



RADIO TEST REPORT

Report No: STS2111213H01

Issued for

BTECH (BaoFeng Tech)

702 N Industrial Ave Arlington South Dakota United States
57212

Product Name:	GMRS mobile radio
Brand Name:	BTECH
Model Name:	GMRS-20V2
Series Model:	N/A
FCC ID:	2AGND20V2G
Test Standard:	FCC 47CFR §2.1091

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Test Report Certification

Applicant's Name..... : BTECH (BaoFeng Tech)
 Address : 702 N Industrial Ave Arlington South Dakota United States 57212
Manufacturer's Name : BTECH (BaoFeng Tech)
 Address : 702 N Industrial Ave Arlington South Dakota United States 57212

Product Description

Product Name..... : GMRS mobile radio
 Brand Name : BTECH
 Model Name : GMRS-20V2
 Series Model..... : N/A

Standards..... : FCC 47CFR §2.1091

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Date of Test..... :

Date of receipt of test item : 30 Nov. 2021
 Date (s) of performance of tests..... : 30 Nov. 2021 ~ 22 Feb. 2022
 Date of Issue..... : 22 Feb. 2022
 Test Result..... : **Pass**

Testing Engineer :

(Chris Chen)

Technical Manager :

(Sean she)

Authorized Signatory :

(Vita Li)





TABLE OF CONTENTS

1. GENERAL INFORMATION	5
1.1 GENERAL DESCRIPTION OF THE EUT	5
1.2 TEST FACTORY	5
2. FCC 47CFR §2.1091 REQUIREMENT	6
2.1 TEST STANDARDS	6
2.2 LIMIT	6
2.3 EUT OPERATION CONDITION	6
2.4 CLASSIFICATION	6
2.5 TEST RESULT	7





Revision History

Rev.	Issue Date	Report No.	Effect Page	Contents
00	22 Feb. 2022	STS2111213H01	ALL	Initial Issue





1. GENERAL INFORMATION

1.1 GENERAL DESCRIPTION OF THE EUT

Product Name	GMRS mobile radio	
Brand Name	BTECH	
Model Name	GMRS-20V2	
Series Model	N/A	
Model Difference	N/A	
Product Description	The EUT is GMRS mobile radio	
	Operation Frequency:	462MHz-467MHz
	Modulation Type:	GMRS
	Antenna gain:	0dBi
	Antenna Designation:	Dipole Antenna
Rating	Input: 13.8V	
Hardware Version	FSSM_U2.3	
Software Version	VW2106	

1.2 TEST FACTORY

SHENZHEN STS TEST SERVICES CO., LTD

Add. : A 1/F, Building B, Zhuoke Science Park, No.190 Chongqing Road, HepingShequ, Fuyong Sub-District, Bao'an District, Shenzhen, Guang Dong, China

FCC test Firm Registration Number: 625569

IC test Firm Registration Number: 12108A

A2LA Certificate No.: 4338.01



2. FCC 47CFR §2.1091 REQUIREMENT

2.1 TEST STANDARDS

The limit for Maximum Permissible Exposure (MPE) specified in FCC 1.1310 is followed. The gain of the antennas used in the product is extracted from the Antenna data sheets provided and also the maximum total power input to the antenna is measured. Through the Friis transmission formula and the maximum gain of the antenna, we can calculate the distance, away from the product, where the limit of MPE is reached.

Although the Friis Transmission formula is far field assumption, the calculated result of that is an over-prediction for near field power density. It is taken as worst case to specify the safety range.

2.2 LIMIT

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environmental impact of the 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)
Limits for Occupational / controlled Exposures			
300 - 1500	--	--	F/300
1500 – 100000	--	--	5.0
Limits for General population / Uncontrolled Exposure			
300 - 1500	--	--	F/1500
1500 – 100000	--	--	1.0

F= Frequency in MHz

Friss Formula

Friss Transmission Formula: $Pd = (Pout * G) / (4*pi*r^2)$

Where

Pd = power density in mW/cm²

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 3.1416

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

If we know the maximum gain of the antenna and the total output power to the antenna, through calculation, we will know MPE value at distance 20cm.

2.3 EUT OPERATION CONDITION

EUT was enabled to transmit and receive at lowest, middle and highest channels.

2.4 CLASSIFICATION

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user. Warning statement to the user for keeping at least 20cm or more separation distance from the antenna should be included in the User manual. So, this device is classified as Mobile device.



2.5 TEST RESULT

ANT Gain (G)

0dBi (gain of antenna in linear scale=1), Duty cycle=50%, R=49cm

Frequency (MHz)	Max Power (dBm)	Max Power (mW)	Correct Power (mW)	ANT Gain(gain of antenna in linear scale)	Power Density (mW/cm ²)	Limit (mW/c m ²)	Result
462.65	42.65	18407.72	9203.86	1	0.305	0.308	Pass

Note: 1. Only show the worst case in this report.

2. Correct power=MAX Power*Duty cycle.

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

