

FCC-SDOC TEST REPORT

For

FIBERLAND TECHNOLOGY CO., LTD

Product Name:	FIBER OPTICAL TRANSCEIVER
Brand Name:	FIBERLAND
Model Number:	See model list of fourth page
Prepared For:	FIBERLAND TECHNOLOGY CO., LTD
Address:	FLOOR 4, BLOCK H6, SHENYE ZILINSHAN, LONG GANG DISTRICT, SHENZHEN, P.R.CHINA
Prepared By:	Shenzhen Youbest Testing Technology Co., Ltd.
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Report No.:	YB181204131WB-FCC-B1

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TEST RESULT CERTIFICATION

Applicant : FIBERLAND TECHNOLOGY CO., LTD
Address : FLOOR 4, BLOCK H6, SHENYE ZILINSHAN, LONG GANG DISTRICT, SHENZHEN, P.R.CHINA
Manufacturer : FIBERLAND TECHNOLOGY CO., LTD
Address : FLOOR 4, BLOCK H6, SHENYE ZILINSHAN, LONG GANG DISTRICT, SHENZHEN, P.R.CHINA
EUT : FIBER OPTICAL TRANSCEIVER
Model Number : See model list of fourth page
Brand Name: : FIBERLAND
Date of Receipt: : December 03, 2018
Test Date : December 03-06, 2018
Date of Report : December 07, 2018
Test Result: : The equipment under test was found to be compliance with the requirements of the standards applied.
Test Procedure Used:
EMI : FCC CFR Title 47 Part 15 Subpart B:2017
ANSI C63.4:2014

Prepared by(Engineer): Nina Deng

Reviewer(Supervisor): Jack Li

Approved(Manager): Eric Sang



This test report is based on a single evaluation of one sample of above mentioned products. It is not permitted to be duplicated in extracts without written approval of Shenzhen Youbest Testing Technology Co., Ltd.

Model list

FLD-SG-SMS-20A/B	FLD-XENPAK-SR/LR/ER/ZR
FLD-S155-XXX-XX	FLD-10GD-S2S-XX
FLD-SG-XXX-XX	FLD-40GD-QS2QS-XX
FLD-S2.5G-XXX-XX	FLD-40GD-QS2FS-XX
FLD-S3G-XXX-XX	FLD-40GD-QS2FXF-XX
FLD-4G-XXX-XX	FLD-25GD-QS2QS-XX
FLD-GC-XX	FLD-100GD-QS2QS-XX
FLD-2.5GC-XX	FLD-100GD-QS2FS-XX
FLD-3GC-XX	FLD-10GA-S2S-XX
FLD-3GC-XX	FLD-40GA-QS2QS-XX
FLD-GD-XX-XX	FLD-100G-QS2QS-XX
FLD-2.5GD-XX-XX	FLD-QSFP+SR4,IIR4/LR4/BIDI/ER4
FLD-GCSFP-XX	FLD-CFP-SR/LR/ER
FLD-SFP+SR/LR/ER/ZR/ZR+	FLD-CFP2-SR/LR/ER
FLD-BIDI-SFP+LR/ER/ZR/ZR+	FLD-CFP4-SR/LR/ER
FLD-CWDM-SFP+XX	FLD-QSFP28-SR4/LR4/ER4/PSM4/IIR4
FLD-DWDM-SFP+XX	FLD-S155-T
FLD-XFP-SR/LR/ER/ZR/ZR+	FLD-SG-T
FLD-BIDI-XFP-LR/ER/ZR/ZR+	FLD-SASG-T
FLD-CWDM-XFP-XX	FLD-10G-T
FLD-DWDM-XFP-XX	FLD-GPON-OLT-XX
FLD-X2-SR/LR/ER/ZR	

1. GENERAL INFORMATION

1.1 Description of Device (EUT)

EUT : FIBER OPTICAL TRANSCEIVER

Brand Name : FIBERLAND

Model Number : See model list of fourth page

Model Difference : The product's different for model number and appearance color.

Power Supply : DC 3.3V

Working
Frequency : Below 108MHz

Note: FLD-SG-SMS-20A was selected as the test model and the data's have been recorded in this report.

1.2 Tested System Details

None.

1.3 Test Uncertainty

Conducted Emission Uncertainty : $\pm 2.57\text{dB}$

Radiated Emission Uncertainty : $\pm 4.51\text{dB}$

2. TEST INSTRUMENT USED

For Conducted Emission at the mains terminals Test

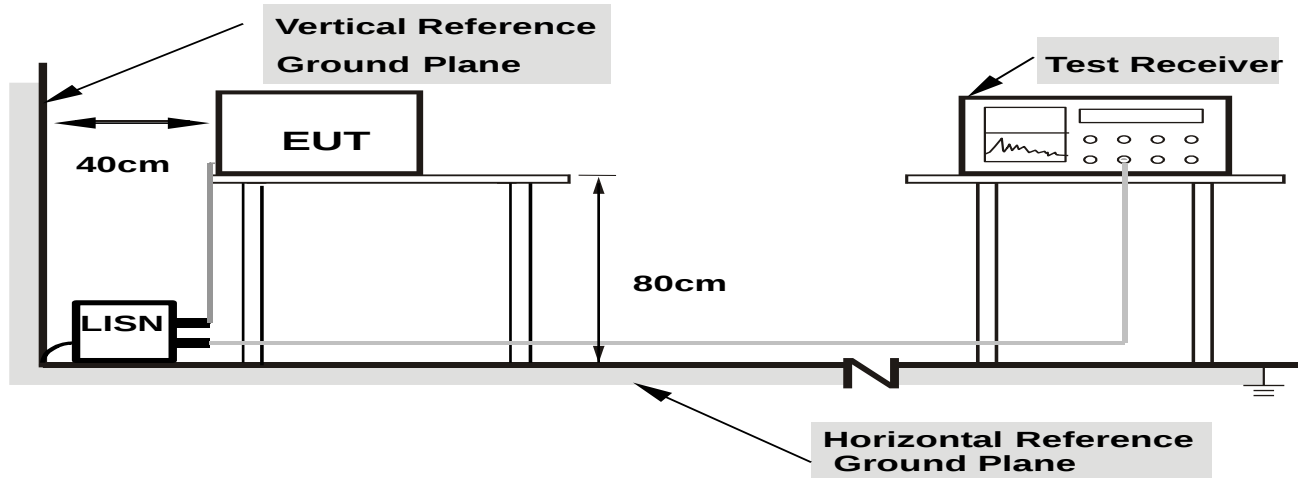
Conducted Emission Test (854 --- site)					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
843 Shielded Room	ChengYu	843 Room	843	Aug. 15, 2018	Aug. 14, 2019
EMI Receiver	R&S	ESCI	101421	Aug. 15, 2018	Aug. 14, 2019
LISN	SCHWARZBECK	NSLK8127	812779	Aug. 15, 2018	Aug. 14, 2019

For Radiated Emission Test

Radiation Emission Test (966 chamber)					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
966 chamber	ChengYu	966 Room	966	Aug. 15, 2018	Aug. 14, 2019
Spectrum Analyzer	Agilent	E4407B	MY45109572	Aug. 15, 2018	Aug. 14, 2019
Amplifier	Schwarzbeck	BBV9743	9743-119	Aug. 15, 2018	Aug. 14, 2019
Amplifier	Schwarzbeck	BBV9718	9718-270	Aug. 15, 2018	Aug. 14, 2019
Log-periodic Antenna	Schwarzbeck	VULB9160	VULB9160-3369	Aug. 15, 2018	Aug. 14, 2019
EMI Receiver	R&S	ESCI	101421	Aug. 15, 2018	Aug. 14, 2019
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-1275	Aug. 15, 2018	Aug. 14, 2019
966 Cable 1#	CHENGYU	966	004	Aug. 15, 2018	Aug. 14, 2019
966 Cable 2#	CHENGYU	966	003	Aug. 15, 2018	Aug. 14, 2019

3. CONDUCTED EMISSION AT THE MAINS TERMINALS TEST

3.1 Block Diagram Of Test Setup



Note: 1.Support units were connected to second LISN.

2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

3.2 Test Standard

FCC Part 15

3.3 Power Line Conducted Emission Limit

Frequency MHz	Limits dB(μ V)	
	Quasi-peak Level	Average Level
0.15 ~ 0.50	66 ~ 56*	59 ~ 46*
0.50 ~ 5.00	56	46
5.00 ~ 30.00	60	50

Notes: 1. *Decreasing linearly with logarithm of frequency.

2. The lower limit shall apply at the transition frequencies.

3.4 EUT Configuration on Test

The following equipment's are installed on conducted emission test to meet FCC Part 15 requirement and operating in a manner which tends to maximize its emission characteristics in a normal application.

3.5 Operating Condition of EUT

3.5.1 Setup the EUT and simulators as shown in Section 3.1.

3.5.2 Turn on the power of all equipments.

3.5.3 Let the EUT work in test modes and test it.

3.6 Test Procedure

The EUT is put on the ground and connected to the AC mains through a Artificial Mains Network (AMN). This provided a 50ohm coupling impedance for the tested equipments. Both sides of AC line are checked to find out the maximum conducted emission levels according to the FCC CFR Title 47 Part 15 Subpart B:2017 regulations during conducted emission test.

The bandwidth of the test receiver (R&S Test Receiver ESCI) is set at 10KHz.

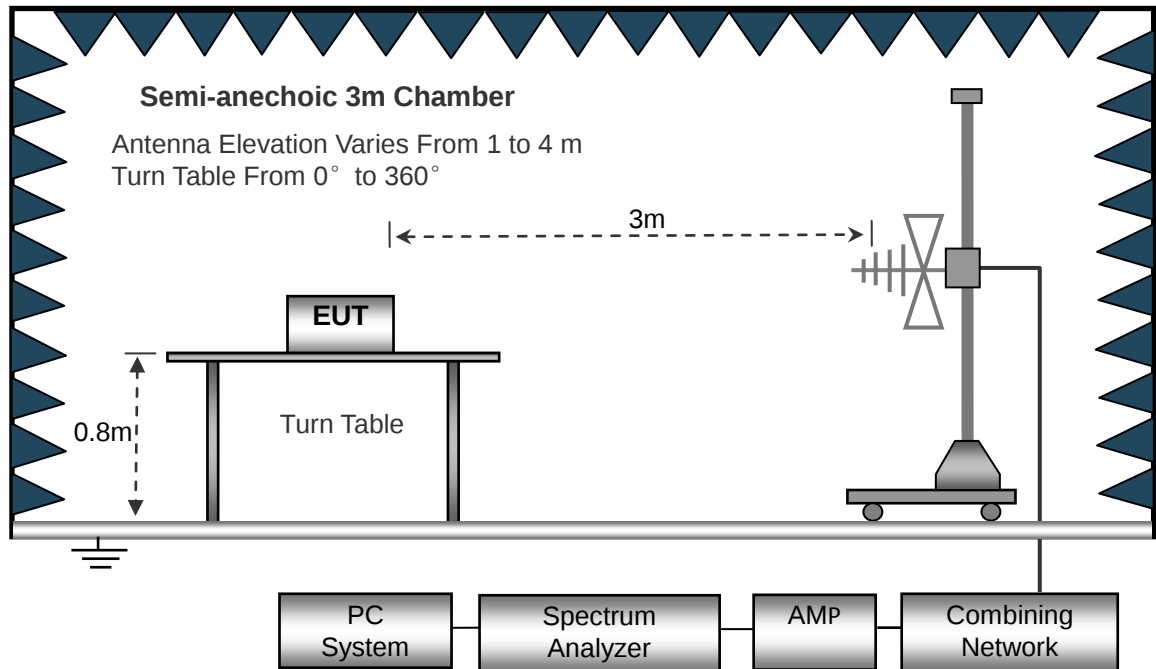
The frequency range from 150 KHz to 30 MHz is investigated.

3.7 Test Result

The EUT is DC input, no requirements for this item.

4. RADIATION EMISSION TEST

4.1 Block Diagram of Test Setup



4.2 Test Standard

FCC Part 15

4.3 Radiation Limit

FREQUENCY (MHz)	DISTANCE (Meters)	FIELD STRENGTHS LIMITS (dB μ V/m)
30 ~ 88	3	40.0
88 ~ 216	3	43.5
216 ~ 960	3	46.0
960 ~ 1000	3	54.0

Remark:

- (1) Emission level (dB(μ V)/m) = 20 log Emission level (μ V/m)
- (2) The smaller limit shall apply at the cross point between two frequency bands.
- (3) Distance refers to the distance in meters between the measuring instrument, antenna and the closed point of any part of the device or system.

4.4 EUT Configuration on Test

The FCC Part 15 regulations test method must be used to find the maximum emission during radiated emission test.

The configuration of EUT is the same as used in conducted emission test.

Please refer to Section 2.2.

4.5 Operating Condition of EUT

Same as conducted emission test, which is listed in Section 2.2 except the test set up replaced as Section 4.1.

4.6 Test Procedure

1) The radiated emissions test was conducted in a semi-anechoic chamber.

2) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane, but separated from metallic contact with the ground reference plane by 0.1m of insulation.

3) Before final measurements of radiated emissions, a pre-scan was performed in the spectrum mode with the peak detector to find out the maximum emissions spectrum plots of the EUT.

4) The frequencies of maximum emission were determined in the final radiated emissions measurement. At each frequency, the EUT was rotated 360°, and the antenna was raised and lowered from 1 to 4 meters in order to determine the maximum disturbance. Measurements were performed for both horizontal and vertical antenna polarization.

5) The bandwidth setting on the field strength meter (R&S Test Receiver ESCI) is set at 120KHz.

6) The frequency range from 30MHz to 1000MHz is checked.

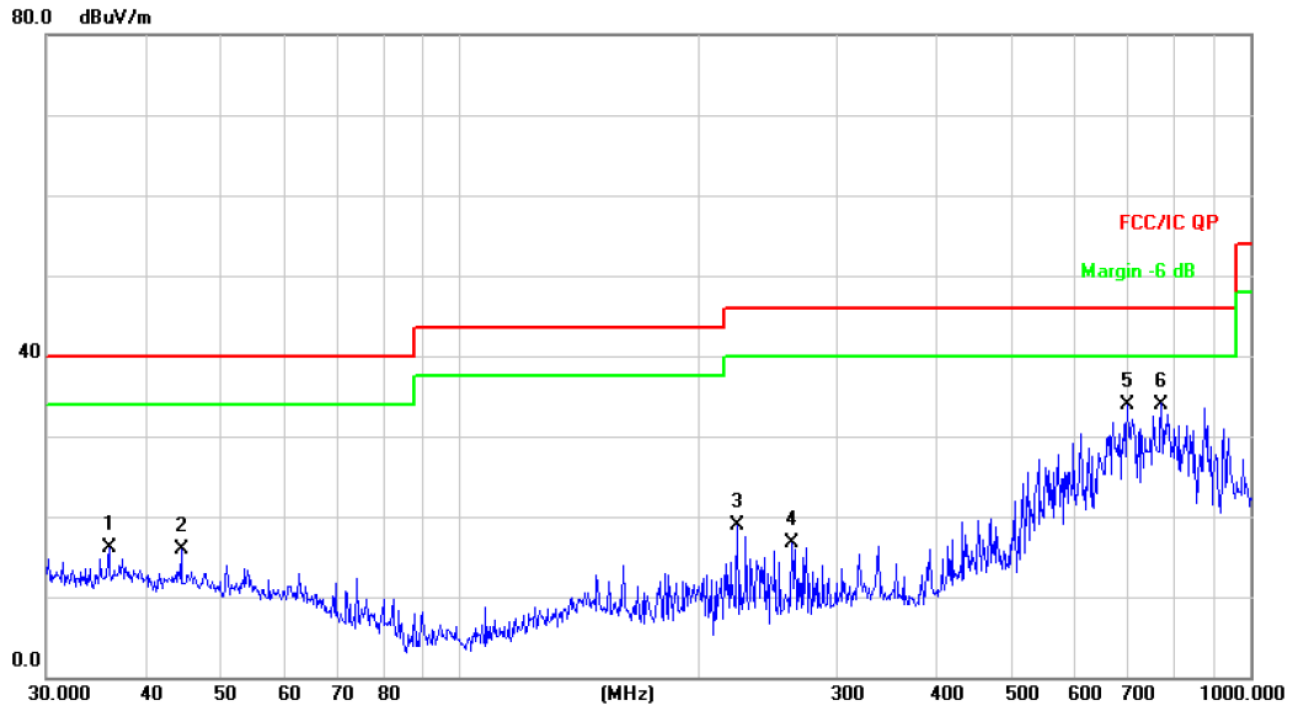
4.7 Test Result

PASS

Please refer to the following page.

Radiation Emission Test Data

Temperature:	24.5 °C	Relative Humidity:	54%
Pressure:	1009hPa	Phase :	Horizontal
Test Voltage :	DC 3.3V	Test Mode:	ON Mode

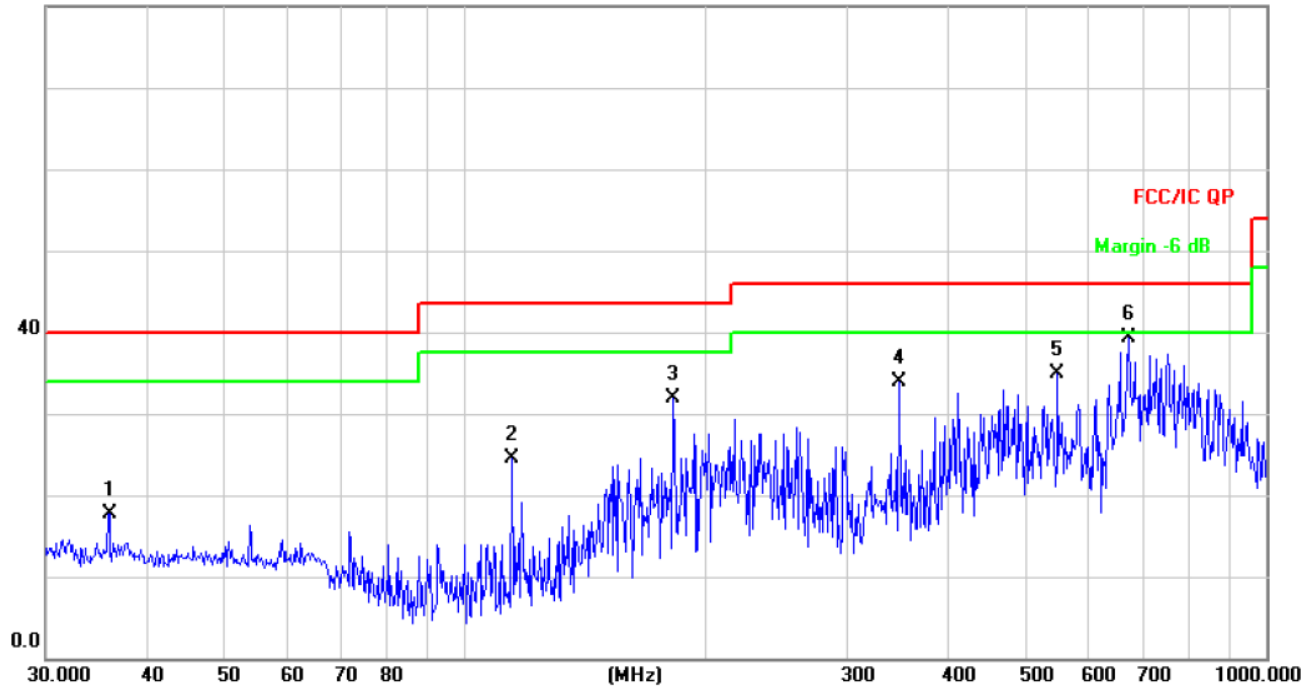


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	cm	degree
1		36.0007	24.62	-8.59	16.03	40.00	-23.97	QP		
2		44.4307	25.28	-9.40	15.88	40.00	-24.12	QP		
3		224.5192	34.28	-15.37	18.91	46.00	-27.09	QP		
4		262.8955	30.41	-13.80	16.61	46.00	-29.39	QP		
5		699.3046	38.22	-4.41	33.81	46.00	-12.19	QP		
6	*	771.4486	36.93	-2.93	34.00	46.00	-12.00	QP		

Radiation Emission Test Data

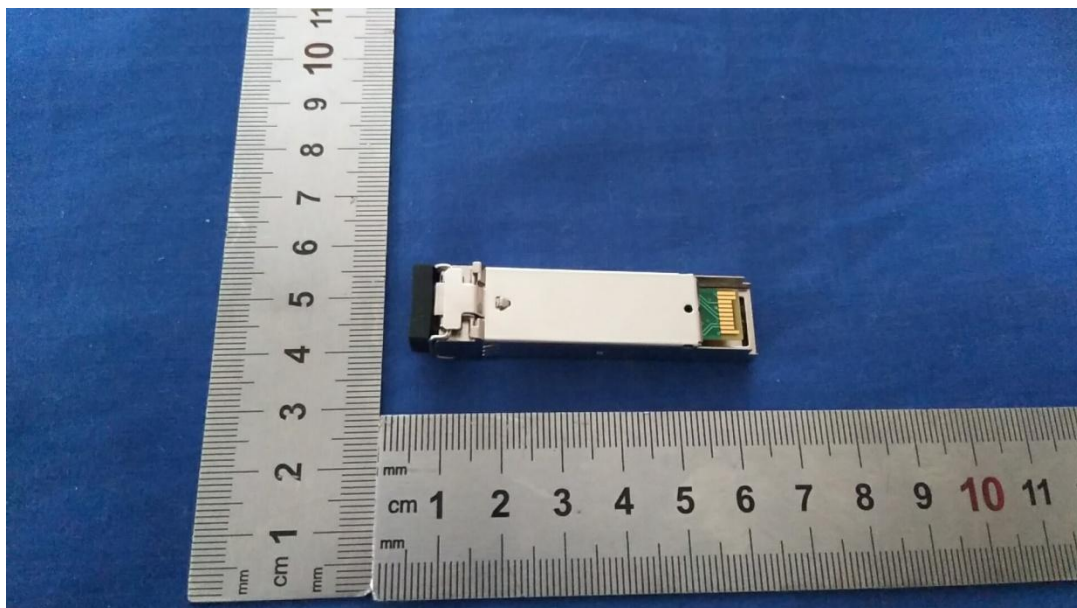
Temperature:	24.5 °C	Relative Humidity:	54%
Pressure:	1009hPa	Phase :	Vertical
Test Voltage :	DC 3.3V	Test Mode:	ON Mode

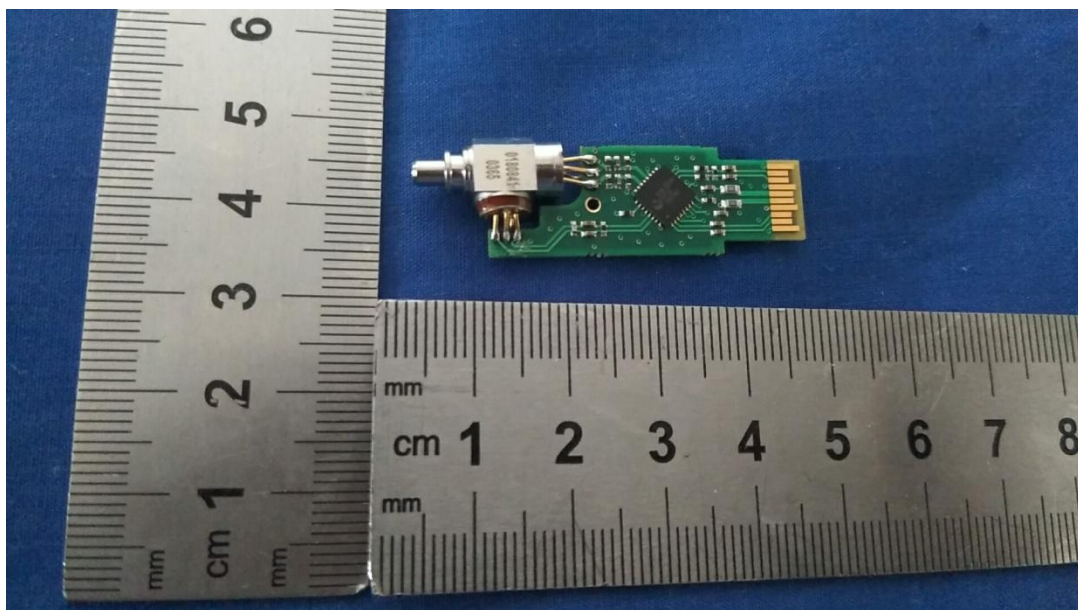
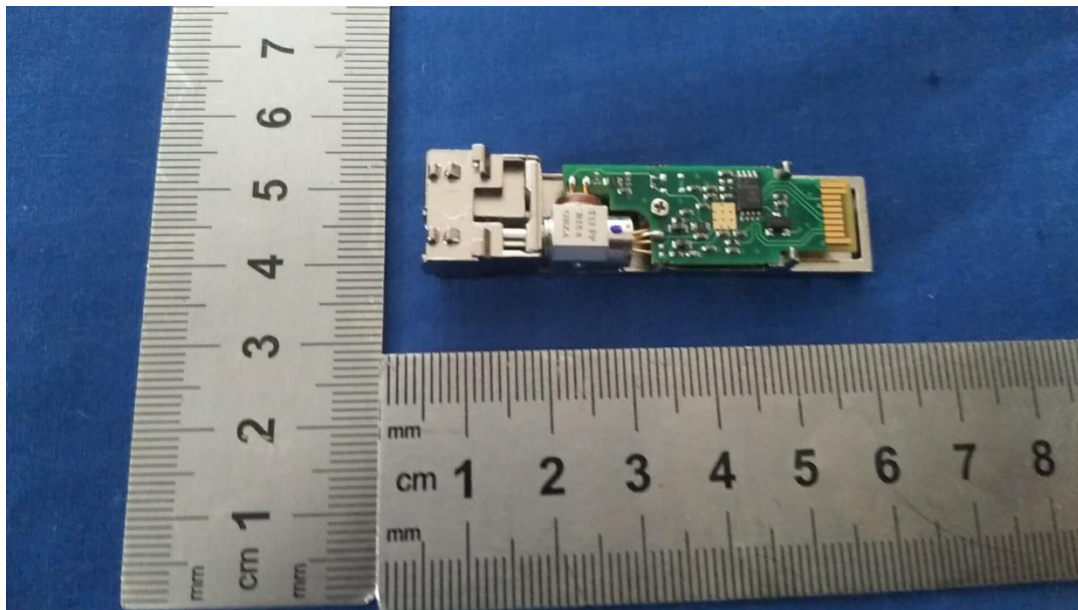
80.0 dBuV/m

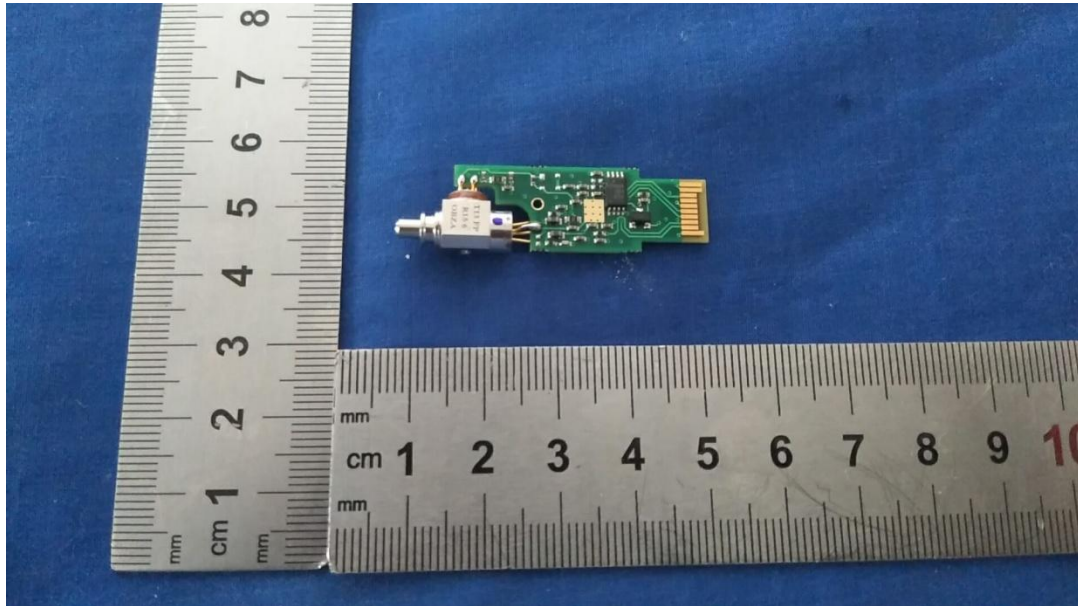


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		36.0007	26.36	-8.59	17.77	40.00	-22.23	QP		
2		114.5146	39.59	-15.18	24.41	43.50	-19.09	QP		
3		181.9202	46.43	-14.58	31.85	43.50	-11.65	QP		
4		348.0274	45.27	-11.42	33.85	46.00	-12.15	QP		
5		549.0195	42.01	-7.14	34.87	46.00	-11.13	QP		
6	*	672.8444	44.06	-4.80	39.26	46.00	-6.74	QP		

5 EUT PHOTOGRAPHS







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