DIGI TRK-RF-10 2.4G RF Module User Manual

Contents

DIGI TRK-RF-10 2.4G RF Module

Notice

DIGI®
The material contained in this document is proprietary and for information only and is subject to change without notice. Digi Singapore Pte. Ltd. assumes no responsibility for any errors or damages arising from misinterpretation of any procedure.
Screen displays, operating procedures and supporting features might vary with different software version releases.

Digi Singapore Pte. Ltd. 4, Leng Kee Road
#06-01 SIS Building Singapore 159088

Safety Information

The operator of the equipment shall comply with the safety and warning indications and procedures outlined in this document. Digi Singapore Pte. Ltd. assumes no responsibility or liability for failure to comply with these requirements.

- For continued protection against fire hazard replace only with battery of same rating and type.
- Avoid overloading the product beyond its rated maximum capacity
- Trained and qualified personnel shall only carry out repair and servicing of product.

Disclaimer:
Specifications are subject to change without notice. All dimensions shown are approximate. Please be aware that DIGI has indicated that its hardware and software used in the product may require additional updates in the future as our product is continually under development. The need for such updates most likely applies to the Printer software.

Safety Regulations

Federal Communication Commission Interference Statement
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.

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.
FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

IMPORTANT NOTE

FCC Radiation Exposure Statement:
This equipment complies with FCC /IC radiation exposure limits set forth for an uncontrolled environment and is safe for intended operation as described in this manual.

This device is intended only for OEM integrators under the following conditions:

The transmitter module may not be co-located with any other transmitter or antenna.
As long as condition above are met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed (for example, digital device emissions, PC peripheral requirements, etc.).

IMPORTANT NOTE: In the event that these conditions do not be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization is no longer considered valid and the FCC ID could not be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

End Product Labeling
The final end product must be labeled in a visible area with the following: "Contains FCC ID: SUFTRKRF10".

Manual Information To the End User
The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user's manual of the end product which integrates this module.
The end user manual shall include all required regulatory information/warning as show in this manual.

Canada Regulatory Wireless Notice:
This device complies with RSS-210 of the Industry Canada Rules. 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

IC Radiation Exposure Statement:
This equipment complies with FCC /IC radiation exposure limits set forth for an uncontrolled environment and is safe for intended operation as described in this manual.

This device is intended only for OEM integrators under the following conditions:
1) The transmitter module may not be co-located with any other transmitter or antenna.
As long as condition above are met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed (for example, digital device emissions, PC peripheral requirements, etc.).

IMPORTANT NOTE: In the event that these conditions can not be met (for example certain laptop configurations or co-location with another transmitter), then the IC authorization is no longer considered valid and the IC ID can not be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate IC authorization.

End Product Labeling
The final end product must be labeled in a visible area with the following: “Contains IC:5663A-TRKRF10”.

Manual Information To the End User
The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user’s manual of the end product which integrates this module.
The end user manual shall include all required regulatory information/warning as show in this manual.

General

The module design is based on RF transceiver with integrated MCU core, FG22. It implements a proprietary communications protocol streamlined to lower cost and power consumption. The antenna used is a surface mount LTCC chip antenna. The module will be FCC and TELEC certified for fast and simple integration into end applications. This module may be integrated into a wireless application which operates in 2.4G ISM frequency band.

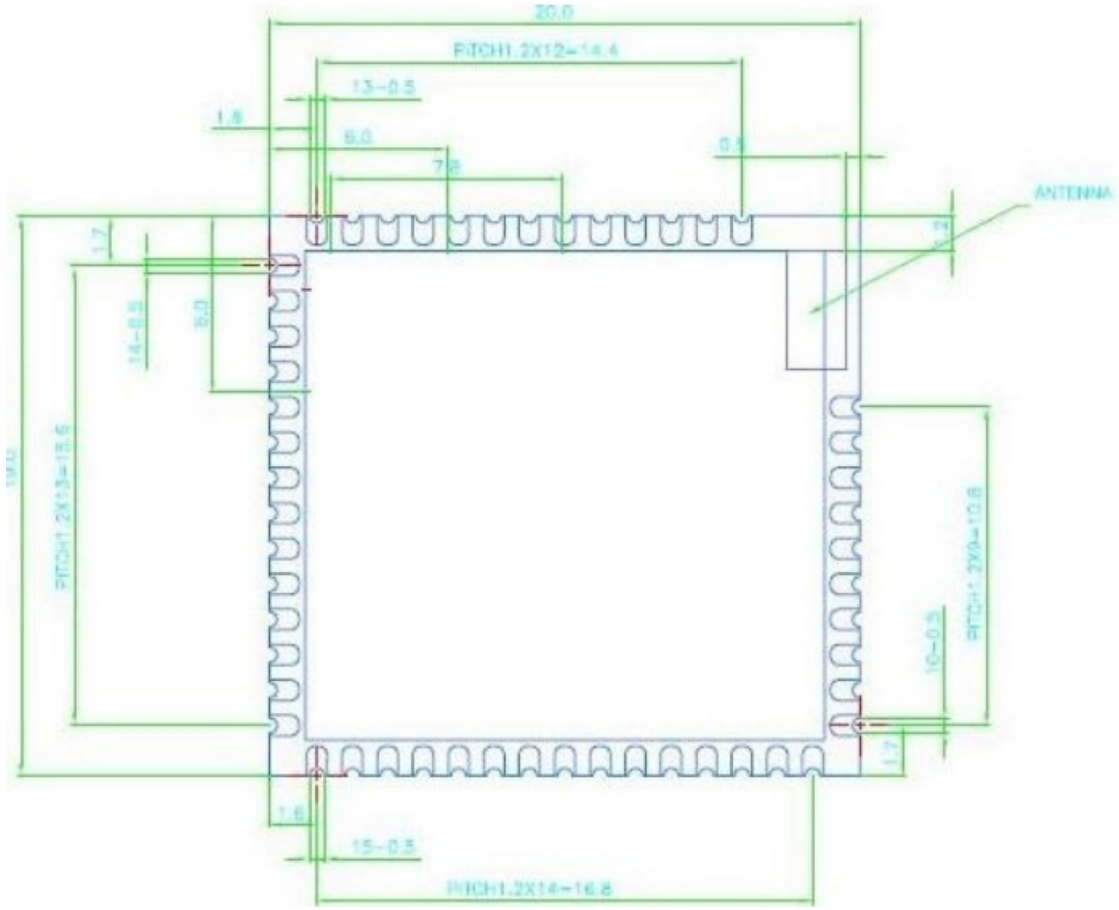
Product Features

- **Model :** TRK-RF-10 (2.4G RF MODULE_BL10)
- **Dimension (in mm) :** 20.0(L) X 19.0(W) X 4.0(H)
- **RF Standard :** FCC ARIB STD-T66 NCC, IC
- **Modulation :** GFSK
- **Frequency Band :** 2.402 GHz – 2.480 GHz
- **Channel list :** 79 Channels at 1MHz step 2402MHz +(n-1)MHz where n = 1 to 79
- **Radio Range :** Up to 100m, L.O.S
- **Transmit Power :** 5 dBm (max)
- **Receiver Sensitivity :** -90dBm (typical), PER = 1%
- **General purpose I/O :** 47

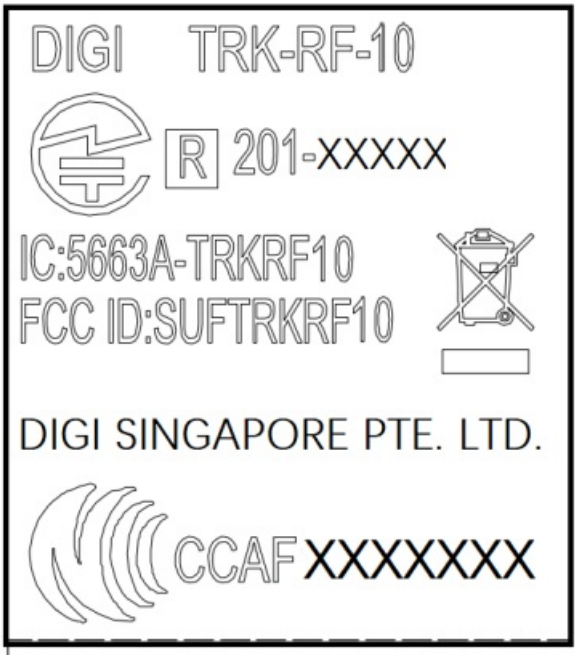
Operating Specification

- **Voltage :** DC 3.0V (+2.7V ~+3.6V)
- **Current :** 10mA (typical), standby: <2uA
- **Operating Temperature :** -20 °C to 55 °C
- **Storage Temperature :** -40 to +85° C
- **Humidity :** 95% max non condensing

Dimension



Label Information



Interface

Interface pin assignments

1	GND	25	P19
2	GND	26	P20
3	GND	27	P18
4	GND	28	GND
5	GND	29	P04
6	GND	30	P02
7	GND	31	P01
8	GND	32	P03
9	GND	33	GND
10	GND	34	P26
11	GND	35	P06
12	VDD	36	P05
13	VDD	37	P07
14	P21	38	P38
15	P11	39	P27
16	GND	40	P08
17	GND	41	GND
18	GND	42	GND
19	GND	43	GND
20	P22	44	GND
21	P23	45	GND
22	P17	46	GND
23	P25	47	GND
24	P16		

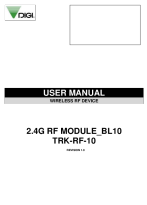
Notes:

1. The I/O pins is connected to the external interface port directly.
2. The voltage level is TTL high/low voltage level

Revision Records

Serial No.	Date	Edition Status	Description of Changes	Software Version	Remarks
1	03/01/2023	1.0	INITIAL RELEASE		

Documents / Resources

	DIGI TRK-RF-10 2.4G RF Module [pdf] User Manual TRKRF10, SUFTRKRF10, TRK-RF-10 2.4G RF Module, TRK-RF-10, 2.4G RF Module, Module