

RF Exposure Evaluation Report

Product Name : TG-BT5-OUT

Model No. : TG-BT5-OUT

FCC ID : TV7-TB50

Applicant : Mikrotikls SIA

Address : Brīvības gatve 214i, Rīga LV-1039 Latvia

Date of Receipt : Apr. 28, 2021

Date of Declaration : Aug. 02, 2021

Report No. : 2140982R-E3082100013

Report Version : V1.0



The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration report of the equipment and evaluated measurement uncertainty herein.

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Measurement uncertainties evaluated for each testing system and associated connections are given here to provide the system information for reference. Compliance determinations do not take into account measurement uncertainties for each testing system, but are based on the results of the compliance measurement.

Issued Date: Aug. 02, 2021

Report No.: 2140982R-E3082100013



| | | |
|---------------------|--|---|
| Product Name | TG-BT5-OUT | |
| Applicant | Mikrotikls SIA | |
| Address | Brīvības gatve 214i, Rīga LV-1039 Latvia | |
| Manufacturer | Mikrotikls SIA | |
| Model No. | TG-BT5-OUT | |
| FCC ID. | TV7-TB50 | |
| Trade Name | MikroTik | |
| Applicable Standard | KDB 447498 D01 v06 | <input checked="" type="checkbox"/> Minimum test separation distance \geq 20 cm <input type="checkbox"/> For low power devices |
| Test Result | Complied | |

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Tested By : wen Lee
(Supervisor / Wen Lee)

Approved By : Tim Sung
(Manager / Tim Sung)

Revision History

| Report No. | Version | Description | Issued Date |
|----------------------|---------|--------------------------|---------------|
| 2140982R-E3082100013 | V1.0 | Initial issue of report. | Aug. 02, 2021 |

1. GENERAL INFORMATION

1.1. EUT Description

| | |
|--------------------|-----------------------------------|
| Product Name | TG-BT5-OUT |
| Trade Name | MikroTik |
| Model No. | TG-BT5-OUT |
| FCC ID. | TV7-TB50 |
| Frequency Range | 2402 – 2480MHz |
| Channel Number | V5.0: 40CH |
| Type of Modulation | V5.0: GFSK (1Mbps, 2Mbps) |
| Channel Control | Auto |
| Antenna Type | PCB trace Antenna |
| Antenna Gain | Refer to the table “Antenna List” |

1.2. Antenna List

| No. | Manufacturer | Part No. | Antenna Type | Peak Gain |
|-----|--------------|-------------|-------------------|-------------------|
| 1 | MikroTik | TG-IN-Trace | PCB trace Antenna | 1.5dBi in 2.4 GHz |

2. RF Exposure Evaluation

2.1. Standard Applicable

According to KDB 447498 D01 (7.1), A minimum test separation distance ≥ 20 cm is required between the antenna and radiating structures of the device and nearby persons to apply mobile device exposure limits.

2.2. Limits

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)

LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

| Frequency Range (MHz) | Electric Field Strength (V/m) | Magnetic Field Strength (A/m) | Power Density (mW/cm ²) | Average Time (Minutes) |
|---|-------------------------------|-------------------------------|-------------------------------------|------------------------|
| (A) Limits for Occupational/ Control Exposures | | | | |
| 300-1500 | -- | -- | F/300 | 6 |
| 1500-100,000 | -- | -- | 5 | 6 |
| (B) Limits for General Population/ Uncontrolled Exposures | | | | |
| 300-1500 | -- | -- | F/1500 | 6 |
| 1500-100,000 | -- | -- | 1 | 30 |

F= Frequency in MHz

Friis Formula

Friis transmission formula: $P_d = (P_{out} * G) / (4 * \pi * r^2)$

Where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

R = distance between observation point and center of the radiator in cm

2.3. Test Result of RF Exposure Evaluation

Product : TG-BT5-OUT
Test Item : RF Exposure Evaluation

WLAN 2.4G Peak Gain: 1.5dBi

| Channel | Frequency | Conducted Peak Power (dBm) | Output Power to Antenna (mW) | Power Density at R = 20 cm (mW/cm ²) | Limit (mW/cm ²) | Pass/Fail |
|---------|-----------|----------------------------|------------------------------|--|-----------------------------|-----------|
| 01 | 2402 | 4.13 | 2.588 | 0.0007 | 1 | Pass |

Note: The conducted output power is refer to report No.: 2140982R-E3032110108 from the DEKRA.