

Japan Specified Radio Test Report

Applicant : ACCO Brands USA LLC

Address : 4 Corporate Drive, Lake Zurich, Illinois 60047,
USA

Product Name : Pro Fit Ergo TB550 Trackball

Report Date : May 04, 2023

Shenzhen Anbotek Compliance Laboratory Limited



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TEST REPORT

Applicant : ACCO Brands USA LLC
Manufacturer : ACCO Brands USA LLC
Product Name : Pro Fit Ergo TB550 Trackball
Model No. : M01679-T
Trade Mark : Kensington
Rating(s) : Input: 5V \pm 250mA(with DC 3.7V, 500mAh battery inside)

Test Standard(s) : **MIC Notice No.88 Annex43**
Certificate regulation article 2, paragraph 1, item 19

The device described above is tested by Shenzhen Anbotek Compliance Laboratory Limited to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and Shenzhen Anbotek Compliance Laboratory Limited is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) is technically compliant with the MIC Notice No.88 Annex43 and Certificate regulation article 2, paragraph 1, item 19 requirements.

This report applies to above tested sample only and shall not be reproduced in part without written approval of Shenzhen Anbotek Compliance Laboratory Limited.

Date of Receipt

Feb. 03, 2023

Date of Test

Feb. 03 ~ 14, 2023

Prepared By

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Approved & Authorized Signer

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(Kingkong Jin)



Revision History

| Report Version | Description | Issued Date |
|----------------|-----------------|--------------|
| R00 | Original Issue. | May 04, 2023 |
| | | |
| | | |



1. General Information

1.1. Client Information

| | | |
|--------------|---|---|
| Applicant | : | ACCO Brands USA LLC |
| Address | : | 4 Corporate Drive, Lake Zurich, Illinois 60047, USA |
| Manufacturer | : | ACCO Brands USA LLC |
| Address | : | 4 Corporate Drive, Lake Zurich, Illinois 60047, USA |

1.2. Description of Device (EUT)

| | | |
|-------------------|---|---|
| Product Name | : | Pro Fit Ergo TB550 Trackball |
| Model No. | : | M01679-T |
| Trade Mark | : | Kensington |
| Test Power Supply | : | DC 3.7V battery inside |
| Test Sample No. | : | 1-2-1(Normal Sample), 1-2-2(Engineering Sample) |
| Hardware Version | : | Ver:A |
| Software Version | : | V3.13 |
| Adapter | : | N/A |

RF Specification

| | | |
|---------------------|---|--|
| Operation Mode | : | <input checked="" type="checkbox"/> BT BLE |
| Support Rate | : | <input checked="" type="checkbox"/> 1Mbps <input type="checkbox"/> 2Mbps |
| Operation Frequency | : | 2402~2480MHz |
| Number of Channel | : | 40 Channels |
| Modulation Type | : | GFSK |
| Antenna Type | : | PCB Antenna |
| Antenna Gain(Peak) | : | -0.08 dBi (Provided by customer) |
| Rated output Power | : | 1 mW Max. |

Remark: 1) For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.



1.3. Auxiliary Equipment Used During Test

| Description | Rating(s) |
|-------------|-----------|
| -- | -- |

1.4. Description of Test Configuration

The EUT has been tested under typical operating condition. The Applicant provides software to control the EUT for staying in continuous transmitting and receiving mode for testing.

| Channel | Freq. (MHz) | Channel | Freq. (MHz) | Channel | Freq. (MHz) | Channel | Freq. (MHz) | Channel | Freq. (MHz) |
|---------|-------------|---------|-------------|---------|-------------|---------|-------------|---------|-------------|
| 00 | 2402 | 09 | 2420 | 18 | 2438 | 27 | 2456 | 36 | 2474 |
| 01 | 2404 | 10 | 2422 | 19 | 2440 | 28 | 2458 | 37 | 2476 |
| 02 | 2406 | 11 | 2424 | 20 | 2442 | 29 | 2460 | 38 | 2478 |
| 03 | 2408 | 12 | 2426 | 21 | 2444 | 30 | 2462 | 39 | 2480 |
| 04 | 2410 | 13 | 2428 | 22 | 2446 | 31 | 2464 | | |
| 05 | 2412 | 14 | 2430 | 23 | 2448 | 32 | 2466 | | |
| 06 | 2414 | 15 | 2432 | 24 | 2450 | 33 | 2468 | | |
| 07 | 2416 | 16 | 2434 | 25 | 2452 | 34 | 2470 | | |
| 08 | 2418 | 17 | 2436 | 26 | 2454 | 35 | 2472 | | |

Note: EUT was tested with channel 00, 19 and 39.

1.5. Test Conditions

| | Normal Test Conditions |
|-------------------|------------------------|
| Temperature | 15°C - 35°C |
| Relative Humidity | 20% - 75% |
| Pressure Range | 86-106kPa |

1.6. Test Voltage

Power Supply Voltage Fluctuation Test

| Voltage Fluctuation Test | Normal Voltage | High Voltage +10% of Normal Voltage | Low Voltage -10% of Normal Voltage |
|--------------------------|----------------|-------------------------------------|------------------------------------|
| Input To EUT | DC 3.7V | DC 4.07V | DC 3.33V |
| Output To RF Module | DC 3.30V | DC 3.30V | DC 3.30V |
| Voltage Variation (%) | -- | 0.00% | 0.00% |

Note: Voltage Variation (%)=(Output high or Low Voltage - Output Normal Voltage)/ Output Normal Voltage* 100



For extreme voltage test, we have tested the relationship between the external power supply and RF IC power supply. Base on the test results, only the normal voltage was selected to perform all items.

1.7. Test Equipment List

| Item | Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Cal. Interval |
|------|--------------------------------|--------------|-----------|-------------|---------------|---------------|
| 1. | MAX Spectrum Analysis | Agilent | N9020A | MY51170037 | Oct. 13, 2022 | 1 Year |
| 2. | MXA Spectrum Analysis | KEYSIGHT | N9020A | MY53280032 | Oct. 13, 2022 | 1 Year |
| 3. | DC Power Supply | IVYTECH | IV3605 | 1804D360510 | Oct. 22, 2022 | 1 Year |
| 4 | MXG RF Vector Signal Generator | Agilent | N5182A | MY47420647 | Feb.28, 2022 | 1 Year |

1.8. Description of Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

FCC-Registration No.: 184111

Shenzhen Anbotek Compliance Laboratory Limited, EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration No. 184111.

ISED-Registration No.: 8058A

Shenzhen Anbotek Compliance Laboratory Limited, EMC Laboratory has been registered and fully described in a report filed with the (ISED) Innovation, Science and Economic Development Canada. The acceptance letter from the ISED is maintained in our files. Registration 8058A.

Test Location

Shenzhen Anbotek Compliance Laboratory Limited.

1/F, Building D, Sogood Science and Technology Park, Sanwei community, Hangcheng Street, Bao'an District, Shenzhen, Guangdong, China.518102



2. Summary of Test Results

| Test Standard | Description of Test | Result |
|-------------------------------------|--|----------|
| Article 2 Paragraph 1 Item 19 | Frequency Tolerance | Complies |
| | Antenna power | Complies |
| | Antenna Power Tolerance | Complies |
| | Occupied Bandwidth | Complies |
| | Spread Bandwidth | N/A |
| | Spurious Emissions | Complies |
| | Carrier sensing function | N/A |
| | Interference prevention function | Complies |
| | Secondary Radiated Emissions | Complies |
| | Dwell Time | N/A |
| | Transmission Radiated Angle Width (3dB Beam Bandwidth) | N/A |
| | Antenna Absolute Gain | N/A |

Note:

(1) N/A is an abbreviation for Not Applicable.

(2) This device have more than 1 subcarrier in 1MHz, compliance with the requirement.



3. Frequency Tolerance Test

3.1. Test Limit

| | |
|------------|--------------|
| Test Limit | ± 50 ppm |
|------------|--------------|

3.2. Test Setup



3.3. Test Procedure

Test Frequency= test channel

RBW=VBW=10KHz

Span=1MHz

Sweep time=Auto

Detector mode=Positive peak

Indication mode=Max hold

3.4. Test Data

PASS

Please refer to Appendix A of the Appendix Test Data.



4. Antenna Power Test

4.1. Test Limit

| No. | Moduation type | Test Limit |
|-----|--|-------------|
| (1) | FH, FH+DS , FH+OFDM (2427 - 2470.75 MHz) | 3mW/MHz |
| (2) | OFDM OBW≤26MHz, DS, FH other than (1) | 10mW/MHz |
| (3) | OFDM (OBW 26-40MHz) | 5mW/MHz |
| (4) | Other than (1)&(2)&(3) | 10mW |
| (5) | Tolerance | -80% ~ +20% |

4.2. Test Setup



4.3. Test Configuration

1. Search Frequency of Peak Power

Test Frequency: test channel,

RBW=VBW≥99% Occupy Bandwidth, Span=4MHz, Sweep time=Auto, Detector mode =Positive peak

2. Measure of average burst power

Test Frequency: frequency of peak power

RBW=VBW=1MHz, Span=0Hz, Sweep time=Auto, Detector mode=RMS

3. Antenna power= average burst power

4.4. Test Data

Pass

Please refer to Appendix B of the Appendix Test Data.



5. Occupied Bandwidth (99%) Test

5.1. Test Limit

| Modulation type | Limit |
|-----------------|-----------------|
| FH: | 83.5MHz or less |
| FH + DS: | 83.5MHz or less |
| FH + OFDM: | 83.5MHz or less |
| OFDM: | 40MHz or less |
| Others: | 26MHz or less |

5.2. Test Setup



5.3. Test Procedure

Test Frequency= test channel

RBW=VBW=300KHZ

Span=4MHz

Sweep time=Auto

Detector mode=Positive peak

Indication mode=Max hold

5.4. Test Data

PASS

Please refer to Appendix C of the Appendix Test Data.



6. Spread-Spectrum Bandwidth (90%) And Factor Test

6.1. Test Limit

| | |
|------------|--|
| Test Limit | Spread bandwidth: $\geq 500\text{KHz}$ |
|------------|--|

6.2. Test Setup



6.3. Test Procedure

Test Frequency= test channel

RBW=VBW=300KHz

Span=4MHz

Sweep time=Auto

Detector mode=Positive peak

Indication mode=Max hold

6.4. Test Data

N/A.

Note: BT BLE is the non DSSS, FHSS, FHSS+DSSS, FHSSS +OFDM device. So spread bandwidth is not need to be test.



7. Spurious Emissions Intensity Test

7.1. Test Limit

| Frequency Range | Test Limit |
|------------------------|-----------------|
| ≤2387MHz | ≤2.5μW (-26dBm) |
| 2387MHz to 2400MHz | ≤25μW (-16dBm) |
| 2483.5MHz to 2496.5MHz | ≤25μW (-16dBm) |
| ≥2496.5MHz | ≤2.5μW (-26dBm) |

7.2. Test Setup



7.3. Test Procedure

Test Frequency: test channel,

RBW=VBW=1MHz, Sweep time=Auto, Detector mode=Positive peak

7.4. Test Data

Pass

Please refer to Appendix E of the Appendix Test Data.

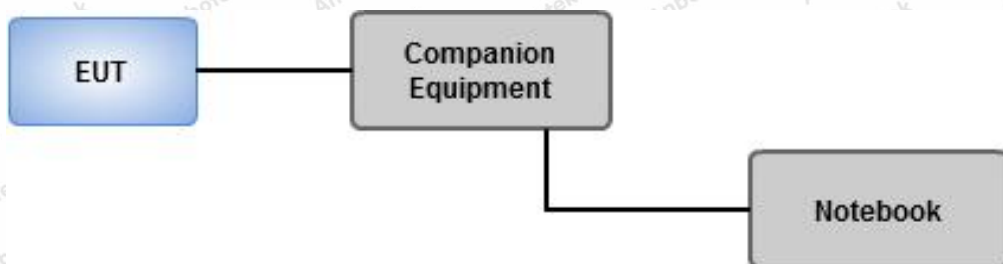


8. Interference prevention function

8.1. Test Limit

| | |
|------------|---|
| Test Limit | The identification code shall be 48 bits long |
|------------|---|

8.2. Test Setup



8.3. Test Configuration

1. Set EUT under operating mode and link up with companion equipment
2. Check communication status between EUT and companion equipment is normal
3. Record the max. reading.
4. Confirm the MAC address of EUT

8.4. Test Data

| Test Mode | ID Code | Test Results |
|-----------|-------------------|--------------|
| BLE | A3:05:3C:53:A6:B2 | Complies |



9. Secondary Radiated Emissions Test

9.1. Test Limit

| Frequency Range | Test Limit |
|-----------------|------------------------------|
| 30~ 1000MHz | $\leq 4.0\text{nW}$ (-54dBm) |
| 1000~ 12500MHz | $\leq 20\text{nW}$ (-47dBm) |

9.2. Test Setup



9.3. Test Configuration

Test Frequency: test channel,
Below 1GHz, RBW=VBW=100KHz;
Above 1GHz, RBW=VBW=1MHz,
Sweep time=Auto, Detector mode=Positive peak

9.4. Test Data

Pass

Please refer to Appendix F of the Appendix Test Data.



APPENDIX I -- TEST SETUP PHOTOGRAPH

Please refer to separated files Appendix I -- Test Setup Photograph

APPENDIX II -- EXTERNAL PHOTOGRAPH

Please refer to separated files Appendix II -- External Photograph

APPENDIX III -- INTERNAL PHOTOGRAPH

Please refer to separated files Appendix III -- Internal Photograph

----- End of Report -----

