Digitrax RF28 Integration Manual: October 21, 2019

The RF28 RF module embodies an Atmel/Microchip Inc. AT86RF233 Zigbee/IEEE 802.15.4 type Transceiver MMIC, with a 12pin connector module plug-in digital control interface. The Host control driver firmware is configured for 47CFR15.212 Modular Transmitter Certification, and RF operations in the Band 2.405 to 2.480 GHz under 47CFR Part15.247, and is provided by Digitrax Inc. Panama City FL.

Transmit power levels are configured to meet 15.247,15.205 and 15.209 frequency and emission limits, and in operation these may not exceed those measured in the FCC Report submission for 47CFR15.212 Modular Transmitter Certification.

The RF28 employs two orthgonal integral Surface Mounted Space-Diversity sequential transmit/receive ceramic-chip Johanson 2450AT18B100E antennas. These are typically 0dBi gain, are fixed by the RF28 module OEM manufacturer, and are not user or integrator modifiable. This configuration inherently meets the antenna requirements of 15.203. There are no post-manufacturing modifiable or serviceable parts in the RF28.

The RF28 modules measure 30x18x3mm maximum external dimensions and are identified with the indelible marking: “FCC#: LV3RF28” on the component side of the SMT module assembly. Due to limited space, the Regulatory information requirements are included below, and must be included in the final product manual.

The RF28 is tested for 15.212 certification external to a Digitrax UR93 Host controller that is configured for the generation of the test signals and modes required for certification testing. Switches on the UR93 allow test lab step-changing of; channel, modulation rate and TX/RX modes as required, and visible on test equipment. This FCC testing portion of host firmware driver is not used or enabled in normal operation of the UR93 host unit, but the channel and power levels remain in effect as for certification requirements and final product operations.

Integration of this RF28 47CFR15.212 Modular Certified Transmitter into a final Host product mandates that this final product then be tested as properly conforming to FCC requirements. RF exposure in the final product meets the requirements stated below.

Regulatory Information: (must be included in final Host product manual)

FCC: Contains FCC Module ID: LV3RF28

Declaration of Conformity:
“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.”

“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 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."

OEM RF28 Manufacturer/Responsible Party:
Digitrax Inc.,
2443 transmitter Rd, Panama City, FL 32404, USA.
(850) 872 9890
Model: RF28

"Changes or modifications not expressly approved by Digitrax Inc., the party responsible for original RF28 Certification compliance under 47 CFR15.212, could void the user's authority to operate the equipment"

Canada ISED RSS:

Contains Canadian ID module: IC:3015A-RF28

This device complies with Industry Canada's licence-exempt RSS'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 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;
2) l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement."

RF28 RF Exposure Guidance:

"In order to comply with FCC / ISED RF Exposure requirements, this device must be installed to provide at least 20 cm separation from the human body at all times."

"Afin de se conformer aux exigences d'exposition RF FCC / ISED, cet appareil doit être installé pour fournir au moins 20 cm de séparation du corps humain en tout temps."