

MPE TEST REPORT

Applicant Quectel Wireless Solutions Co., Ltd.

FCC ID XMR202107HC06U

Product Bluetooth Module

Brand Quectel

Model HC06U

Report No. R2106A0545-M1V1

Issue Date August 13, 2021

TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC 47 CFR Part 1 1.1310.** The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Prepared by: Yurui Zhao

Approved by: Guangchang Fan

Guangchang Fan

TA Technology (Shanghai) Co., Ltd.

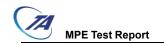
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Note: This revised report (Report No. R2106A0545-M1V1) supersedes and replaces the previously issued report (Report No. R2106A0545-M1). Please discard or destroy the previously issued report and dispose of it accordingly.

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Test Laboratory

Notes of the Test Report

This report shall not be reproduced in full or partial, without the written approval of TA technology

(shanghai) co., Ltd. The results documented in this report apply only to the tested sample, under the

conditions and modes of operation as described herein .Measurement Uncertainties were not taken

into account and are published for informational purposes only. This report is written to support

regulatory compliance of the applicable standards stated above.

1.2. Test facility

FCC (Designation number: CN1179, Test Firm Registration Number: 446626)

TA Technology (Shanghai) Co., Ltd. has been listed on the US Federal Communications Commission

list of test facilities recognized to perform measurements.

Testing Location 1.3

Company:

TA Technology (Shanghai) Co., Ltd.

Address:

No.145, Jintang Rd, Tangzhen Industry Park, Pudong Shanghai, China

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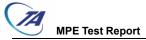


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1.4 Laboratory Environment

Temperature	Min. = 18°C, Max. = 25 °C		
Relative humidity	Min. = 30%, Max. = 70%		
Ground system resistance	< 0.5 Ω		
Ambient noise is checked and found very low and in compliance with requirement of standar			

Ambient noise is checked and found very low and in compliance with requirement of standards. Reflection of surrounding objects is minimized and in compliance with requirement of standards.



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2 Description of Equipment under Test

Client Information

Applicant Quectel Wireless Solutions Co., Ltd.			
Applicant address	Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai, China 200233		
Manufacturer	Quectel Wireless Solutions Co., Ltd.		
Manufacturer address	Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai, China 200233		

General Technologies

Model	HC06U
Lab internal SN	R2106A0545/S01
Hardware Version	V1.1
Software Version	HC06U_b8_210525_r6510
Date of Testing:	July 2, 2021 ~ July 16, 2021

Note: 1. The EUT is sent from the applicant to TA and the information of the EUT is declared by the applicant.

2. All indications of Pass/Fail in this report are opinions expressed by TA Technology (Shanghai) Co., Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only.

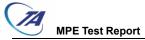


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3 Maximum conducted output power (measured) and antenna Gain

The numeric gain (G) of the antenna with a gain specified in dB is determined by Numeric gain (G)=10^(antenna gain/10)

Band		nducted Output r (dBm)	Antenna Gain	Numeric gain	
	(dBm)	(mW)	(dBi)		
Bluetooth (Low Energy)	2.09	1.618	1.0	1.259	



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4 Test Result

According to section 1.1310 of FCC 47 CFR Part 1, limits for maximum permissible exposure (MPE) are as following

TABLE 1 – LIMITS FOR MAXIMUN PERMISSIBLE EXPOSURE (MPE)

Frequency Range	Electric Field	Magnetic Field	Power Density	Averaging Time	
(MHz)	Strength	Strength		120	
A-5-000	(V/m)	(AVm)	(mW/cm2)	(minutes)	
	(A) Limits for Occu	upational/Controlle	Exposures		
0.3-3.0	614	1.63	*(100)	6	
3-30	1842/f	4.89/f	6		
30-300	61.4	0.163	6		
300-1500		f/300		6	
1500-100,000			5	6	
(B)	Limits for General	Population/Uncont	rolled Exposure		
0.3-1.34	614	1.63	*(100)	30	
1.34-30	824/f	2.19/f	*(180/f2)	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

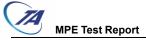
Note1. Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational / controlled limits apply provided he or she is made aware of the potential for exposure.

Note2: General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or can not exercise control over their exposure.

The maximum permissible exposure for 1500~100,000MHz is 1.0.So

Band	The maximum permissible exposure (mW/cm²)
Bluetooth LE	1.000

^{* =} Plane-wave equivalent power density



RF Exposure Calculations:

The following information provides the minimum separation distance for the highest gain antenna provided. This calculation is based on the conducted power, considering maximum power and antenna gain. The formula shown in KDB 447498 D01 is used in the calculation.

Equation from KDB 447498 D01 General RF Exposure Guidance v06 (10/23/2015) is:

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

Where: S = power density (in appropriate units, e.g. mW/cm²)

P = Time-average maximum tune up procedure (in appropriate units, e.g., mW)

G = the numeric gain of the antenna

R = distance to the center of radiation of the antenna (20 cm = limit for MPE)

Band	Antenna Gain (dBi)	Maximum Power (dBm)	Maximum EIRP (dBm)	PG (mW)	Test Result (mW/cm²)	Limit Value (mW/cm²)
Bluetooth LE	1.00	2.09	3.09	2.037	0.0004	1.000

Note: $\mathbf{R} = 20 \text{cm}$ $\mathbf{\pi} = 3.1416$

Note: For transmitters, minimum separation distance is 20cm, even if calculations indicate MPE distance is less.

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

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ANNEX A: The EUT Appearance

The EUT Appearance are submitted separately.

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