

SATEL NARS-BT Bluetooth Adapter (YIO220)

Technical specification

SATEL NARS-BT complies with the following international standards:

CE:	EN 62311
EN 301 489-17	EN 62368-1
EN 300 328	EN 62368-1/A11:2017
EN 301 489-1	
EN 55032:2015+A11:2020	FCC: QOQ-BT122 Certificate
EN 61000-4-2	IC: 5123A-BT122 – IC Certificate
EN 61000-4-3:2006+A1:2008+A2:2010	

GENERAL	
Radio Interface	Bluetooth v4.2 BR/EDR and BLE compliant (Operation mode: Slave)
Electrical Interface	2 x Combined data and power connector (IN and OUT)
Interface Connector	Deutsch DT04-6P and Deutsch DT06-6S
Serial interface and speed	RS232, 115200 bps
Operating voltage range	+9 ... +30 VDC (-15% / +20% *) **
Absolute MAX Voltage	+36 V (exceeding the value may damage the device)
Power consumption	<1 W Adapter (Bluetooth 0,5 W peak)
Temperature Ranges	-20 °C ... +55 °C Type Approval conditions -40 °C ... +70 °C Functional** -40 °C ... +85 °C Storage***
Antenna	Internal Ceramic Bluetooth Antenna
Construction	Polycarbonate housing
Size L x W x T / Weight	151 mm x 66 mm x 43 mm / 192 g
Ingress protection	IP67 with pure water when all connectors are mated.
Vibration	ISO 9022-3:2015 sinusoidal vibration sweep up to 5G (severity class 09)

*Note: As a result of new revision of safety standard IEC600001, voltage range is marked to a label with tolerance limits.

** Using the device beyond this region the functionality cannot be guaranteed.

*** Recommended storage is at dry, room temperature.

How to use SATEL NARS-BT

SATEL NARS-BT intended to be used together with SATEL Command mobile application to configure SATEL modems. SATEL Command mobile application is available for iOS and Android platforms from Apple App Store and Google Play Store. High level setup and use case for SATEL NARS-BT is shown in Figure 1.

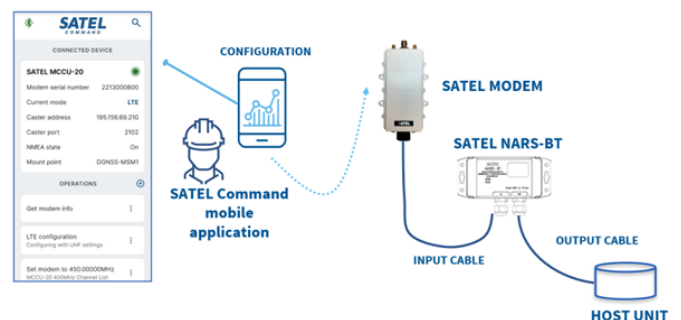


Figure 1. SATEL NARS-BT use case

LEDs

There is one (1) RGB LED indicator on the top of the NARS-BT (shown in Figure 2) which indicates the status of the serial port and the radio interface. Status indications are given with different colors, blinking and color sequences. Indications are explained in Table 1.



Figure 2. RGB LED indicator on the top of the NARS-BT device.

Table 1. RGB LED status indications.

LED colour	Blinking	ON
Blue	Pairing mode is active	Bluetooth connection is established/active
Green	No bluetooth connection established	-
Red	-	Error

Power feed of SATEL NARS-BT

For power feed , use external fuse protection on device supply wire. 2A slow blow fuse is required.

Whenever possible, SATEL NARS-BT should be connected into vehicle's ignition sense line (IGN pin). When the voltage in this line is the same as operating voltage, the device wakes and enters normal operating mode. If the voltage in this line drops to zero, the device shuts down. If the ignition sense feature can't be taken into use i.e., the vehicle does not have ignition sense line available, the IGN pin must be connected to operating voltage.

NOTE: Device can always be turned off by disconnecting the Output Cable from a host unit. When mounting the device, please make sure, that output cable plug is easily accessible.

Cable Assembly

SATEL NARS-BT has 2 cables, Input and Output. Output cable is installed to host device or such and provides power for both SATEL NARS-BT and SATEL modem. Input cable is installed to SATEL modem and provides power and data lines for it (Shown in Figure 1). In case using other cables and connectors than provided, they must meet at least UL VW-1 (UL1581) flame proof requirements.

Input and output cables are to be assembled before device installation. Before assembly, please adjust the cable length to the desired length and strip the cable and each conductor. The strip length for each conductor's insulation is 7 mm (Shown in Figure 3).

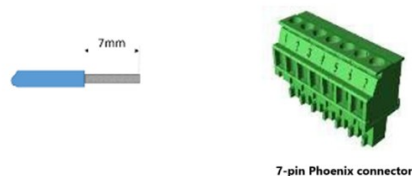


Figure 3. Conductor strip length and Phoenix connector

Before connector assembly, pull cables through the (PG9) cable glands. Pull both cables (In and Out) separately for approx. 10 cm length and pull each wire end separately thru its own hole on

gable gland sealing with two small holes in it. Recommended tightening torque for cable gland is 3 Nm.

Install the conductors to green coloured 7-pin Phoenix connectors (Shown in Figure 3) according to below pin out list (Table 2). NOTE: Phoenix connector conductor screw tightening torque must be 0.22 - 0.25 Nm.

Table 2. Pin out list for Input and Output connector

Input CON4 (7-pin conn.), Cable YC7432			Output CON3 (7-pin conn.), Cable YC7439		
Wire Colour	Pin	Signal	Wire Colour	Pin	Signal
Orange	1	V+ (9-30VDC)	Orange	1	V+ (9-30VDC)
Blue	2	IGN	Blue	2	IGN
Black	3	NC	Black	3	NC
Red	4	TD	Red	4	TD
White	5	RD	White	5	RD
Green	6	VIN - (GND)	Green	6	VOUT- (GND)
-	7	NC	-	7	NC

Device Assembly

After cables are connected and connectors plugged in, make sure that rubber sealing is properly inserted into the bottom part and there is no dirt or on it. Insert 4 screws in to inner corner holes on bottom part, attach cover and tighten up the screws. Recommended tightening torque is 2.5 lbf-in / 0.3 Nm.

Device Mounting

SATEL NARS-BT is recommended to be mounted to fixed position by using 4 pcs max. M5 size mounting bolts/screws. Mounting bolt/screw template is shown in Figure 4. Mounting bolts/screws are not included in the package. Recommended mounting direction of SATEL NARS-BT is cable glands downwards.

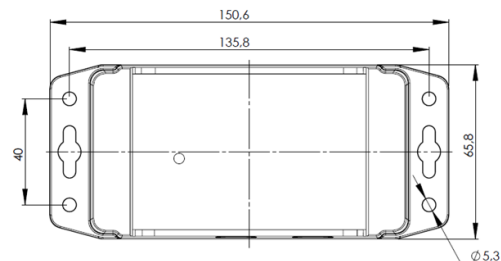


Figure 4. SATEL NARS-BT mounting bolt/screw template.

Product Conformity

European Union

Hereby, SATEL Oy declares that SATEL NARS-BT is in compliance with the essential requirements (radio performance, electromagnetic compatibility and electrical safety) and other relevant provisions of Directive 2014/53/EU. Therefore the equipment is labelled with CE-marking.



United States of America

SATEL NARS-BT contains Bluetooth transceiver module FCC ID: QOQ-BT122. The module works with an embedded antenna.

SATEL NARS-BT complies with part 2 and 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesirable operation.

RF Radiation Exposure Statement

SATEL NARS-BT complies with radiation exposure limits set forth in Title 47 CFR 2.1091 of FCC rules. Minimum distance to a human body shall always be 20 cm.

Canada

The Bluetooth radio transceiver module (IC: 5123A-BT122) has been approved by Innovation, Science and Economic Development Canada (ISED). The module works with an embedded antenna.

SATEL NARS-BT complies with ISED's license-exempt RSS standards RSS-Gen Issue 5, RSS-247 Issue 3, ICES-Gen Issue 2, and ICES-003 Issue 7.

Operation is subject to the following two conditions:

1. This device may not cause interference; and
2. This device must accept any interference, including interference that may cause undesired operation of the device

RF Radiation Exposure Statement

SATEL NARS-BT meets the exposure requirements that are given in RSS-102 Issue 6. Minimum distance to a human body shall always be 20 cm.

Australia

SATEL NARS-BT meets the local radio equipment and safety requirements in Australia. (SDoC: 10th of Jan 2025).

New Zealand

SATEL NARS-BT meets the local radio equipment and safety requirements in New Zealand (SDoC: 10th of Jan 2025).

SATEL

Mission-Critical Connectivity

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