REFCOM II®

MANUAL VERSION 1.1C/EN

SPINTSO®

COMPLIANCES

EU Compliances, CE

Specific Absorption Rate (SAR) certification information

The REFCOM II radio is designed to not exceed the recommended limits for exposure of radio waves.

Frequency band and output power

Bluetooth (BR&EDR), +4.25dBm.

Bluetooth low emission (BLE), +3.74dBm.

Declaration of Conformity

Spintso AB declares that this device complies with directive 2014/53/EU and the applicable UK statutory requirements.

Visit https://www.spintso.com/declaration-of-conformity to access the declaration of conformity.

Notified Body nr.

2280

Adress

Spintso AB, Box 3113, 10362 Stockholm, Sweden

European Union, Disposal information

After this product has reached end of life, it shall be taken cared of properly. Please dispose the product to the recycling facility assigned by your authorities.

FCC

This device complies with part 15 of the FCC Rules.

FCC ID: 2BBUE-RCII-SPINTSO

Giteki

Certificate of compliance can be provided on request. Please e-mail info@spintso.com

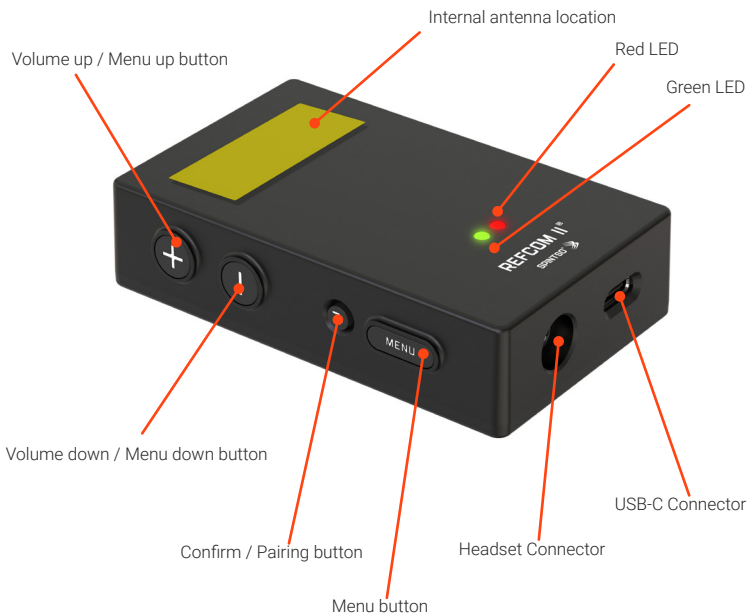Certification id number: R 210-215561

GENERAL

The new Spintso Refcom II radio system is developed by Referees for Referees and is optimized for use in both indoor and outdoor sports environments.

SECTIONS

3. OVERVIEW

Internal antenna location

Red LED

Green LED

Volume up / Menu up button

REFCOM II®
SPINTSO

Volume down / Menu down button

Confirm / Pairing button

Menu button

Headset Connector

USB-C Connector

4. GENERIC FUNCTIONS/FEATURES

- Optimized for Referees

- Open speech conference with high performance wind & ambient noise reduction.

- Automatic whistle sound level limitation.

- Compatible with both the Spintso in-ear Swiftfit headset and Twistlock premium headsets.

- Bluetooth 5.1 standard encryption.

- Customized high performance internal antenna solution. Line of site range ~800m

- 2-4 users with full duplex audio.

- Easy initial set-up by assigning each radio an individual id nr. (1-4)

- Connects automatically at each match after power-on.

- License Free 2.4GHz radio band, CE, UKCA, FCC, GITEKI.

- Battery level announcement at start-up (High, Medium, Low)

- Operational Time 12+h

- Operating Temperature -10 to + 45 °C

- Climatic environment IP54. Waterproof 3,5mm audio and USB-C connectors.

- Size: (51 x 20 x 82 mm)

- Weight: 58g

- Future proof by SW upgrades through USB.

5. INITIAL PREPARATIONS

1. Charge the radios until the green led activates.

2. Test to fit your Swiftfit or Twistlock headset to your ear. If needed, change the in-ear adapters to a different size until the headset fits properly and feels comfortable.

3. Mark-up the radios using the included stickers. Choose the ones that suits your application best. In European football it would be for example:

| RADIO 1 AR2 | RADIO 2 REFEREE | RADIO 3 AR1 | RADIO 4 4th |

6. GENERAL HANDLING

6.1. Activation

- Radios are started up by pressing down Volume up and Volume down buttons at the same time for 1 second.

- Radios are turned off by pressing Volume up and Volume down buttons at the same time for 2 seconds.

6.2. Indications

6.2.1. LEDs

At start-up and power off, both LEDs activates for 2 seconds. During normal operation the LEDs indicates the radio status.

6.2.2. Voice guide

At start-up the current applicable settings and status is presented in the headset. For example:
• Radio designation number (Radio [1-4])
• Battery Level (BATTERY [HIGH/NORMAL/LOW])
• Headset type (SWIFTFIT HEADSET/TWISTLOCK HEADSET)

6.3. Pairing

Pairing procedure is performed using the confirm button and the audio Menu.

• Connect the headsets and press the confirm button for 6 seconds on each radio to clear the pairing history and to set the radios into radio pairing mode.

• Access the audio menu on each radio one at a time by pressing the MENU-button. Assign each radio an individual number (1-4) Change number by pressing the +/- buttons. Confirm the selected number by pressing down the confirm button. **The number shall match the number on the mounted sticker.**

• The pairing can be started when all radios have been set-up with their individual number. Press the confirm button for 2 seconds on the radio assigned to "RADIO 1". All radios will pair automatically in sequence.

6.4. LED Indications

6.4.1. Radio pairing mode
Radio pairing mode state is indicated by both LEDs being continuously active.

6.4.2. Pairing
When pairing is successful, the red LED turns off and the green led indicates connected by blinking.

6.4.3. Connected state
a. One connected radio is indicated by a single blink.
b. Two connected radios are indicated by a double-blink.
c. At low battery, the red LED activates.
d. The LED blinking is synchronized and moves from radio 1 to radio 4.

6.4.4. Not connected state
When not connected the green LED blinks 1 time per second at a 50% duty cycle.

6.5. Radio Connect

6.5.1. Connecting radios
Radios that have been previously paired, connects automatically after start-up. At connect the voice guide says CONNECT RADIO "X" on each radio.
All connected radios LEDs indicates connected mode in synchronization.

6.5.2. Disconnect in connected state
Disconnect only occur when out of range, or if a radio is turned off. At disconnect, the voice guide says RADIO "X" LOST on the applicable radio. The applicable LED indicates accordingly. If losing all radios, the radio indicates not connected.

6.5.3. Automatic re-connect
If radios disconnect during normal operation because of poor radio connection or by being out of range, the radios automatically re-connect when the radios are back within operational range.

6.6. Volume control

The earphone volume can be adjusted in 12 steps. Changing of the volume level is indicated be beep sounds. A high pitch beep sound indicates reaching the highest volume, and a low pitch sound indicates reaching the lowest volume.

6.7. Audio Menu

- The radio features an audio menu for setting different options. For example, selection of preferred headset model or radio number.

- Menu button is pressed to access menu mode.

- Volume buttons are used to change a setting.

- Confirmation button is used to confirm the selected setting.

- Pressing the menu button several times, steps between the menu options.

- Exit menu to normal operation i.e. Volume buttons go back to changing volume, is done after confirming a selection, or automatically after three seconds if not pressing any buttons. A selected parameter is not stored if exit menu occurs automatically after the three second time-out.

6.7.1. Battery status

When in normal operation, pressing and releasing the Bluetooth button within 2 seconds activates a battery status message. (Battery High, Battery normal, battery low)

6.8. Charging

- Charging is indicated by the red LED being active.

- Charging finished in radio off state is indicated by turning the red LED off and turning the Green LED on.

- Charging finished in radio on state is indicated by turning the red LED off. The green LED indicate status normally.

- Charging time is less than 4h.

6.8.1. Operational time

Operational time with a fully charged battery is at least 12h under the following conditions: Maximum radio transmission power, 10% speaking time, and 0 degrees Centigrade ambient temperature.

7. INTERFACES

7.1. Headset

The headset interface features a waterproof 4-pole 3,5mm headset connector. It is compatible with the SPINTSO SwiftFit headset and the Spintso provided Twistlock headset.

7.2. Charging & Data

The charging interface features a Waterproof USB-C connector. This interface also handles upgrades of the radio firmware.

7.3. Antenna

The radio features a calibrated internal antenna that provides optimal radio range and signal quality.

8. LABEL

The radio features a submerged area on the back where a label that displays the radio designated number and the Referee role can be attached. For example: "RADIO 1, AR2", "RADIO 2, REFEREE", "RADIO 3, AR1"

9. CHARGING CABLE

The Refcom radios are charged from a normal USB-C cable that connects to a standard USB A power outlet. The cable provides for charging and data communication.
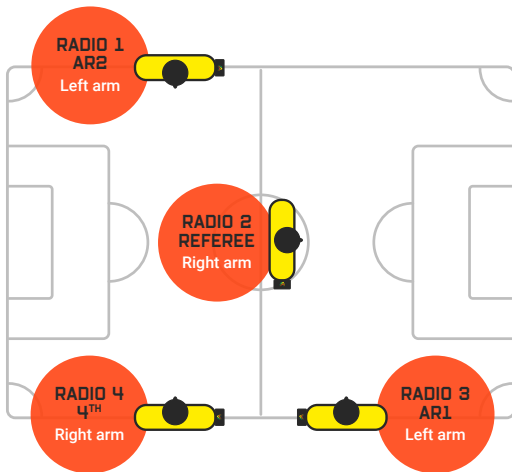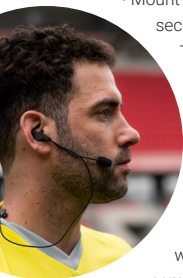
10. REFCOM II MATCH SET-UP AND HANDLING

• Make sure the radios are fully charged before use.

• Start-up all radios and wait for a short moment until they have automatically connected.

• Assign each referee with the applicable radio and a headset. For example: "Radio 1, AR2" is handed to assisting referee 2.

• Use SPINTSO arm-bag, or a shirt with dedicated arm-bag pocket when carrying

REFCOM II®. The radio shall not be worn behind your back or by the belt. The backside of the radio shall face the skin, and the connectors shall point downwards.

• Mount the headset to the ear, and make sure a secure and comfortable fitting is achieved. The microphone shall be positioned in hight with the mouth and be placed close to the cheek. Use transparent medical tape to secure the microphone position if needed.

• Adjust and attach the cable clip to the sweater collar to avoid cable tension.

• Speak between each other to check that all communication is working properly. Adjust if needed your personal earphone volume to a comfortable level.

RADIO 1
AR2
Left arm

RADIO 2
REFEREE
Right arm

RADIO 4
4TH
Right arm

RADIO 3
AR1
Left arm

FOOTBALL SET-UP