

***TPMS BSI-03
Antenna Performance
Test Report***

Version: 0.1

Project Name: TPMS BSI-03

Date : 2015/11/14

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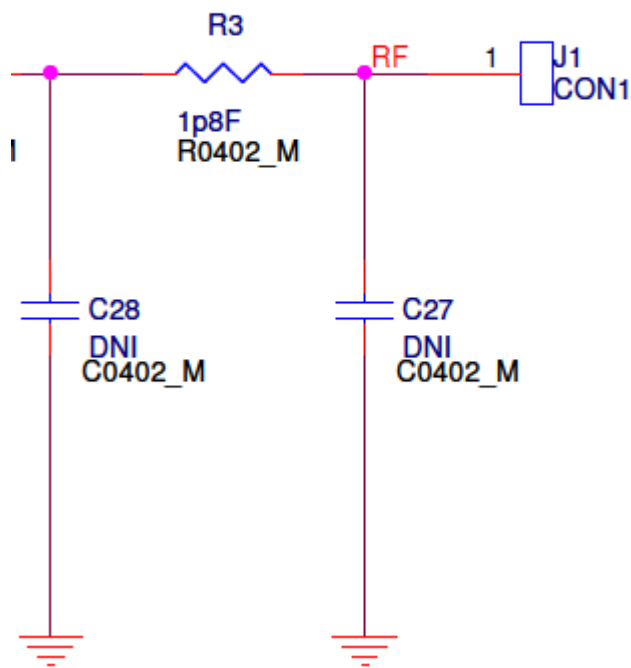
Sysgration

Document History

Rev.	Date	Author	Reason for Changes
0.1	2015/11/14	Eric Cheng	• First Release

Sysgration

1 Conducted RF Test



CIRCUIT

1.1 Test setup

1.1.1 Test Unit

1. Sample Phase: **DV1**
2. Hardware Version: **V2R1**
3. Firmware Version:

U1- SY-MQ12XXX : BLE_internal_TPMS_V1.15_20151203.bin

U2- 8700 : FXTH87xx11_Starter_Project_CW10_internal_900kpa_151209.abs.s19

1.2 Test Equipment

A. Measurement Setup

1. Reflection Coefficient Measurement

- (a) Equipment : Network Analyzer(Agilent E5071A) (Fig. 1)
- (b) Item : Impedance, Return loss, VSWR



Fig. 1 Network Analyzer

2. Gain Pattern Measurement

- (a) Equipment : Anechoic Chamber, Network Analyzer (Agilent E5071C), Standard Horn. (Fig. 2)
- (b) Item : Gain .

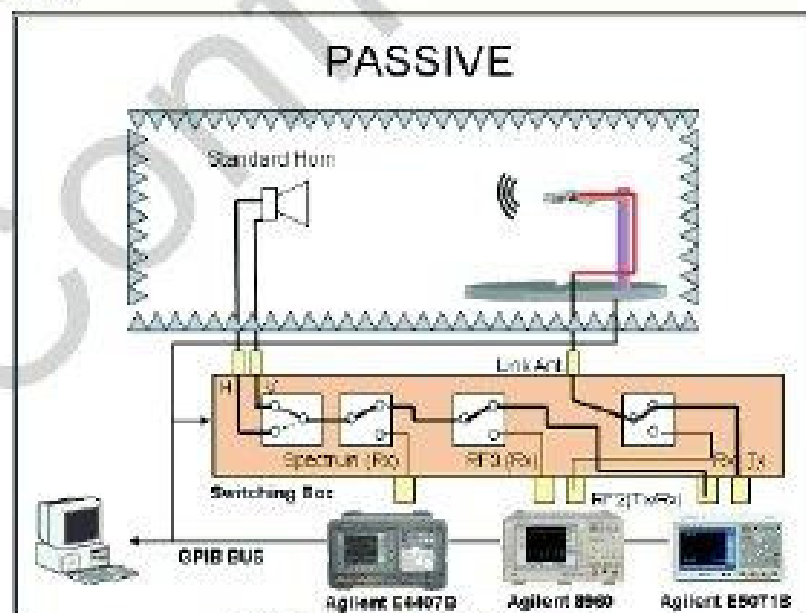
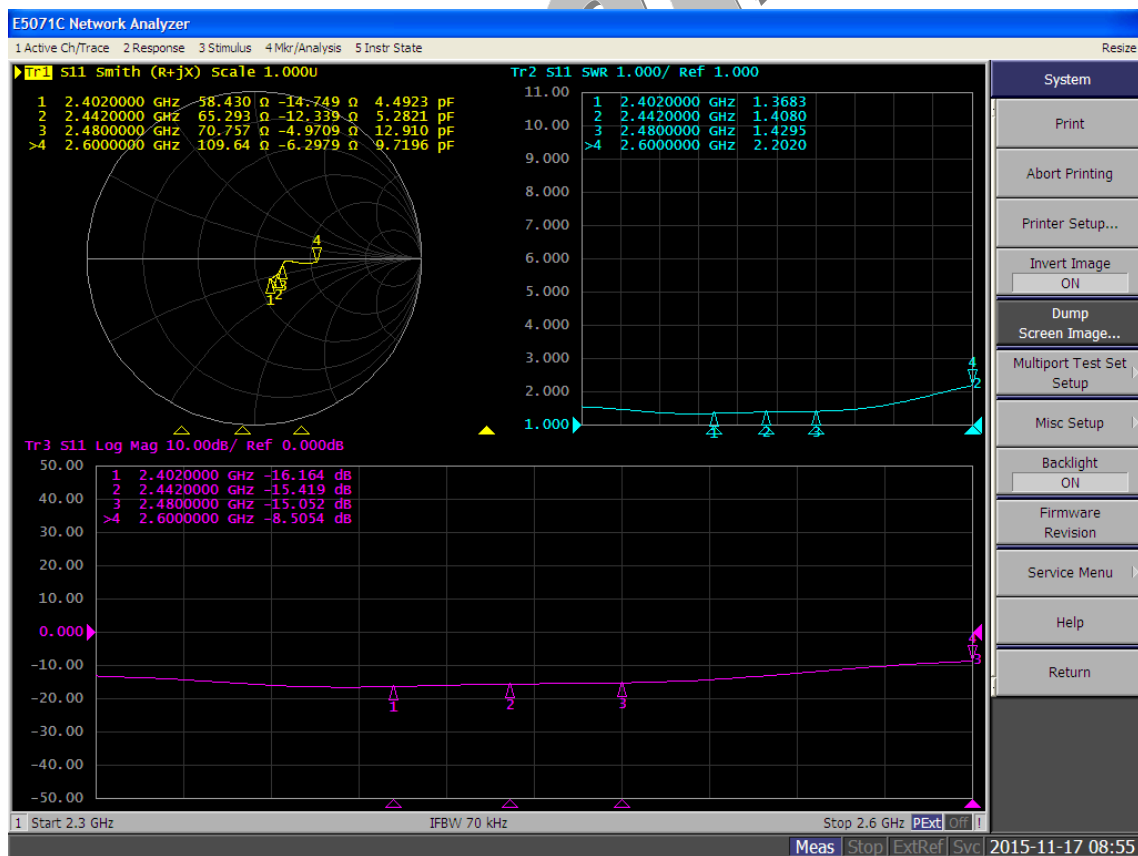


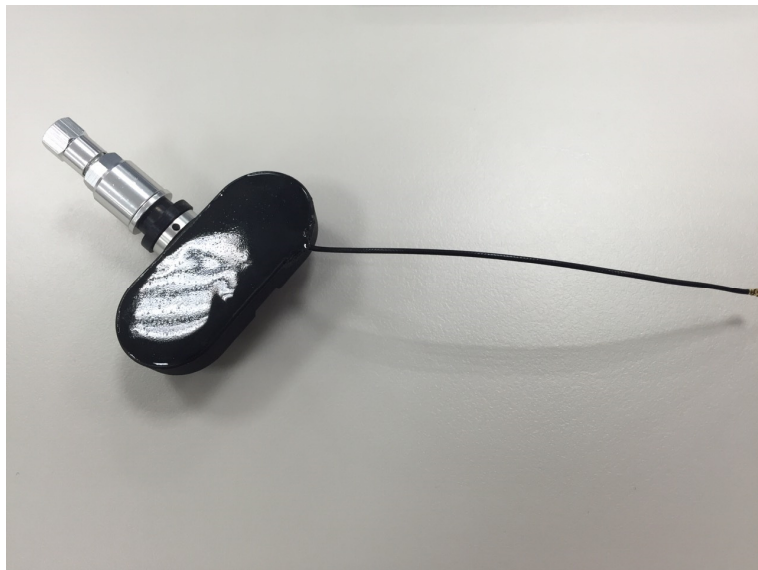
Fig. 2 Anechoic Chamber

1.3 Test Result and summary

1. Overview & Antenna Information. VSWR



1.4 Antenna performance for free space



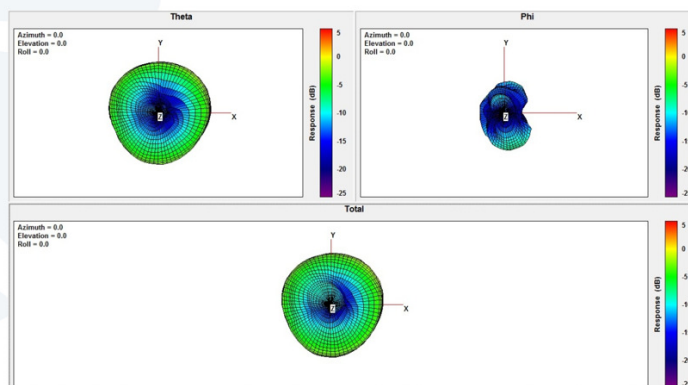
Antenna Matching **R3: 1.8pF**

1.5 3D Pattern at 2442MHz

3D Gain table

Patch Antenna			
Freq.	Gain (dBi)		Efficiency (%)
MHz	Tot. Rad. Pwr. (dBm)	Average Gain(dBi)	
2400	-1.35	-5.36	29.06
2450	-0.41	-4.82	32.95
2500	-0.05	-4.60	34.60

3D Radiation Patterns



PS.BSI-03 design in tire inner antenna for the best efficiency, but can not be placed in a passive test tire testing.