

RF TEST REPORT

Report No.: SHATBL2509003W03

Applicant : Franklin Technology Inc.**Product Name** : BE3600 Router**Brand Name** : Quvo**Model Name** : FX21-BE36**Series Model** : N/A**FCC ID** : XHG-FX21**Test Standard** : 47 CFR Part 2.1091**Date of Sample Arrival** : Aug.15, 2025**Date of Test** : Aug.15, 2025~Nov.20, 2025**Issue Date** : Nov.20, 2025**Report Prepared by** :*Chris Xu*

(Chris Xu)

Report Approved by :*Guozheng Li*

(Guozheng Li)

Authorized Signatory :*Terry Yang*

(Terry Yang)



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REVISION HISTORY

Rev.	Issue Date	Revisions	Revised by
A0	Nov.20, 2025	Initial Release	Guozheng Li



DECLARATION OF REPORT

1. The device has been tested by ATBL, and the test results show that the equipment under test (EUT) is in compliance with the requirements of 47 CFR Part 2.1091. And it is applicable only to the tested sample identified in the report.
2. This report shall not be reproduced except in full, without the written approval of ATBL, this document only be altered or revised by ATBL, personal only, and shall be noted in the revision of the document.
3. The general information of EUT in this report is provided by the customer or manufacture, ATBL is only responsible for the test data but not for the information provided by the customer or manufacture.
4. The results in this report is only apply to the sample as tested under conditions. The customer or manufacturer is responsible for ensuring that the additional production units of this model have the same electrical and mechanical components.
5. In this report, '☐' indicates that EUT does not support content after '☐', and '☑' indicates that it supports content after '☑'



1. GENERAL DESCRIPTION

1.1.Applicant

Name : Franklin Technology Inc.

Address : 906 JEI Platz, 186, Gasan digital1-ro, Geumcheon-gu, Seoul 08502 Korea

1.2.Manufacturer

Name : Franklin Technology Inc.

Address : 906 JEI Platz, 186, Gasan digital1-ro, Geumcheon-gu, Seoul 08502 Korea



1.4.General Information of EUT

General Information			
Equipment Name	BE3600 Router		
Brand Name	Quvo		
Model Name	FX21-BE36		
Series Model	N/A		
Model Difference	N/A		
Operation Frequency	WiFi 2.4GHz:2400MHz - 2483.5MHz WiFi 5GHz: 5180 ~ 5240MHz;5260 ~ 5320MHz;5500 ~ 5700MHz;5745 ~ 5825MHz;		
Modulation Type	WiFi 2.4GHz: 802.11b: DSSS (DBPSK/DQPSK/CCK) 802.11g/n: OFDM (BPSK/QPSK/16QAM/64QAM) 802.11ax/be: OFDM (BPSK/QPSK/16QAM/64QAM)		
	WiFi 5GHz: 802.11a/n(HT): OFDM (BPSK/QPSK/16QAM/64QAM) 802.11ac: OFDM (BPSK/QPSK/16QAM/64QAM/256QAM) 802.11ax/be: OFDMA (BPSK/QPSK/16QAM/64QAM/256QAM)		
Antenna Information	☒ SISO	Antenna Type:	Built-in
		Antenna 1 Gain:	2.4GHz WIFI :3.57dBi; 5GHz WIFI : 5180MHz~5240MHz:5.39dBi; 5260MHz~5320MHz:5.09dBi; 5500MHz~5700MHz:6.27dBi; 5745MHz~5825MHz:6.42dBi;
		Antenna 2 Gain:	2.4GHz WIFI :3.44dBi 5GHz WIFI : 5180MHz~5240MHz:5.52dBi; 5260MHz~5320MHz:5.11dBi; 5500MHz~5700MHz:5.94dBi; 5745MHz~5825MHz:5.94dBi;
	☒ Beam Forming	Beam Forming Gain:	3.0dBi
Adapter 1:	Model:YHSW-120150UA Input:100-240V~ 50/60Hz,0.75A MAX Output:DC 12V,1.5A,18W		
Adapter 2:	Model:DJ18W-1201500U Input:100-240V~ 50/60Hz,0.6A MAX Output:DC 12V,1.5A,18W		
Hardware Version	A1		
Software Version	FX21.AT.0001		
Connecting I/O Port(s)	Refer to the remark below.		

Remark:

The above information of EUT was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

1.5.Laboratory Information

Company Name	:	Shanghai ATBL Technology Co., Ltd.
Address	:	5-6/F., Unit 1, No 8,Free Trade one LifeScience No.160,Basheng Road,Pudong New District,Shanghai City,China
Telephone	:	+86(0)21-51298625
FCC-Registration Number:	:	485917
Designation Number:	:	CN1306
A2LA-Lab Cert. No.:	:	6184.01
ISED Designation Number:	:	27371



2. FCC 47CFR §2.1091 Requirement

2.1.Test Standards

According to §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

According to §1.1310 and §2.1091 RF exposure is calculated.

KDB447498 D01: Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies

2.2.Limit

Limits for Maximum Permissible Exposure (MPE)/Controlled Exposure

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density (mW/cm ²)	Averaging Time (minute)
Limits for Occupational/Controlled Exposure				
0.3 – 3.0	614	1.63	(100) *	6
3.0 – 30	1842/f	4.89/f	(900/f ²)*	6
30 – 300	61.4	0.163	1.0	6
300 – 1500	/	/	f/300	6
1500 – 100,000	/	/	5	6

Limits for Maximum Permissible Exposure (MPE)/Uncontrolled Exposure

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density (mW/cm ²)	Averaging Time (minute)
Limits for Occupational/Controlled Exposure				
0.3 – 3.0	614	1.63	(100) *	30
3.0 – 30	824/f	2.19/f	(180/f ²)*	30
30 – 300	27.5	0.073	0.2	30
300 – 1500	/	/	f/1500	30
1500 – 100,000	/	/	1.0	30

F=frequency in MHz

*=Plane-wave equivalent power density



2.3.MPE Calculation Method

Predication of MPE limit at a given distance

Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S=PG/4\pi R^2$$

Where: S=power density

P=power input to antenna

G=power gain of the antenna in the direction of interest relative to an isotropic radiator

R=distance to the center of radiation of the antenna

2.4.Antenna Information

EUT can only use antennas certificated as follows provided by manufacturer;

Transmitter Circuit	Peak Gain (dBi)	Antenna Type	Note
Antenna 1	3.57	Built-in	For 2.4GHz WIFI
Antenna 2	3.04	Built-in	For 2.4GHz WIFI
Antenna 1 Gain:	5180MHz~5240MHz:5.29dBi; 5260MHz~5320MHz:5.09dBi; 5500MHz~5700MHz:5.77dBi; 5745MHz~5825MHz:5.37dBi;	Built-in	For 5GHz WIFI
Antenna 2 Gain:	5180MHz~5240MHz:5.07dBi; 5260MHz~5320MHz:5.11dBi; 5500MHz~5700MHz:4.94dBi; 5745MHz~5825MHz:4.74dBi;	Built-in	For 5GHz WIFI
Beam Forming	3.0	Built-in	For WIFI

Note:

1).Only 802.11n/ac/ax mode support Beam forming mode.

2).Directional Gain for Power:

5180~5250MHz:

Directional Gain=8.19dBi;

5260~5320MHz:

Directional Gain=8.11dBi;

5500 ~ 5700MHz:

Directional Gain=8.38dBi;

5745 ~ 5825MHz:

Directional Gain=8.07dBi;

2412~2462MHz:

Directional gain =6.32dBi



2.5 Max. mode tune up power

Function		Max measure Power (dBm)	Max Target power with tune up (dBm)	Antenna Port
WiFi 2.4G Band	802.11ax20_2442MHz	26.95	27.5	Antenna 1
	802.11ax20_2462MHz	27.08	27.5	Antenna 2
WiFi 5G Band	802.11n_40_5755MHz	22.98	23	Antenna 1
	802.11ax_40_5230MHz	22.56	23	Antenna 2

Note:

1. The target power has included the maximum transmission power and tolerance values.
- 2.The above assessment is based on the maximum output power.



2.6.Test Result

As declared by the Applicant, the EUT is a wireless device used in a Mobile application, at least 25 cm from any body part of the user or nearby persons; from the maximum EUT RF output power, the minimum separation distance, $r=25\text{cm}$, as well as the gain of the used antenna is refer to section 4, the RF power density can be obtained.

Mode	Modulation Type	Max Target power with tune up (dBm)		Directional Gain (dBi)	Directional Gain (linear)	MPE (mW/cm ²)	MPE Limits (mW/cm ²)
		dBm	mW				
Transmit							
802.11ax20_2442MHz	WiFi 2.4GHz-Antenna 1	27.5	562.34	6.32	4.54	0.31	1.0000
802.11ax20_2462MHz	WiFi 2.4GHz-Antenna 2	27.5	562.34	6.32	4.54	0.31	1.0000
802.11n_40_5755MHz	WiFi 5GHz-Antenna 1	23.0	199.53	8.07	6.41	0.16	1.0000
802.11ax_40_5230MHz	WiFi 5GHz-Antenna 2	23.0	199.53	8.19	6.59	0.17	1.0000

Simultaneous transmission:

$$2.4\text{GHz WIFI Antenna 1+Antenna 2} = 0.31/1 + 0.31/1 = 0.62\text{mW/cm}^2 < 1$$

$$5\text{GHz WIFI Antenna 1+Antenna 2} = 0.16/1 + 0.17/1 = 0.33\text{mW/cm}^2 < 1$$

$$\text{Max. 2.4GHz+ 5GHz WIFI} = 0.31/1 + 0.31/1 + 0.16/1 + 0.17/1 = 0.95\text{mW/cm}^2 < 1$$

Note:

1. If nothing else, the report will only record the worst power.
2. The Maximum power is less than the limit, complies with the exemption requirements.
3. Max.WIFI Output power including turn-up tolerance.
4. The calculated distance is 25 cm.



*****END OF THE REPORT*****