting in fig. 2 can be used at the top of a tube. **Please note** that it is necessary to mount the cable, and seal this connection securely before the antenna and fitting are mounted on the tube.
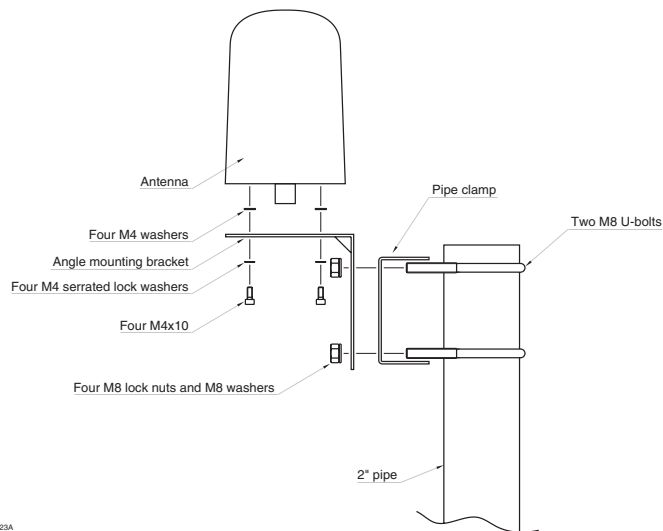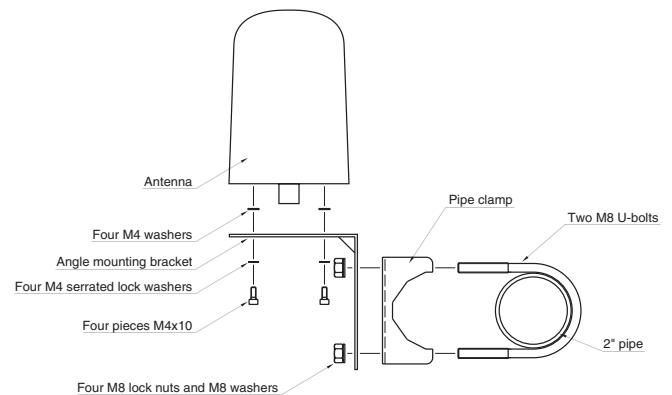

Fig. 1

Fig. 2

Precautions

In order to avoid interference or any other kind of disturbances from other systems on board, there are a few precautions to take note of:

Radars

According to any installation guide for radars it is of vital importance that any other units are kept outside the radiation beam of the radar. Please consult fig. 3, showing what area to avoid:

Avoid interference
e.g. from the radar

10°

10°

36622A

Unobstructed view until
10° below the horizon

10°
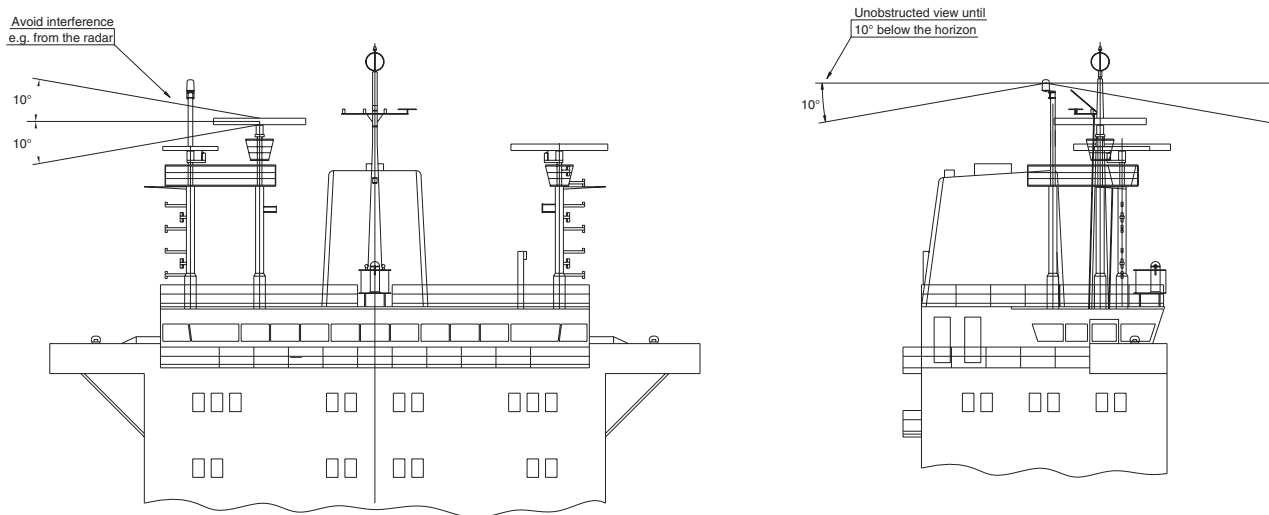
GPS

Tests have shown that only in case very old GPS equipment is used, a user may expect a minor influence on the GPS originated from the Iridium equipment. This can be avoided by ensuring a distance of at least 1 m between the two antennas.

Inmarsat equipment
The operating frequency bands of the iridium and Inmarsat systems are neighbours, and it is not in any way by any technical solution possible to completely separate these bands. This means that interference from Inmarsat can be expected, especially if the antennas are placed near each other. The distance between the antennas Should be as far as possible.

If in any way the user experiences trouble using Iridium because of Inmarsat, a filter can be provided as an option. This filter is placed in a suitable place between the antenna and the transceiver. The filter is a passive type not requiring external power. Please contact your dealer for further information.

Antenne cable
Below, please find a table of cables that can be provided by your dealer:

CABLE					CONNECTOR	
Cable type	Part no.	Maximum length/ 3 dB loss	Outer diameter	Minimum bending radius	Conn. type	Part no.
RG 214/U	E62.415	8 m	10.8 mm	54 mm	N	MALE E62.147
SUCOFEED 1/2" HF	77.518	19 m	13.4 mm	35 mm	N	MALE 79.002
SUCOFEED 1/2"	77.519	30 m	16.0 mm	125 mm	N	MALE 79.001
SUCOFEED 7/8"	77.520	50 m	27.8 mm	220 mm	N	MALE 79.003 & FEMALE 79.004

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