Appendix A: Regulatory for Third Party Integration

Third Party Integration Overview

The RE40 is approved for modular certification by FCC and Industry Canada under the following ID numbers:
FCC ID - UZ7RE40
IC ID - 109AN-RE40

Modular approval allows installation in different end-use products by an OEM with limited or no additional testing or equipment authorization for the transmitter function provided by the RE40:

- No additional transmitter compliance testing is required if the module is operated with an approved antenna.
- No additional transmitter compliance testing is required if the module is operated with the same general type of antenna listed as approved in the RE40 documentation.
    - Acceptable antennas must be of equal or less far field gain than the antenna previously authorized under the same FCC ID and must have similar in band and out of band characteristics.

The end-product must comply with all applicable FCC equipment authorizations, regulations, requirements and equipment functions not associated with the RE40.

- Compliance must be demonstrated to regulations for other transmitter components within the host product, to requirements for unintentional radiators (Part 15B), and to additional authorization requirements for the non-transmitter functions.

The OEM applying the RE40 is required to include all FCC and/or IC statements and warnings detailed in the following sections to the end-product labeling and in the finished product manual.

Product Labeling

A statement must be included on the exterior of the final OEM product which communicates that the device identified by the FCC and Industry Canada ID numbers are contained within the product. Include the statements:

- Contains FCC ID: UZ7RE40
- Contains IC: 109AN-RE40

Additionally, the OEM must include the following statements on the exterior of the finished product:

- 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 any interference that may cause undesired operation.

User Manuals

Any user documentation that accompanies the end-product must include the following information in a location that is easily read:

- To comply with EU RF radiation exposure requirements, the antenna(s) used for this transmitter must be installed such that a minimum separation distance of 20 cm is maintained between the reader (antenna) & user's/nearby people's body at all times and must not be co-located or operating in conjunction with another antenna or transmitter.

- To comply with FCC/ISED's RF radiation exposure requirements, the antenna(s) used for this transmitter must be installed such that a minimum separation distance of 25 cm is maintained between the reader (antenna) & user's/nearby people's body at all times and must not be co-located or operating in conjunction with another antenna or transmitter.

US Requirements

The finished product manual must contain the following statement:

- WARNING: The Federal Communications Commission warns that changes or modifications of the radio module within this device not expressly approved by Zebra Technologies, Inc. could void the user's authority to operate the equipment.

In the case where an OEM seeks class B (residential) limits for the host product, the finished product manual must contain the following statement:

- 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.

In the case where an OEM seeks the lesser category of a Class A digital device for their finished product, the following statement must be included in the manual of the finished product:

- Note: 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 expense.

Canadian Requirements

The OEM must include the following regulatory statements in both the English and the French product manual and/or on the finished product:

- 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.
- Cet appareil contient des émetteurs / récepteurs exemptés de licence qui sont conformes aux RSS exempts de licence d'Innovation, Sciences et Développement économique Canada. Son fonctionnement est soumis aux deux conditions suivantes:
  (1) Cet appareil ne doit pas provoquer d'interférences.
  (2) Cet appareil doit accepter toute interférence, y compris les interférences pouvant entraîner un fonctionnement indésirable de l'appareil

Antenna Requirements

Although the RE40 is compatible with many different antennas, the device's modular certification with the FCC and IC was tested with Zebra tested antennas enlisted for RE40. As a result, the following instructions allow end users to certify with the FCC and IC using their own antenna.

- To operate the RE40 under the FCC ID or IC, the following guidelines must be followed:
  - The OEM may operate:
    - With the following antenna or antennas of the same type (patch) with maximum gain (6 dBi) according to Zebra UHF RFID Antenna spec, examples:

      AN510, AN610, AN620, AN720, AN440, AN480, AN710

      Laird Technologies Model S9025PL, S9025PR,
      S8655PL, S8655PR
    - With the following antenna or antennas of the same type (loop) with maximum gain (-30 dBi)

      P1046176-01, P1092482-01 and P1113980-01
  - RF I/O interface to the antenna connector on the PCB shall be accomplished via a microstrip or stripline transmission line with characteristic impedance of 50 oHms +/- 10%. A custom coaxial pigtail may also be utilized to connect to the antenna in lieu of a connector.
    - The FCC and IC modular certification testing was performed using Zebra's RE40 Carrier Board PCB, detailed documentation of which can be downloaded from the Zebra support site at www.zebra.com/support.
  - The connector on the OEM's PCB which interfaces to the antenna must be of a unique type to disable connection to a non-permissible antenna in compliance with FCC section 15.203. The following connectors are allowed:
    - Right angle Reverse-Polarity SMA (RP-SMA) Jack: Amphenol p/n 132136RP or equivalent
    - Ultra-Miniature Coaxial Connector (UMCC) Jack: Molex p/n 0734120110 or equivalent
    - Custom 50 Ohm coaxial pigtail from PCB to antenna

- The OEM must professionally install the RE40 into its final environment to ensure that the conditions are met.

Statement of Compliance

Zebra hereby declares that this radio equipment is in compliance with Directives, 2014/53/EU and 2011/65/EU.

The full text of the EU Declaration of Conformity is available at the following internet address: www.zebra.com/doc.

OEM/Host Manufacturer Responsibilities

OEM/Host manufacturers are ultimately responsible for the compliance of the Host and Module. The final product must be reassessed against all the essential requirements of the RED before it can be placed on the EU market. This includes reassessing the transmitter module for compliance with the Radio and EMF essential requirements of the RED. This module must not be incorporated into any other device or system without retesting for compliance as multi-radio and combined equipment.

In all cases assessment of the final product must be met against the Essential requirements of the RE Directive Articles 3.1(a) and (b), safety and EMC respectively, as well as any relevant Article 3.3 requirements.

1. The patch antenna (gain: 6 dBi) AN480 was verified in the conformity testing, and for compliance the antenna shall not be modified.

2. The loop antenna (gain: -30 dBi) P1092482-01 was verified in the conformity testing, and for compliance the antenna shall not be modified.

3. A separate approval is required for all other operating configurations, including different antenna configurations (antenna gain increase or different antenna type).

5. If any other simultaneous transmission radio is installed in the host platform together with this module, or above restrictions cannot be kept, a separate RF exposure assessment and CE equipment certification is required.