**Appendix M: Manual**

Please refer to the following pages.

# USER MANUAL

# RCQR01 RF Module

**Revision History:**

| Rev | Date | Description |
|---|---|---|
| **A** | **4/21/2014** | |
| | | |

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# 1.0 RCQR01 RF Module

### 1.1 Description

The RCQR01 is a low power wireless response keypad module. The RCQR01 module is used to interact with an audience so they can provide real time feed back to questions. It communicates at 2.4GHz, GFSK to a base station.

The overall operation of the RCQR01 module is controlled by a single chip microcontroller-transceiver IC. This microcontroller-transceiver is powered from approximately 3V and uses a 16MHz reference. The microcontroller handles control of the RF communications, LCD, and keypad inputs.

RF communications uses the 2.4 GHz transceiver. The transceiver also uses the 16 MHz reference oscillator for TX/RX, and is also powered by 3V. The transceiver uses an integral inverted F antenna on the PCB. The antenna gain is approximately 3 dBi.

### 1.2 FCC, IC Compliance Information

RCQR01 RF Module
Responsible Party Pertaining to the Declaration of Conformity

**Turning Technologies, LLC**
**255 W. Federal Street**
**Youngstown, OH 44503**
**(330) 599-4948**

### 1.3 Standards and Guidelines

This device complies with the following USA/Canada Regulations:

- The USA Federal Communications Commission (FCC) Rules and Regulations
- Industry Canada Rules and Regulations

This device complies with the following national and international standards:

- FCC Part 15.249 (10-01-13): Operation within the bands 902-928 MHz, 2400-2483.5 MHz, 5725-5875 MHz, and 24.0-24.25 GHz.
- IC RSS-210 Issue 8: Low power license-exempt radio-communications devices (all frequency bands): Category 1 equipment.
- EN 301 489-1 (V1.9.2)
- EN 301 489-3 (V1.6.1)
- EN 300 220-2 (V2.4.1)
- EN 60950-1:2006 + A11:2009 + A12:2011 + A1:2010 + AC:2011

### 1.4 FCC/IC Compliance

Changes or modifications to the device that are not approved by the manufacturer could void the user's authority to operate the device.

This device complies with Part 15 of the FCC Rules and with Industry Canada license-exempt RSS standard(s). 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.

Le présent appareil est conforme aux la Partie 15 des règlements de la FCC et CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

### 1.5 EU Compliance

This device is a 2.4 GHz low power response system controller intended for residential and commercial use in all EU and EFTA member states .

Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, The Netherlands, Norway, Poland, Portugal, Romania, Slovak Republic, Slovenia, Spain, Sweden, Switzerland/ Lichtenstein, United Kingdom

CAUTION
RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE.
DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS