TRC® Since1985
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Measurement of MPE

1. Foreword

In adopt with the Human Exposure IEEE C95.1, and according to the FCC 1.1310. The *Maximum Permissible Exposure (MPE)* is obligated to measure in order to prove the safety of radiation harmfulness to the human body.

The *Gain* of the antenna used is measured in an *Anechoic chamber*. The *maximum total power to the antenna* is to be recorded. By adopting the ***Friis Transmission Formula*** and the *power gain of the antenna*, we can find the distance right away from the product, where the limit of the MPE is.

2. Description of EUT

EUT	**:**	External Conexant 56K Data/Fax Bluetooth Modem
Model No.	**:**	BT-56SA-SCD
FCC ID	**:**	JCHBT56SASCD
Classification	**:**	Mobile Device (i) Under normal use condition, the antenna is at least 20cm away from the user; (ii) Warning statement for keeping 20cm separation distance and the prohibition of operating next to the person has been printed in the user's manual
Frequency Range	**:**	2400 MHz to 2483.5 MHz
Support Channel	**:**	80 Channels
Channel Spacing	**:**	1 MHz
Modulation Skill	**:**	GFSK
Power Type	**:**	Powered by the AC Adapter (Model No.: MW41-0900800UA) (I/P: 230VAC, 50Hz; O/P: 9VAC, 800mA)
Applicant	**:**	WELL Communication Corp. 11F, No. 788, Chung Cheng Rd., Chung Ho City, Taipei Hsien, Taiwan, R.O.C.

3. Limits for *Maximum Permissible Exposure (MPE)*

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Filed Strength (H) (A/m)	Power Density (S) (mW/cm2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)
(A) 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
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	100	30
1.34-30	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

[The EUT is tested in transmit and receive modes and in the first, middle and the last channel separately. The following shows only our observation have the greatest emissions.]

According to **OET BULLETIN 56 Fourth Edition/August 1999**, **equation for predicting RF fields, by the *Friis Transmission Formula*:**

Power density at the specific separation (portable): $S = \frac{PG}{4\pi R^2} = \frac{2.12 \times 1.995}{4\pi (20)^2} = 8.414 \times 10^{-4}\, mW/cm^2$

Estimated safe separation: $R = \sqrt{\frac{PG}{4\pi}} = \sqrt{\frac{2.12 \times 1.995}{4\pi}} = 0.58 cm$

Remarks: "The safe estimated separation that the user must maintain from the antenna is at least 0.58 cm."

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

P = *power input* to the antenna (in appropriate units, e.g., mW)

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

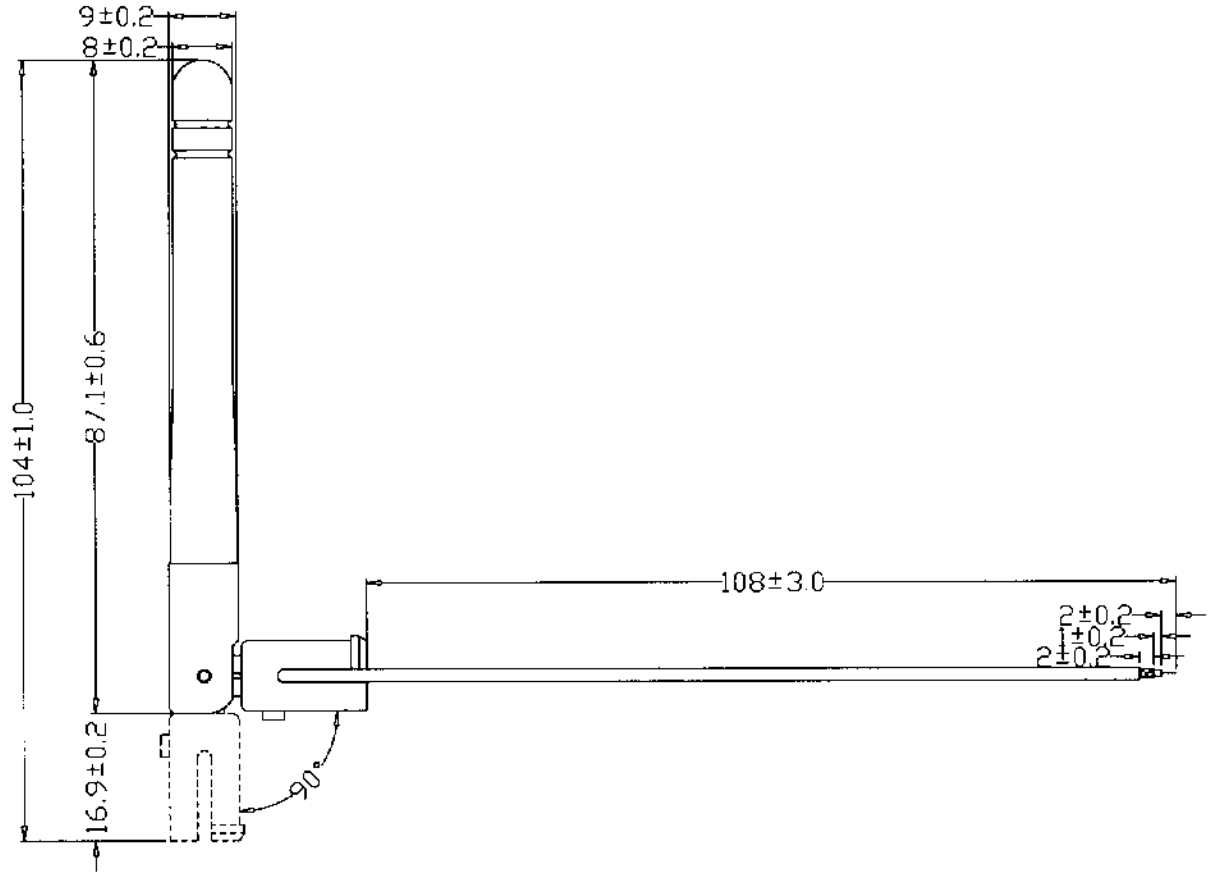
R = *distance* to the center of radiation of the antenna (appropriate units, e.g., cm)

The *Numeric gain G* of antenna with a gain specified in dB is determined by:

G = Log $^{-1}$ (dB antenna gain/10)

G = Log $^{-1}$ (3 / 10) = 1.995

REVISIONS			
REV	BY	DESCRIPTION	DATE
1			



ITEM NO.	QTY REQD	PART NUMBER	DESCRIPTION
1			

PARTS LIST

METRIC

THIRD ANGLE PROJECTION

DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED
TOLERANCES ARE:
DECIMALS: X ± 0.50, .X ± 0.25, .XX ± 0.13
ANGLES: ± 1/2°

MATERIAL: 1
FINISH: 2

DO NOT SCALE DRAWING

DRAWN | DATE
CHECK | DATE
DESIGN | DATE

REV A0
SIZE A4
SHEET 1 OF 1
SCALE 1/1

欣格科技股份有限公司
Antenniques Corp. Ltd.

TITLE: 宏博 MCF003A-204-01

PART NO. MCF003A-204-01
DRAWING NO. WR-R-AD0225-A1

TECHNICAL DATA

● Electrical Properties

Frequency Range	: 2.4～2.5GHz
Impedance	: 50 Ohm nominal
VSWR	: ≦2.0
Gain	: 3dBi
Radiation	: Omni
Polarization	: Vertical
Electrical Wave	: λ/4 Dipole

● Mechanical Properties

Antenna Cover	: PU
Color	: Black
Operation Temperature	: -20℃～+60℃
Storage Temperature	: -30℃～+75℃