

1. GENERAL INFORMATION

1.1 Product Description

a) Type of EUT	: Transmitter / Wireless Microphone
b) Trade Name	: MASCOT
c) Model No.	: QF-20
d) FCC ID	: JEBQF-20
e) Working Frequency	: 174-216MHz
f) Power Supply	: DC 3V Batteries

1.2 Characteristics of Device:

The EUT is a frequency modulation Transmitter / Wireless Microphone with following features :

Operation Frequency Range: 174MHz to 216MHz. Type of emission is 161KF3E for headset.

1. To adjust GT/MT Switch, and Gain Control, Simply push down both snap locks on the sides of battery cover and flip it backwards to expose the adjustment panel.
2. Before power on, ascertain if same channel was set up for both receiver and microphone. If not adjust to same channel accordingly.
3. The LED indicator flashes briefly when power on indicating normal battery status. If not flash occurs it has either no battery, the battery is drained or installed incorrectly. Change accordingly.
4. Plug the microphone connector into the input jack and tighten the connector screw by clockwise direction.

1.3 Test Methodology

Both conducted and radiated testing were performed according to the procedures in chapter 13 of ANSI C63.4. and section 2.1046, 2.1047, 2.1049, 2.1051, 2.1053, and 2.1055 of Part 2 of CFR 47

1.4 Test Facility

The open area test site and conducted measurement facility used to collect the radiated data is located on the roof top of Building at No. 34, Lin 5, Ding Fu Tsun, Linkou Hsiang, Taipei Hsien, Taiwan, R.O.C.

This site has been fully described in a report submitted to your office, and accepted in a letter dated Feb. 10, 2000.

3. OUTPUT POWER MEASUREMENT

3.1 Provision Applicable

According to § 74.861(e)(1)(i), the output power shall not exceed 50 milliwatts.

3.2 Measurement Procedure

1. Setup the configuration per figure 1 and 2 for frequencies measured below and above 1 GHz respectively, adjusting the input voltage to produce the maximum power as measured in chapter 3.
2. Adjust the analyzer for each frequency measured in chapter 6 on a 1 MHz frequency span and 100 kHz resolution bandwidth.
3. The search antenna is to be raised and lowered over a range from 1 to 4 meters in horizontally polarized orientation. Position the highness when the highest value is indicated on spectrum analyzer, then change the orientation of EUT on test table over a range from 0 ° to 360 ° , and record the highest value indicated on spectrum analyzer as reference value.
4. Repeat step 3 until all frequencies need to be measured were complete.
5. Repeat step 4 with search antenna in vertical polarized orientations.
6. Replace the EUT with a tuned dipole antenna (horn antenna for above 1 GHz) relative to each frequency in horizontally polarized orientation and as the same polarized orientation with search antenna. Connect the tuned dipole antenna to a standard signal generator (SG) via a low loss cable. Power on the SG and tune the right frequency in measuring as well as set SG at a appreciated output level. Rise and lower the search antenna to get the highest value on spectrum analyzer, and then hold this position. Adjust the SG output to get a identical value derived from step 3 on spectrum analyzer. Record this value for result calculated.
7. Repeat step 6 until all frequencies need to be measured were complete.
8. Repeat step 7 with both dipole antenna (horn antenna for above 1 GHz) and search antenna in vertical polarized orientations.

3.3 Test Data

A. Channel Low (ERP)

Operated mode : Normal

Test Date : Jul. 03, 2002

Temperature : 25 °C

Humidity : 60 %

Frequency (MHz)	Meter Reading (dB μ V/m)	SG Reading (dBm)	Cable Loss (dB)	Result (dBm)	Output Power (mW)	Limit (mW)
174.591	69.3	-5.0	0.5	-5.5	0.28	50.0

B. Channel Mid (ERP)

Operated mode : Normal

Test Date : Jul. 03, 2002

Temperature : 25 °C

Humidity : 60 %

Frequency (MHz)	Meter Reading (dB μ V/m)	SG Reading (dBm)	Cable Loss (dB)	Result (dBm)	Output Power (mW)	Limit (mW)
195.592	70.7	-3.8	0.5	-4.3	0.37	50.0

C. Channel High (ERP)

Operated mode : Normal

Test Date : Jul. 03, 2002

Temperature : 25 °C

Humidity : 60 %

Frequency (MHz)	Meter Reading (dB μ V/m)	SG Reading (dBm)	Cable Loss (dB)	Result (dBm)	Output Power (mW)	Limit (mW)
215.837	75.9	1.2	0.6	0.6	1.15	50.0

3.3 Result Calculation

Result calculation is as following :

Result = SG Reading + Cable Loss + Antenna Gain Corrected

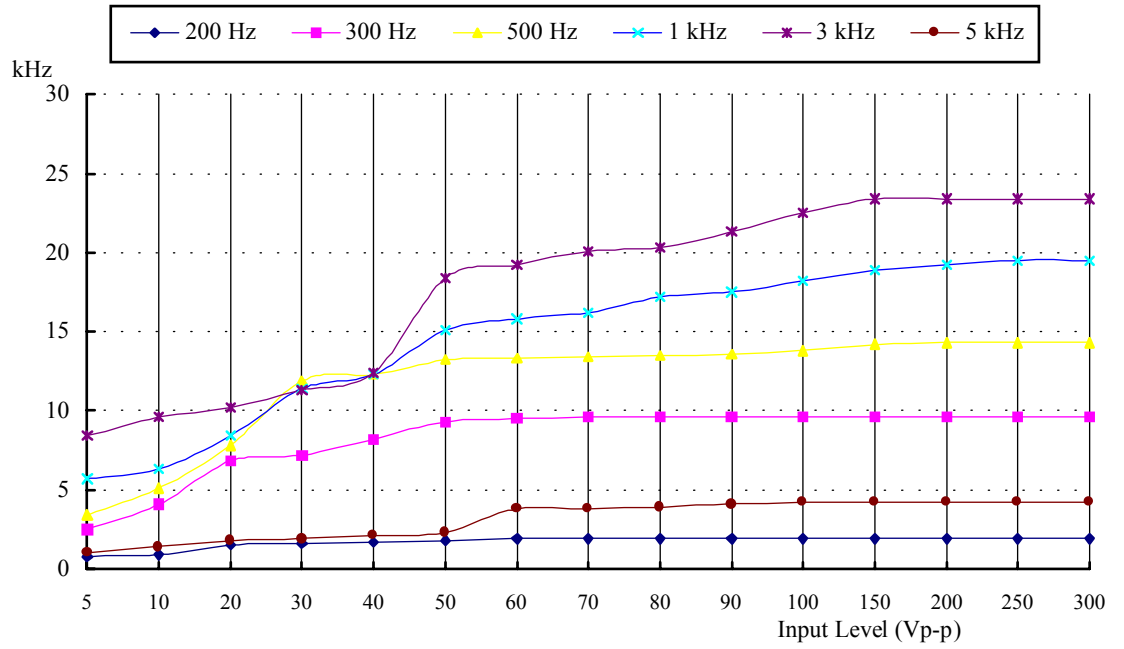
Antenna Gain Corrected : is used for antenna other than dipole to convert radiated power to ERP.

$$mW = \log^{-1} \left[\frac{\text{Result(dBm)}}{10} \right]$$

3.4 Test Equipment

Equipment	Manufacturer	Model No.	Next Cal. Date
EMI Test Receiver	R&S	ESBI	05/15/2003
Plotter	HP	7440A	N/A

B). Modulation Limit



C). Frequency response of all circuits

