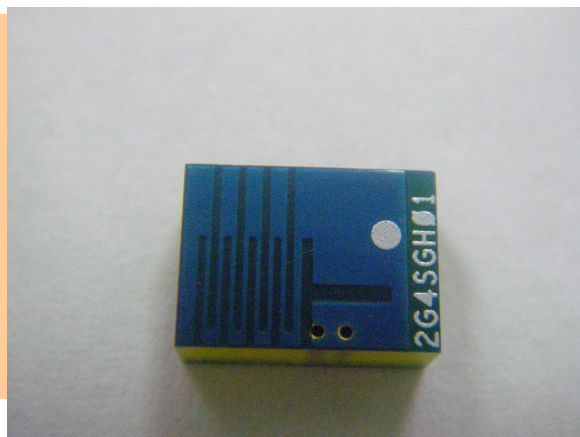


BS-MoVA Technology Co., Ltd.

2.4GHz Chip Antenna with Back Ground



Features:

1. Single Band available
2. Special customer design

W T E 8 6 0 0 2

(1) (2) (3) (4) (5)

(1) System code :

(2) Area code :

(3) Product type :

(4) Customer code :

(5) Suffix :

DESIGNED BY : wilson

TITLE: WTE86002

UNIT : mm

Part No. 111010014

REV. : B1

Document No. 111010014

Website: <http://www.bs-mova.com.tw>

碧中科技股份有限公司(BS-MoVA Technology Co., Ltd.)

30265新竹縣竹北市台元街18號5樓之6(台元科技園區)

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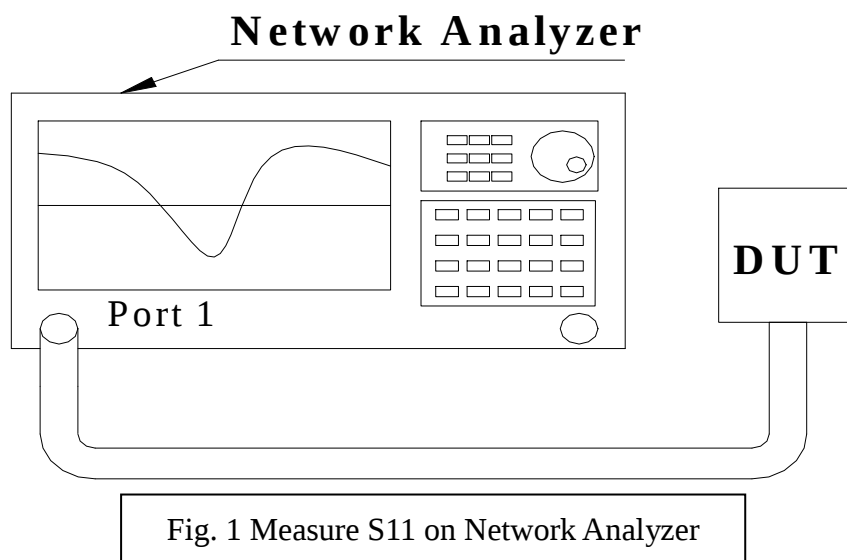
I. Measurement Setup:

(1) Reflection Coefficient Measurement :

a. Instrument : Network Analyzer

b. Setup :

- I.** Calibrate the Network Analyzer by one port calibration using O.S.L calibration kits.
- II.** Connect the antenna under test to the Network Analyzer.
- III.** Measure the S11 (reflection coefficient) shown in Fig. 1.
- IV.** Generally, the S11 is less than -10dB to ensure the 90% power into antenna and only less than 10% power back to system.



(2) Pattern Measurement:

- a.** The anechoic chamber is a far-field measurement system with size of $7\text{m} \times 3\text{m} \times 3\text{m}$.
The quiet zone region is $30\text{cm} \times 30\text{cm} \times 30\text{cm}$ at center of the rotator.
- b.** The probing antenna is the BBHA 9120 LFA 700MHz ~ 6GHz module (9120D horn antenna), which is placed in the one side of the chamber room. And the antenna under testing (AUT) is placed in the other side of the chamber. The distance between the probing antenna and the AUT is

about 4m.

- c. The gain is calibrated by the standard gain horn (BBHA 9120 LFA 700MHz ~ 6GHZ), and we do the gain calibration in each measurement.

$$G_{AUT} = G_{stand} + P_{AUT} - P_{stand}$$

G_{AUT} : Gain of AUT

G_{stand} : Gain of Standard Gain Antenna

P_{AUT} : Measured Power of AUT

P_{stand} : Measured Power of Standard Gain Antenna

- d. We use the HP 8753E for the pattern measure.
- e. The scanning method is CW wave with 6 degree by one step.
- f. We measure the radiation pattern in the free space situation at the lowest, middle and highest frequency for the H(X-Y), E1(Y-Z), and E2(X-Z) planes, which defined in figure next page.

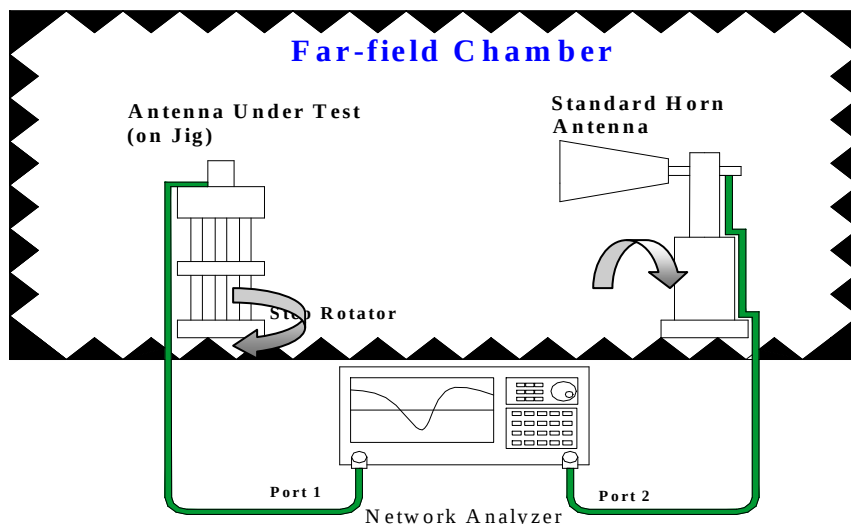


Fig. 2 Measure S21 on Network Analyzer

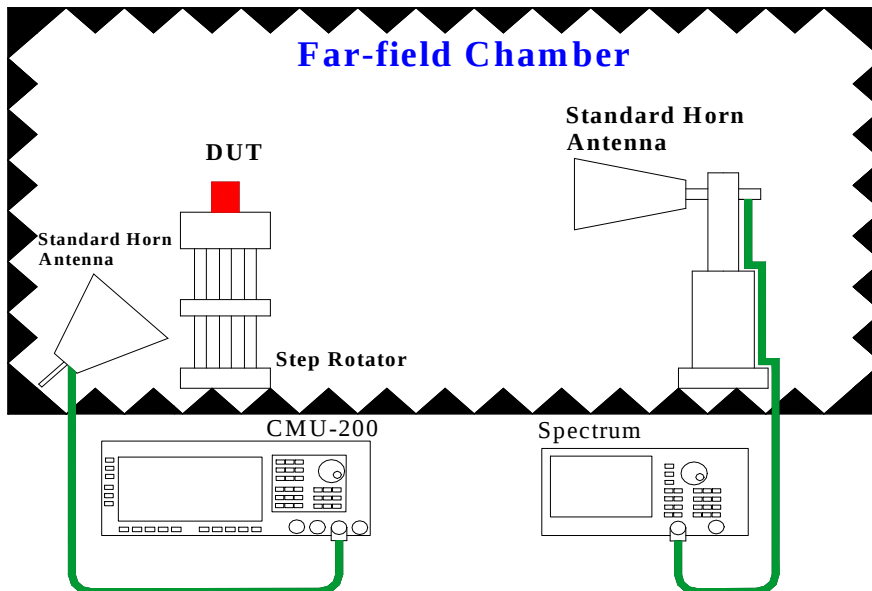


Fig.3 Measure EIRP on Network 、 CMU200

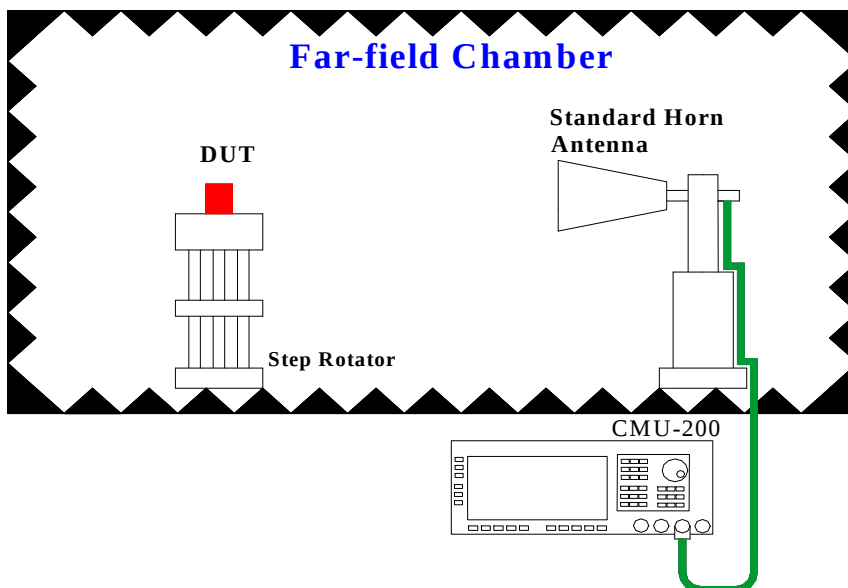
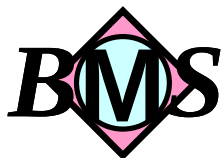
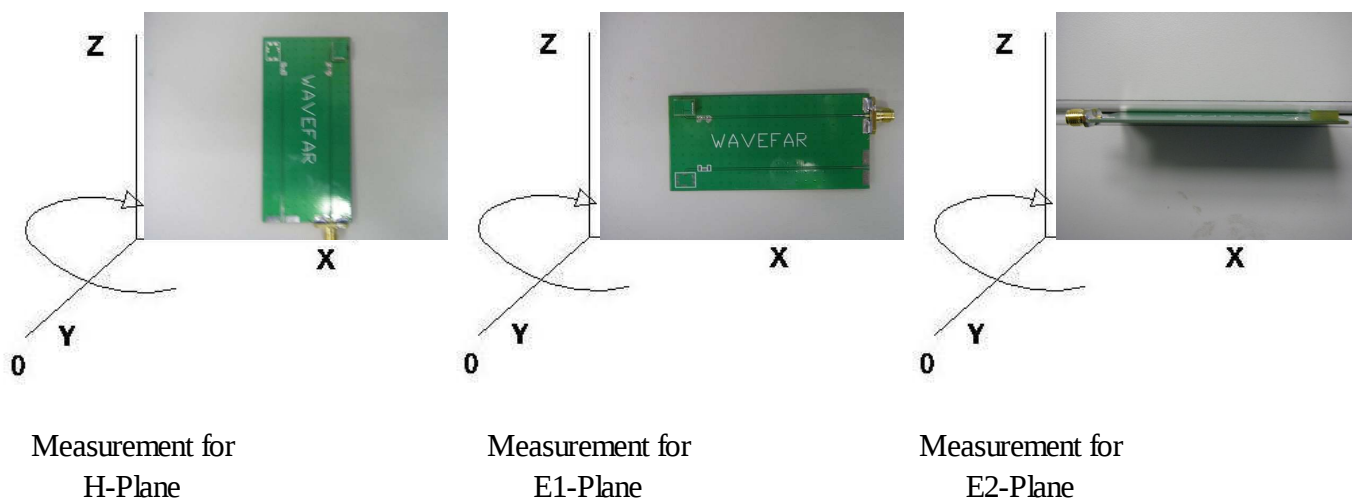


Fig. 4 Measure EIRS on CMU200



(3) Pattern Definition:



Measuring technique is to connect antenna with DUT jig, then place DUT jig into chamber for later measurement.

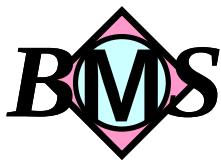
Fig. 5 Pattern Definition

II. Electrical Properties:

(1) Summary:

Item	Property
Impedance	50 (Typ.)
Radiation pattern	Vertical Polarization

Tab. 1 Summary Properties



(2) VSWR and Return Loss:

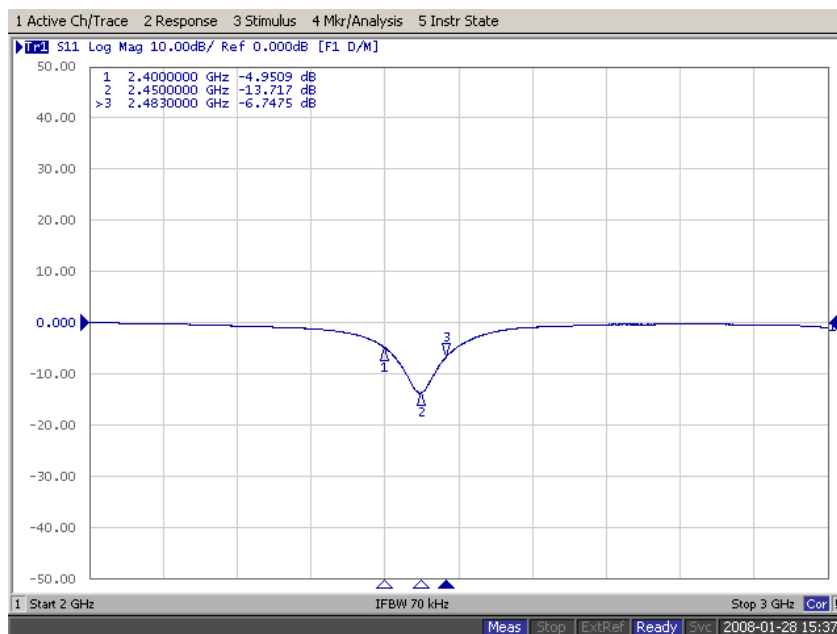


Fig. 6 Return loss

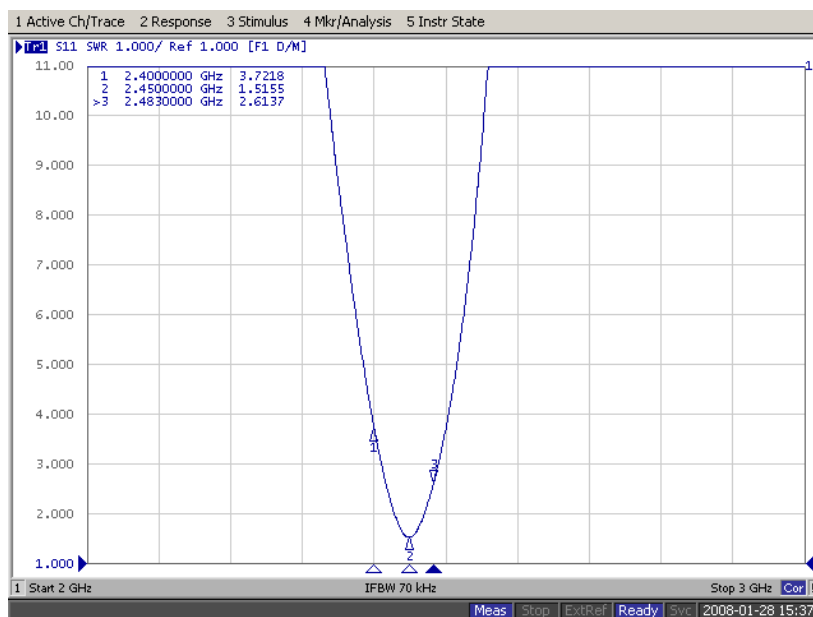
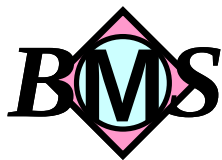
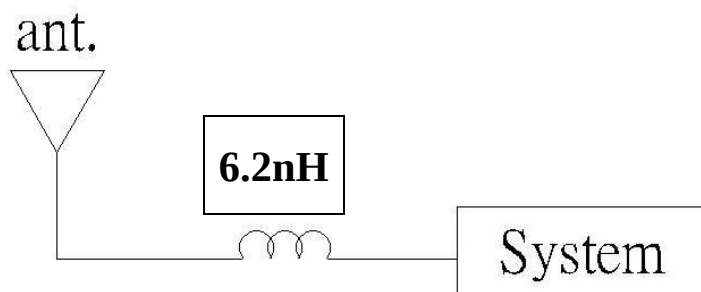


Fig. 7 VSWR



(3) Matching circuit:

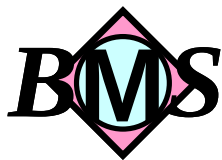


III. Measurement Value:

Gain Measurement Value :

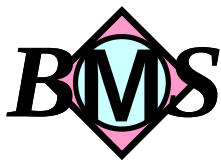
H-Plane	Unit (dBi)	Max	Min	Average
	2400	-5.39	-14.14	-8.02
	2450	-4.52	-12.36	-7.12
	2483	-5.83	-13.29	-8.25

E1-Plane	Unit (dBi)	Max	Min	Average
	2400	-3.62	-10.89	-6.21
	2450	-2.27	-9.49	-4.97
	2483	-3.35	-10.03	-5.99



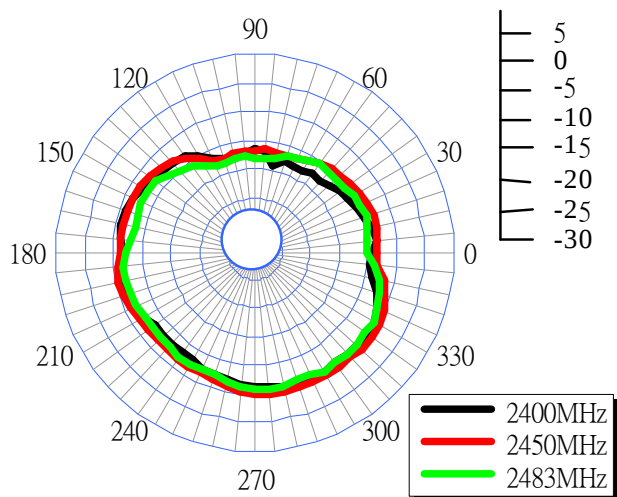
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E2-Plane	Unit (dBi)	Max	Min	Average
	2400	-2.78	-16.25	-7.11
	2450	-1.56	-13.91	-5.95
	2483	-3.05	-14.93	-7.06

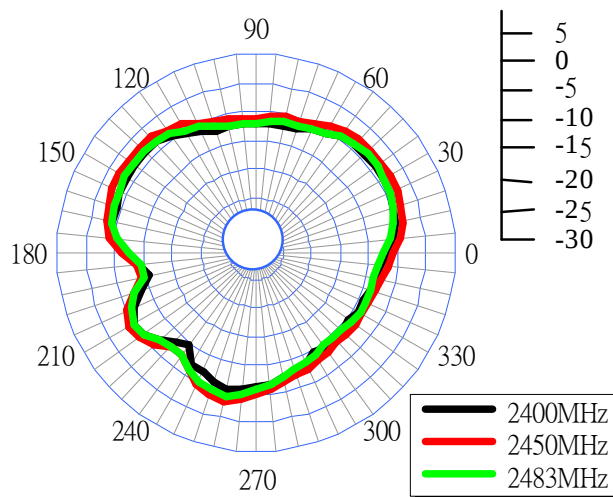


Gain Measurement Radiation Patterns:

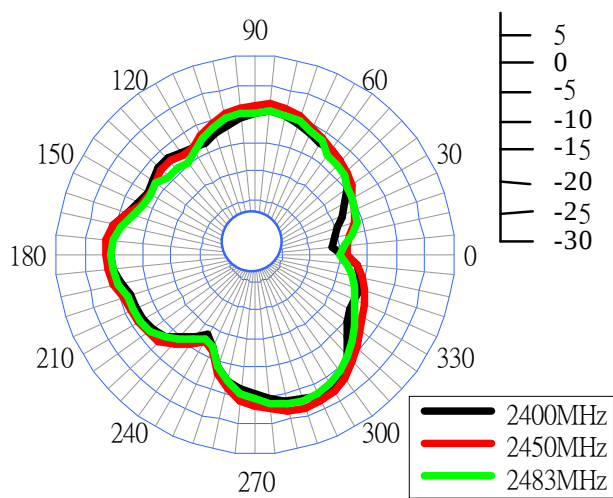
2.4G H-Plane

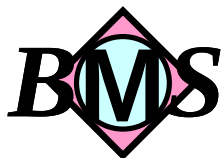


2.4G E1-Plane



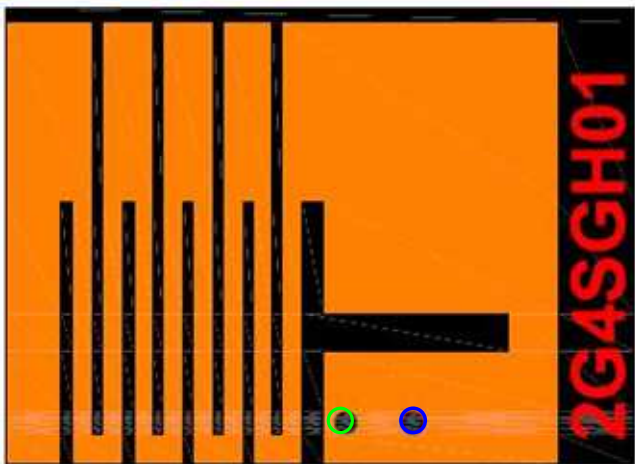
2.4G E2-Plane



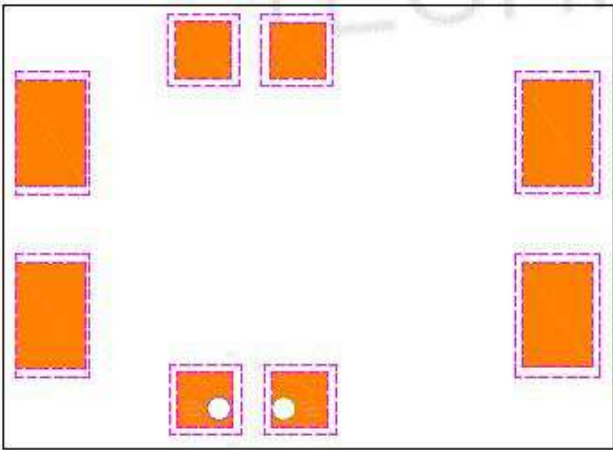


IV. Terminal Configuration:

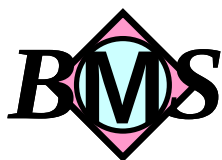
TOP Layer :



Bottom Layer :

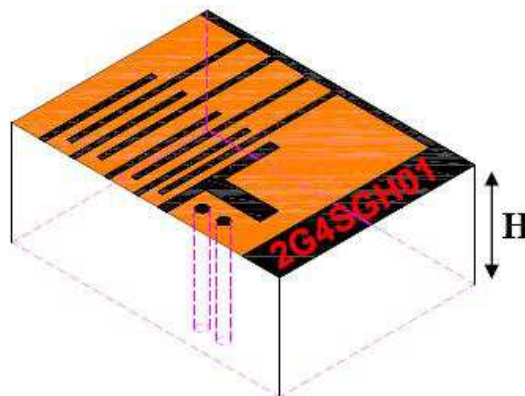
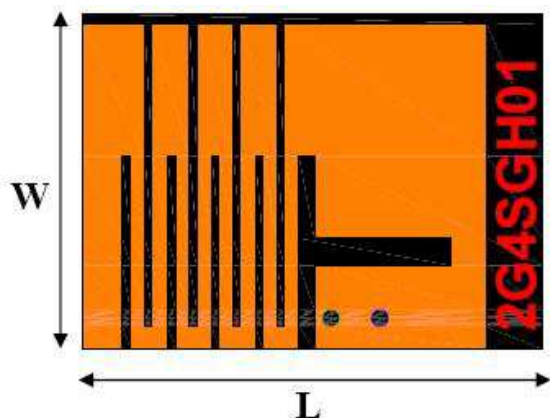


No.	Terminal Name
	NC
	NC
	Feeding Point
	Shorting Point
	NC
	NC
	NC
	NC

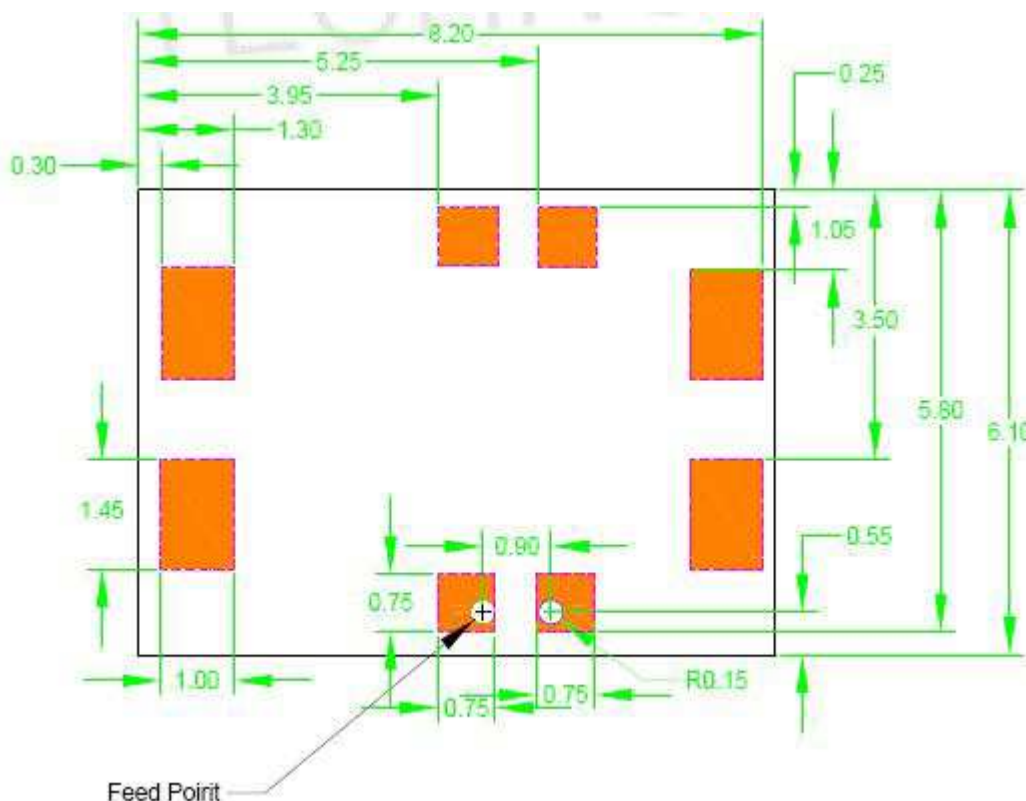


BS-MoVA Technology Co., Ltd.

Dimensions and Recommended PC Board Pattern



Mark	L	W	H
Dimensions	8.5 ± 0.5	6 ± 0.5	3 ± 0.3



DESIGNED BY : wilson

UNIT : mm

REV. : B1

Website: <http://www.bs-mova.com.tw>

TITLE: WTE86002

Part No. 111010014

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