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QUEUE
MANAGEMENT

RF board

1.00

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Tensator is the global leader in the management of the customer journey. Its products are proven to generate revenues, improve efficiencies and increase profitability. The company's core value proposition is to 'make and save money' for its clients. Tensator enjoys a strong global reputation for product quality, customer service, and as the inventor of the world-famous Tensabarrier® - the most respected queue barrier in the world – and industry-wide recognition as a true pioneer its field.

Tensator's advanced queue management technology includes: electronic call forward systems; virtual queuing technology; digital media platforms including the Tensator Virtual Assistant; in-queue merchandising; self-service systems, crowd and access control solutions; display and signage devices. As well as its dedication to innovative product development, Tensator also prides itself on adopting a customer centric approach that ensures tailored solutions are developed to meet a client's exacting needs.

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Headquartered in Milton Keynes, UK, Tensator has offices in the USA, UAE, Germany, France, and Poland. It has affiliate offices in Portugal, Spain and Colombia, as well as a worldwide network of distribution partners.

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1   Description

The RF IO Board is a remote control and communication transceiver. It uses a radio interface for remote communication. Through a rs485 interface collects information and transmits commands to external modules. A USB serial port allows a computer with compatible software to update firmware, configure and get log information.

1.1   RF interface

The RF Interface is a single chip. Low power, multi-channel FSK transceiver configured to operate on the 433MHz band. The chip is a complete analog RF and baseband transceiver including a PLL synthesizer with PA, LNA, I/Q down converter mixers, baseband filters and amplifiers.

The transmitter block is equipped with an 8bit TX data register. The receiver has a 16bit FIFO

1.2   RS485 Interface

The RF Board uses the RS485 interface to communicate to external modules. It can poll and collect information, send commands originated locally or relayed from the RF interface.

Communication rate used can 9600 or 115200 baud.

Power may be supplied via this connector (5V)

1.3   USB Interface

The miniUSB type B port is connected to a FTDI232 chip. This implements a serial port and allows for firmware update, configuration e collection of log information.

The firmware update uses a bootloader. This is executed every time the microcontroller starts operation. To use this feature other than at boot time a software command is available in the main firmware generating a reset. For the update itself a software tool (tinybldWin.exe) which must started with correct timing.

For configuration a set of text based commands allow to change any settings available in the main firmware.

Log information is sent by the board reporting current operation

Power may be supplied via this connector (5V)
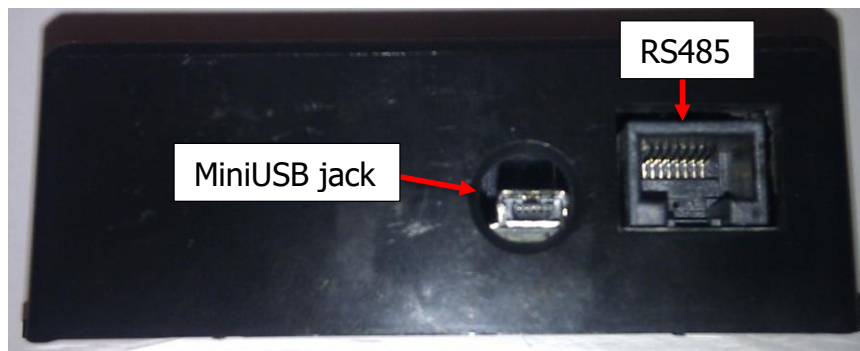

USB and RS485 interface

2   Configuration

The RF board needs to have an address and zone. The zone specifies the group of devices in working cooperation. The address identifies the device and consequently its function.

The system controller CTRX (See SQL3000 manual) must be configured with the same zone.

For configuration connect the RF board via USB to a Windows PC. Use TnyBld1989.exe for configuration. Windows automatically gets the necessary driver if an internet connection is available. For driver issues go to http://www.ftdichip.com/Drivers/D3XX.htm

Use a miniUSB plug to USB A plug cable.
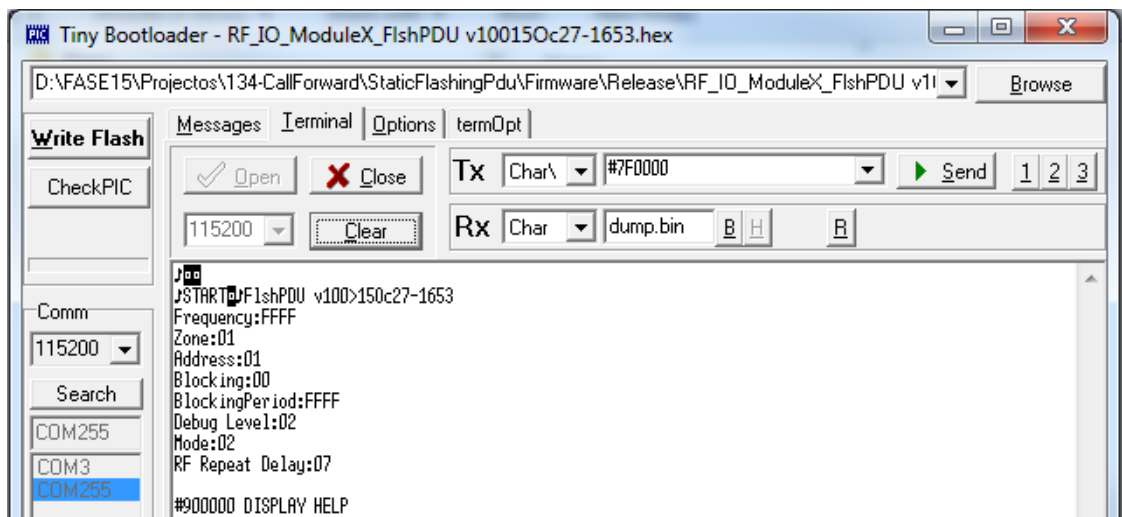
Select and open the serial port. Baud is 115200.

Use TX field to send the configuration commands.

2.1 Reset

#7F0000

This command resets the board

2.2 Current config

#75000

Presents the current configuration

2.3 Set zone

#760001XX

Set zone command. Replace XX by 01 to 09 for zone

2.4 Set Address

#770001XX

Set address command. Replace XX by 01 to 18 for zone. This is coded in hexadecimal. 24 positions can be defined

2.5 Get firmware version

#7A0000

Requests firmware version

3 Setup

Configure the board according to the system requirements (Configuration chapter of this manual).

Once configuration is complete remove configuration cable and prepare location for install. Verify if power is being received via RS485 cable or if an external power supply is necessary.

Connect the RS485 with RJ11 in the RS485 jack.

If necessary connect a 5V , 2A, power supply with a mini USB plug in the miniUSB jack of the RF board.

The connecting cables should have enough slack in order not to stress the connection points.

Once the RF board is powered is starts updating the system controller via CTRX with its status. Verify operation in the main controller console. (See Tensator SLQ manual).

Make the sensor bar status (see Sensor Bar manual) change to verify status update in the main system controller (see SLQ3000 manual).

Optionally to verify operation a Windows PC may remain connected via USB instead of the external power supply. Using the software described in the Configuration chapter of this manual, is possible to verify operation of the connected sensor bars. Please note that the PC USB port may not be able feed enough current to all the connected sensor bars if these are not self-powered.

4 Characteristics

Dimensions	*Standard*: 90 mm (L) x 66 mm (D) x 32 mm (H)
Power	5V DC, 2A
Environment	Temperature range: 0ºC ~ 40ºC humidity: 10% ~ 80% (Class 3K2 – EN60721)

5 Information to user

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

2. This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

3. 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.

Whenever you wish, do not hesitate to contact your Supplier or Tensator – helpdesk-techcentre@tensator.com