

FCC Test Report

Application Purpose : Original grant
Applicant Name: : INFINIX MOBILITY LIMITED
FCC ID : 2ADYY- X601-LTE
Equipment Type : Mobile phone
Model Name : X601-LTE
Report Number : FCC16083896A-7
Standard(S) : FCC Part 15 Subpart C&E
Date Of Receipt : August 19, 2016
Date Of Issue : September 27, 2016

Test By : 

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REPORT REVISE RECORD

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	September 27, 2016	Valid	Original Report
V1.1	/	October 08, 2016	Valid	Original Report

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1. GENERAL INFORMATION

GENERAL DESCRIPTION OF EUT

Test Model	X601-LTE
Applicant	INFINIX MOBILITY LIMITED
Address	RMS 05-15, 13A/F SOUTH TOWER WORLD FINANCE CTR HARBOUR CITY 17 CANTON RD TST KLN HONG KONG
Manufacturer	SHENZHEN TECNO TECHNOLOGY CO.,LTD.
Address	1-4th Floor,3rd Building,Pacific Industrial Park,No.2088,Shenyan Road,Yantian District,Shenzhen,Guangdong,China
Equipment Type	Mobile phone
Brand Name	Infinix
Hardware version:	V2.1
Software version:	X601-H537B1-M-160715V13
Extreme Temp. Tolerance	-10℃ to +65℃
Battery information:	Li-ion Battery : BL-45BX Voltage: 3.85V Capacity: 4500mAh Limited Charge Voltage: 4.4V
Adapter Information:	Adapter: CQ—24KX Input: AC 100~240V 50/60Hz 600mA Output: DC 5~12V 2A
Operating Frequency	see the below table
Channels	see the below table
Channel Spacing	see the below table
Modulation Type	see the below table
Antenna Type:	PIFA Antenna
Antenna gain:	-5dBi
Data of receipt	August 19, 2016
Date of test	August 19, 2016 to September 27, 2016
Deviation	None
Condition of Test Sample	Normal

EUT Specification:

Items	Description
Modulation	IEEE 802.11a: OFDM IEEE 802.11n: see the below table
Data Modulation	IEEE 802.11a/n: OFDM (BPSK / QPSK / 16QAM / 64QAM)
Data Rate (Mbps)	IEEE 802.11a: OFDM 6,9,12,18,24,36,48, and 54 Mbps IEEE 802.11n: MCS 0-15 up to 150 Mbps
Frequency Range	Band 1: 5150 MHz ~ 5250 MHz Band 2: 5250 MHz ~ 5350 MHz Band 4: 5725 MHz ~ 5850 MHz
Channel Number	13 for 20MHz bandwidth ; 6 for 40MHz bandwidth
Communication Mode	☒ IP Based (Load Based) ☐ Frame Based
TPC Function	☒ With TPC ☐ Without TPC
Weather Band	☐ With 5600~5650MHz ☒ Without 5600~5650MHz
Beamforming Function	☒ With beamforming ☐ Without beamforming
Operating Mode	☐ Outdoor access point ☐ Indoor access point
	☐ Fixed point-to-point access points ☒ Mobile and portable client devices
	☐ Master ☒ Slave with radar detection
	☐ Slave without radar detection

Antenna	One (TX)	
Band width Mode	20 MHz	40 MHz
IEEE 802.11a	V	X
IEEE 802.11n	V	V

Protocol	Number of Transmit Chains (NTX)	Data Rate / MCS
802.11n (HT20)	1	MCS 0-15
802.11n (HT40)	1	MCS 0-15

Note 1: IEEE Std. 802.11n modulation consists of HT20 and HT40 (HT: High Throughput).
Then EUT supports HT20 and HT40.

Note 2: Modulation modes consist of below configuration:
HT20/HT40: IEEE 802.11n

We hereby certify that:

All measurement facilities used to collect the measurement data are located at QTC Certification & Testing Co., Ltd.

Registration Number: 588523

The data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C 63.4:2014 and TIA/EIA 603. The sample tested as described in this report is in compliance with the FCC Rules Part15 Subpart C&E.

ALL the testing was referenced KDB NO. 789033.

The test results of this report relate only to the tested sample identified in this report.

8. BAND EDGE EMISSIONS

8. 1 Test Equipment

Please refer to Section 4 this report.

8. 2 Test Procedure

Band Edge Emissions Measurement:	
Test Method:	a.)The EUT was tested according to ANSI C63.10. b)The EUT, peripherals were put on the turntable which table size is 1m x 1.5 m, table high <u>0.8</u> m. All set up is according to ANSI C63.10. c)The frequency spectrum from <u>9</u> kHz to 40 GHz was investigated. All readings from <u>9</u> kHz to <u>150</u> kHz are quasi-peak values with a resolution bandwidth of <u>200</u> Hz. All readings from <u>150</u> kHz to <u>30</u> MHz are quasi-peak values with a resolution bandwidth of <u>9</u> KHz. All readings from <u>30</u> MHz to <u>1</u> GHz are quasi-peak values with a resolution bandwidth of <u>120</u> KHz. All readings are above <u>1</u> GHz , peak values with a resolution bandwidth of <u>1</u> MHz . Measurements were made at <u>3</u> meters. d)The emissions from the EUT were measured continuously at every azimuth by rotating the turntable. The Receiving antenna high is varied from <u>1</u> m to <u>4</u> m high to find the maximum emission for each frequency. Emissions below 30MHz were measured with a loop antenna while emission above 30MHz were measured using a broadband E-field antenna. e) Maximizing procedure was performed on the six (6) highest emissions to ensure EUT compliance is with all installation combinations. All data was recorded in the peak detection mode. Quasi-peak readings was performed only when an emission was found to be marginal (within -4 dB of specification limit), and are distinguished with a "QP" in the data table. f)Each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the relative positions of this transmitter(EUT) was rotated through three orthogonal axes according to the requirements in Section 8 and 13 of ANSI C63.10.
Band Edge Emissions Measurement:	
Test Equipment Setting:	
a)Attenuation: Auto b)Span Frequency: 100 MHz c)RBW/VBW (Emission in restricted band): 1MHz / 3MHz for Peak, 1MHz / 1/T for Average	d)RBW/VBW(Emission in non-restricted band) 1MHz / 3MHz for peak

8. 3 Test Setup

Same as section 2.2 of this report

8. 4 Configuration of the EUT

Same as section 2.2 of this report

8. 5 EUT Operating Condition

Same as section 2.2 of this report.

8. 6 Limit

Spurious Radiated Emission & Band Edge Emissions Measurement:

Limit:	For transmitters operating in the 5.15-5.35 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz. For transmitters operating in the 5.470-5.725 GHz band: all emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz. For transmitters operating in the 5.725-5.85 GHz band: all emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an e.i.r.p. of -17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an e.i.r.p. of -27 dBm/MHz. In any 100 KHz bandwidth outside the operating frequency band, the radio frequency power that is produced by modulation products of the spreading sequence, the information sequence and the carrier frequency shall be either at least 20 dB below that in any 100 KHz bandwidth within the band that contains the highest level of the desired power or shall not exceed the general levels specified in section 15.209(a), which lesser attenuation. All other emissions inside restricted bands specified in section 15.205(a) shall not exceed the general radiated emission limits specified in section 15.209(a)
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Note:

Applies to harmonics/spurious emissions that fall in the restricted bands listed in section 15.205. The maximum permitted average field strength is listed in section 15.209.

47 CFR § 15.237(c): The emission limits as specified above are based on measurement instrument employing an average detector. The provisions in section 15.35 for limiting peak emissions apply.

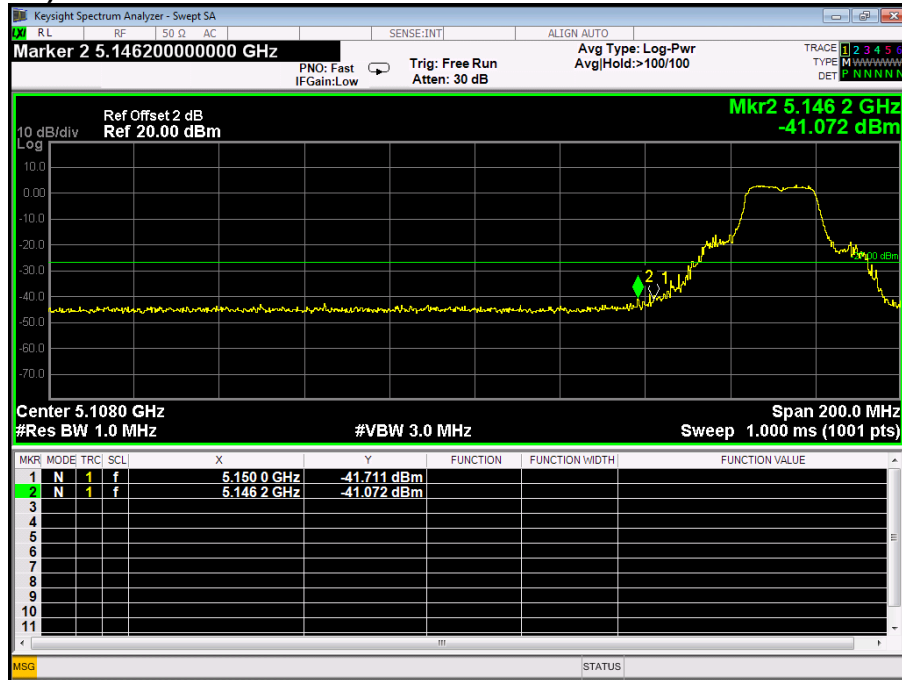
8. 7 Test Result

Band Edge and Fundamental Emissions

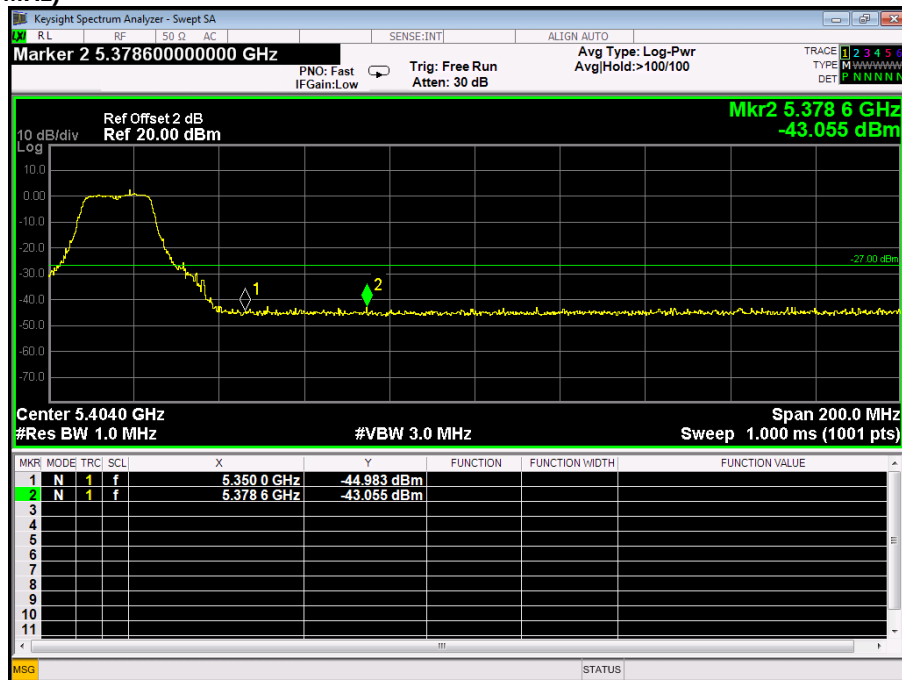
Product:	Mobile Phone	Test Mode:	IEEE 802.11a/n 5G
Test Item:	Band Edge and Fundamental Emissions	Temperature:	25 °C
Test Voltage:	DC 5V	Humidity:	56%RH
Test Result:	PASS		

IEEE 802.11a

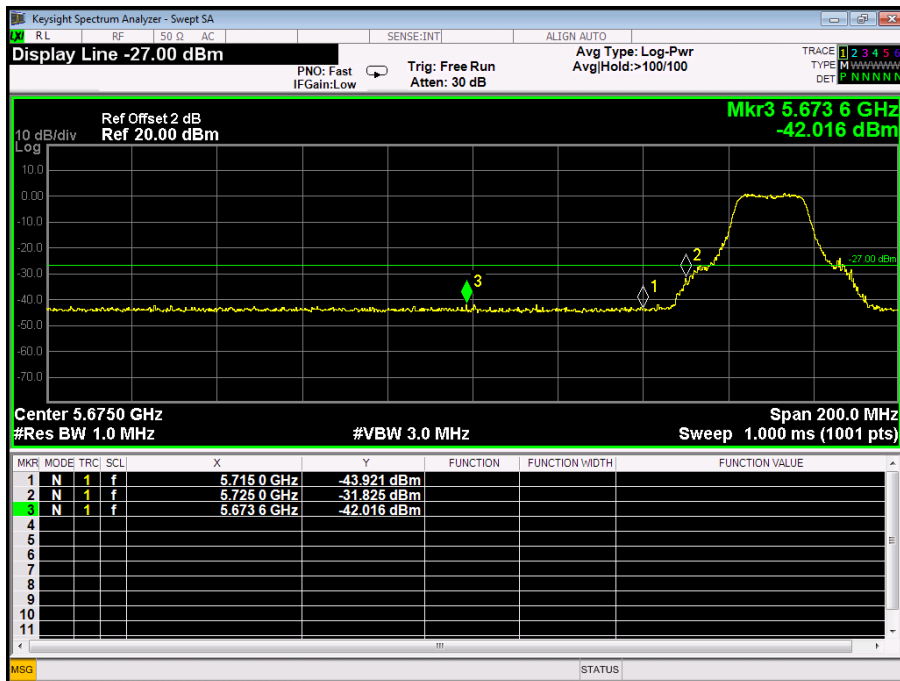
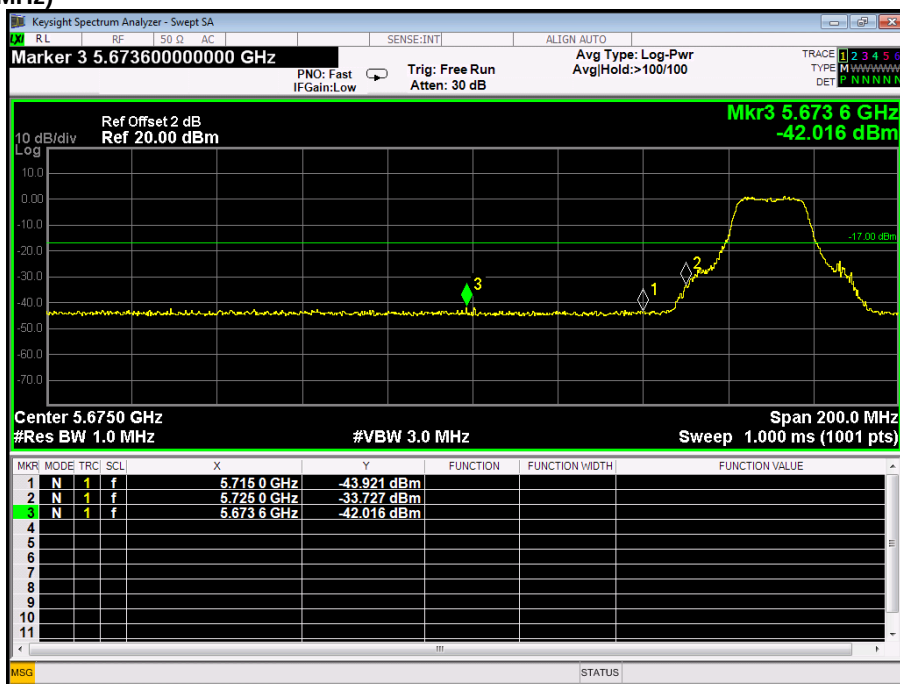
Channel Low (5180MHz)



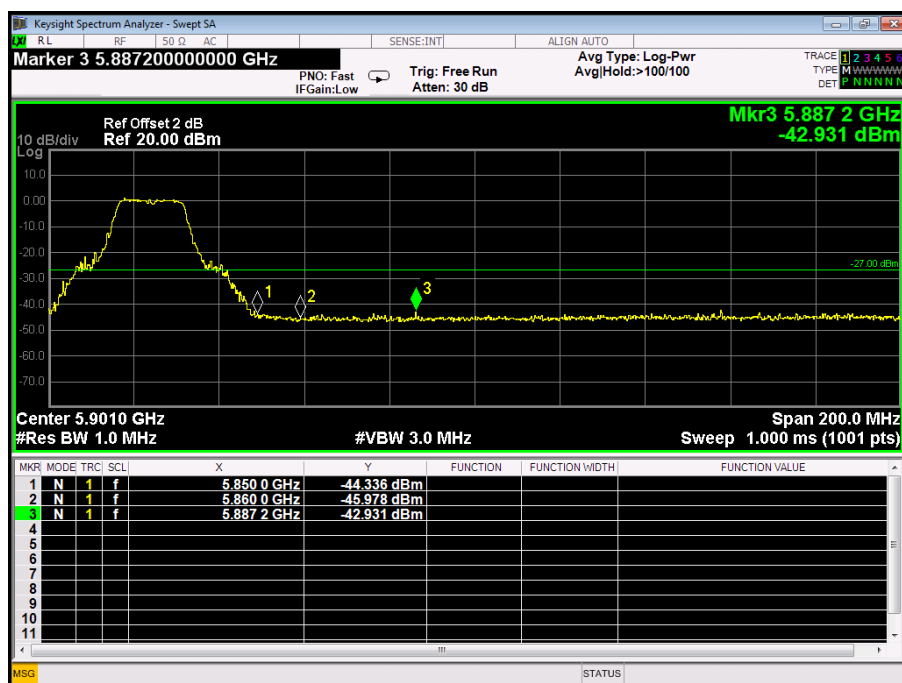
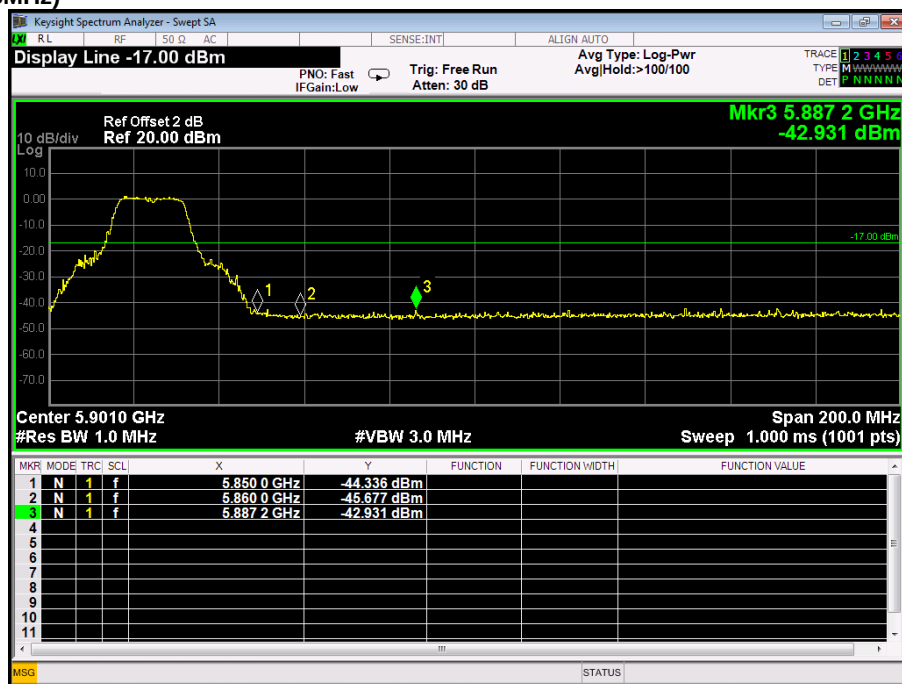
Channel High (5320MHz)



Channel Low (5745MHz)

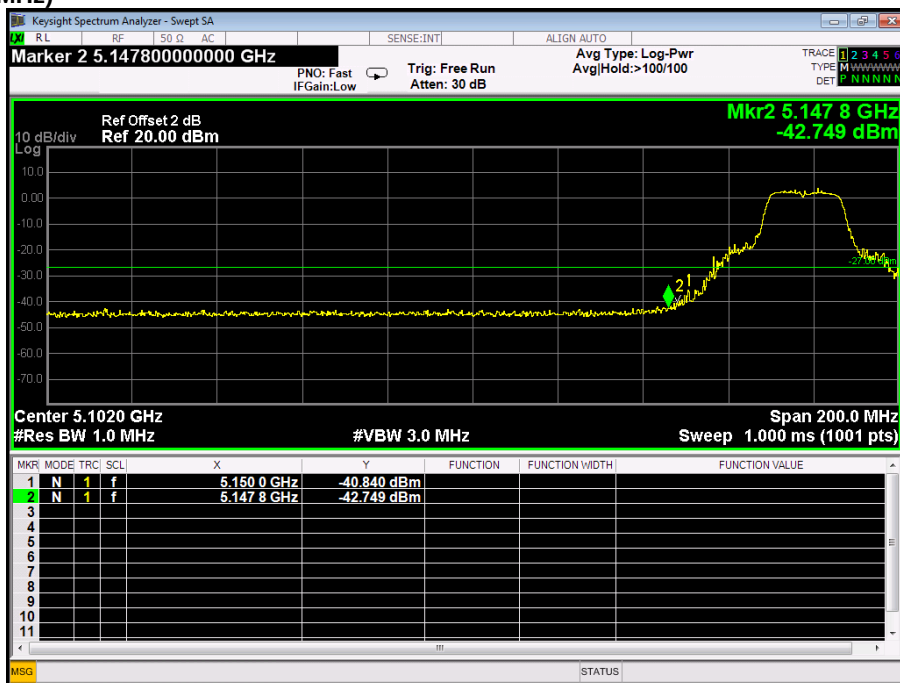


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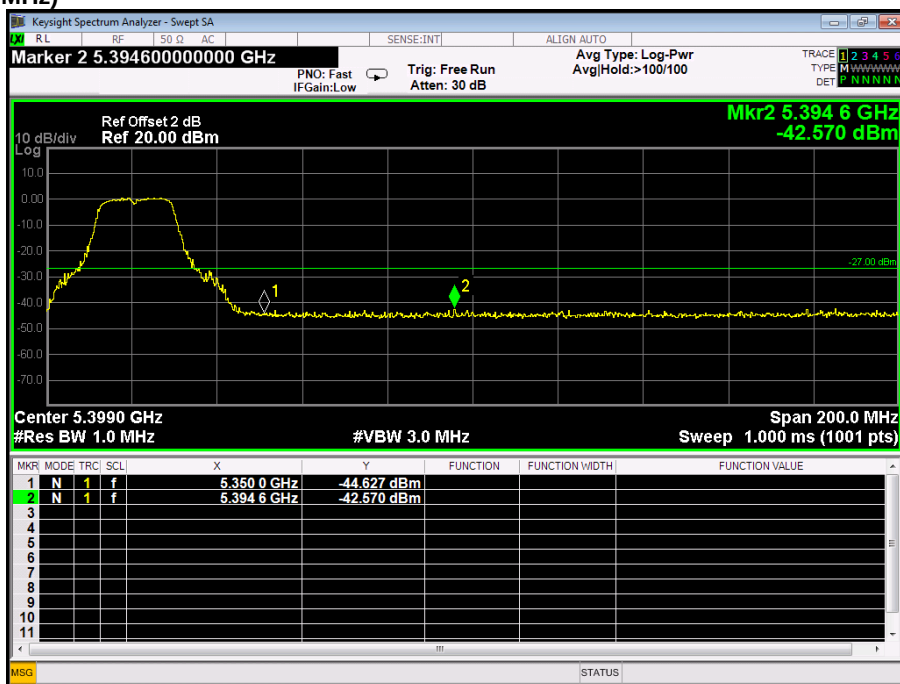


IEEE 802.11n 20MHz

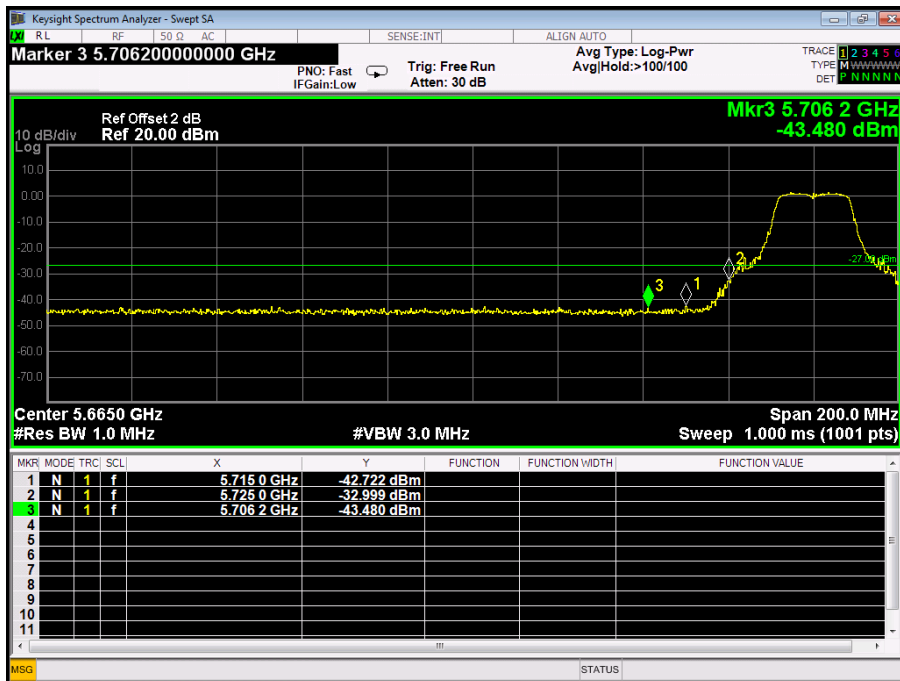
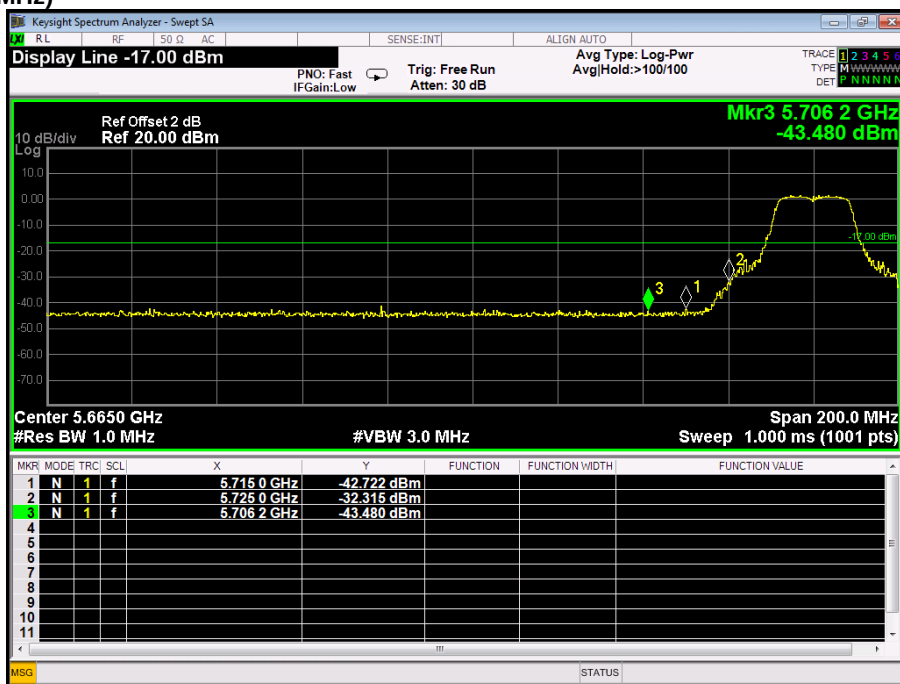
Channel Low (5180MHz)



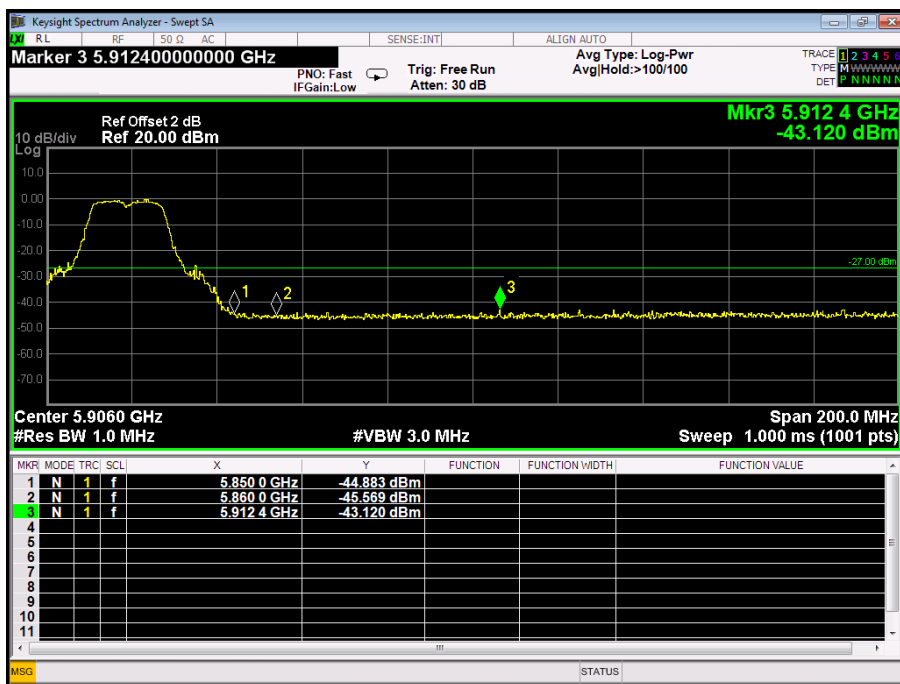
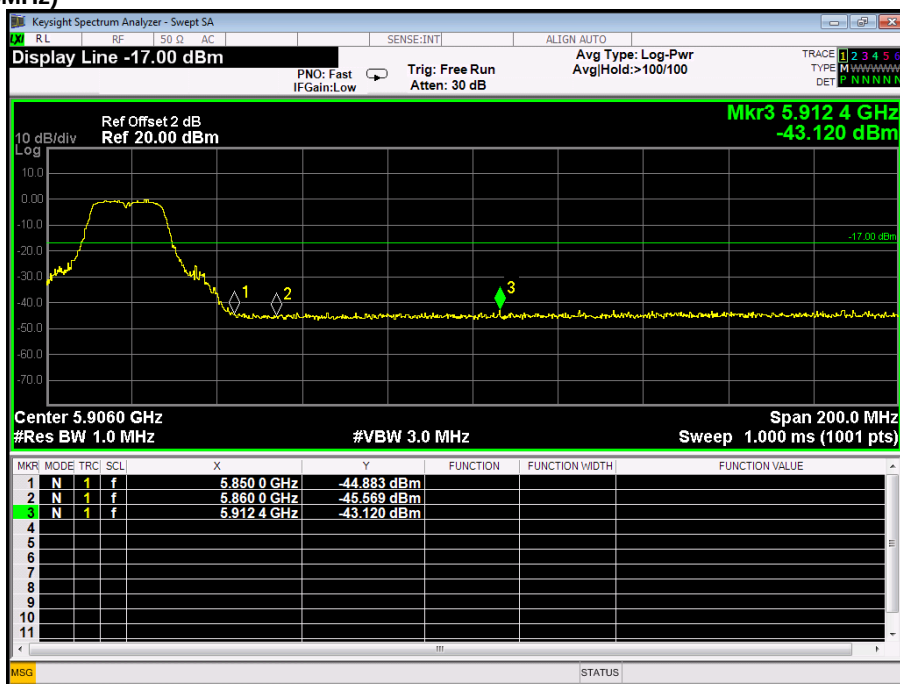
Channel High (5320MHz)



Channel Low (5745MHz)

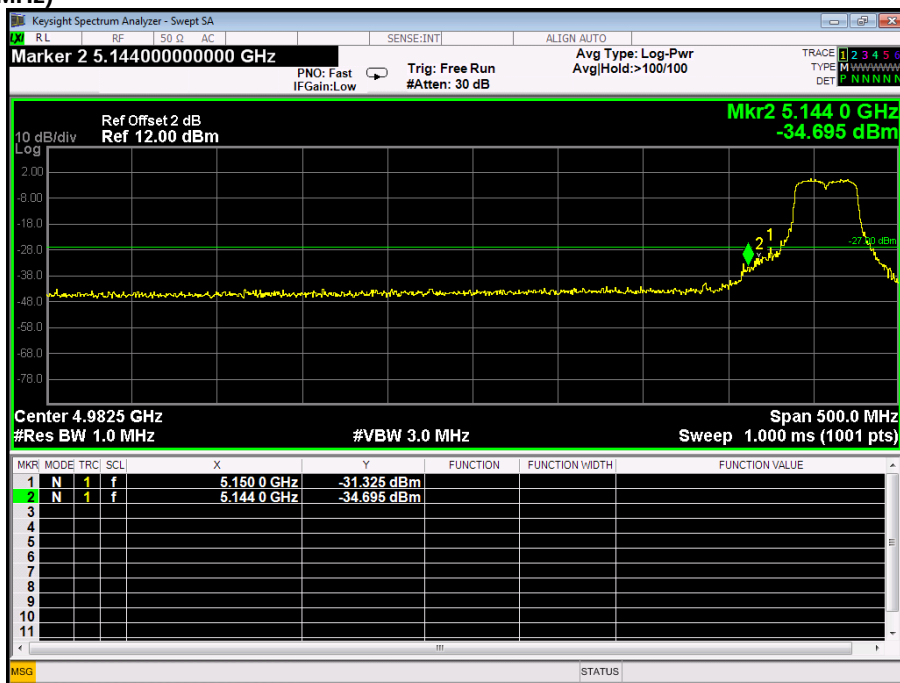


Channel High (5825MHz)

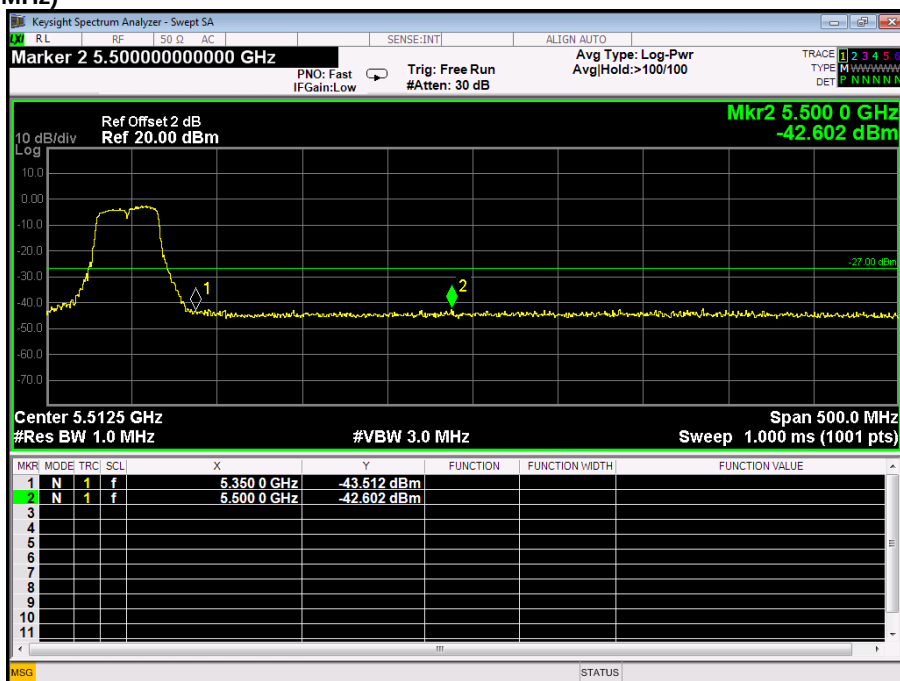


IEEE 802.11n 40MHz

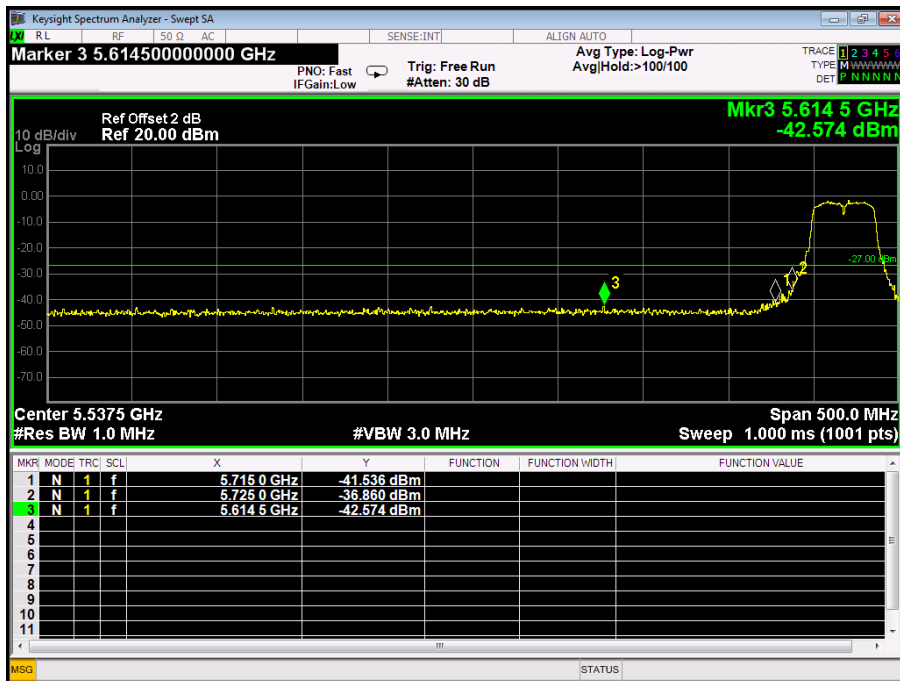
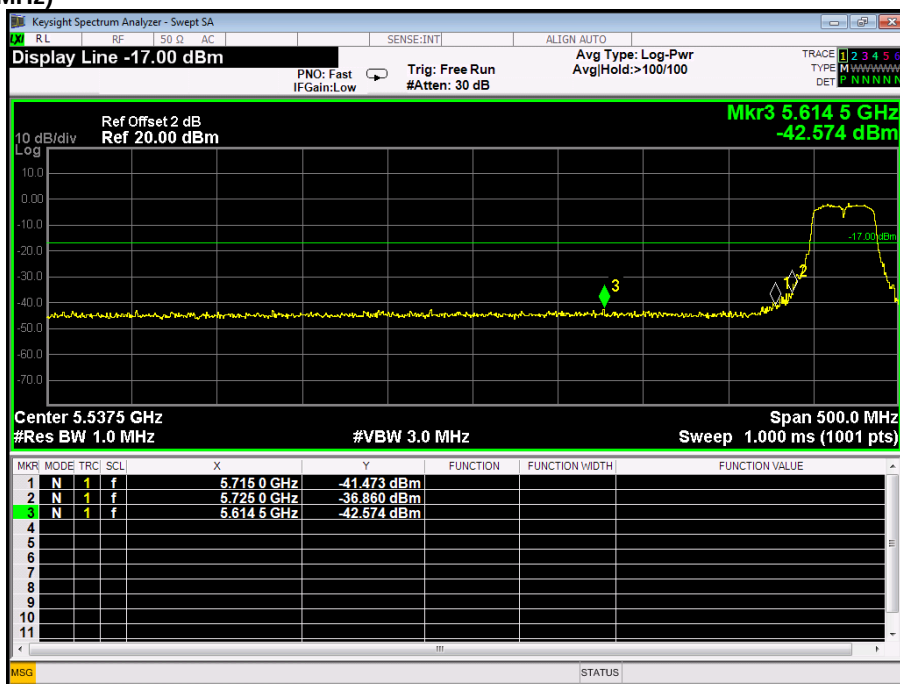
Channel Low (5190MHz)



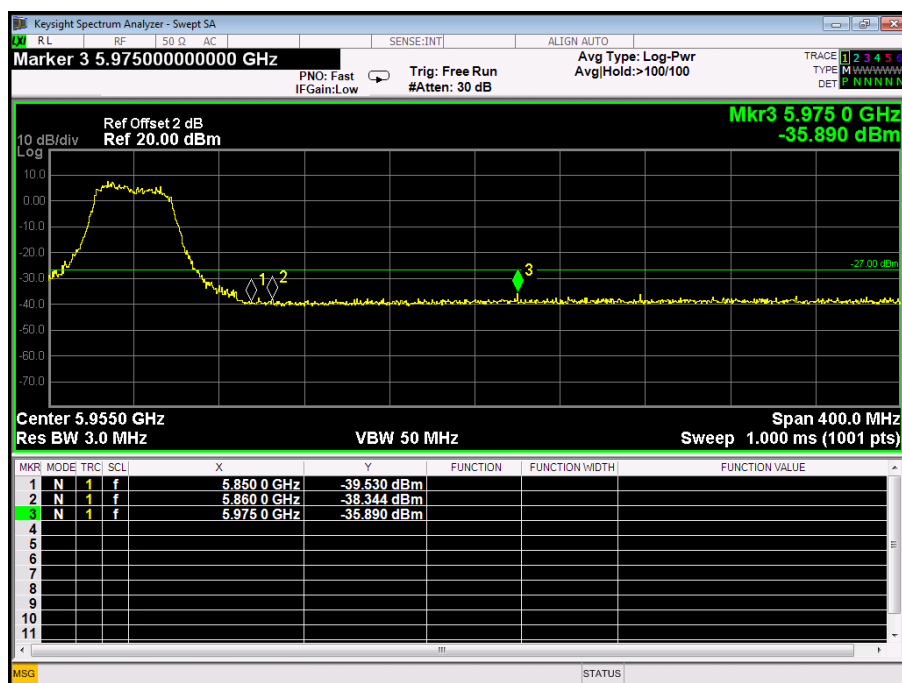
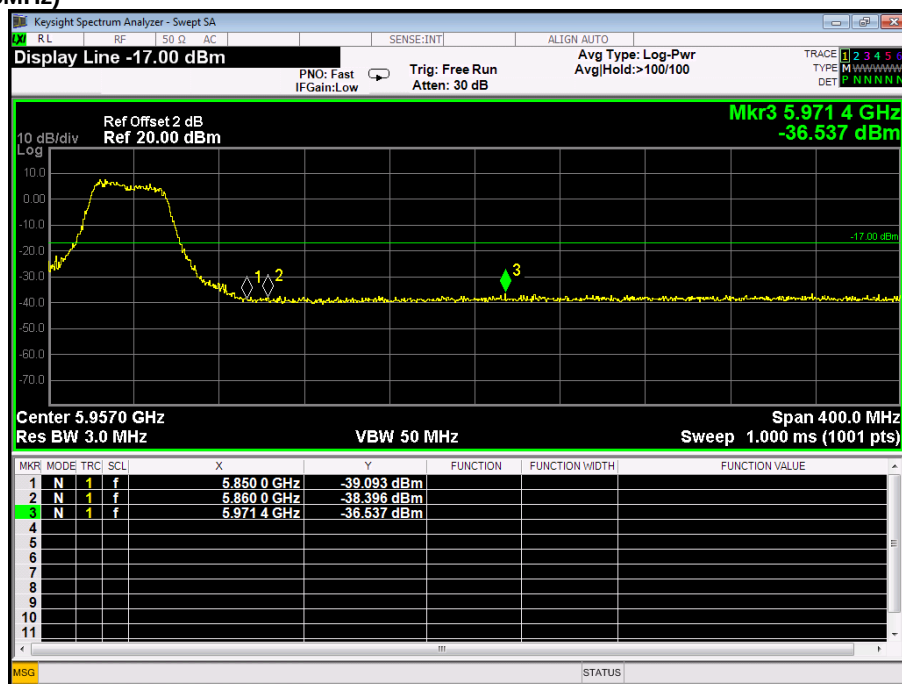
Channel High (5310MHz)



Channel Low (5755MHz)

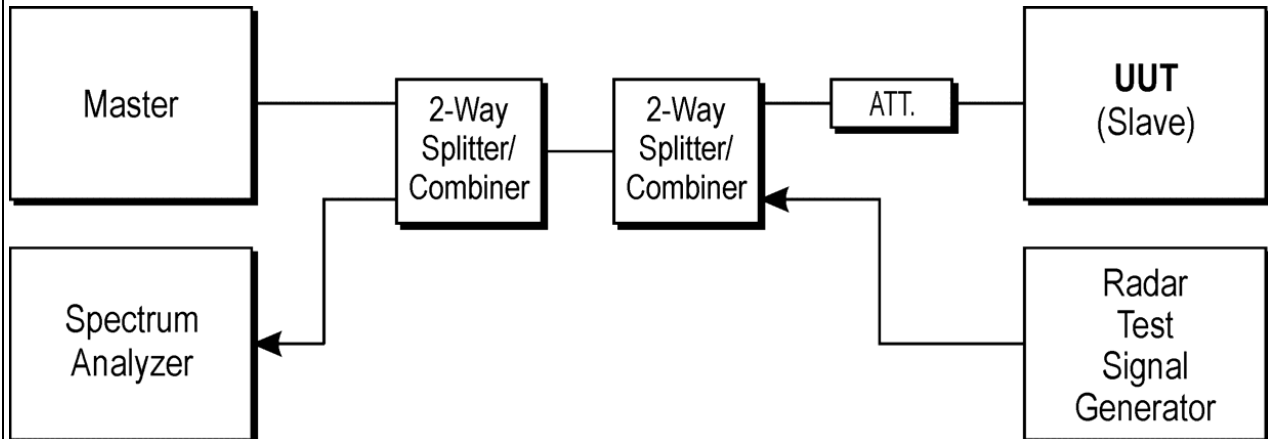


Channel High (5795MHz)



9. DYNAMIC FREQUENCY SELECTION (DFS)

TEST SETUP



RESULT

Test Items	Remark	Result
Channel Availability Check Time	Not Applicable	N/A
Off-Channel CAC	Not implemented	N/A
In-Service Monitoring	Applicable	PASS
Channel Shutdown	Applicable	PASS
Non-Occupancy Period	Applicable	PASS
Uniform Spreading	Not Applicable	N/A

DFS TECHNICAL REQUIREMENTS SPECIFICATIONS

Table 5: Applicability of DFS requirements

Requirement	DFS Operational mode		
	Master	Slave without radar detection (see table D.2, note 2)	Slave with radar detection (see table D.2, note 2)
Channel Availability Check	✓	Not required	✓ (see note 2)
Off-Channel CAC (see note 1)	✓	Not required	✓ (see note 2)
In-Service Monitoring	✓	Not required	✓
Channel Shutdown	✓	✓	✓
Non-Occupancy Period	✓	Not required	✓
Uniform Spreading	✓	Not required	Not required

NOTE 1: Where implemented by the manufacturer.

NOTE 2: A slave with radar detection is not required to perform a CAC or *Off-Channel CAC* at initial use of the channel but only after the slave has detected a radar signal on the *Operating Channel* by *In-Service Monitoring*.

DFS PARAMETERS**Table 1:DFS requirement values**

Parameter	Value
Channel Availability Check Time	60 seconds (see note 1)
Minimum Off-Channel CAC Time	6 minutes (see note 2)
Maximum Off-Channel CAC Time	4 hours (see note 2)
Channel move Time	10 seconds
Channel closing Transmission Time	1 seconds
Non-occupancy period	Minimum 30 minutes

Note 1:For channels whose nominal bandwidth falls completely or partly within the band 5600-5650 MHz,the Channel Availability Check Time shall be 10 minutes.

Note 2: For channels whose nominal bandwidth falls completely or partly within the band 5600-5650 MHz,the Maximum Off-Channel CAC Time shall be 24 hours.

Table 2:Interference threshold values

EIRP Spectral Density(dBm/MHz)	Value(see notes 1 and 2)
10	-62

Note 1:This is the level at the input of the receiver of a RLAN device with a maximum EIRP density of 10dBm/MHz and assuming a 0 dBi receive antenna.For devices employing different EIRP spectral density and/or a different receive antenna gain G(dBi) the DFS threshold level at the receiver input follows the following relationship:DFS Detection Threshold(dBm)=-62+10-EIRP Spectral Density (dBm/MHz)+G(dBi),however the DFS threshold level shall not be lower than -64 dBm assuming a 0 dBi receive antenna gain.

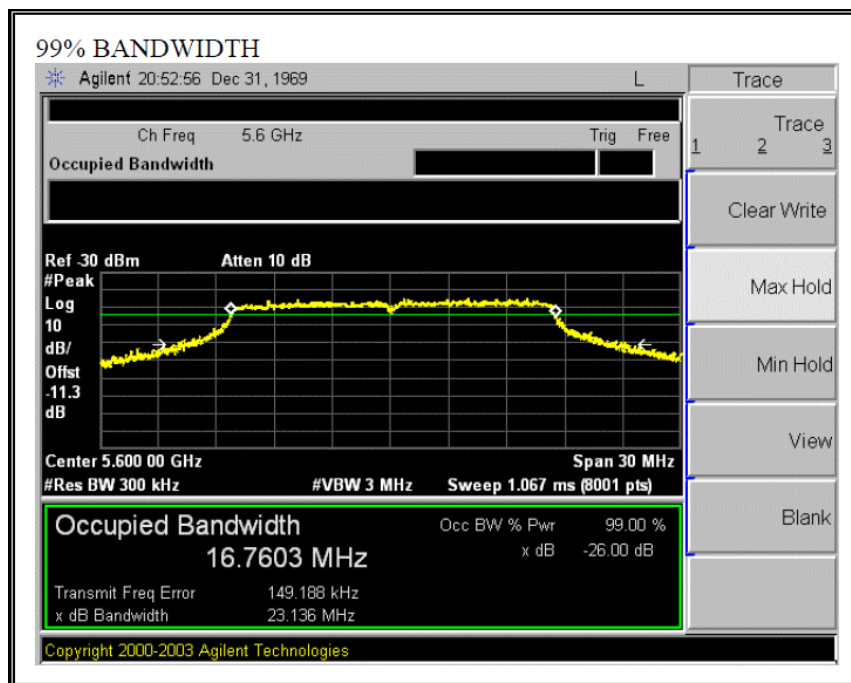
Note 2:Slave devices with a maximum EIRP of less than 23 dBm do not have to implement radar detection.

Table 3:Parameters of the reference DFS test signal

Pulse width W[μs]	Pulse repetition frequency PRF[pps]	Pulses per burst [PPB]
1	700	18

TEST RESULT OF IN-SERVICE MONITORING

Modulation Mode	Freq.(MHz)	Radar Test Signal	Channel Closing Transmission Time(s)	Channel Move Time(s)
HT20	5260	Type 1	0.0056	0.68
HT40	5270	Type 1	0.0032	0.65
Limit			<1 sec	<10 sec
Result			PASS	

TEST RESULT OF DETECTION BANDWIDTH**TEST PLOT OF 99% POWER BANDWIDTH**

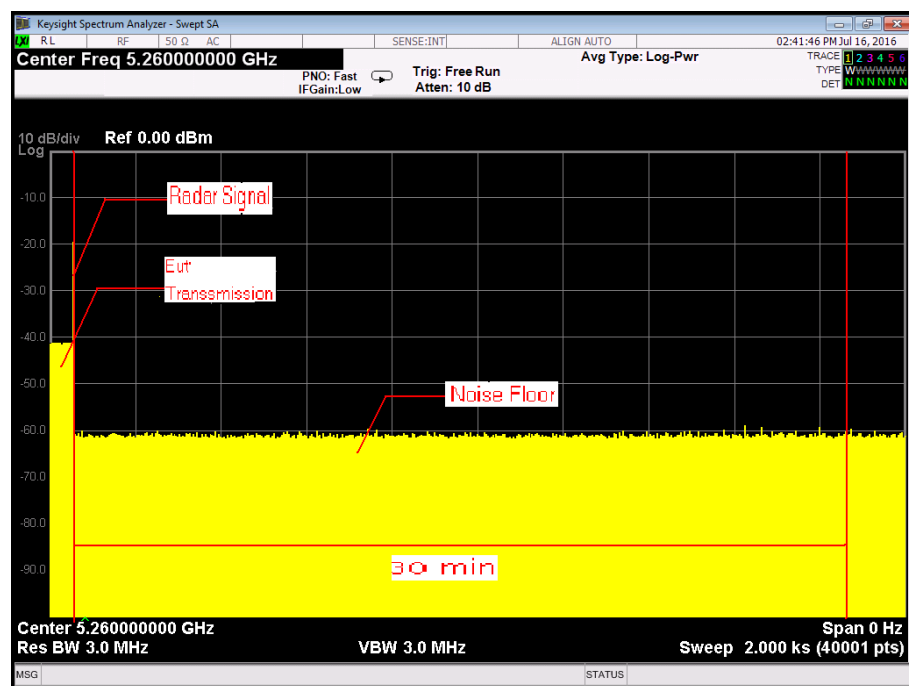
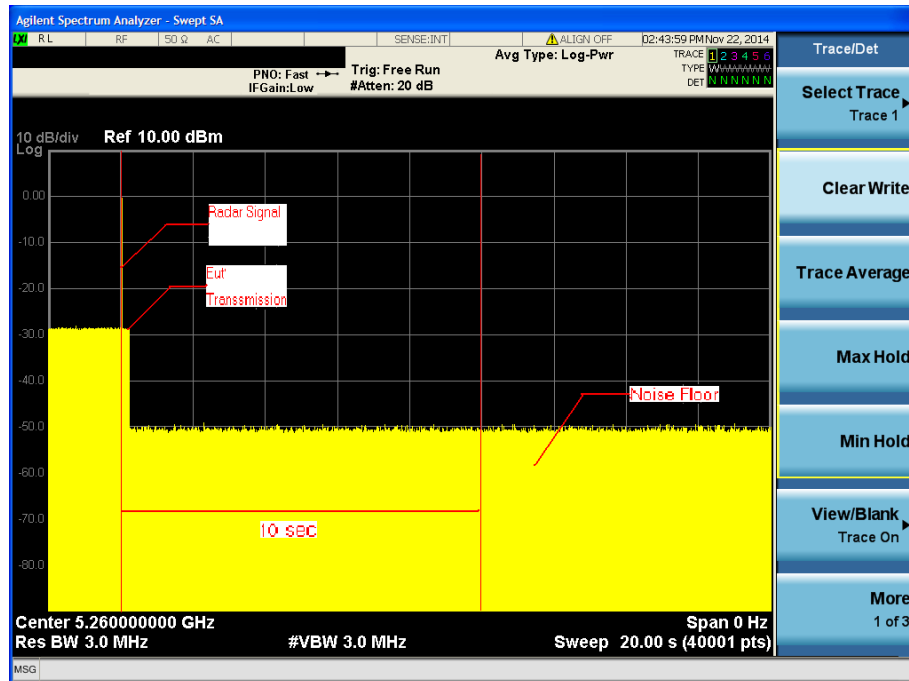
DETECTION BANDWIDTH PROBABILITY RESULTS

DETECTION BANDWIDTH PROBABILITY RESULTS				
FCC Type 1 Waveform: 1 us Pulse Width, 1428 us PRI, 18 Pulses per Burst				
Frequency (MHz)	Number of Trials	Number Detected	Detection (%)	Mark
5591	10	0	0	FL
5592	10	10	100	
5593	10	10	100	
5594	10	10	100	
5595	10	10	100	
5596	10	10	100	
5597	10	10	100	
5598	10	10	100	
5599	10	10	100	
5600	10	10	100	
5601	10	10	100	
5602	10	10	100	
5603	10	10	100	
5604	10	10	100	
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5606	10	10	100	
5607	10	10	100	
5608	10	10	100	FH
5609	10	0	0	

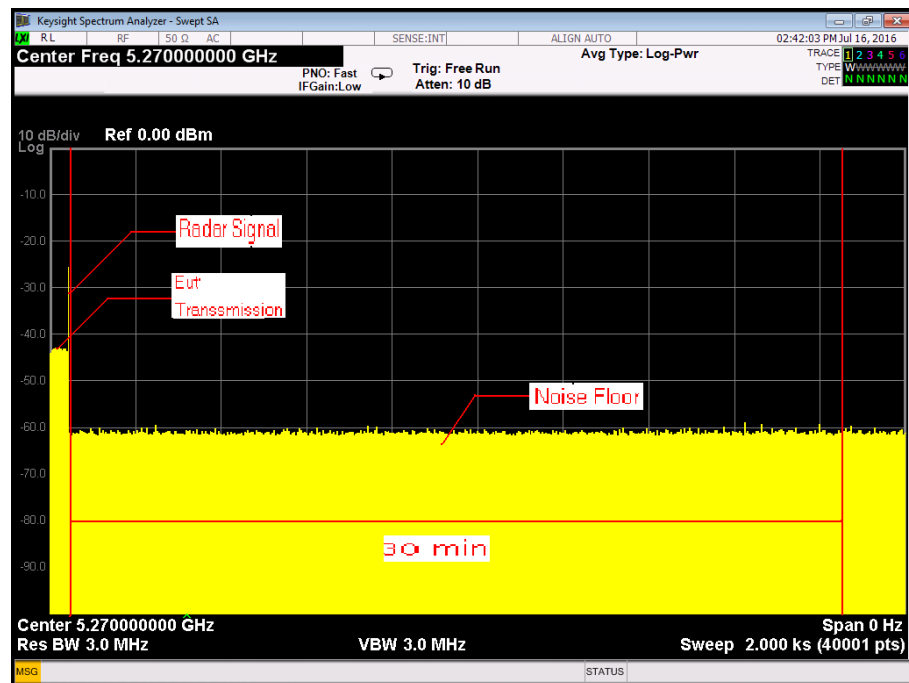
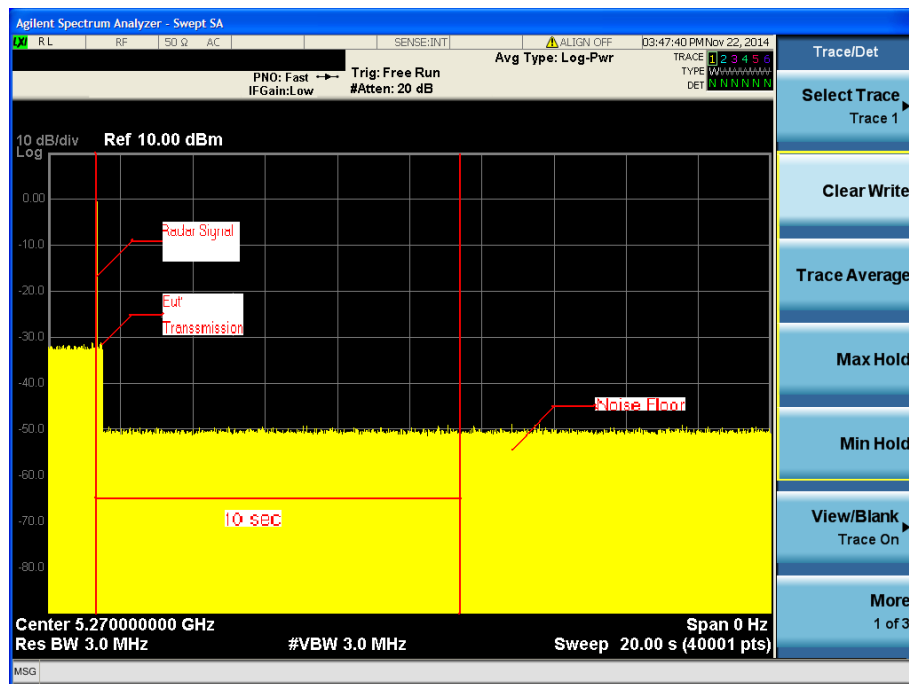
TEST RESULTS

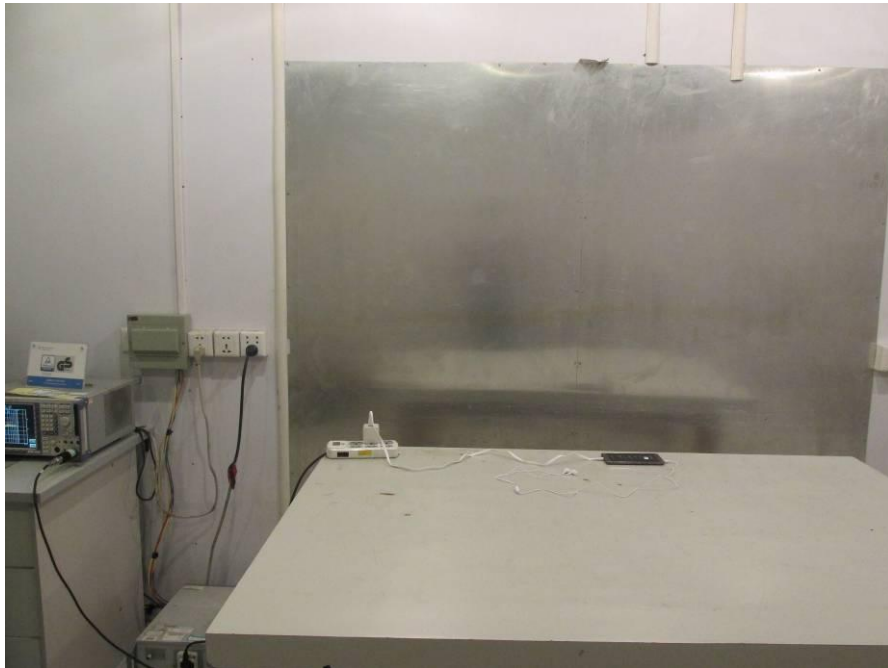
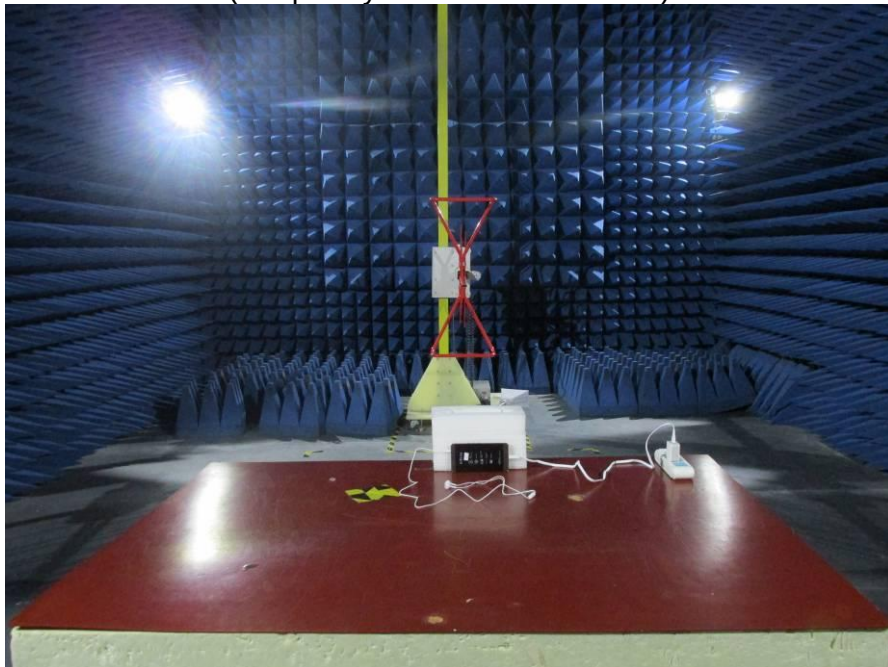
FL (MHz)	FH (MHz)	DETECTION BANDWIDTH	99% POWER BANDWIDTH	RATIO OF DETECTION BW TO 99% POWER BW	MINIMUM LIMIT (%)
5592	5608	16	16.760	95.5	80

HT20 5260MHz



HT40 5270MHz



10. EUT TEST PHOTO**CONDUCTED EMISSION TEST****RADIATED EMISSION TEST**
(Frequency from 30MHz to 1GHz)

RADIATED EMISSION TEST
(Frequency above 1GHz)



RF TEST

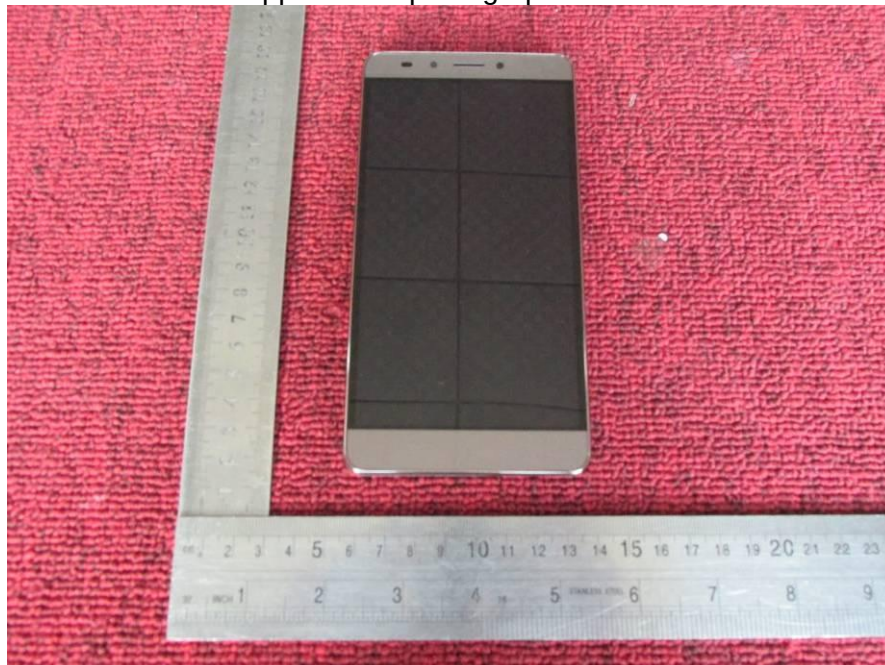


11. PHOTOGRAPHS OF EUT

Appearance photograph of EUT



Appearance photograph of EUT



Appearance photograph of EUT



Appearance photograph of EUT



Appearance photograph of EUT



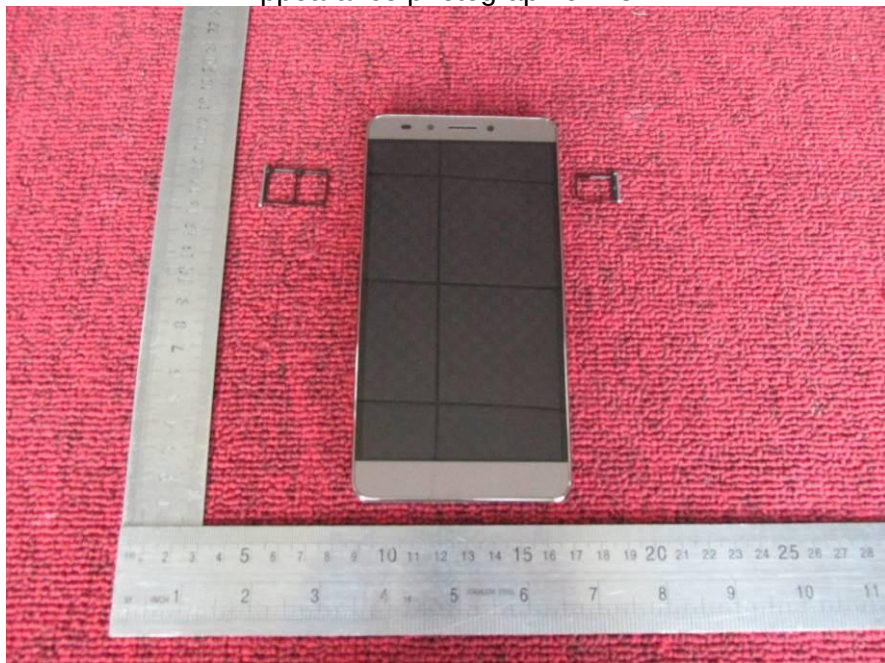
Appearance photograph of EUT



Appearance photograph of EUT



Appearance photograph of EUT



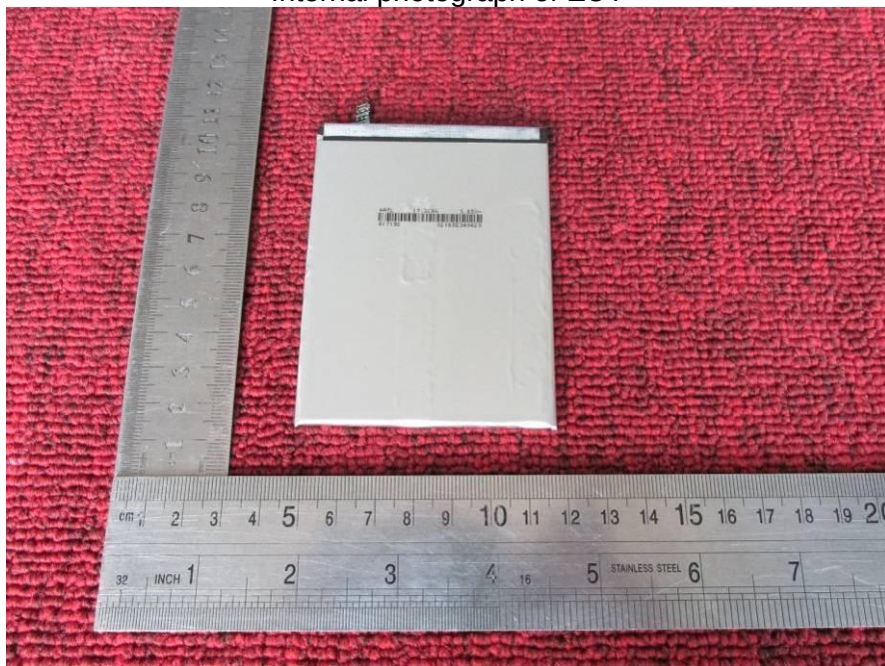
Internal photograph of EUT



Internal photograph of EUT



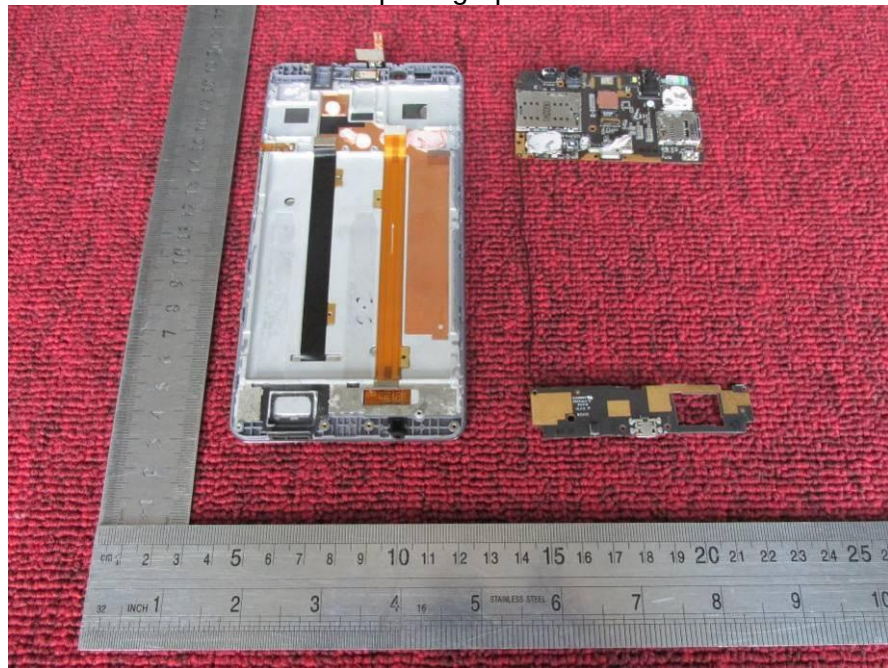
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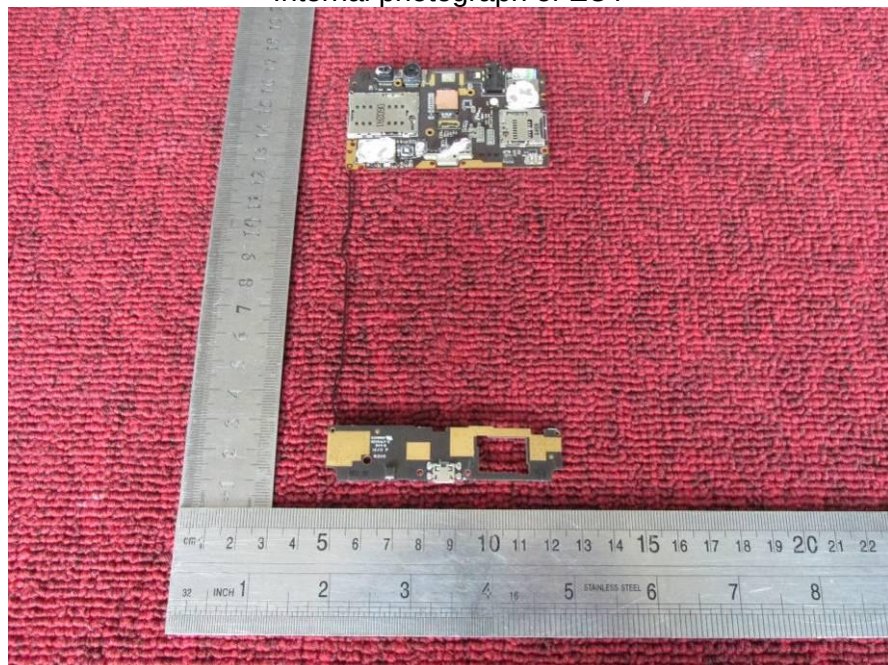
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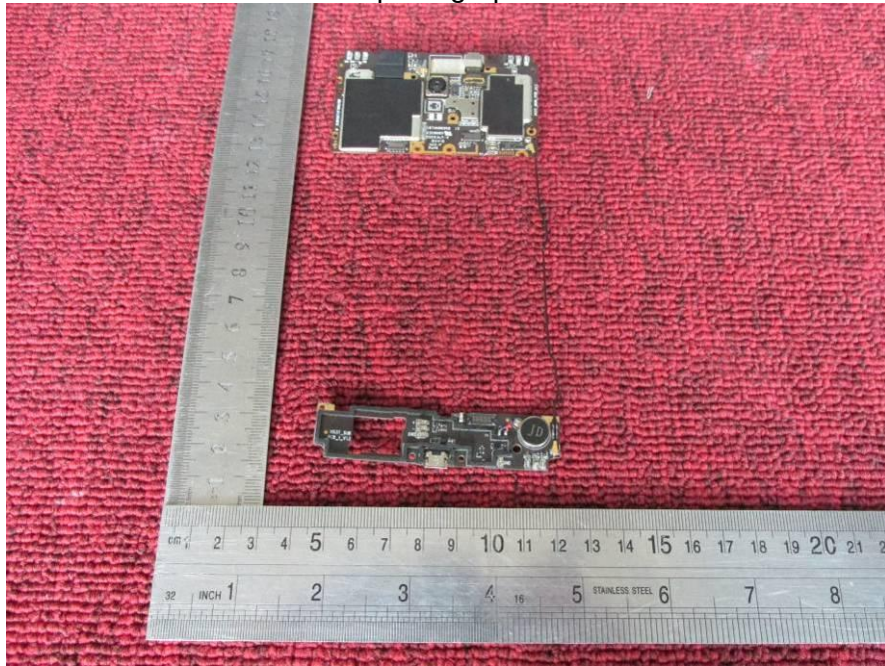
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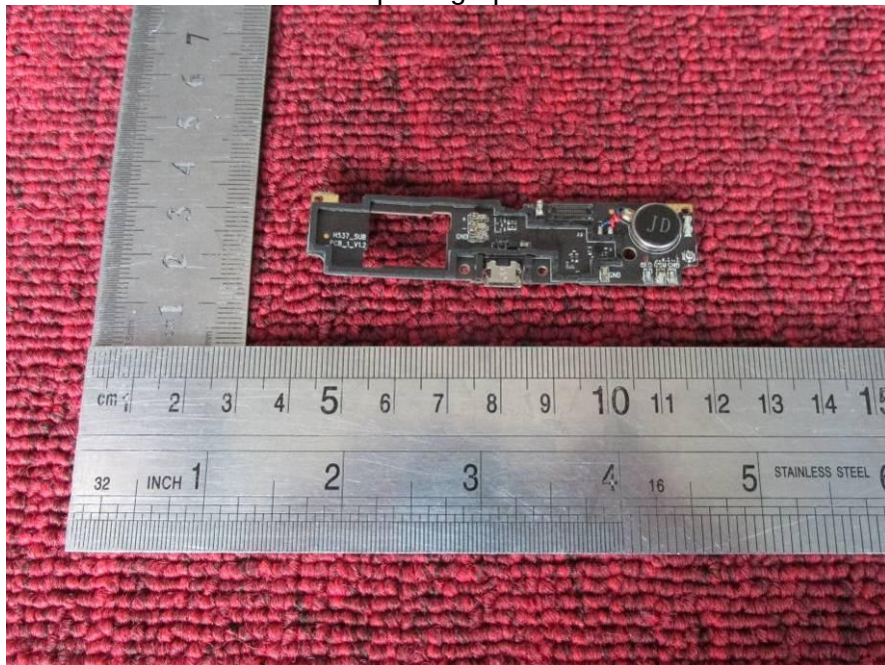
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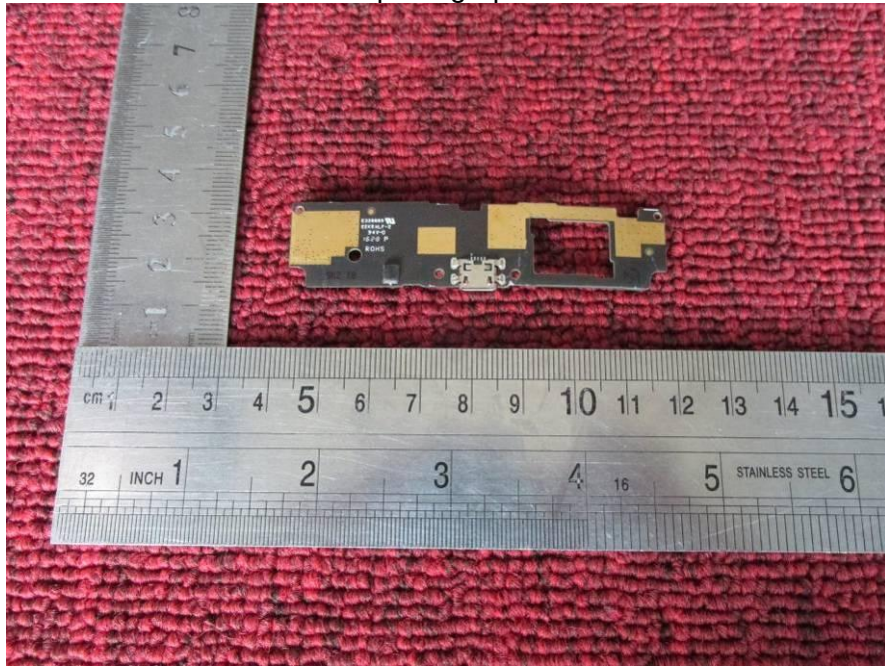
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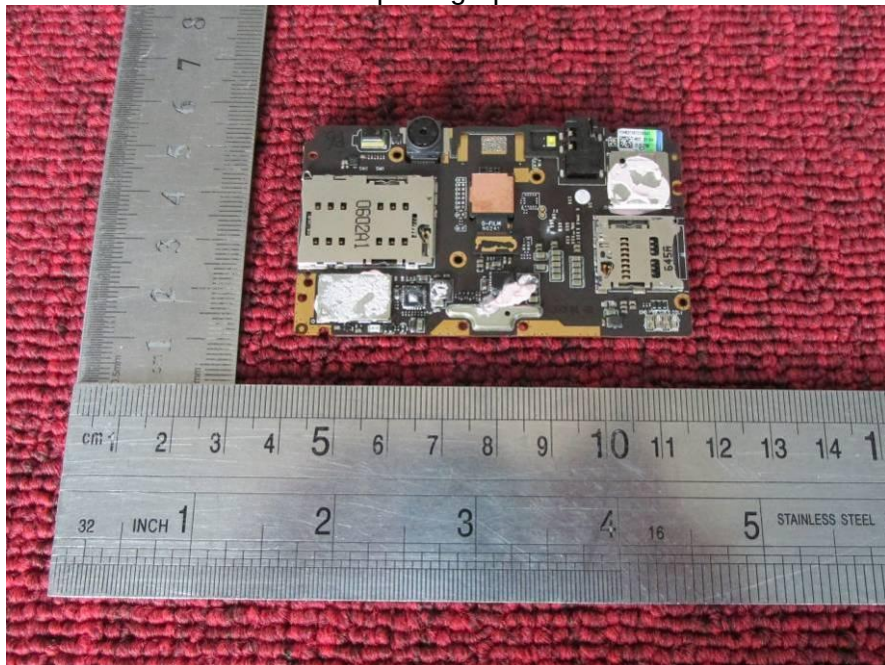
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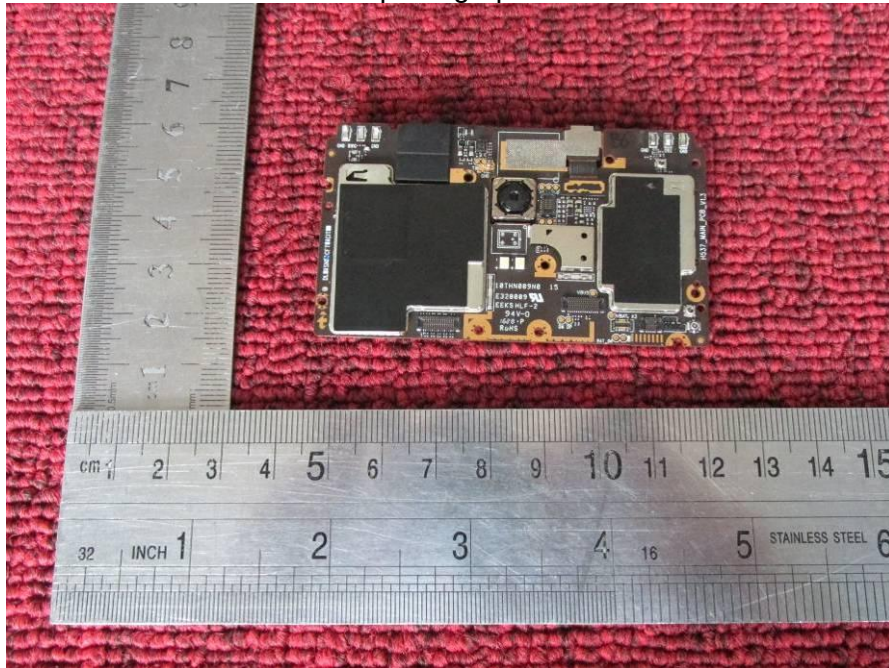
Internal photograph of EUT



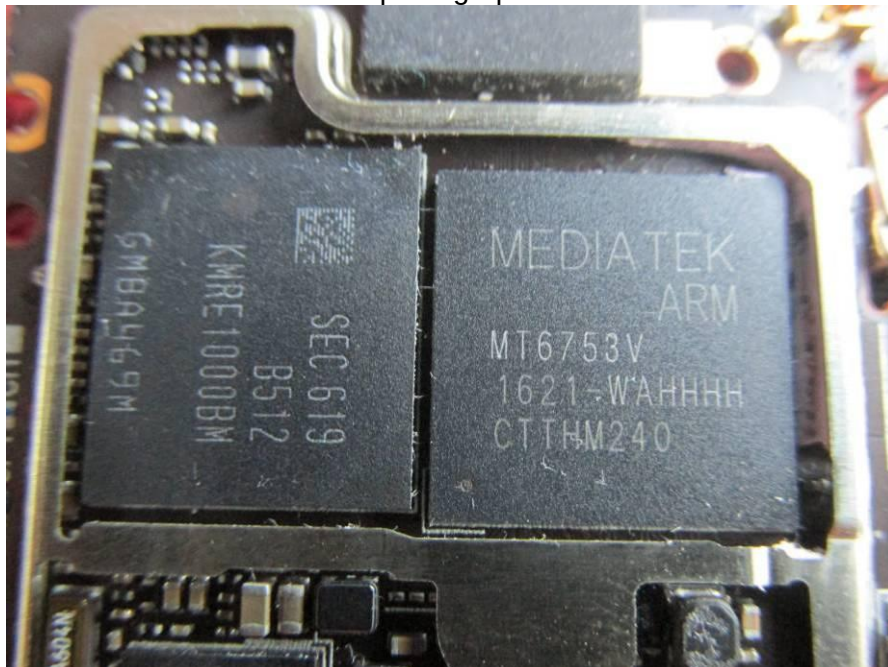
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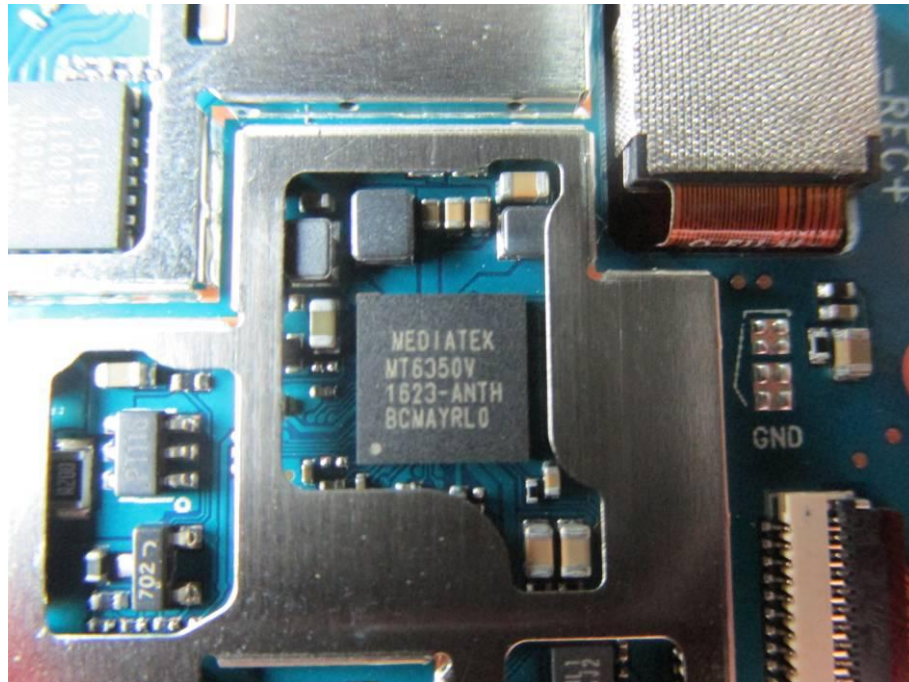
Internal photograph of EUT



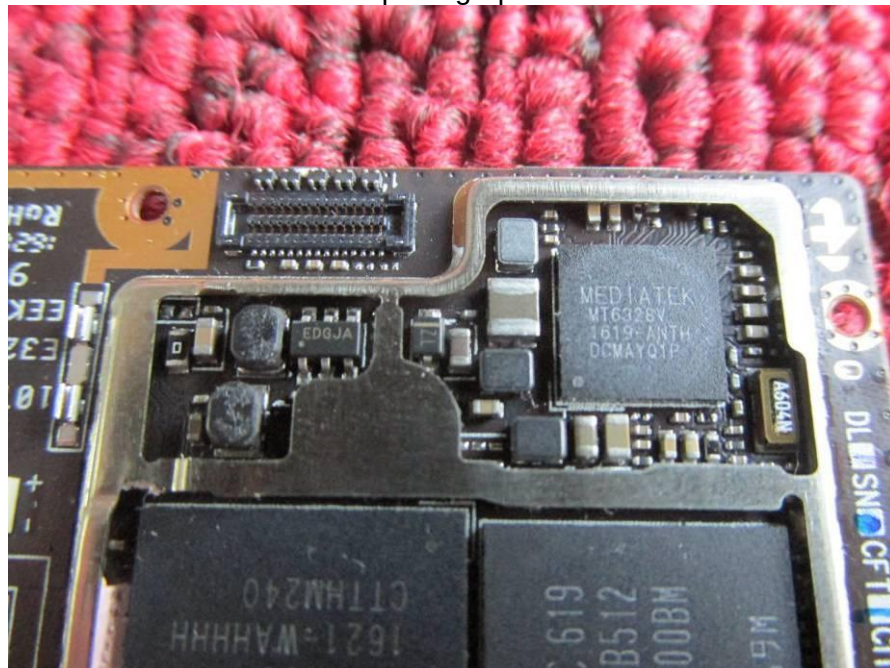
Internal photograph of EUT



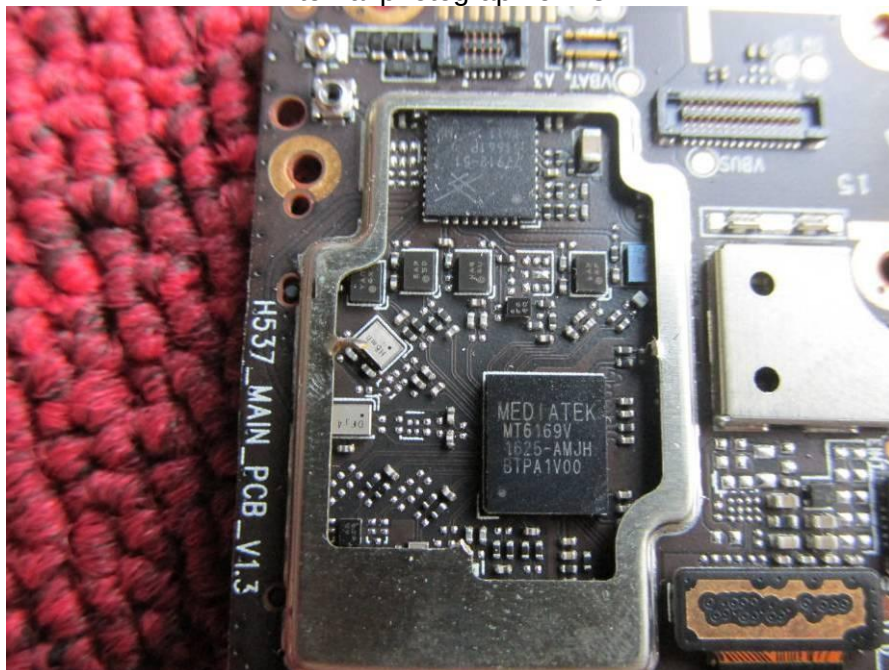
Internal photograph of EUT



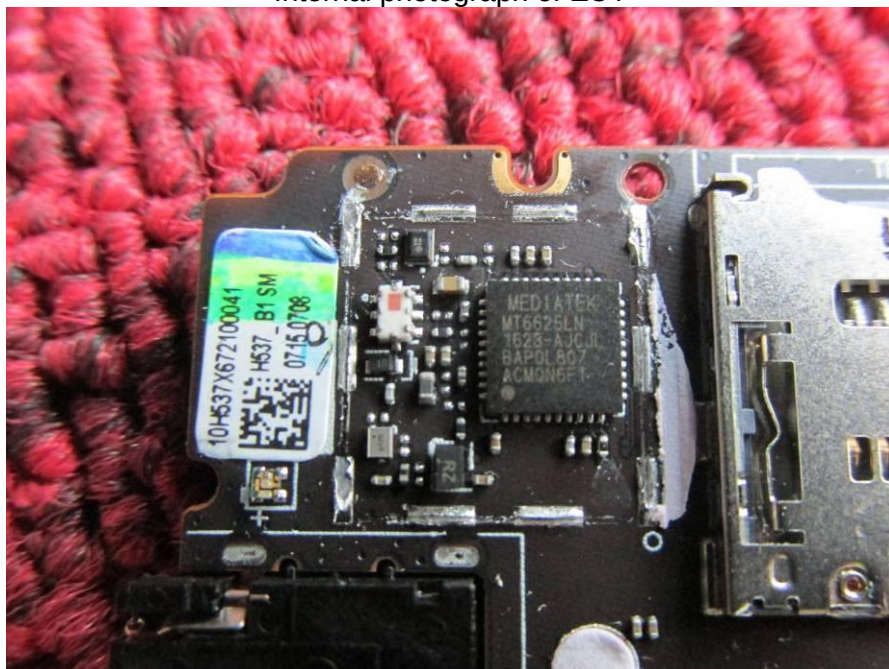
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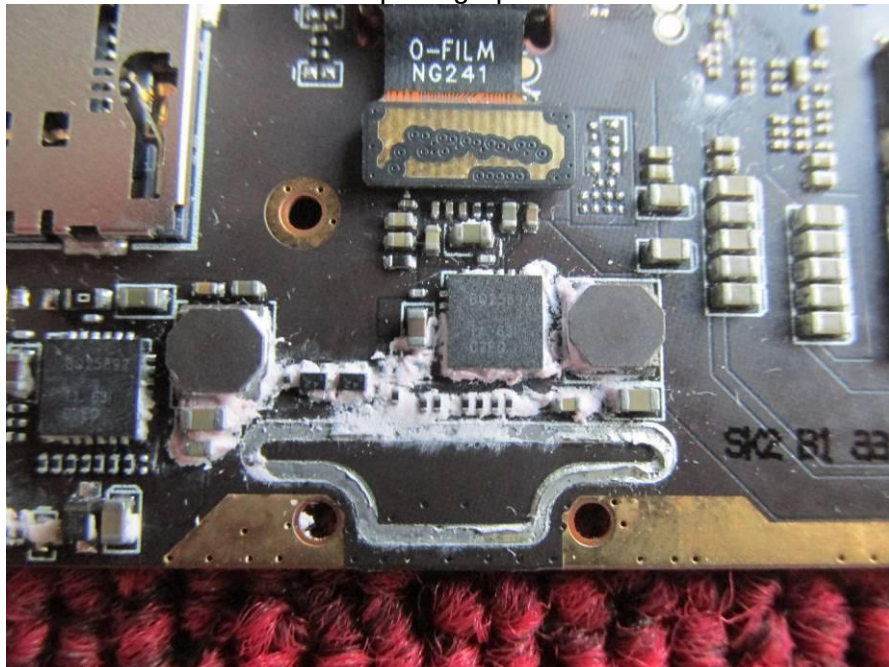
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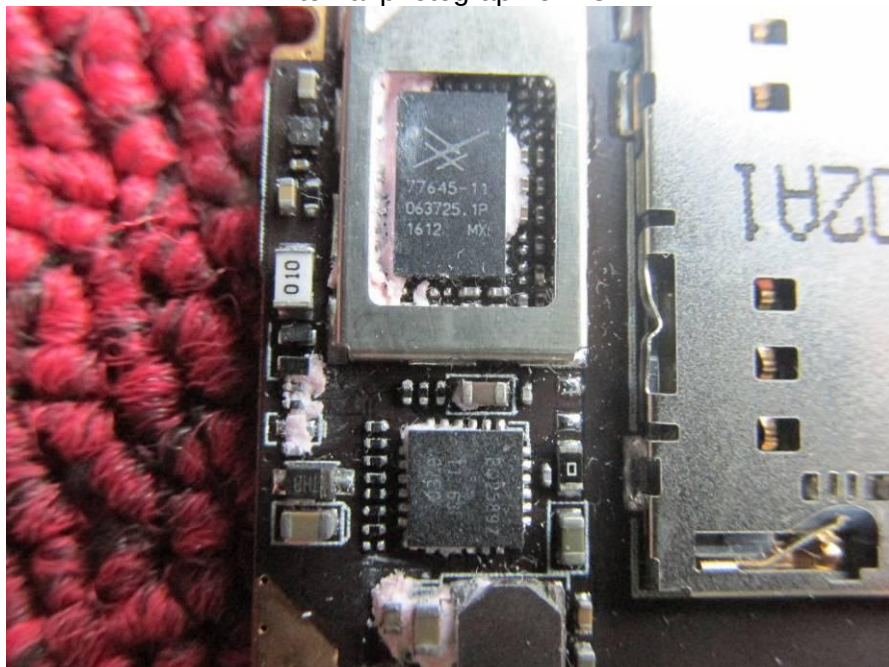
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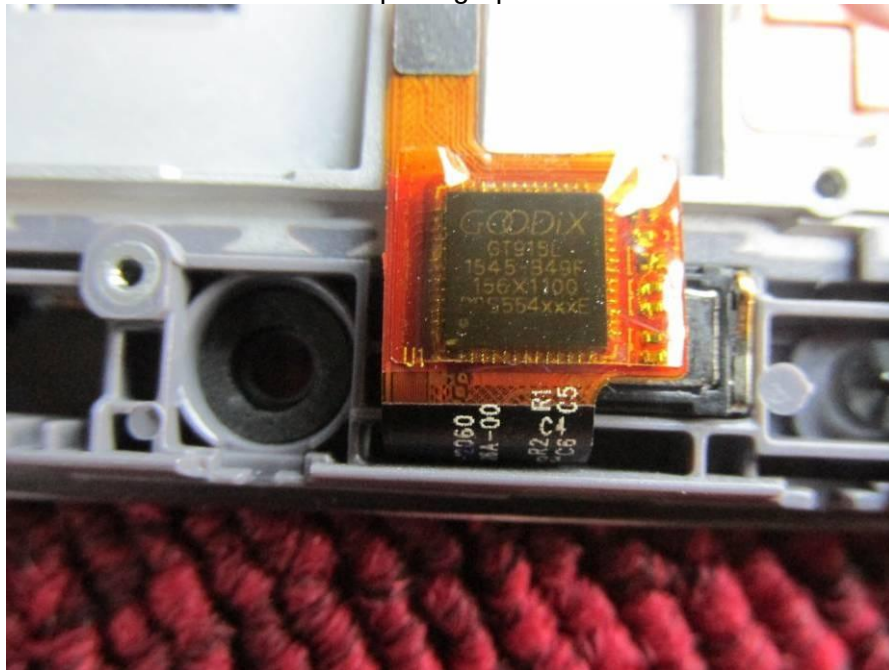
Internal photograph of EUT



Internal photograph of EUT



Internal photograph of EUT



---END OF REPORT---