

VEX Robotics, Inc.

228-3530 VEX IQ Smart Radio User Manual



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1. Overview

This document describes the 228-3530 VEX IQ Smart Radio.

2. Operational Modes

The Smart Radio can be commanded to transmit, receive or be idle. It does not simultaneously transmit and receive. The Smart Radio may be queried to provide internal register contents.

3. Ports

The Smart Radio has one digital port to get power, ground, and digital information to/from the Host. The Host controls the Smart Radio via a Serial Peripheral Interface (SPI) bus and two interrupt lines.

4. Basic Operation

Power ON: The unit is on when power is applied to the digital connector. The default state at Power ON is Idle. No RF activity is occurring during idle.

Control: The unit will be controlled by and submit information as queried by the Host over the digital port.

Radio Operation: The unit will be controlled by commands from the Host over the digital port. Data includes modulation, frequency, unique identifier imbedded in the RF message, power level and Forward Link / Reverse Link selection.

5. Technical Description

The block diagram (Fig. 5.1) lists the major components.

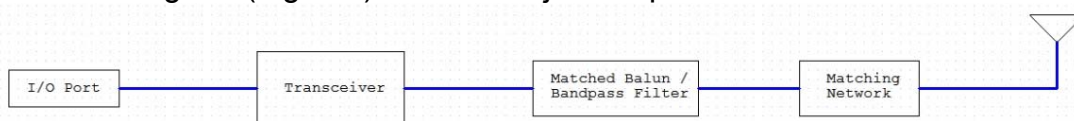


Figure 5.1 228-3530 Block Diagram

6. FCC / Industry Canada Compliance Information

FCC Compliance Statement (United States):

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

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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.

Industry Canada Compliance Statement

This device complies with Industry Canada license-exempt RSS Standards. 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.

Conformité aux normes d'Industrie Canada

Cet appareil est conforme aux normes RSS exemptes de licence d'Industrie Canada. Son utilisation doit répondre aux deux conditions suivantes : (1) cet appareil ne doit pas générer d'interférences et (2) il doit supporter toutes les interférences, y compris les interférences susceptibles de provoquer des dysfonctionnements.

7. Appendix A: Document Version History

<u>Date Code</u>	<u>Rev</u>	<u>Changes</u>
2015-07-10	1	Initial document release.