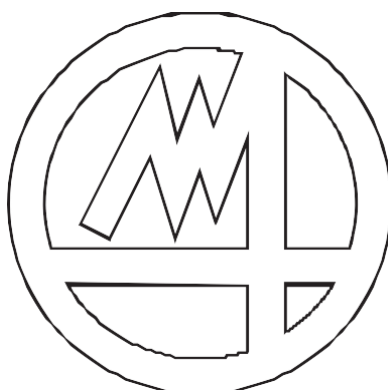


MUPS

MUPS RF Module Guide



MARPOSS

CONTENTS

- 1. *MUPS RF Module*.....4
 - 1.1 General Description4
 - 1.2 MUPS RF Module use4
 - 1.3 Probes.....5
 - 1.4 Anchor.....9
- 2. *Regulatory Statements* 11

1. MUPS RF Module

1.1 General Description

The “MUPS RF Module” is a radio frequency module which integrates two synchronous and identical low power transceivers Microchip ATA8352, each one with its reference crystal and its antenna, together on the same PCB. The transceivers are identically configured at any time (i.e. both transmitting or both receiving on the same channel and with the same power).

Specifications

Name	MUPS RF MODULE
Manufacturer	Marposs S.P.A. via Saliceto 13 – 40010 Bentivoglio (Bologna) ITALY www.marposs.com
Frequency band	6.2 GHz to 8.3 GHz
Channel	4 channels, typical UWB Center Frequencies: Channel A: 6520 MHz Channel B: 7040 MHz Channel C: 7560 MHz Channel D: 7987 MHz
Type of radio transmission	Pulsed
Type of modulation	BFSK
Peak TX Output Power	11.5 dBm Typ.
Tune-up Tolerance	1%
Power Supply	3.3V supplied by the application in which it is mounted
Antenna	Johanson Technology p/n 7000AT18A1600
Antenna Gain	2.0dB in 6.2 ÷ 8.24 GHz Band

1.2 MUPS RF Module use

This module is not an end-product, but it is designed to be fitted inside other Marposs products as a wireless communication device.

The typical application will be a remote gauging system applied to the mechanical industry, which measures some physical dimension and then it transmits this information to a receiver and/or Numerical Control.

The radio transmission system consists of one or more Probes (available in the versions UWP45 and UWP60 or UWT) which exchange wireless data (by UWB technology) with Anchor.

The Anchor is wired connected with the WLC connector to the Base Station.

The Base Station is installed into the electrical cabinet of the CNC machine.

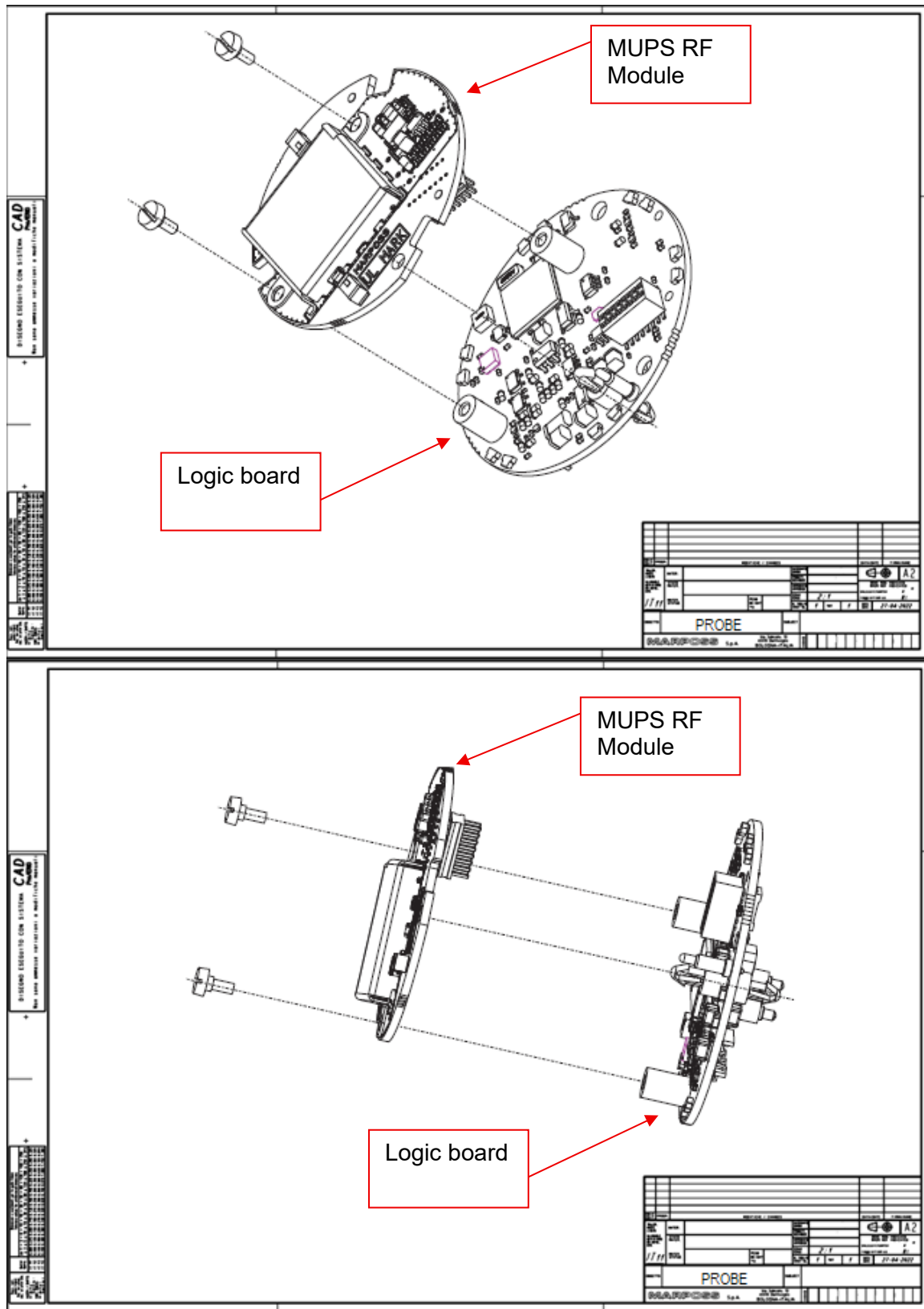
The MUPS RF Module is powered by the host device into which it is mounted and it can communicate with the host system by a serial peripheral interface (SPI). The host system is responsible for the programming of the transceiver and for the implementation of the protocol (from the MAC level and above). The protocol is designed by Marposs for its specific needs.

All of the modulation, RF generation and amplification is done by the transceiver itself, which only needs an external 48MHz quartz and some decoupling capacitors. The output port of the transceiver is followed by a pass-band filter, an integrated chip antenna both manufactured by Johanson Technology Inc. and a matching network.

1.3 Probes

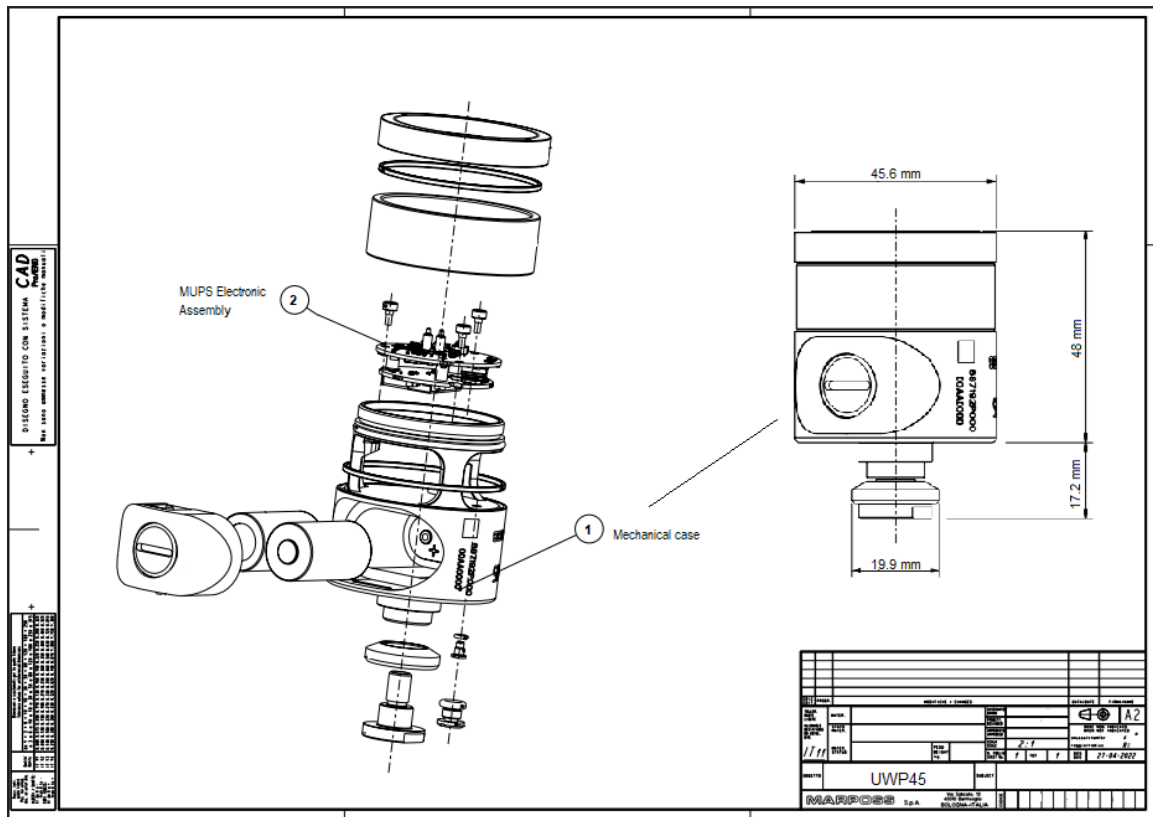
The MUPS RF module is connected to the Probe's logic circuit of the host system with a 16 pin-connector, as shown in the figures below.

MUPS electronical assembly

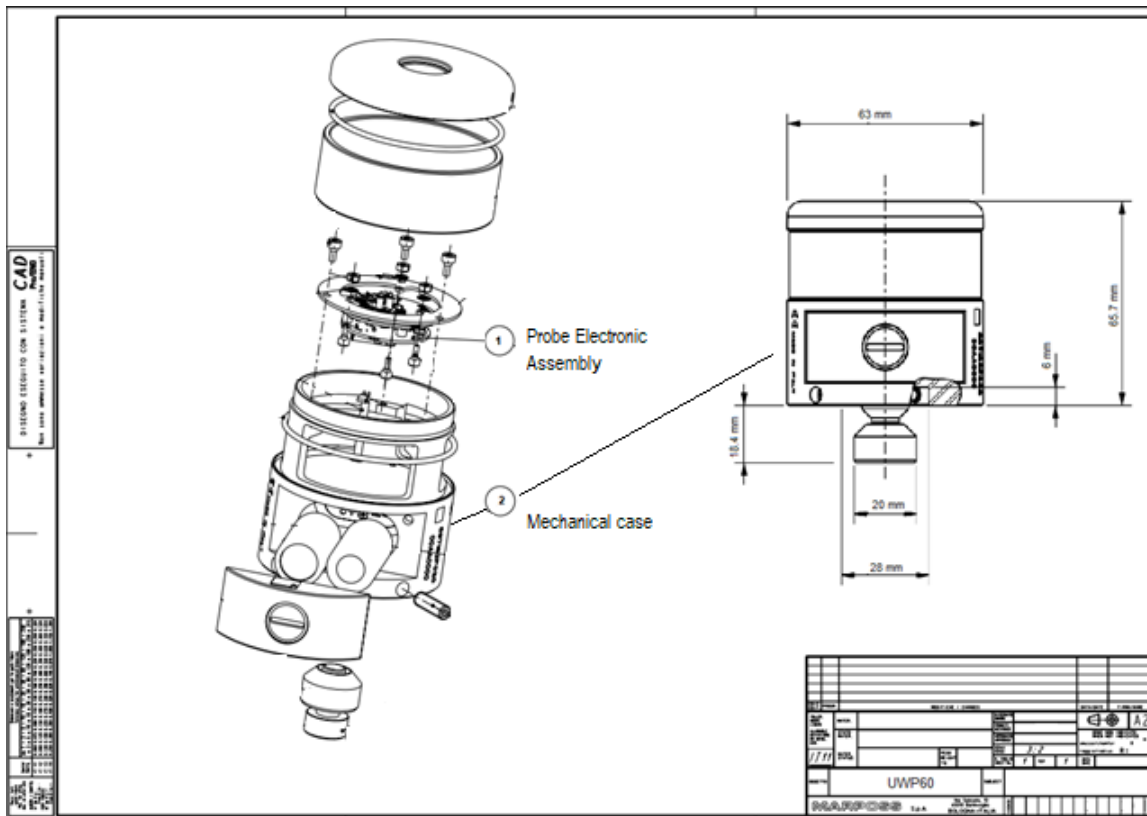


The electronic assembly is inserted in the host end-device, as shown in the following figures, for each type. The electronic assembly is the same for all probe models.

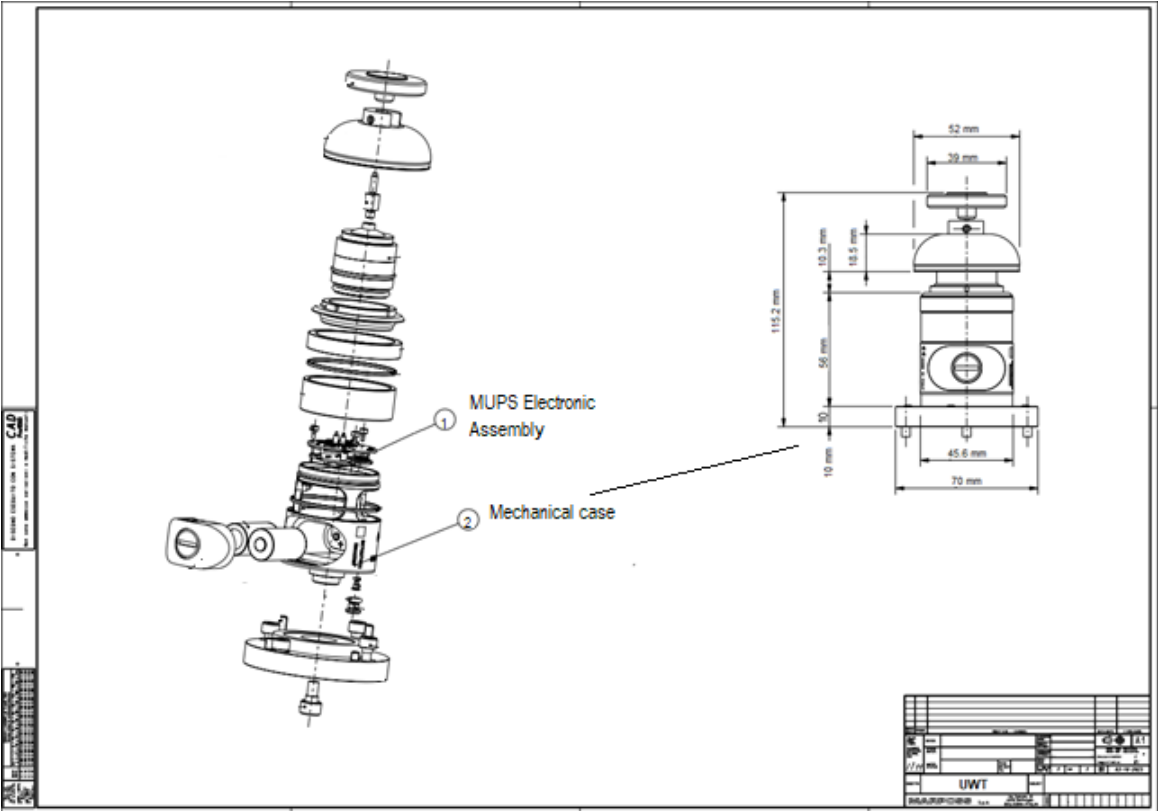
UWP45



UWP60

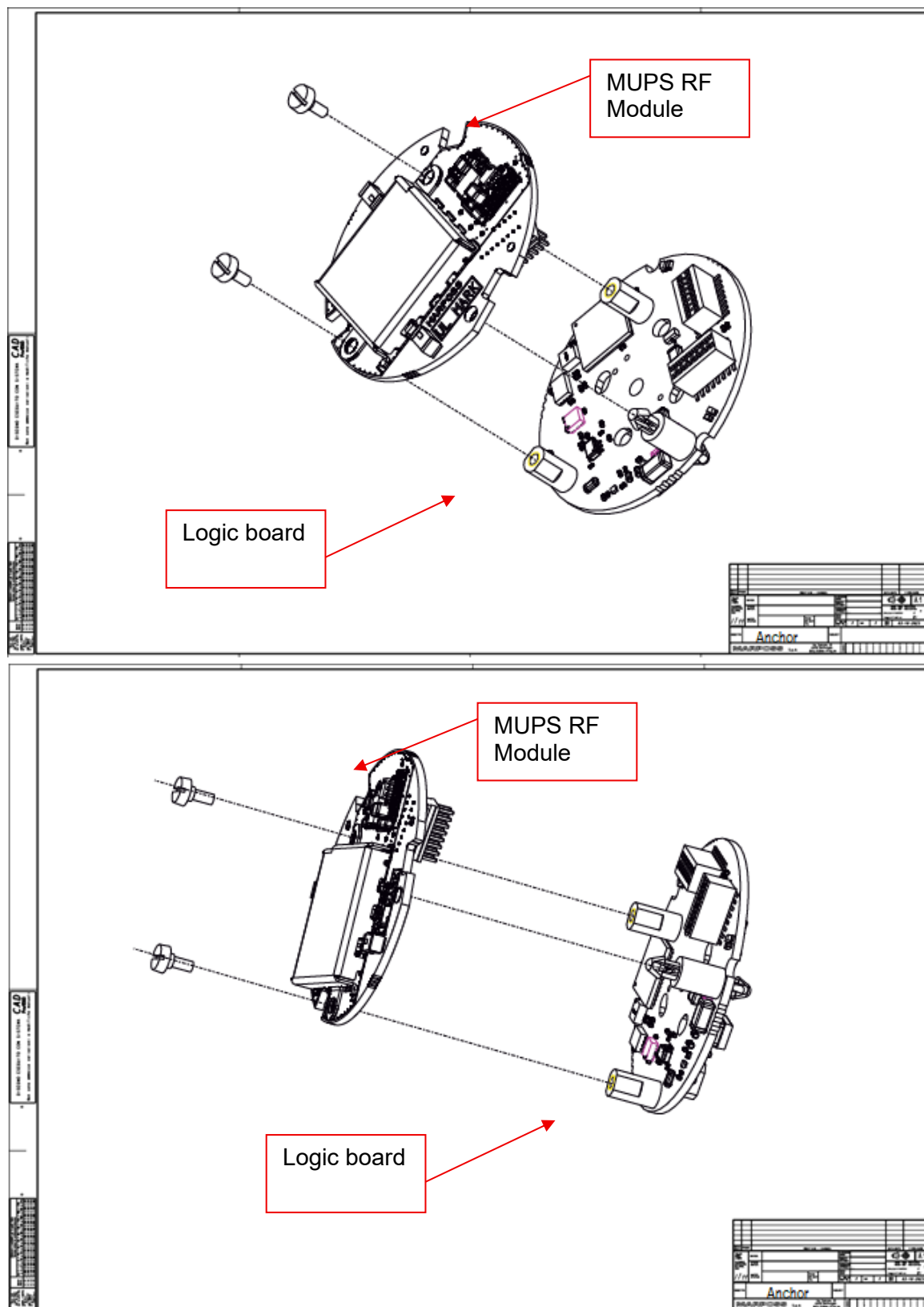


UWT

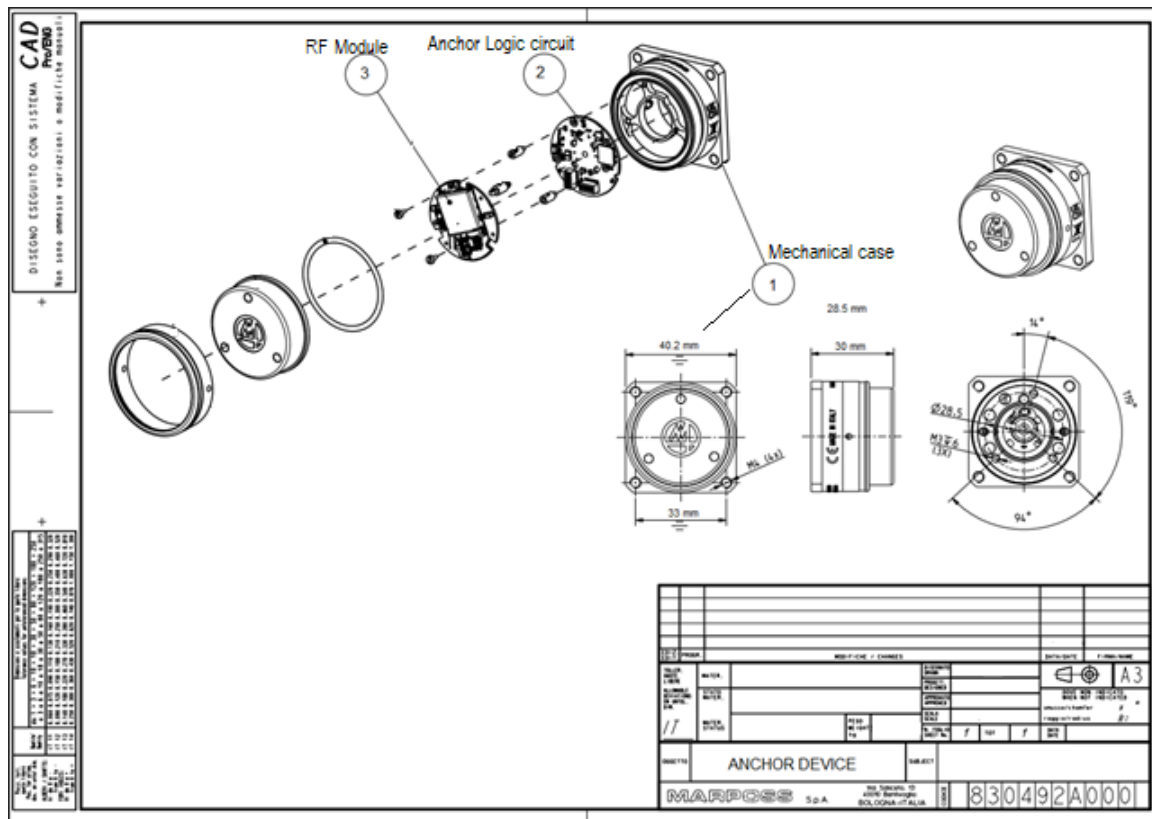


1.4 Anchor

The Marposs RF module is connected to the Anchor's logic circuit of the host system with a 16 pin-connector, as shown in the figures below.



The electronic assembly is inserted in the host end-device, as shown in the following figure, for each type.



2. Regulatory Statements

FCC ID: NXIMUPS

This equipment may only be operated indoors. Operation outdoors is in violation of 47 U.S.C. 301 and could subject the operator to serious legal penalties.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with part 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 undesired operation.

ISED ID: 3066A-MUPS

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions: (1) This device may not cause interference. (2) This device must accept any interference, including interference that may cause undesired operation of the device.

This module is solely being integrated into Marposs end products, verification testing is required to guarantee host and module comply with FCC rules.

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