



**FCC PART 15C
TEST REPORT
No. 2013WLN0801**

for

TCT Mobile Limited

**HSDPA/HSUPA/UMTS Tri bands / GSM quad bands/LTE Bi bands
mobile phone**

Model name: A851L

Marketing Name: A851L

With

FCC ID: RAD361

Hardware Version: 05

Software Version: VAC6

Issued Date: 2013-11-05



Note: The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of TMC Beijing.

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1. TEST LATORATORY

1.1. Testing Location

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Fax: +86-10-62304633-2504

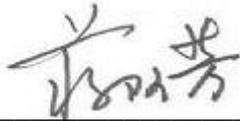
1.2. Project data

Testing Start Date: 2013-07-04
Testing End Date: 2013-07-09

1.3. Signature



Xu Zhongfei
(Prepared this test report)



Jiang Afang
(Reviewed this test report)



Xiao Li
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2. CLIENT INFORMATION

2.1. Applicant Information

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2.2. Manufacturer Information

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Fax: 0086-21-61460602

3. EQUIPMENT UNDER TEST (EUT) AND ANCILLARY

EQUIPMENT(AE)

3.1. About EUT

| | |
|----------------------|---|
| Description | HSDPA/HSUPA/UMTS Tri bands / GSM quad bands/LTE Bi bands mobile phone |
| Model name | A851L |
| Marketing name | A851L |
| FCC ID | RAD361 |
| WLAN Frequency Range | ISM Band: 5725MHz~5850MHz |
| Type of modulation | OFDM |
| Number of Channels | a/n-HT20 mode: 5 n-HT40 mode: 2 |
| Antenna | Integral Antenna |
| MAX Conducted Power | 19.75dBm(OFDM) |
| GPRS Class | Class 10 |
| GPRS operation mode | Class B |
| Extreme Temperature | -20/+55°C |
| Normal Voltage | 3.9VDC |

3.2. Internal Identification of EUT used during the test

| EUT ID* | IMEI | HW Version | SW Version |
|---------|------|------------|------------|
| EUT1 | / | 05 | VAC6 |
| EUT2 | / | 05 | VAC6 |

*EUT ID: is used to identify the test sample in the lab internally.

3.3. Internal Identification of AE used during the test

| AE ID* | Description | Type | SN |
|--------|-------------|--------------|----|
| AE1 | Battery | TLi022A2 | / |
| AE2 | Charger | CBA3000AG0C1 | / |

*AE ID: is used to identify the test sample in the lab internally.

3.4. General Description

Equipment Under Test (EUT) is a model of HSDPA/HSUPA/UMTS Tri bands / GSM quad bands/LTE Bi bands mobile phone with integrated antenna. It consists of normal options: Battery and Charger.

Manual and specifications of the EUT were provided to fulfil the test.

Samples undergoing test were selected by the Client.

Normal Accessory setting:

1. A microSD card was being installed in the device during the test;
2. Fully charged battery should be used during the test.

4. REFERENCE DOCUMENTS

4.1. Documents supplied by applicant

EUT feature information is supplied by the applicant or manufacturer, which is the basis of testing.

4.2. Reference Documents for testing

The following documents listed in this section are referred for testing.

| | | |
|------------|--|------|
| | FCC CFR 47, Part 15, Subpart C: | |
| | 15.205 Restricted bands of operation; | |
| FCC Part15 | 15.209 Radiated emission limits, general requirements; | Oct, |
| | 15.247 Operation within the bands 902–928MHz, | 2010 |
| | 2400–2483.5 MHz, and 5725–5850 MHz. | |
| ANSI C63.4 | Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz | 2009 |
| KDB558074 | Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247 | 2012 |

5. LABORATORY ENVIRONMENT

Conducted RF performance testing is performed in shielding room.

EMC performance testing is performed in Fully-anechoic chamber.

6. SUMMARY OF TEST RESULTS

6.1. Summary of Test Results

| SUMMARY OF MEASUREMENT RESULTS | Sub-clause of Part15C | Sub-clause of IC | Verdict |
|---|-----------------------|------------------|----------|
| Maximum Peak Output Power | 15.247 (a) | / | P |
| Peak Power Spectral Density | 15.247 (d) | / | P |
| Occupied 6dB Bandwidth | 15.247 (d) | / | P |
| Band Edges Compliance | 15.247 (b) | / | P |
| Transmitter Spurious Emission - Conducted | 15.247 | / | P |
| Transmitter Spurious Emission - Radiated | 15.247, 15.209 | / | P |
| AC Powerline Conducted Emission | 15.107, 15.207 | / | P |

Please refer to **ANNEX A** for detail.

Terms used in Verdict column

| | |
|----|---|
| P | Pass, The EUT complies with the essential requirements in the standard. |
| NM | Not measured, The test was not measured by TMC |
| NA | Not Applicable, The test was not applicable |
| F | Fail, The EUT does not comply with the essential requirements in the standard |

6.2. Statements

TMC has evaluated the test cases requested by the client/matrix manufacturer as listed in section 6.1 of this report for the EUT specified in section 3 according to the standards or reference documents listed in section 4.1.

This report only deals with the WLAN function among the features described in section 3.

This model is a variant product which market name is ONE TOUCH 7030Y; all the test result has been derived from test report of ONE TOUCH 7030Y.

6.3. Test Conditions

For this report, all the test cases are tested under normal temperature and normal voltage, and also under norm humidity, the specific condition is shown as follows:

| | |
|-------------|-------------------|
| Temperature | 26°C |
| Voltage | 3.9V (By battery) |
| Humidity | 44% |

7. TEST EQUIPMENTS UTILIZED

Conducted test system

| No. | Equipment | Model | Serial Number | Manufacturer | Calibration Due date |
|-----|------------------------|---------|---------------|-----------------|----------------------|
| 1 | Vector Signal Analyzer | FSQ40 | 200089 | Rohde & Schwarz | 2014-07-08 |
| 2 | Test Receiver | ESS | 847151/015 | Rohde & Schwarz | 2013-10-30 |
| 3 | LISN | ESH2-Z5 | 829991/012 | Rohde & Schwarz | 2014-08-12 |
| 4 | Shielding Room | S81 | / | ETS•LingGern | / |

Radiated emission test system

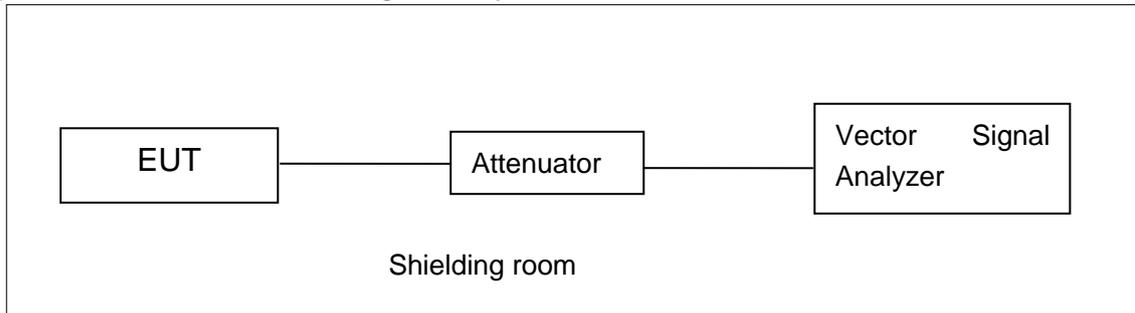
| No. | Equipment | Model | Serial Number | Manufacturer | Calibration Due date |
|-----|-----------------------------------|-------|---------------|------------------|----------------------|
| 1 | Test Receiver | ESI40 | 831564/002 | Rohde & Schwarz | 2014-08-11 |
| 2 | BiLog Antenna | 3142B | 9908-1403 | EMCO | 2014-03-15 |
| 3 | Dual-Ridge Waveguide Horn Antenna | 3115 | 9906-5827 | EMCO | 2014-12-25 |
| 4 | Dual-Ridge Waveguide Horn Antenna | 3116 | 2661 | EMCO | 2014-06-30 |
| 5 | Semi-anechoic chamber | / | CT000332-1074 | Frankonia German | / |

ANNEX A: MEASUREMENT RESULTS

A.1. Measurement Method

A.1.1. Conducted Measurements

- 1). Connect the EUT to the test system correctly.
- 2). Set the EUT to the required work mode.
- 3). Set the EUT to the required channel.
- 4). Set the spectrum analyzer to start measurement.
- 5). Record the values. Vector Signal Analyzer

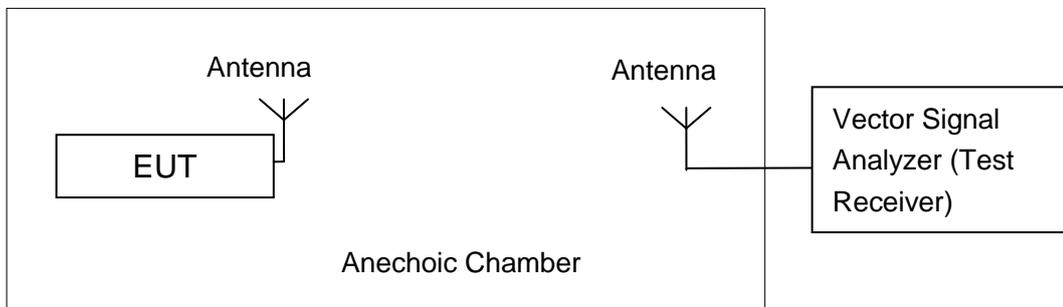


A.1.2. Radiated Emission Measurements

In the case of radiated emission, the used settings are as follows,

Sweep frequency from 30 MHz to 1GHz, RBW = 100 kHz, VBW = 300 kHz;

Sweep frequency from 1 GHz to 26GHz, RBW = 1MHz, VBW = 10Hz;



The measurement is made according to ANSI C63.4 and KDB558074

The radiated emission test is performed in semi-anechoic chamber. The distance from the EUT to the reference point of measurement antenna is 3m. The test is carried out on both vertical and horizontal polarization and only maximization result of both polarizations is kept. During the test, the turntable is rotated 360° and the measurement antenna is moved from 1m to 4m to get the maximization result.

A.2. Maximum Peak Output Power

Measurement Limit and Method:

| Standard | Limit (dBm) |
|------------------------|-------------|
| FCC CRF Part 15.247(b) | < 30 |

The measurement method SA-1 is made according to ANSI C63.4 and KDB558074

Measurement Uncertainty:

| | |
|-------------------------|--------|
| Measurement Uncertainty | 0.75dB |
|-------------------------|--------|

A.2.1. Maximum Peak Output Power-conducted

Measurement Results:

802.11a mode

| Mode | Data Rate (Mbps) | Test Result (dBm) | | |
|---------|------------------|-------------------|-----------------|-----------------|
| | | 5745MHz (Ch149) | 5785MHz (Ch157) | 5825MHz (Ch165) |
| 802.11a | 6 | 19.52 | / | / |
| | 9 | 19.34 | / | / |
| | 12 | 19.28 | / | / |
| | 18 | 19.26 | / | / |
| | 24 | 19.72 | / | / |
| | 36 | 19.73 | / | / |
| | 48 | 19.75 | 16.67 | 15.74 |
| | 54 | 19.64 | / | / |

The data rate 48Mbps is selected as worse condition, and the following cases are performed with this condition.

802.11n-HT20 mode

| Mode | Data Rate (Index) | Test Result (dBm) | | |
|-----------------|-------------------|-------------------|-----------------|-----------------|
| | | 5745MHz (Ch149) | 5785MHz (Ch157) | 5825MHz (Ch165) |
| 802.11n (20MHz) | MCS0 | 19.15 | / | / |
| | MCS1 | 18.93 | / | / |
| | MCS2 | 18.93 | / | / |
| | MCS3 | 19.30 | / | / |
| | MCS4 | 19.28 | / | / |
| | MCS5 | 19.40 | 16.02 | 15.05 |
| | MCS6 | 19.32 | / | / |
| | MCS7 | 19.30 | / | / |

The data rate MCS5 is selected as worse condition, and the following cases are performed with this condition.

802.11n-HT40 mode

| Mode | Data Rate (Index) | Test Result (dBm) | |
|-----------------|-------------------|-------------------|-----------------|
| | | 5755MHz (Ch151) | 5795MHz (Ch159) |
| 802.11n (40MHz) | MCS0 | 17.13 | / |
| | MCS1 | 17.15 | / |
| | MCS2 | 17.42 | / |
| | MCS3 | 17.50 | / |
| | MCS4 | 17.78 | / |
| | MCS5 | 17.95 | 16.06 |
| | MCS6 | 17.49 | / |
| | MCS7 | 17.46 | / |

The data rate MCS5 is selected as worse condition, and the following cases are performed with this condition.

Conclusion: PASS

A.2.2. Maximum Average Output Power-conducted

802.11a mode

| Mode | Test Result (dBm) | | |
|---------|-------------------|-----------------|-----------------|
| | 5745MHz (Ch149) | 5785MHz (Ch157) | 5825MHz (Ch165) |
| 802.11a | 14.75 | 12.47 | 12.25 |

802.11n-HT20 mode

| Mode | Test Result (dBm) | | |
|-----------------|-------------------|-----------------|-----------------|
| | 5745MHz (Ch149) | 5785MHz (Ch157) | 5825MHz (Ch165) |
| 802.11n (20MHz) | 13.76 | 11.96 | 11.11 |

802.11n-HT40 mode

| Mode | Test Result (dBm) | |
|-----------------|-------------------|-----------------|
| | 5755MHz (Ch151) | 5795MHz (Ch159) |
| 802.11n (40MHz) | 12.79 | 11.28 |

Conclusion: PASS

A.3. Peak Power Spectral Density

Measurement Limit:

| Standard | Limit |
|------------------------|---------------|
| FCC CRF Part 15.247(d) | < 8 dBm/3 kHz |

The measurement is made according to ANSI C63.4 and KDB558074

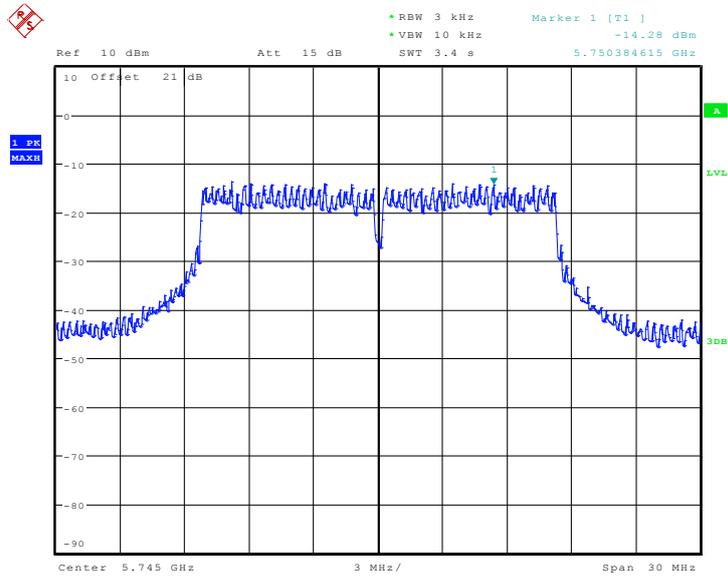
Measurement Uncertainty:

| | |
|-------------------------|--------|
| Measurement Uncertainty | 0.75dB |
|-------------------------|--------|

Measurement Results:

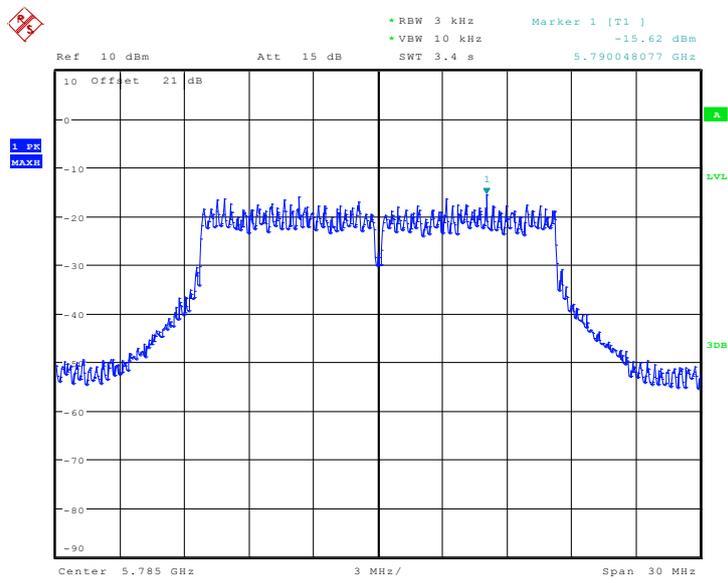
| Mode | Channel | Power Spectral Density (dBm/3 kHz) | | Conclusion |
|-----------------|---------|---|--------|------------|
| | | Fig. | Value | |
| 802.11a | 149 | Fig.1 | -14.28 | P |
| | 157 | Fig.2 | -15.62 | P |
| | 165 | Fig.3 | -16.99 | P |
| 802.11n HT20 | 149 | Fig.4 | -14.82 | P |
| | 157 | Fig.5 | -18.23 | P |
| | 165 | Fig.6 | -18.36 | P |
| 802.11n HT40 | 151 | Fig.7 | -18.72 | P |
| | 159 | Fig.8 | -20.47 | P |

Conclusion: PASS



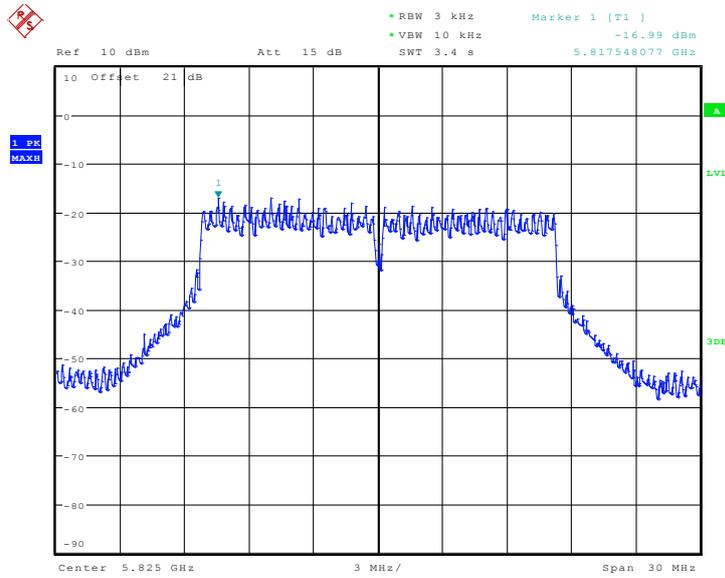
Date: 8.JUL.2013 11:12:39

Fig. 1 Power Spectral Density (802.11a, Ch 149)



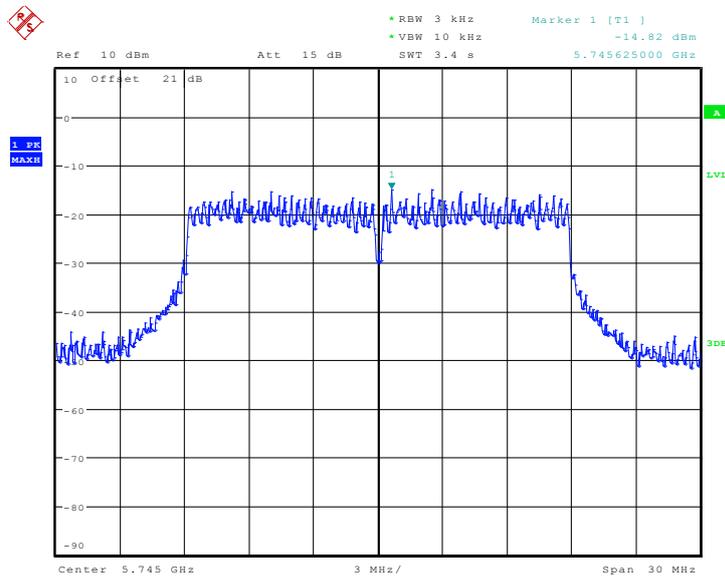
Date: 8.JUL.2013 11:13:44

Fig. 2 Power Spectral Density (802.11a, Ch 157)



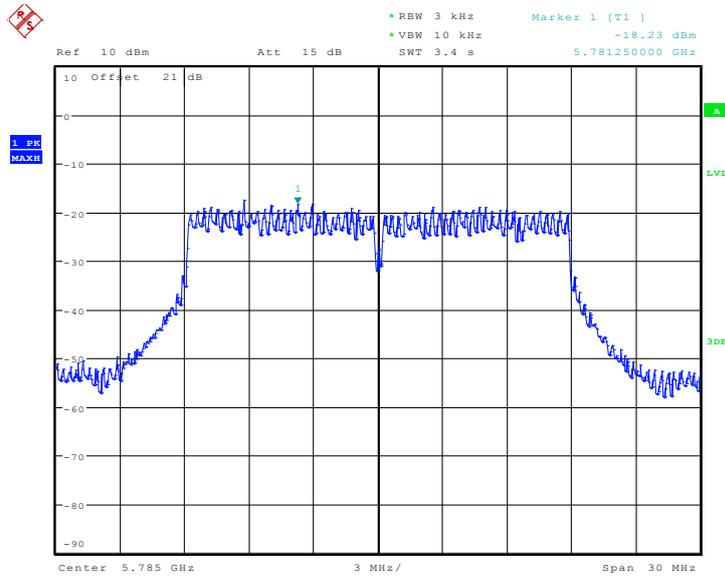
Date: 8.JUL.2013 11:14:38

Fig. 3 Power Spectral Density (802.11a, Ch 165)



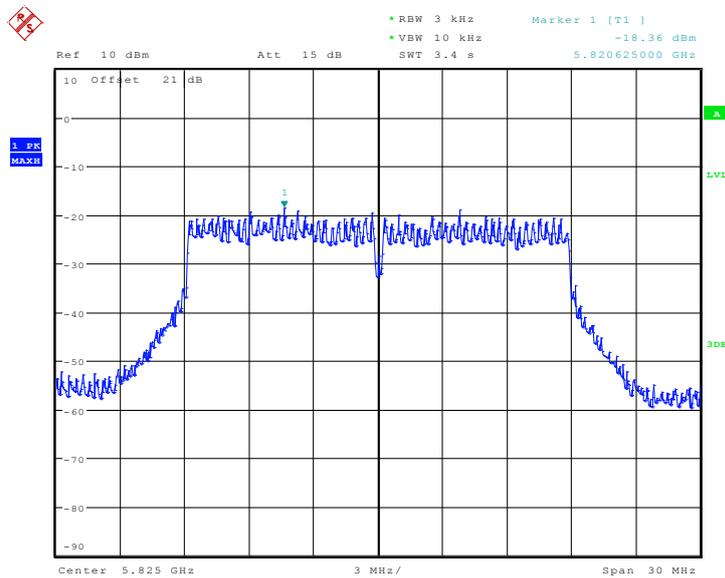
Date: 8.JUL.2013 11:19:05

Fig. 4 Power Spectral Density (802.11n-HT20, Ch 149)



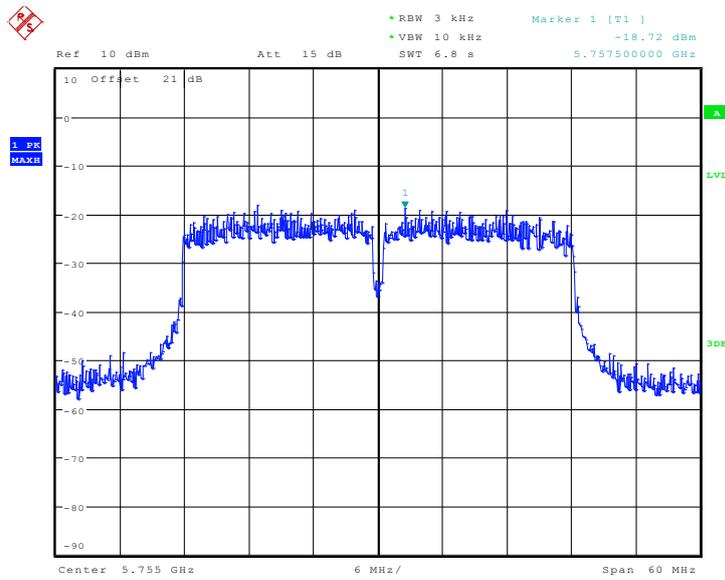
Date: 8.JUL.2013 11:17:47

Fig. 5 Power Spectral Density (802.11n-HT20, Ch 157)



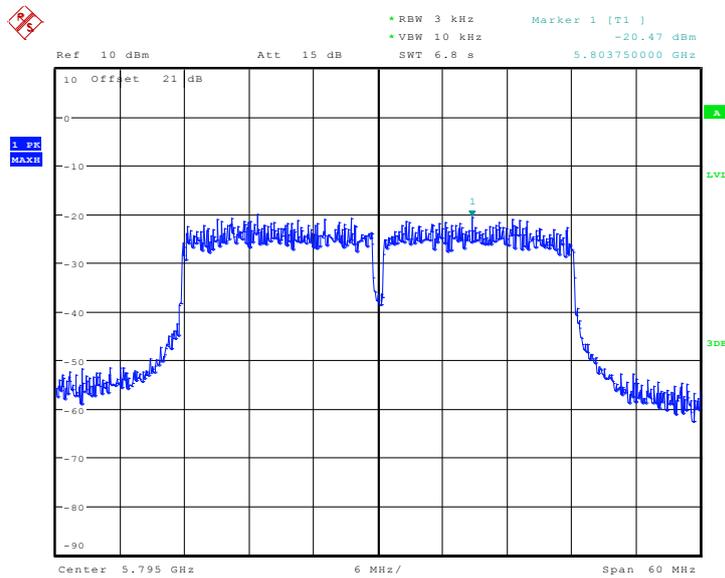
Date: 8.JUL.2013 11:18:34

Fig. 6 Power Spectral Density (802.11n-HT20, Ch 165)



Date: 8.JUL.2013 11:20:21

Fig. 7 Power Spectral Density (802.11n-HT40, Ch 151)



Date: 8.JUL.2013 11:21:29

Fig. 8 Power Spectral Density (802.11n-HT40, Ch 159)

A.4. Occupied 6dB Bandwidth

Measurement Limit:

| Standard | Limit (kHz) |
|----------------------------|-------------|
| FCC 47 CFR Part 15.247 (a) | ≥ 500 |

The measurement is made according to ANSI C63.4 and KDB558074

Measurement Uncertainty:

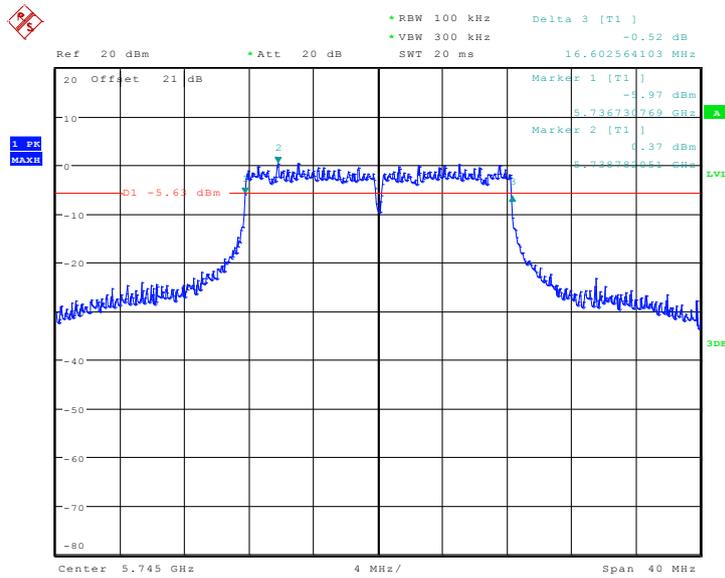
| | |
|-------------------------|---------|
| Measurement Uncertainty | 60.80Hz |
|-------------------------|---------|

Measurement Result:

| Mode | Channel | Occupied 6dB Bandwidth (kHz) | | conclusion |
|-----------------|---------|-------------------------------|----------|------------|
| | | Fig. | Value | |
| 802.11a | 149 | Fig.9 | 16602.56 | P |
| | 157 | Fig.10 | 16602.56 | P |
| | 165 | Fig.11 | 16602.56 | P |
| 802.11n HT20 | 149 | Fig.12 | 17820.51 | P |
| | 157 | Fig.13 | 17820.51 | P |
| | 165 | Fig.14 | 17820.51 | P |
| 802.11n HT40 | 151 | Fig.15 | 36410.26 | P |
| | 159 | Fig.16 | 36538.46 | P |

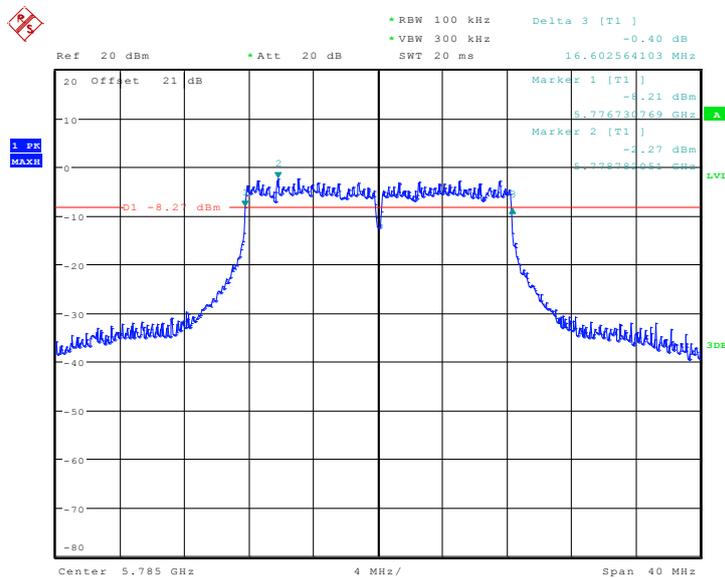
Conclusion: PASS

Test graphs as below:



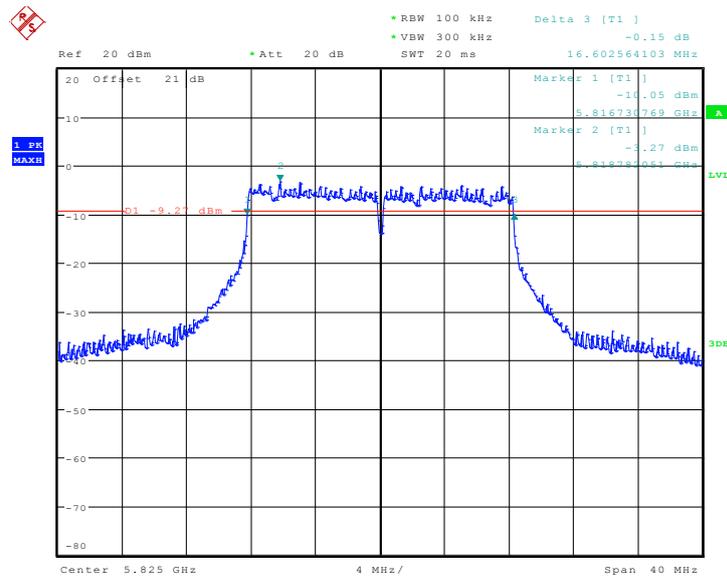
Date: 8.III.2013 11:25:20

Fig. 9 Occupied 6dB Bandwidth (802.11a, Ch 149)



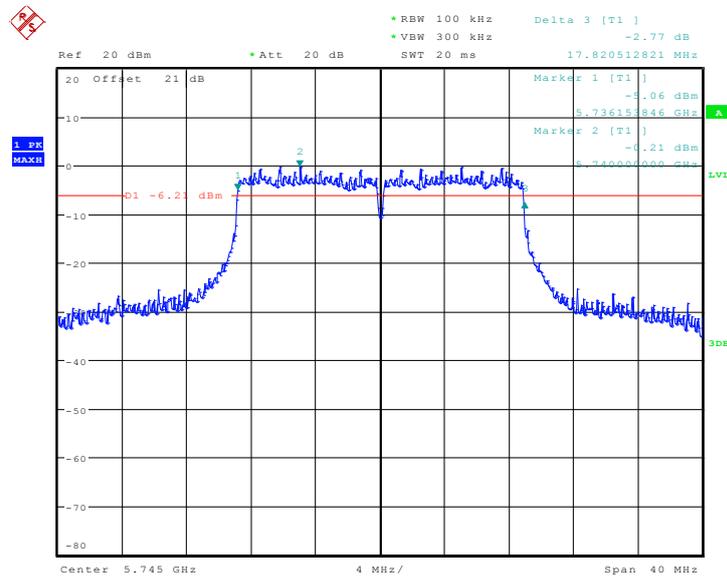
Date: 8.III.2013 13:09:52

Fig. 10 Occupied 6dB Bandwidth (802.11a, Ch 157)



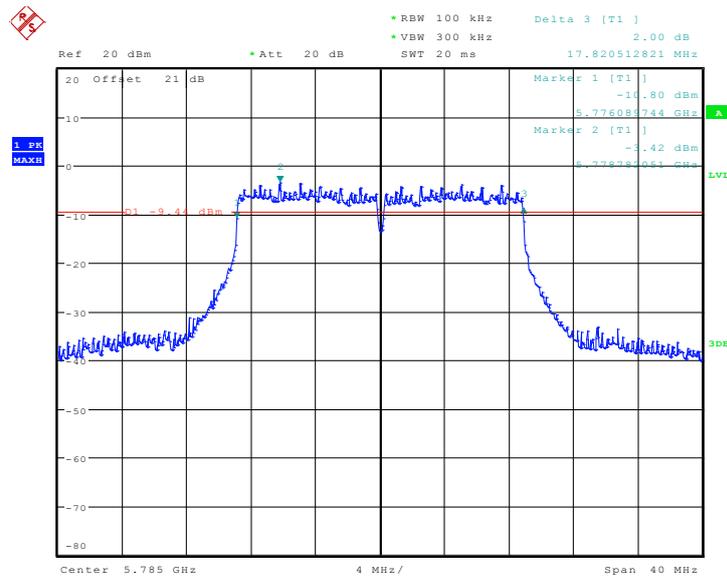
Date: 8.JUL.2013 13:11:42

Fig. 11 Occupied 6dB Bandwidth (802.11a, Ch 165)



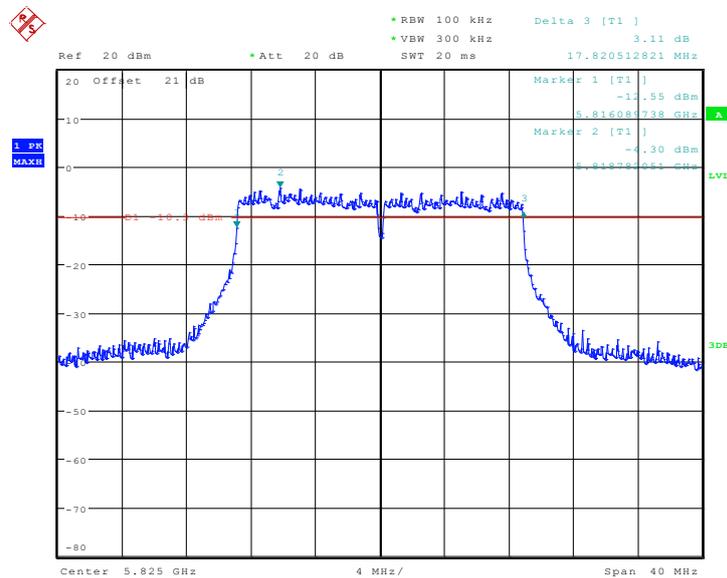
Date: 8.JUL.2013 13:13:10

Fig. 12 Occupied 6dB Bandwidth (802.11n-HT20, Ch 149)



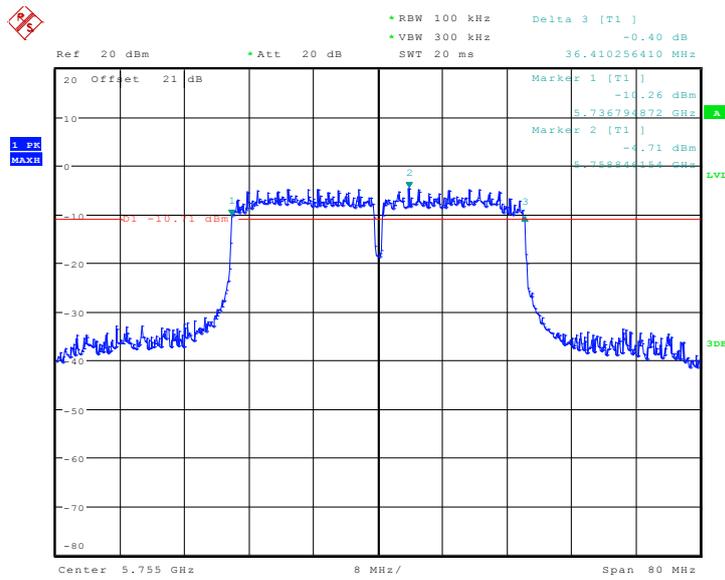
Date: 8.JUL.2013 13:14:40

Fig. 13 Occupied 6dB Bandwidth (802.11n-HT20, Ch 157)



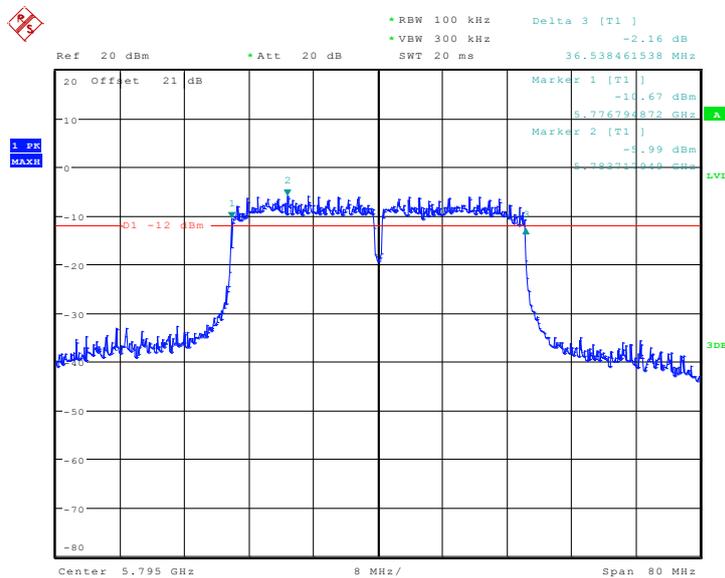
Date: 8.JUL.2013 13:17:17

Fig. 14 Occupied 6dB Bandwidth (802.11n-HT20, Ch 165)



Date: 8.JUL.2013 13:18:47

Fig. 15 Occupied 6dB Bandwidth (802.11n-HT40, Ch 151)



Date: 8.JUL.2013 13:20:24

Fig. 16 Occupied 6dB Bandwidth (802.11n-HT40, Ch 157)

A.5. Transmitter Spurious Emission

Measurement Limit:

| Standard | Limit |
|----------------------------|---|
| FCC 47 CFR Part 15.247 (d) | 20dB below peak output power in 100 kHz bandwidth |

The measurement is made according to ANSI C63.4 and KDB558074

In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c)).

| Frequency of emission (MHz) | Field strength(uV/m) | Field strength(dBuV/m) |
|-----------------------------|----------------------|------------------------|
| 30-88 | 100 | 40 |
| 88-216 | 150 | 43.5 |
| 216-960 | 200 | 46 |
| Above 960 | 500 | 54 |

Measurement Uncertainty:

| Frequency Range | Uncertainty |
|-------------------|-------------|
| 30MHz ≤ f ≤ 2GHz | 0.63 |
| 2GHz ≤ f ≤ 3.6GHz | 0.82 |
| 3.6GHz ≤ f ≤ 8GHz | 1.55 |
| 8GHz ≤ f ≤ 20GHz | 1.86 |
| 20GHz ≤ f ≤ 22GHz | 1.90 |
| 22GHz ≤ f ≤ 26GHz | 2.20 |

A.6.1 Transmitter Spurious Emission - Conducted

Measurement Results:

802.11a mode

| MODE | Channel | Frequency Range | Test Results | Conclusion |
|---------|---------|-----------------|--------------|------------|
| 802.11a | 149 | 5.745 GHz | Fig.17 | P |
| | | 30 MHz ~ 12 GHz | Fig.18 | P |
| | | 12 GHz ~ 25 GHz | Fig.19 | P |
| | | 25 GHz ~ 40 GHz | Fig.20 | P |
| | 157 | 5.785 GHz | Fig.21 | P |
| | | 30 MHz ~ 12 GHz | Fig.22 | P |
| | | 12 GHz ~ 25 GHz | Fig.23 | P |
| | | 25 GHz ~ 40 GHz | Fig.24 | P |
| | 165 | 5.825 GHz | Fig.25 | P |
| | | 30 MHz ~ 12 GHz | Fig.26 | P |
| | | 12 GHz ~ 25 GHz | Fig.27 | P |
| | | 25 GHz ~ 40 GHz | Fig.28 | P |

802.11n-HT20 mode

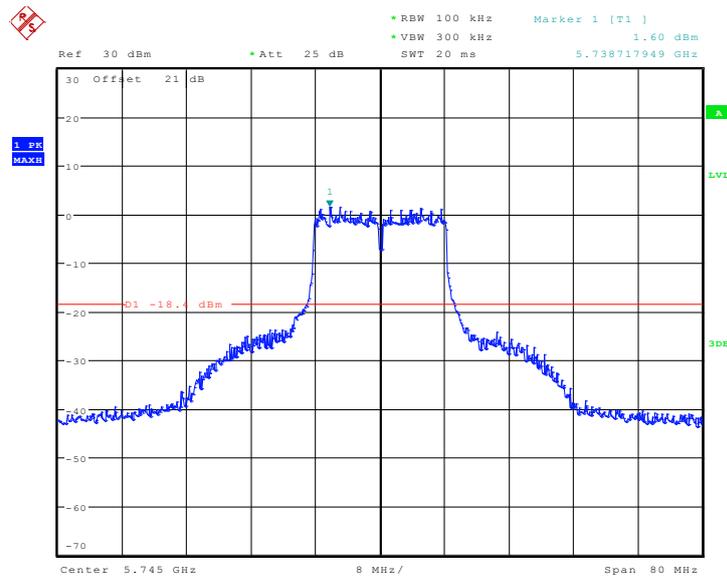
| MODE | Channel | Frequency Range | Test Results | Conclusion |
|-----------------|---------|-----------------|--------------|------------|
| 802.11n HT20 | 149 | 5.745 GHz | Fig.29 | P |
| | | 30 MHz ~ 12 GHz | Fig.30 | P |
| | | 12 GHz ~ 25 GHz | Fig.31 | P |
| | | 25 GHz ~ 40 GHz | Fig.32 | P |
| | 157 | 5.785 GHz | Fig.33 | P |
| | | 30 MHz ~ 12 GHz | Fig.34 | P |
| | | 12 GHz ~ 25 GHz | Fig.35 | P |
| | | 25 GHz ~ 40 GHz | Fig.36 | P |
| | 165 | 5.825 GHz | Fig.37 | P |
| | | 30 MHz ~ 12 GHz | Fig.38 | P |
| | | 12 GHz ~ 25 GHz | Fig.39 | P |
| | | 25 GHz ~ 40 GHz | Fig.40 | P |

802.11n-HT40 mode

| MODE | Channel | Frequency Range | Test Results | Conclusion |
|--------------------|---------|-----------------|--------------|------------|
| 802.11n (40MHz) | 151 | 5.755 GHz | Fig.41 | P |
| | | 30 MHz ~ 12 GHz | Fig.42 | P |
| | | 12 GHz ~ 25 GHz | Fig.43 | P |
| | | 25 GHz ~ 40 GHz | Fig.44 | P |
| | 159 | 5.795 GHz | Fig.45 | P |
| | | 30 MHz ~ 12 GHz | Fig.46 | P |
| | | 12 GHz ~ 25 GHz | Fig.47 | P |
| | | 25 GHz ~ 40 GHz | Fig.48 | P |

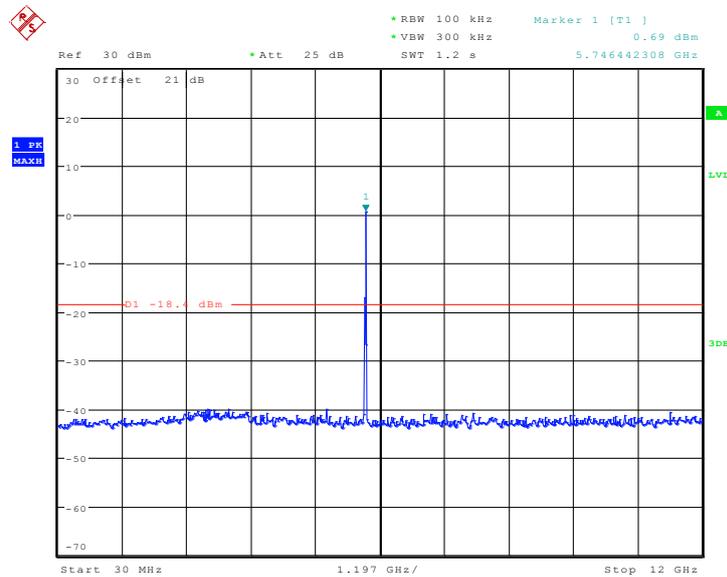
Conclusion: PASS

Test graphs as below:



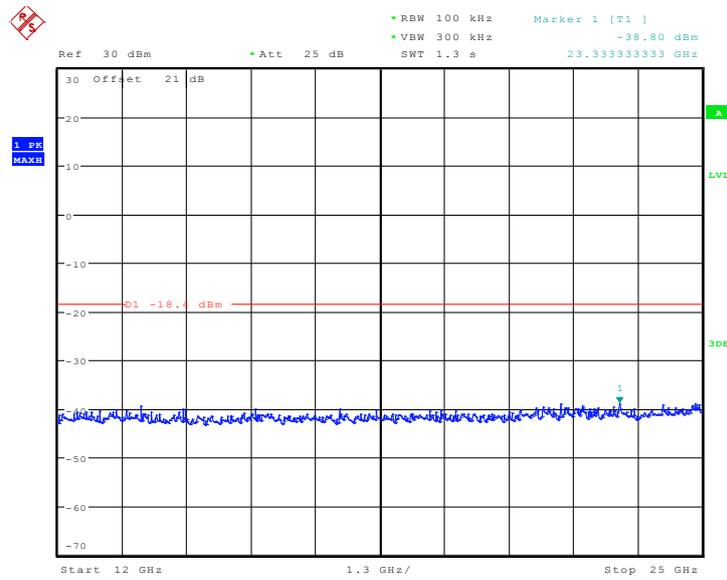
Date: 1.JAN.2003 00:35:46

Fig. 17 Conducted Spurious Emission (802.11a, Ch149, Center Frequency)



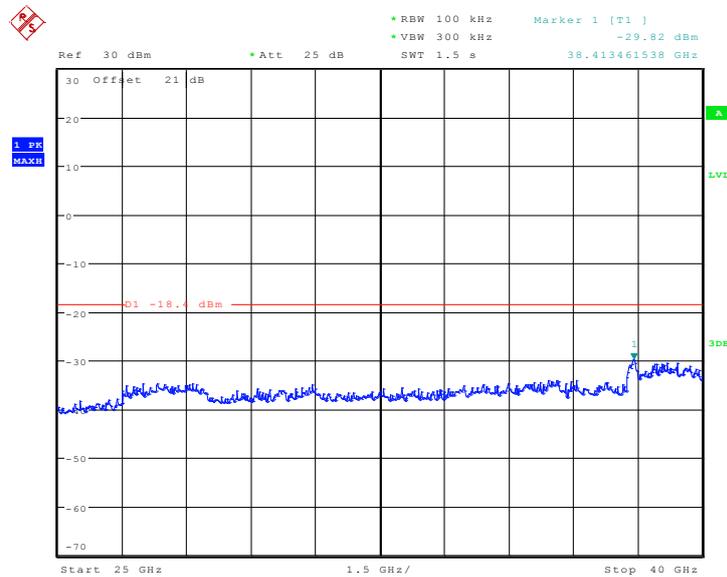
Date: 1.JAN.2003 00:36:04

Fig. 18 Conducted Spurious Emission (802.11a, Ch149, 30 MHz-12 GHz)



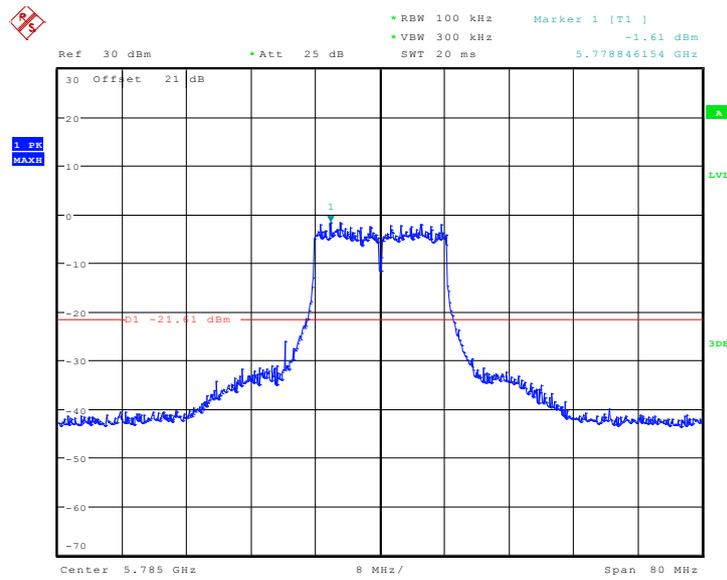
Date: 1.JAN.2003 00:36:29

Fig. 19 Conducted Spurious Emission (802.11a, Ch149, 12 GHz-25 GHz)



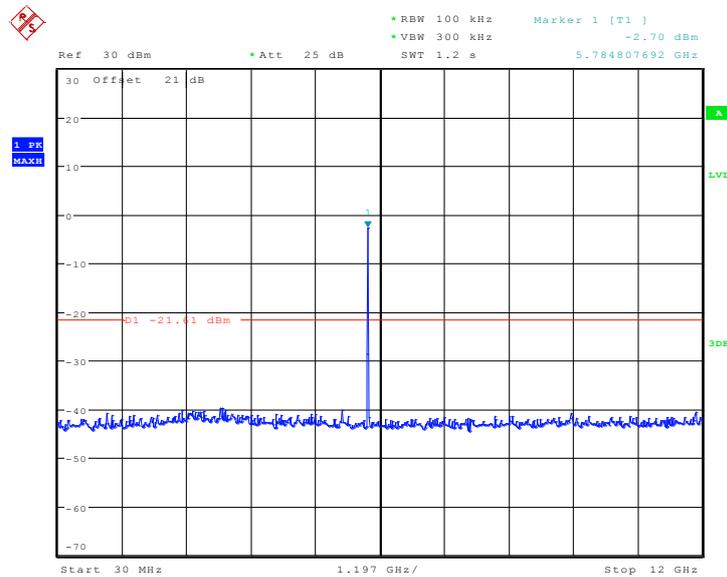
Date: 1.JAN.2003 00:36:52

Fig. 20 Conducted Spurious Emission (802.11a, Ch149, 25 GHz-40 GHz)



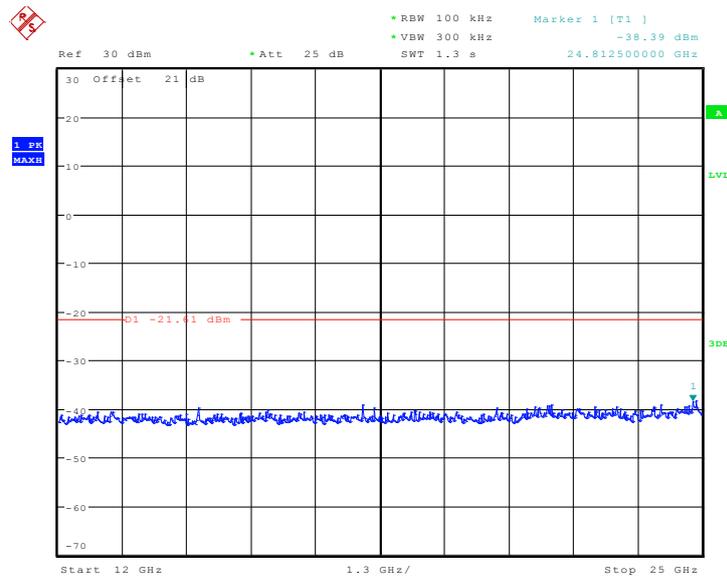
Date: 1.JAN.2003 00:37:42

Fig. 21 Conducted Spurious Emission (802.11a, Ch157, Center Frequency)



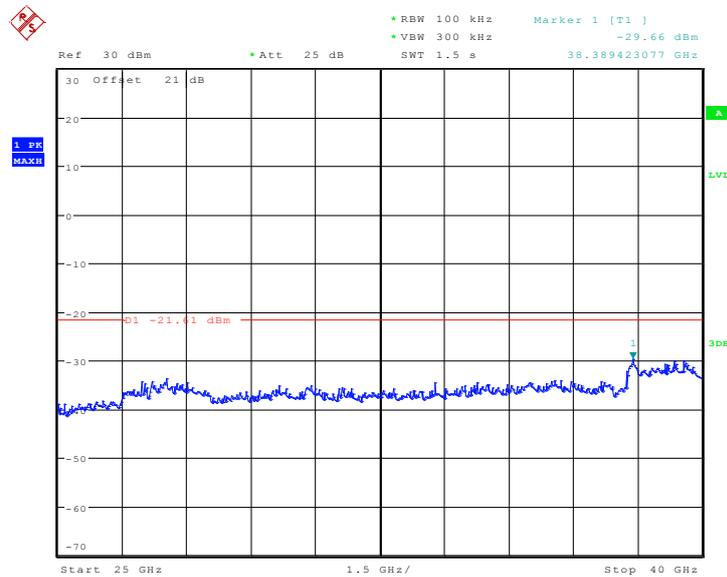
Date: 1.JAN.2003 00:37:54

Fig. 22 Conducted Spurious Emission (802.11a, Ch157, 30 MHz-12 GHz)



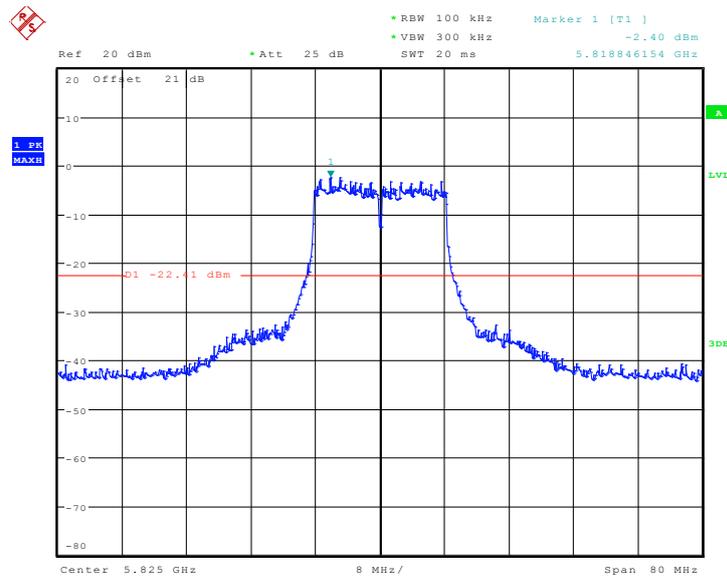
Date: 1.JAN.2003 00:38:09

Fig. 23 Conducted Spurious Emission (802.11a, Ch157, 12 GHz-25 GHz)



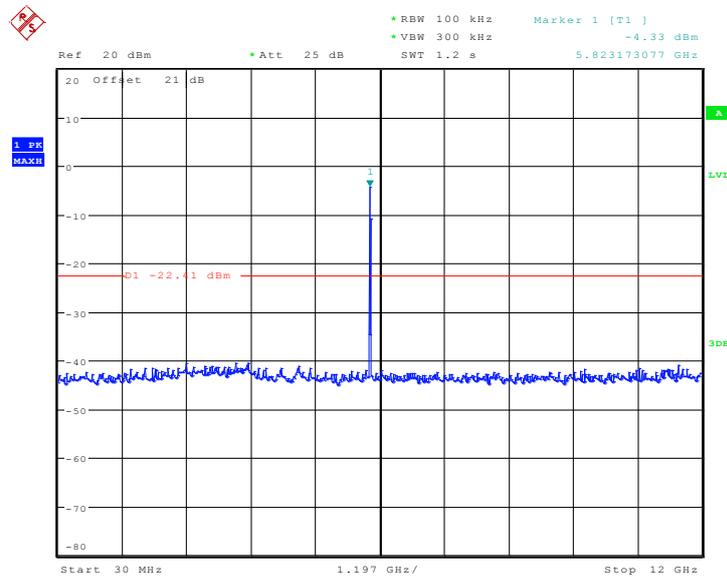
Date: 1.JAN.2003 00:38:36

Fig. 24 Conducted Spurious Emission (802.11a, Ch157, 25 GHz-40 GHz)



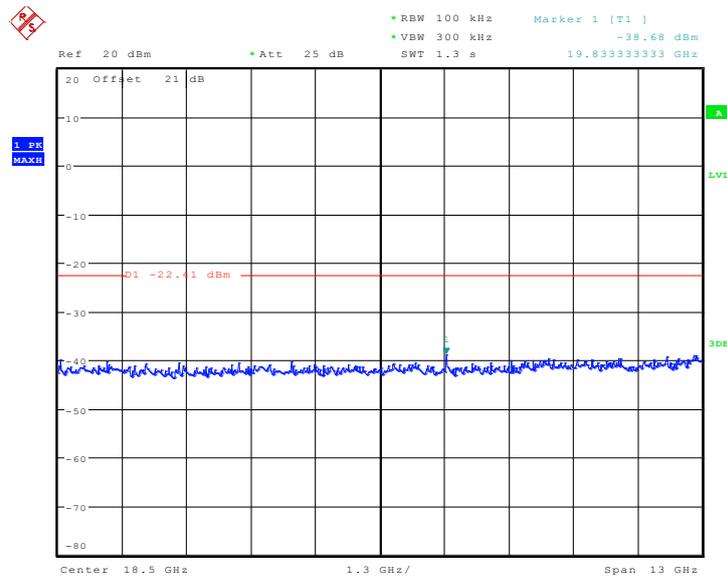
Date: 1.JAN.2003 00:39:44

Fig. 25 Conducted Spurious Emission (802.11a, Ch165, Center Frequency)



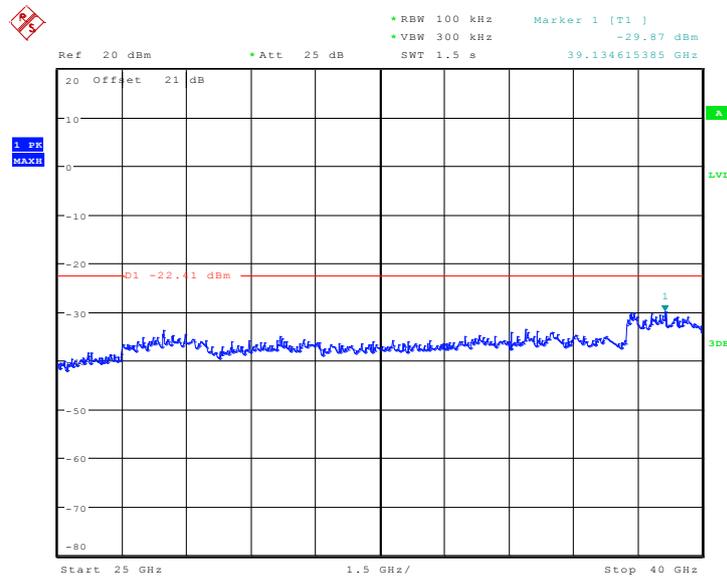
Date: 1.JAN.2003 00:39:57

Fig. 26 Conducted Spurious Emission (802.11a, Ch165, 30 MHz-12 GHz)



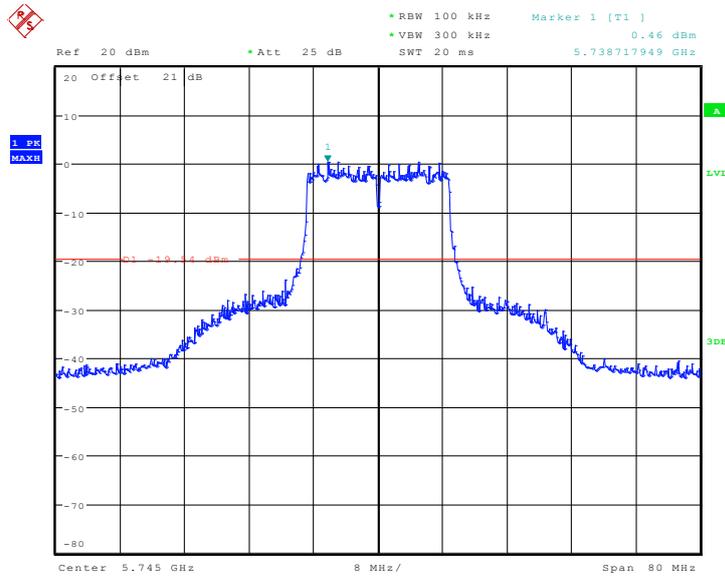
Date: 1.JAN.2003 00:40:24

Fig. 27 Conducted Spurious Emission (802.11a, Ch165, 12 GHz-25 GHz)



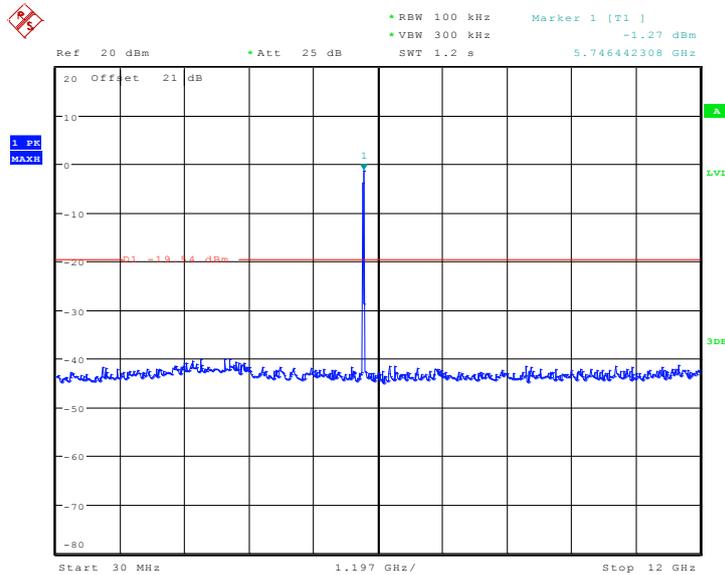
Date: 1.JAN.2003 00:40:46

Fig. 28 Conducted Spurious Emission (802.11a, Ch165, 25 GHz-40 GHz)



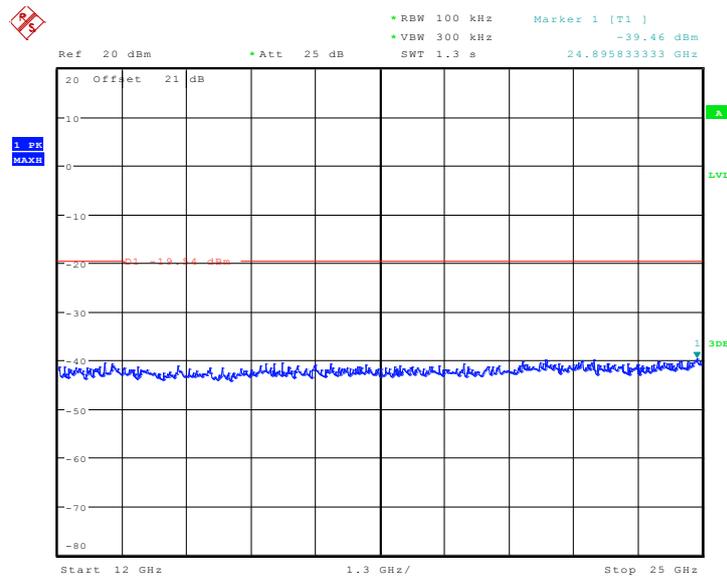
Date: 1.JAN.2003 00:41:39

Fig. 29 Conducted Spurious Emission (802.11n-HT20, Ch149, Center Frequency)



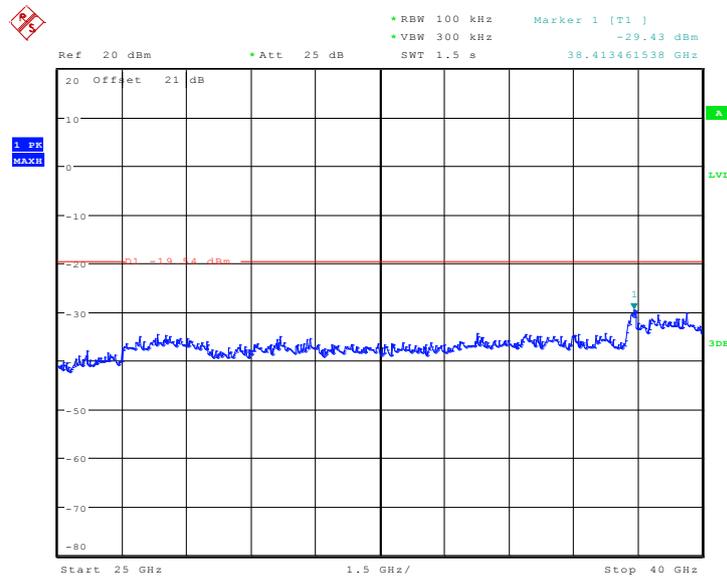
Date: 1.JAN.2003 00:41:55

Fig. 30 Conducted Spurious Emission (802.11n-HT20, Ch149, 30 MHz-12 GHz)



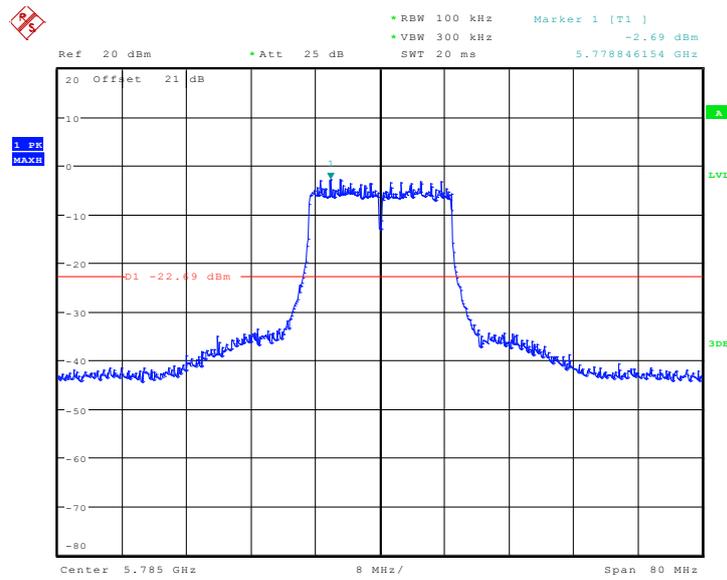
Date: 1.JAN.2003 00:42:08

Fig. 31 Conducted Spurious Emission (802.11n-HT20, Ch149, 12 GHz-25 GHz)



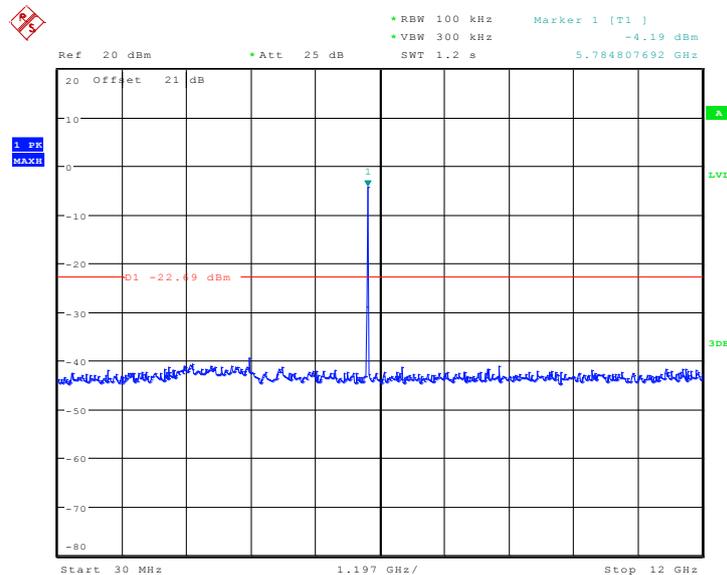
Date: 1.JAN.2003 00:42:23

Fig. 32 Conducted Spurious Emission (802.11n-HT20, Ch149, 25 GHz-40 GHz)



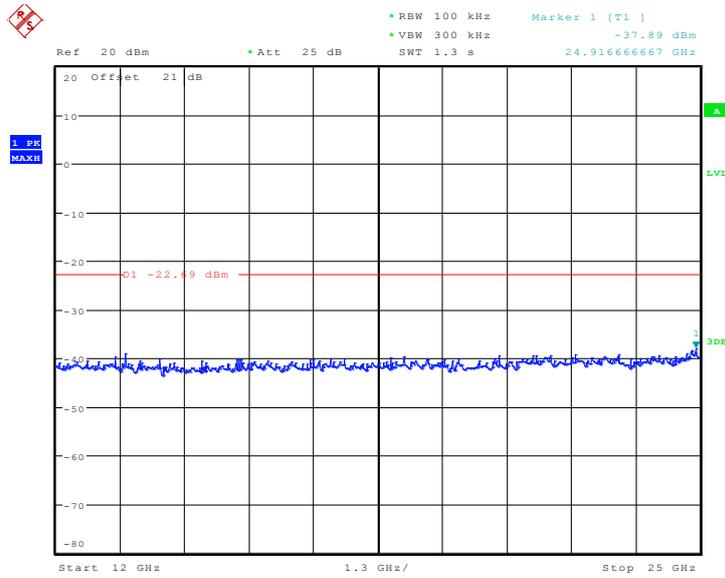
Date: 1.JAN.2003 00:43:19

Fig. 33 Conducted Spurious Emission (802.11n-HT20, Ch157, Center Frequency)



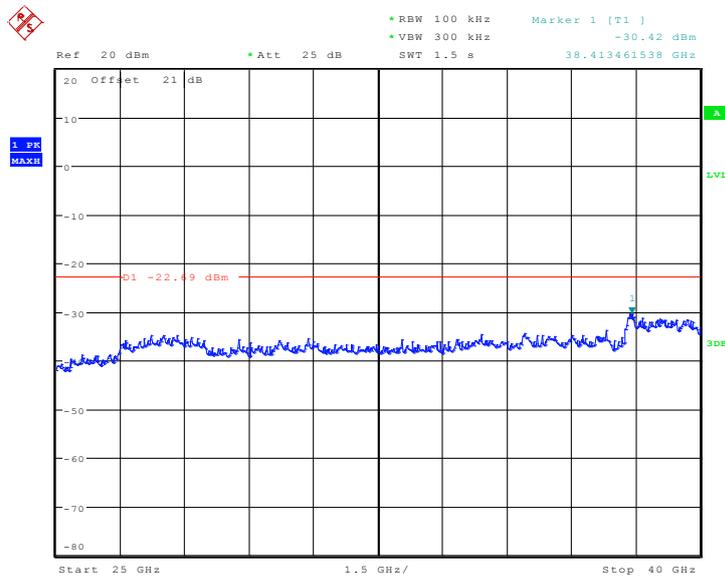
Date: 1.JAN.2003 00:43:34

Fig. 34 Conducted Spurious Emission (802.11n-HT20, Ch157, 30 MHz-12 GHz)



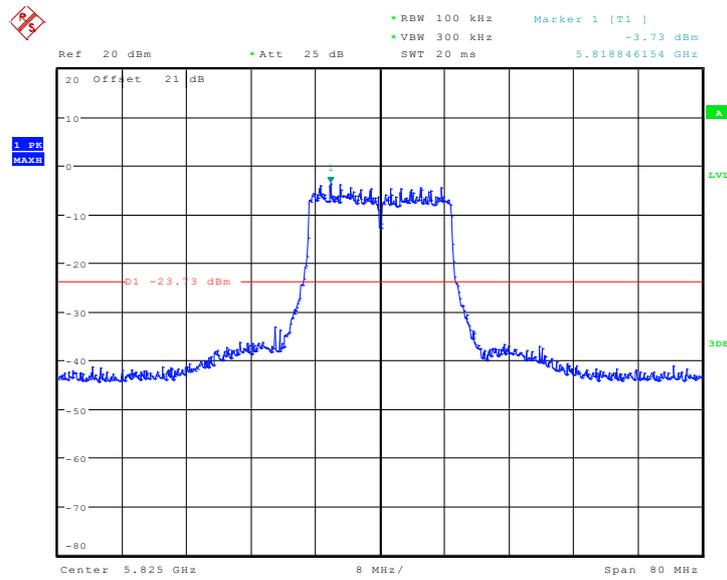
Date: 1.JAN.2003 00:44:27

Fig. 35 Conducted Spurious Emission (802.11n-HT20, Ch157, 12 GHz-25 GHz)



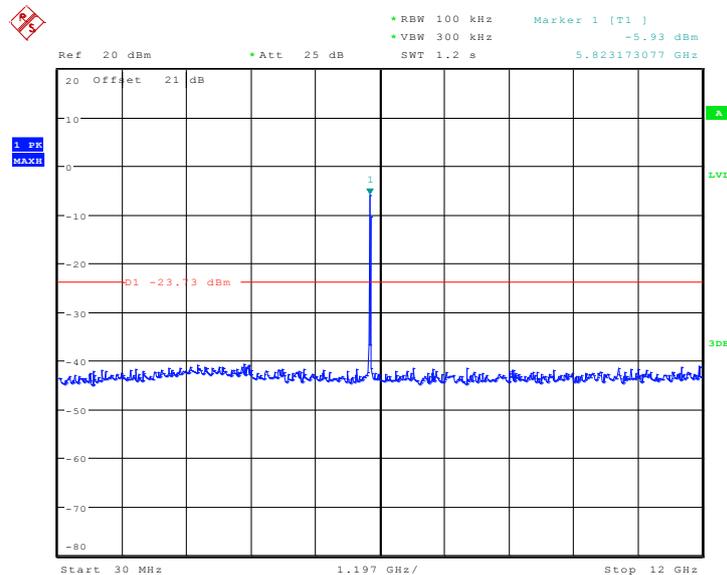
Date: 1.JAN.2003 00:44:44

Fig. 36 Conducted Spurious Emission (802.11n-HT20, Ch157, 25 GHz-40 GHz)



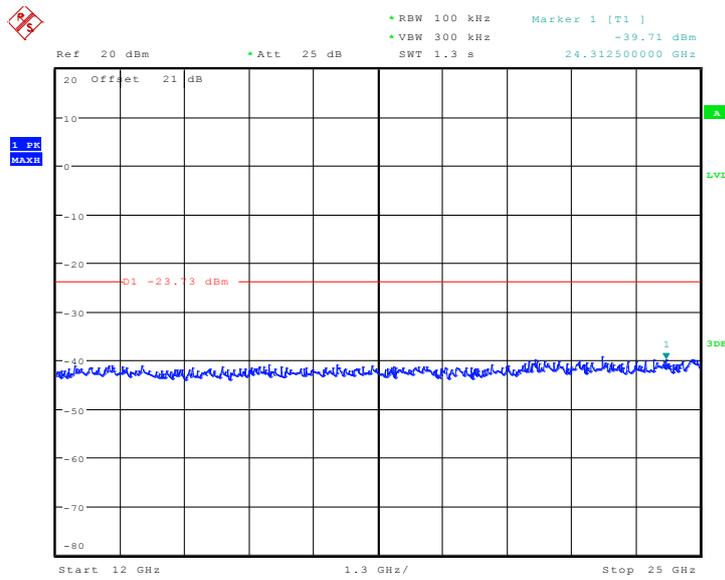
Date: 1.JAN.2003 00:45:22

Fig. 37 Conducted Spurious Emission (802.11n-HT20, Ch165, Center Frequency)



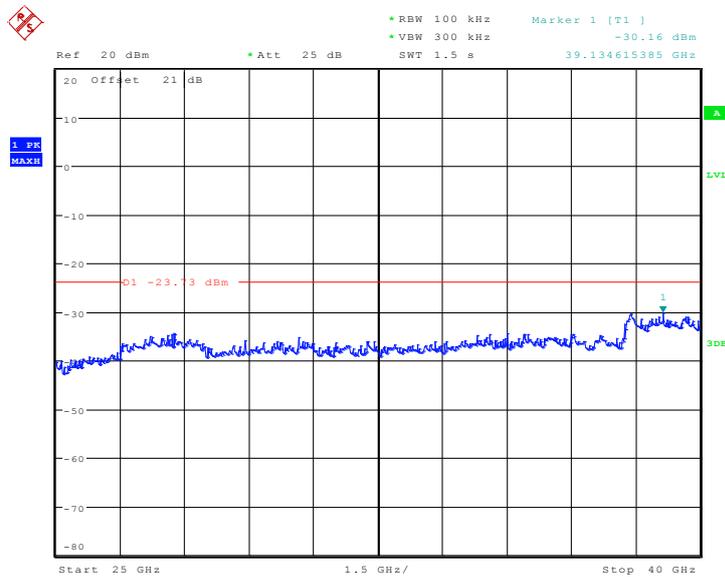
Date: 1.JAN.2003 00:45:35

Fig. 38 Conducted Spurious Emission (802.11n-HT20, Ch165, 30 MHz-12 GHz)



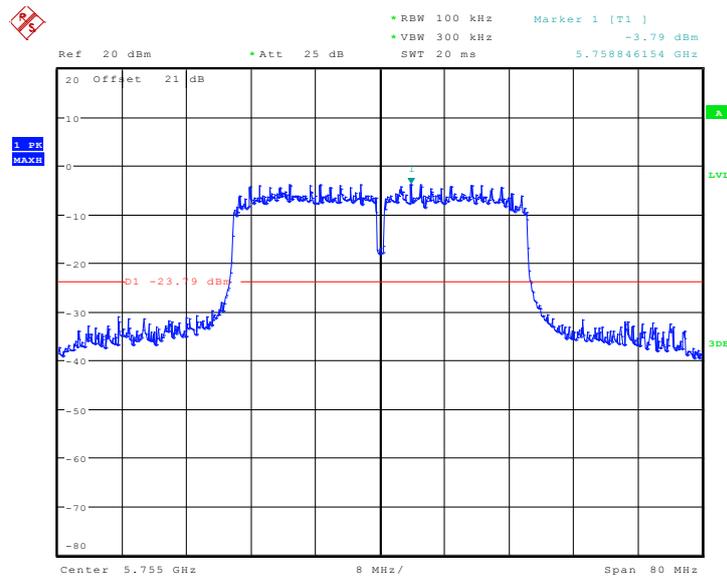
Date: 1.JAN.2003 00:45:48

Fig. 39 Conducted Spurious Emission (802.11n-HT20, Ch165, 12 GHz-25 GHz)



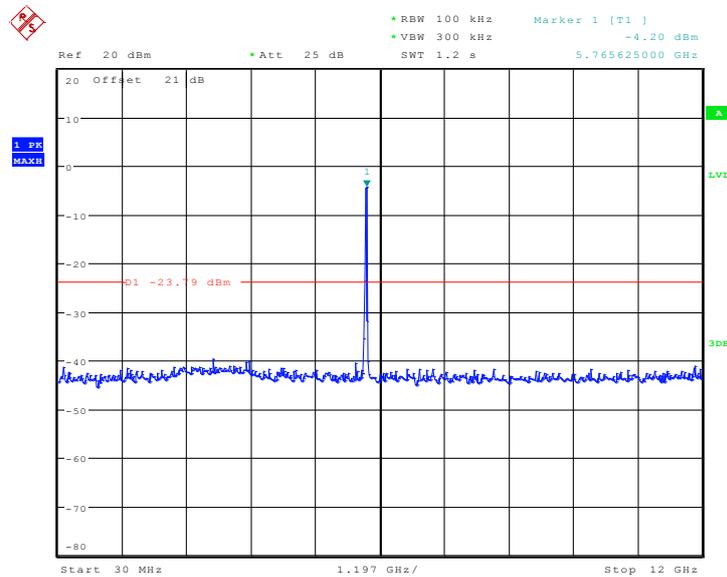
Date: 1.JAN.2003 00:46:02

Fig. 40 Conducted Spurious Emission (802.11n-HT20, Ch165, 25 GHz-40 GHz)



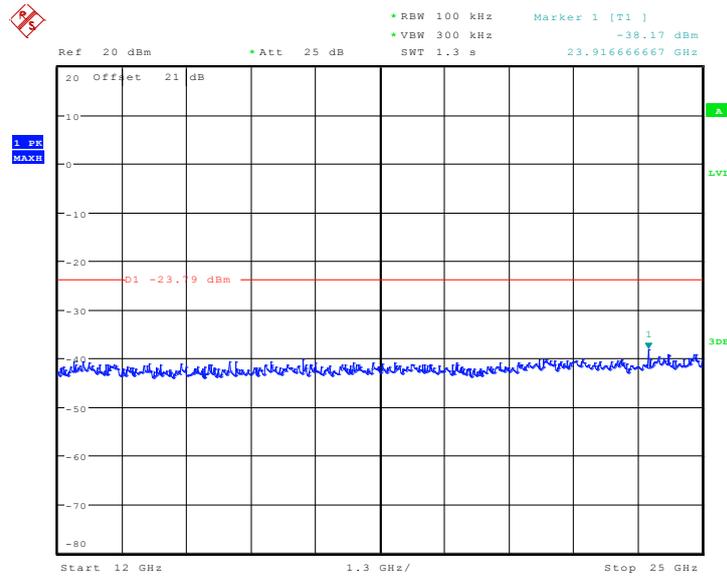
Date: 1.JAN.2003 00:46:56

Fig. 41 Conducted Spurious Emission (802.11n-HT40, Ch151, Center Frequency)



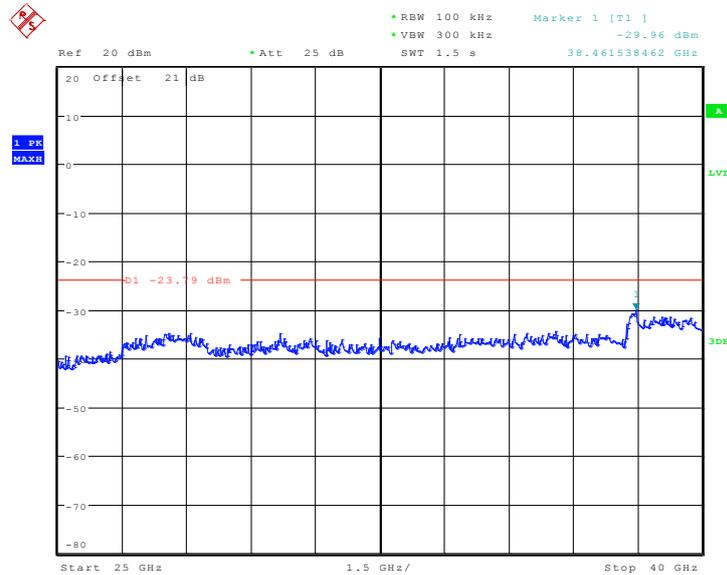
Date: 1.JAN.2003 00:47:11

Fig. 42 Conducted Spurious Emission (802.11n-HT40, Ch151, 30 MHz-12 GHz)



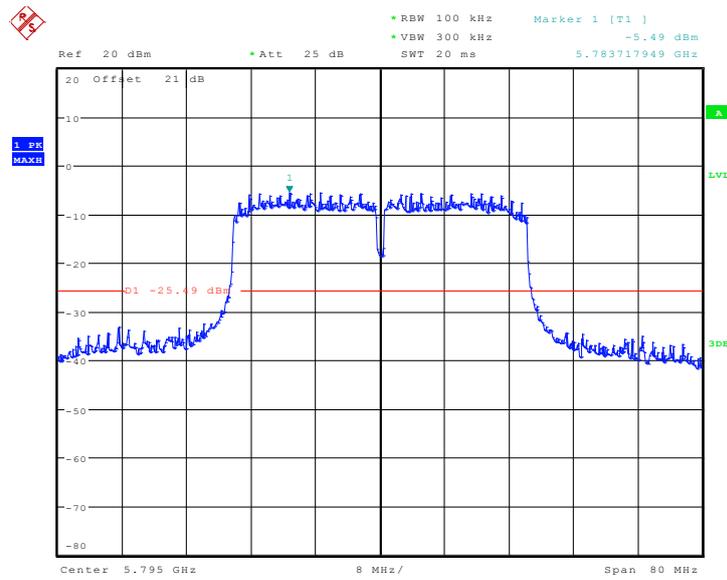
Date: 1.JAN.2003 00:47:25

Fig. 43 Conducted Spurious Emission (802.11n-HT40, Ch151, 12 GHz-25 GHz)



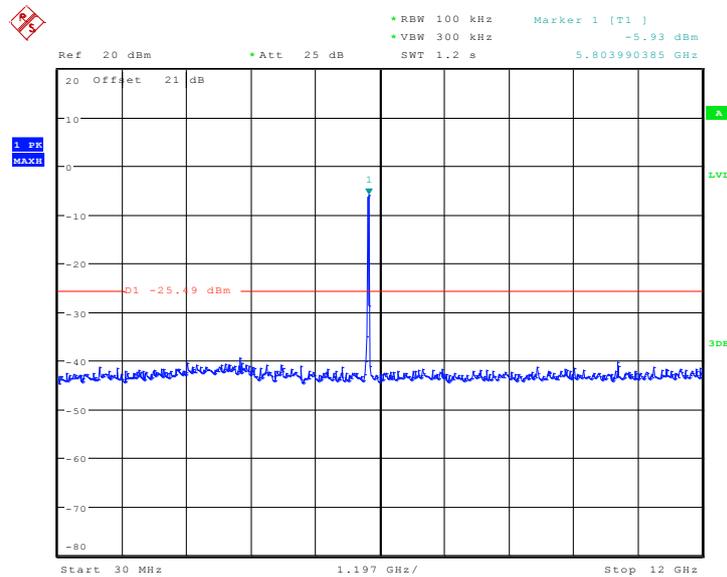
Date: 1.JAN.2003 00:47:56

Fig. 44 Conducted Spurious Emission (802.11n-HT40, Ch151, 25 GHz-40 GHz)



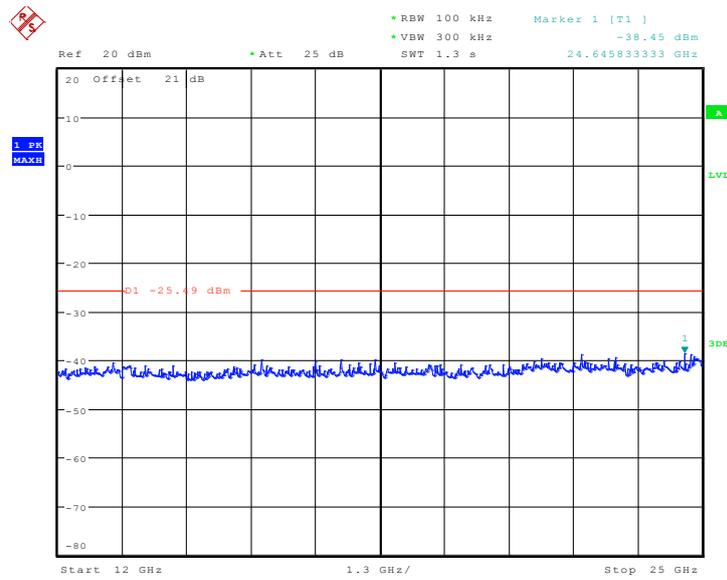
Date: 1.JAN.2003 00:49:05

Fig. 45 Conducted Spurious Emission (802.11n-HT40, Ch159, Center Frequency)



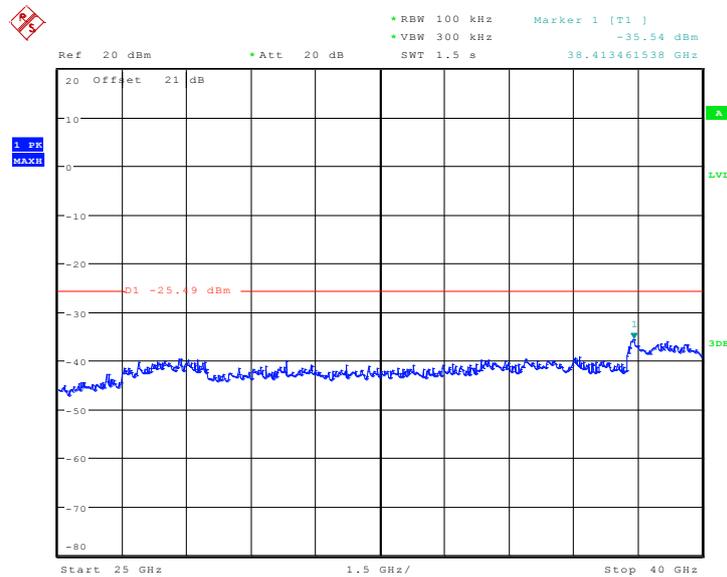
Date: 1.JAN.2003 00:49:28

Fig. 46 Conducted Spurious Emission (802.11n-HT40, Ch159, 30 MHz-12 GHz)



Date: 1.JAN.2003 00:49:43

Fig. 47 Conducted Spurious Emission (802.11n-HT40, Ch159, 12 GHz-25 GHz)



Date: 1.JAN.2003 00:50:12

Fig. 48 Conducted Spurious Emission (802.11n-HT40, Ch151, 25 GHz-40 GHz)

A.6.2 Transmitter Spurious Emission - Radiated

Limit in restricted band:

Measurement Results:

802.11a mode

| Mode | Channel | Frequency Range | Test Results | Conclusion |
|---------|---------|-------------------|--------------|------------|
| 802.11a | 149 | 30 MHz ~1 GHz | Fig.49 | P |
| | | 1 GHz ~ 3 GHz | Fig.50 | P |
| | | 3 GHz ~ 6 GHz | Fig.51 | P |
| | | 6 GHz ~ 18 GHz | Fig.52 | P |
| | | 18 GHz ~ 26.5 GHz | Fig.53 | P |
| | | 26.5 GHz ~ 40 GHz | Fig.54 | P |
| | 157 | 30 MHz ~1 GHz | Fig.55 | P |
| | | 1 GHz ~ 3 GHz | Fig.56 | P |
| | | 3 GHz ~ 6 GHz | Fig.57 | P |
| | | 6 GHz ~ 18 GHz | Fig.58 | P |
| | | 18 GHz ~ 26.5 GHz | Fig.59 | P |
| | | 26.5 GHz ~ 40 GHz | Fig.60 | P |
| | 165 | 30 MHz ~1 GHz | Fig.61 | P |
| | | 1 GHz ~ 3 GHz | Fig.62 | P |
| | | 3 GHz ~ 6 GHz | Fig.63 | P |
| | | 6 GHz ~ 18 GHz | Fig.64 | P |
| | | 18 GHz ~ 26.5 GHz | Fig.65 | P |
| | | 26.5 GHz ~ 40 GHz | Fig.66 | P |

802.11n-HT20 mode

| Mode | Channel | Frequency Range | Test Results | Conclusion |
|-------------------|---------|-------------------|--------------|------------|
| 802.11n (HT20) | 149 | 30 MHz ~1 GHz | Fig.67 | P |
| | | 1 GHz ~ 3 GHz | Fig.68 | P |
| | | 3 GHz ~ 6 GHz | Fig.69 | P |
| | | 6 GHz ~ 18 GHz | Fig.70 | P |
| | | 18 GHz ~ 26.5 GHz | Fig.71 | P |
| | | 26.5 GHz ~ 40 GHz | Fig.72 | P |
| | 157 | 30 MHz ~1 GHz | Fig.73 | P |
| | | 1 GHz ~ 3 GHz | Fig.74 | P |
| | | 3 GHz ~ 6 GHz | Fig.75 | P |
| | | 6 GHz ~ 18 GHz | Fig.76 | P |
| | | 18 GHz ~ 26.5 GHz | Fig.77 | P |
| | | 26.5 GHz ~ 40 GHz | Fig.78 | P |
| | 165 | 30 MHz ~1 GHz | Fig.79 | P |
| | | 1 GHz ~ 3 GHz | Fig.80 | P |
| | | 3 GHz ~ 6 GHz | Fig.81 | P |
| | | 6 GHz ~ 18 GHz | Fig.82 | P |
| | | 18 GHz ~ 26.5 GHz | Fig.83 | P |
| | | 26.5 GHz ~ 40 GHz | Fig.84 | P |

802.11n-HT40 mode

| Mode | Channel | Frequency Range | Test Results | Conclusion |
|-------------------|---------|-------------------|--------------|------------|
| 802.11n (HT40) | 151 | 30 MHz ~1 GHz | Fig.85 | P |
| | | 1 GHz ~ 3 GHz | Fig.86 | P |
| | | 3 GHz ~ 6 GHz | Fig.87 | P |
| | | 6 GHz ~ 18 GHz | Fig.88 | P |
| | | 18 GHz ~ 26.5 GHz | Fig.89 | P |
| | | 26.5 GHz ~ 40 GHz | Fig.90 | P |
| | 159 | 30 MHz ~1 GHz | Fig.91 | P |
| | | 1 GHz ~ 3 GHz | Fig.92 | P |
| | | 3 GHz ~ 6 GHz | Fig.93 | P |
| | | 6 GHz ~ 18 GHz | Fig.94 | P |
| | | 18 GHz ~ 26.5 GHz | Fig.95 | P |
| | | 26.5 GHz ~ 40 GHz | Fig.96 | P |

Conclusion: PASS

Test graphs as below:

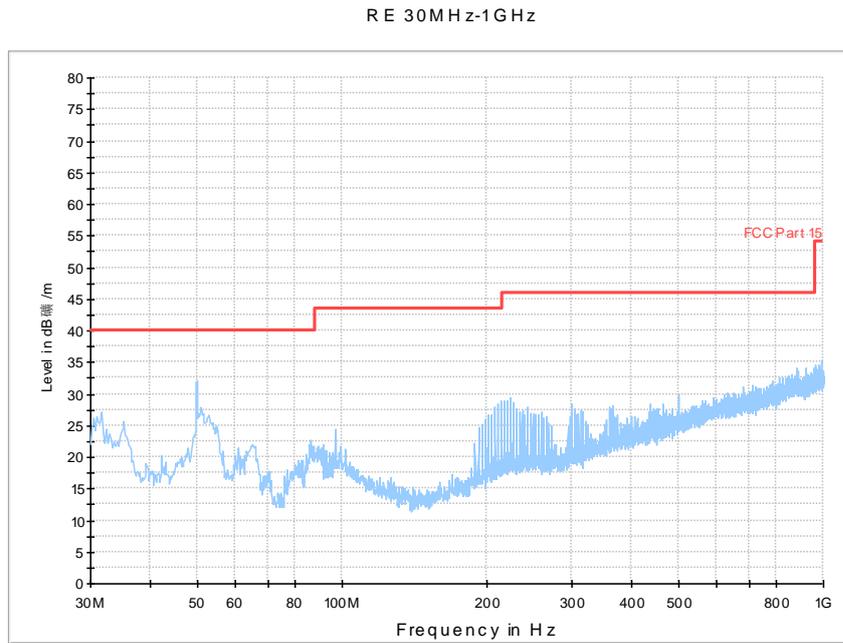


Fig. 49 Radiated Spurious Emission (802.11a, Ch149, 30 MHz-1 GHz)

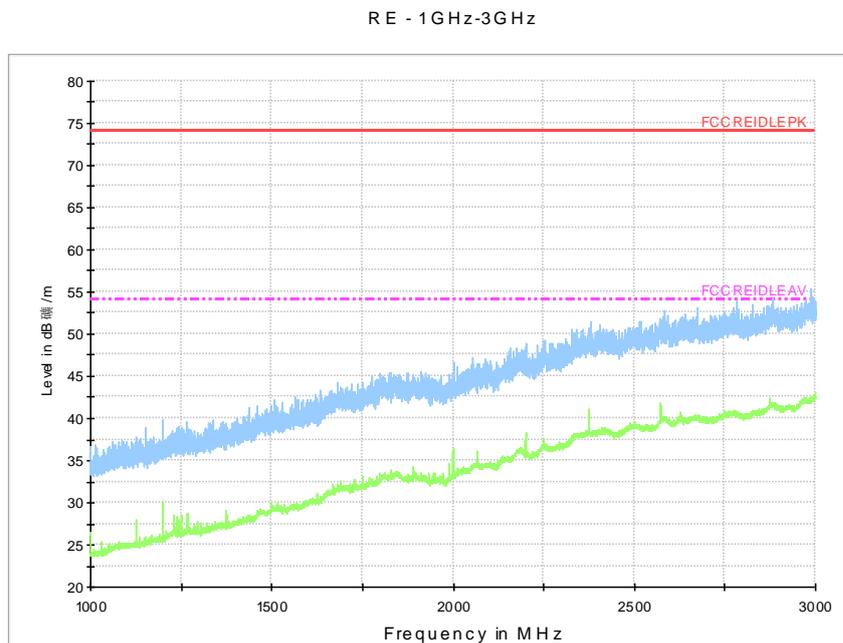


Fig. 50 Radiated Spurious Emission (802.11a, Ch149, 1 GHz-3 GHz)

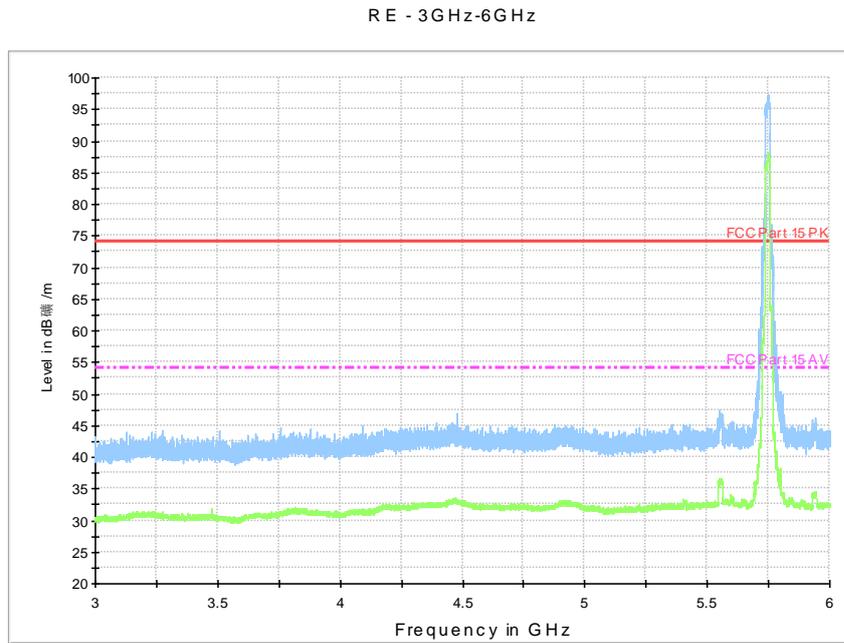


Fig. 51 Radiated Spurious Emission (802.11a, Ch149, 3 GHz-6 GHz)

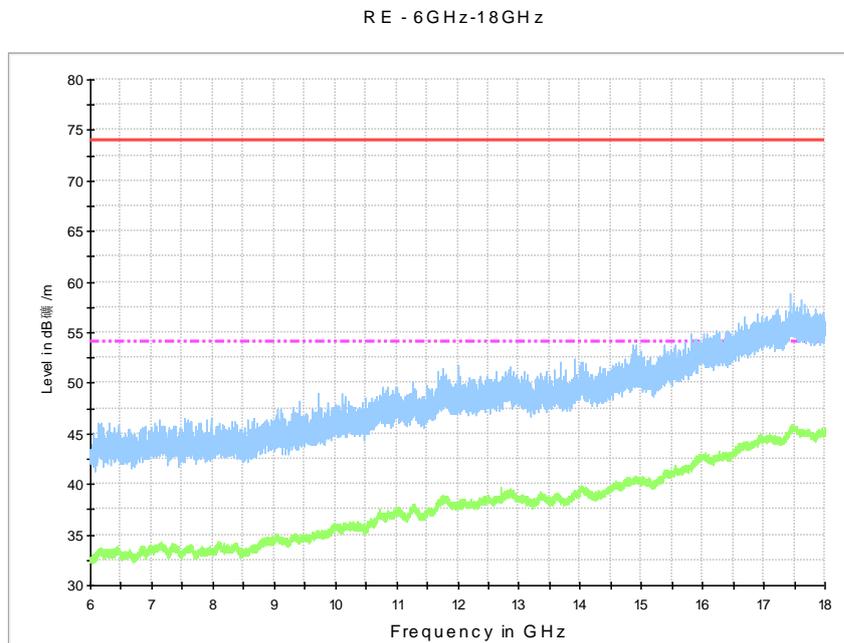


Fig. 52 Radiated Spurious Emission (802.11a, Ch149, 6 GHz-18 GHz)

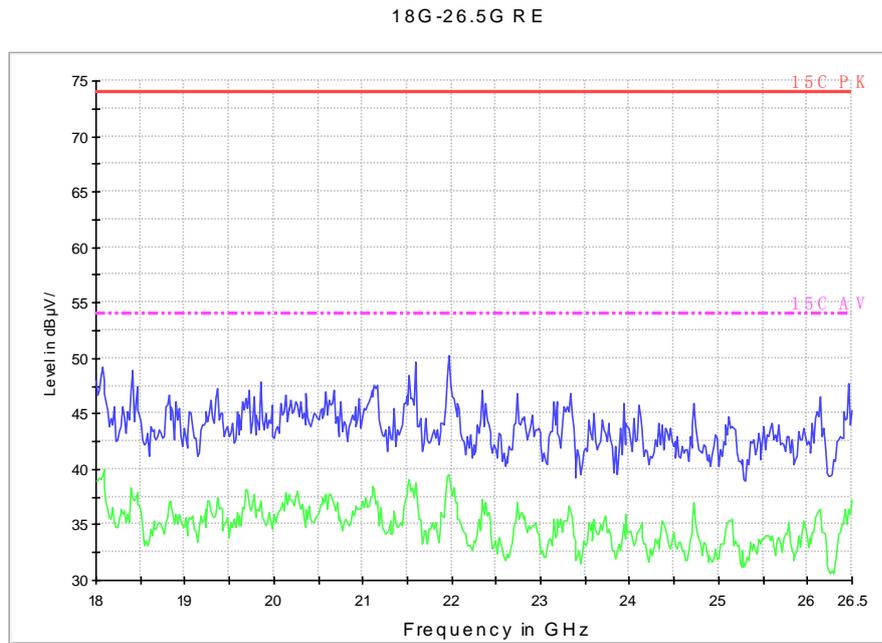


Fig. 53 Radiated Spurious Emission (802.11a, Ch149, 18 GHz-26.5 GHz)

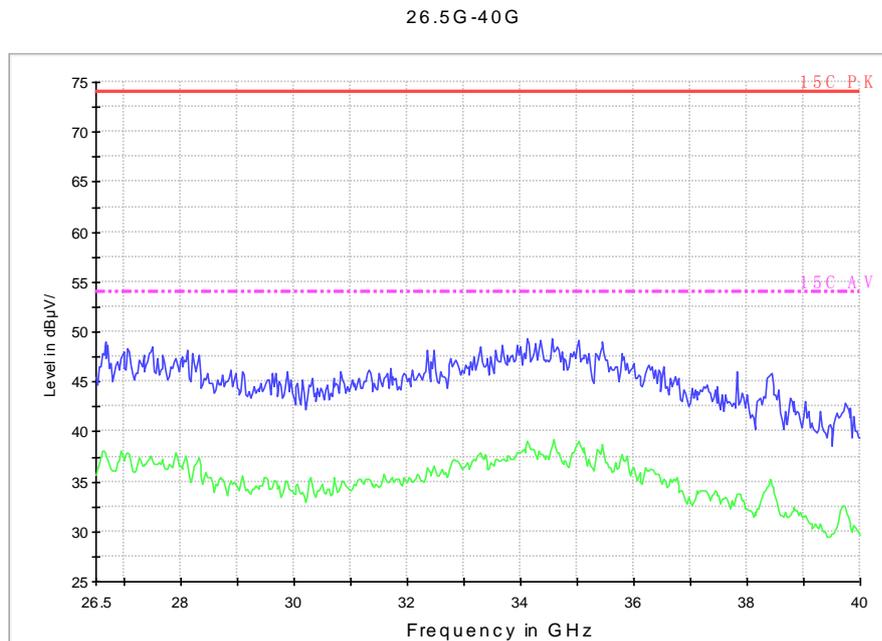


Fig. 54 Radiated Spurious Emission (802.11a, Ch149, 26.5 GHz-40 GHz)

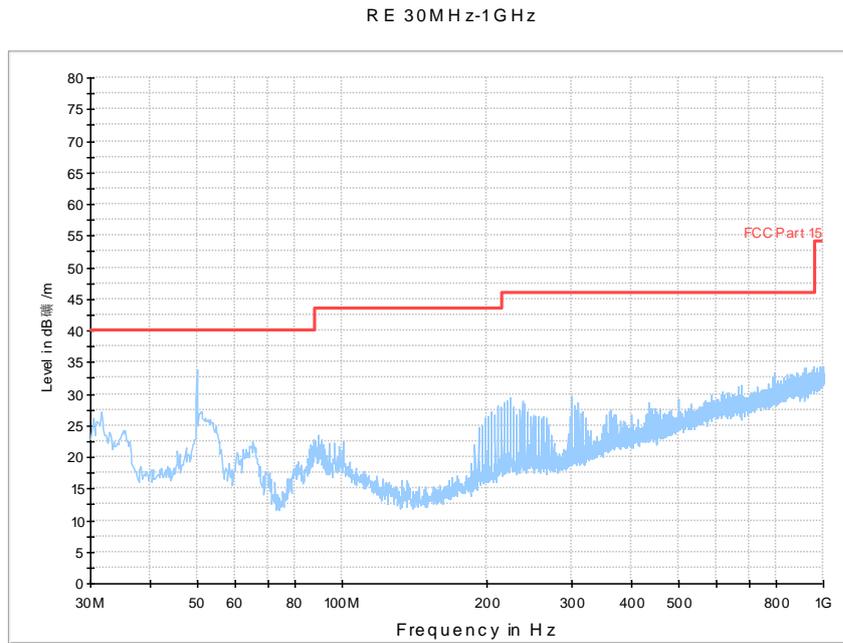


Fig. 55 Radiated Spurious Emission (802.11a, Ch157, 30 MHz-1 GHz)

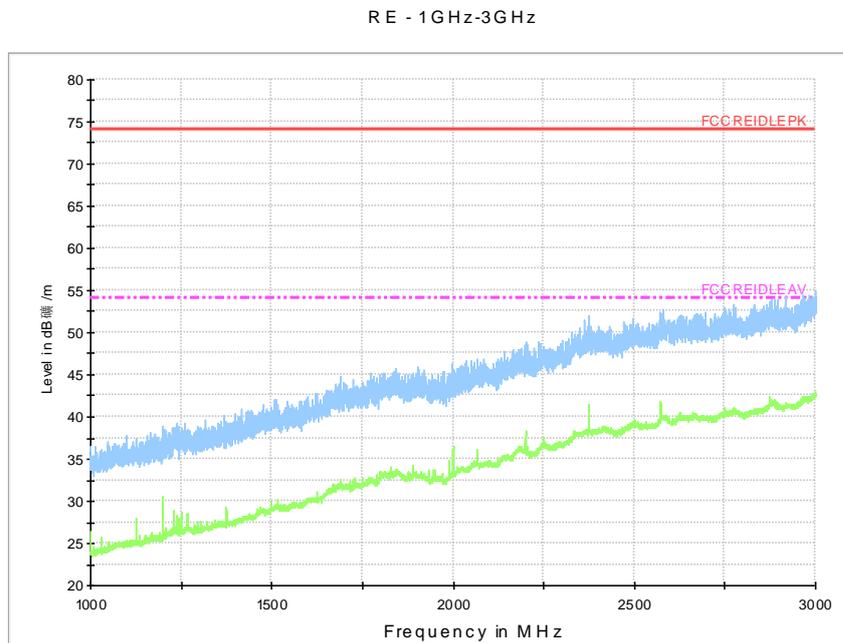


Fig. 56 Radiated Spurious Emission (802.11a, Ch157, 1 GHz-3 GHz)

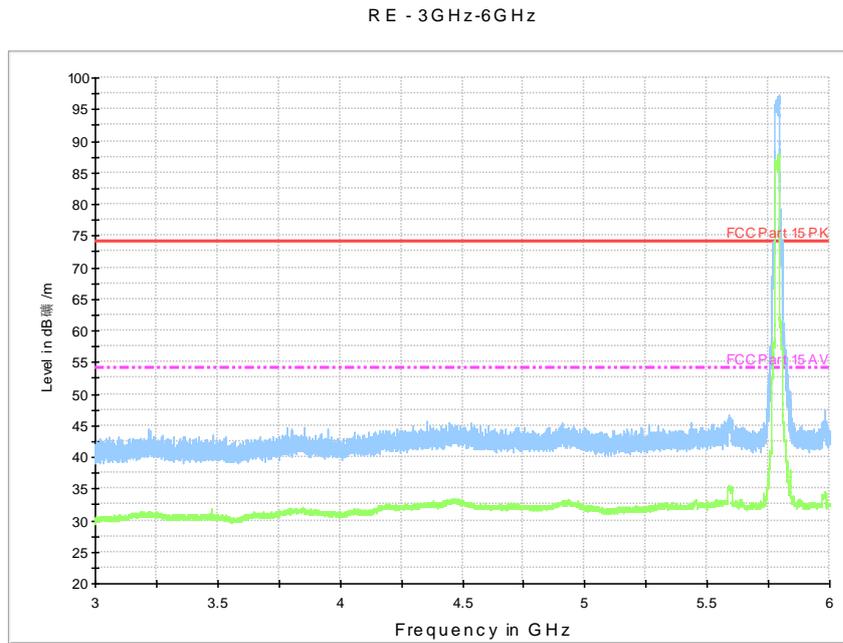


Fig. 57 Radiated Spurious Emission (802.11a, Ch157, 3 GHz-6 GHz)

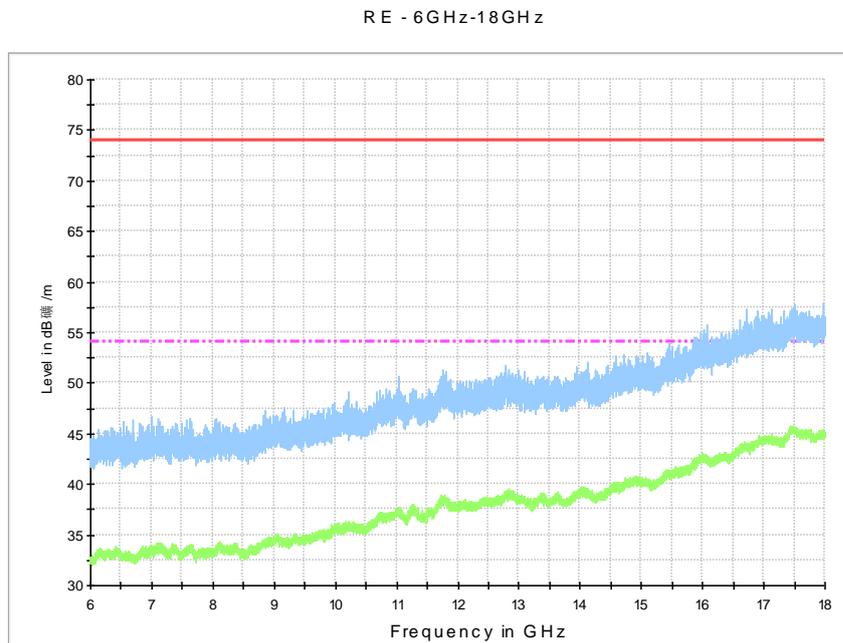


Fig. 58 Radiated Spurious Emission (802.11a, Ch157, 6 GHz-18 GHz)

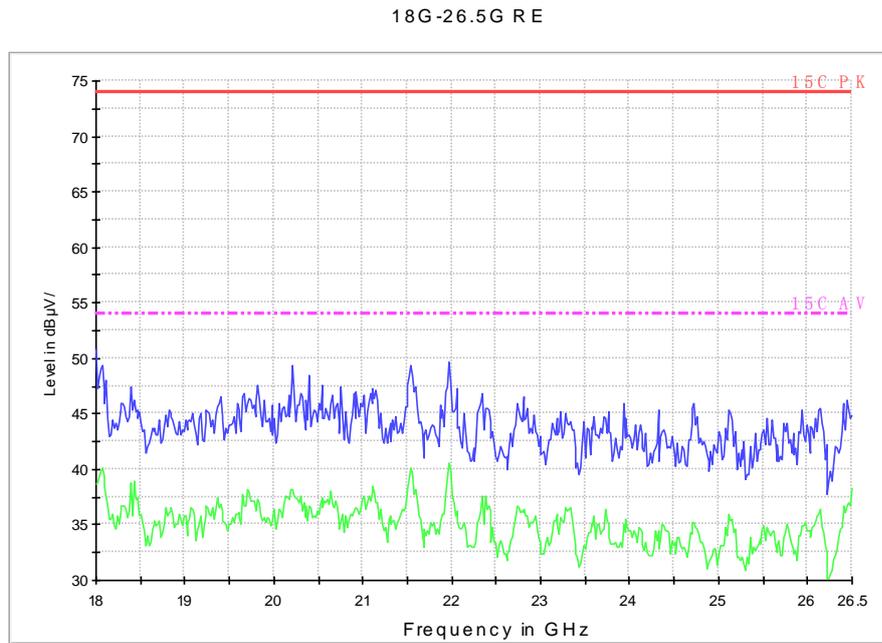


Fig. 59 Radiated Spurious Emission (802.11a, Ch157, 18 GHz-26.5 GHz)

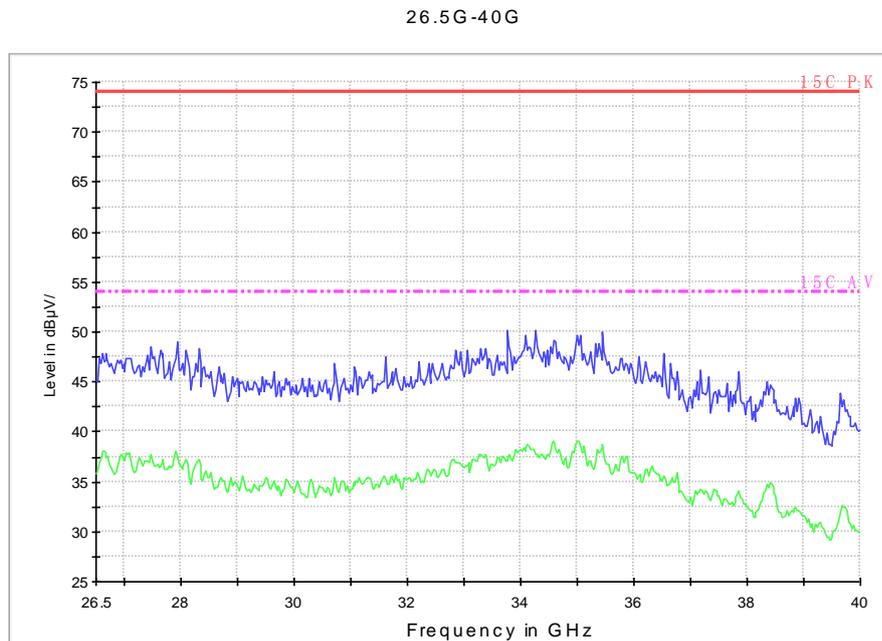


Fig. 60 Radiated Spurious Emission (802.11a, Ch165, 26.5 GHz-40 GHz)

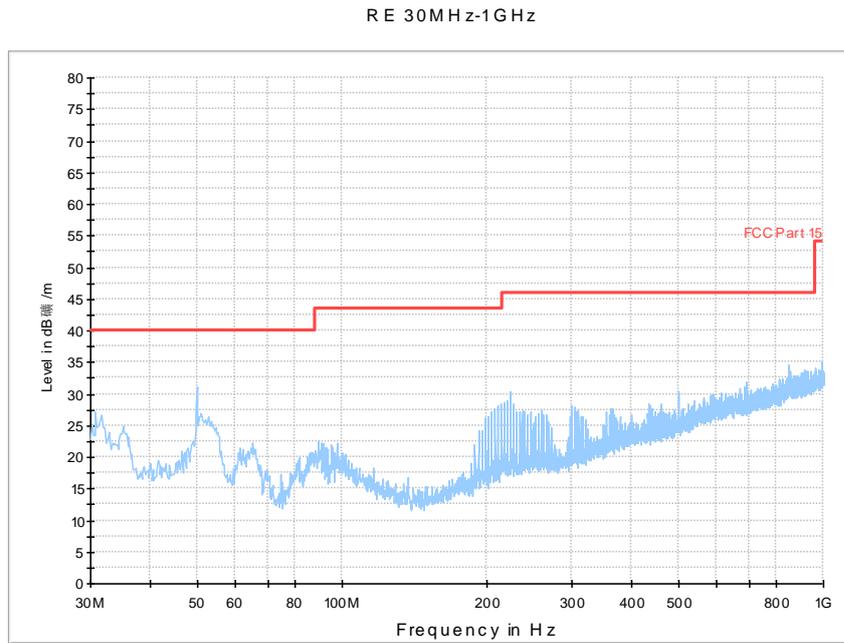


Fig. 61 Radiated Spurious Emission (802.11a, Ch165, 30 MHz-1 GHz)

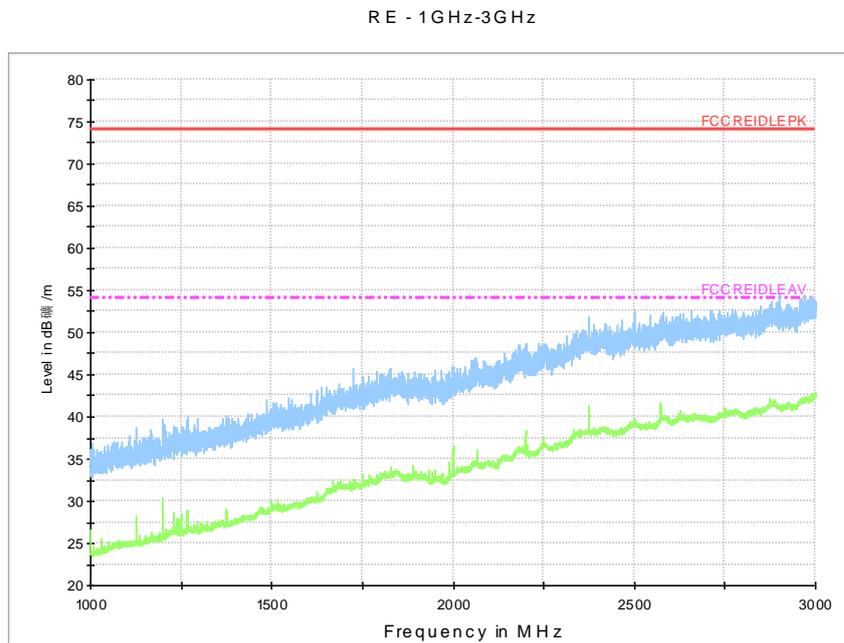


Fig. 62 Radiated Spurious Emission (802.11a, Ch165, 1 GHz-3 GHz)

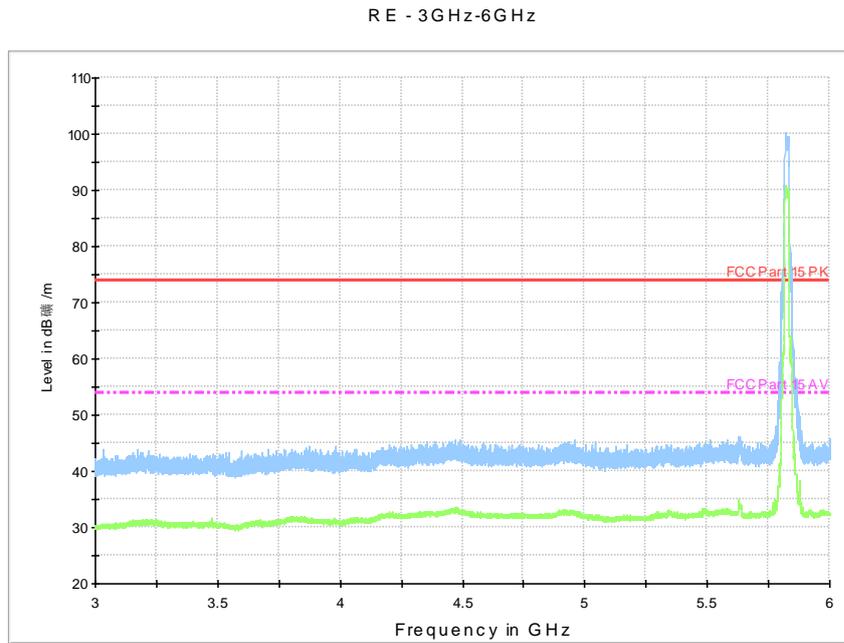


Fig. 63 Radiated Spurious Emission (802.11a, Ch165, 3 GHz-6 GHz)

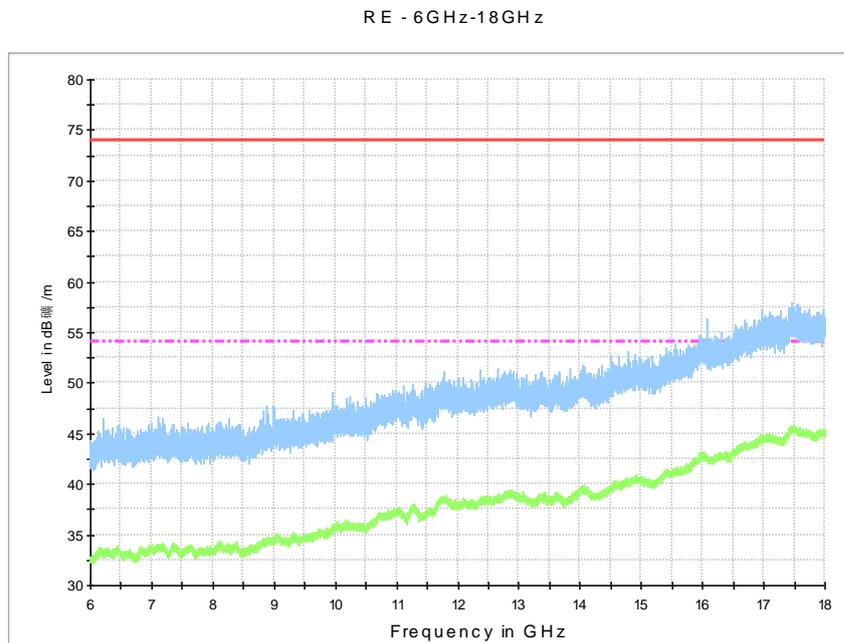


Fig. 64 Radiated Spurious Emission (802.11a, Ch165, 6 GHz-18 GHz)

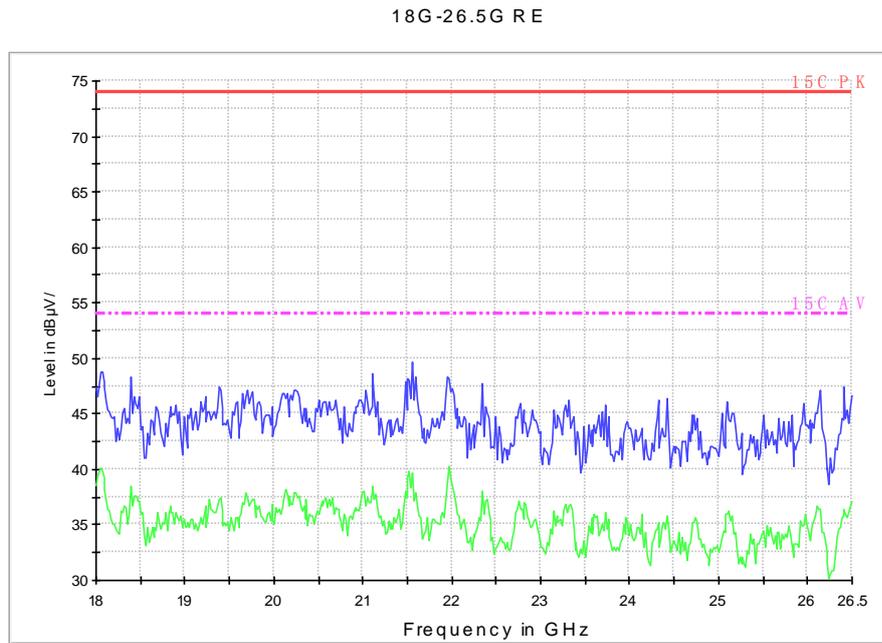


Fig. 65 Radiated Spurious Emission (802.11a, Ch165, 18 GHz-26.5 GHz)

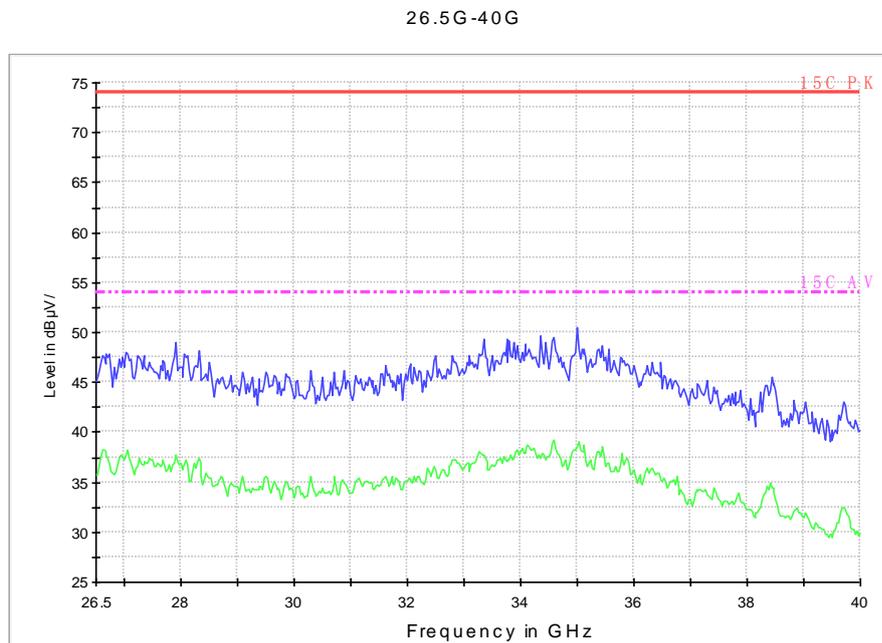


Fig. 66 Radiated Spurious Emission (802.11a, Ch165, 26.5 GHz-40 GHz)

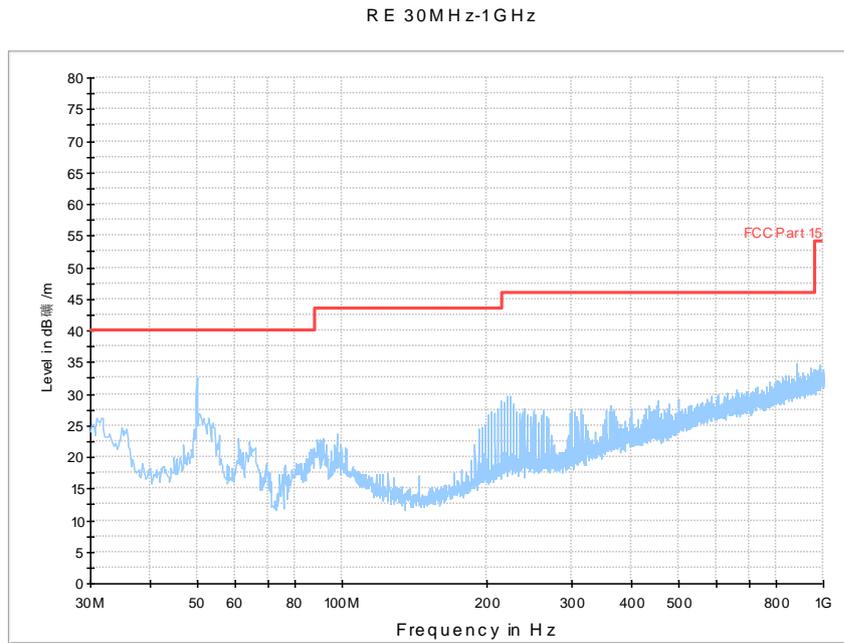


Fig. 67 Radiated Spurious Emission (802.11n-HT20, Ch149, 30 MHz-1 GHz)

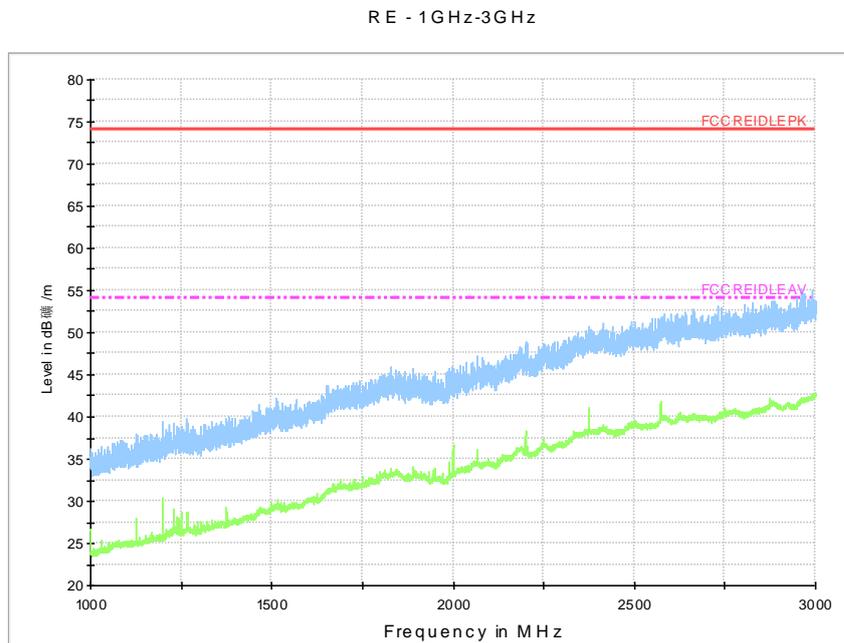


Fig. 68 Radiated Spurious Emission (802.11n-HT20, Ch149, 1 GHz-3 GHz)

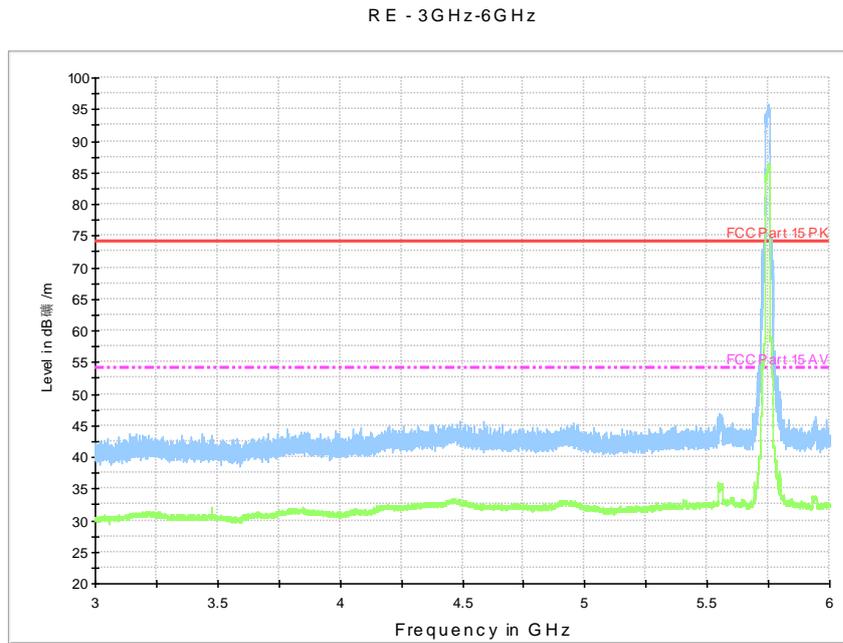


Fig. 69 Radiated Spurious Emission (802.11n-HT20, Ch149, 3 GHz-6 GHz)

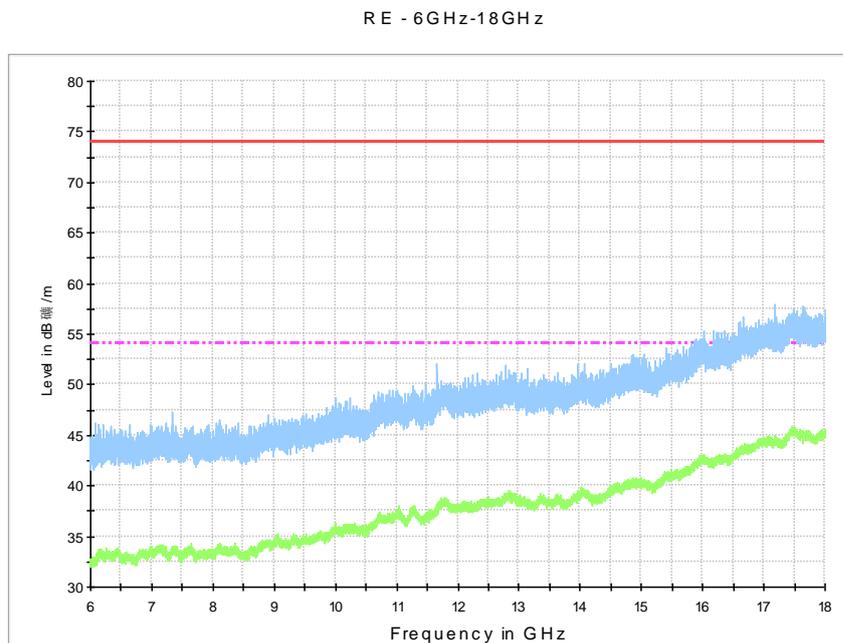


Fig. 70 Radiated Spurious Emission (802.11n-HT20, Ch149, 6 GHz-18 GHz)

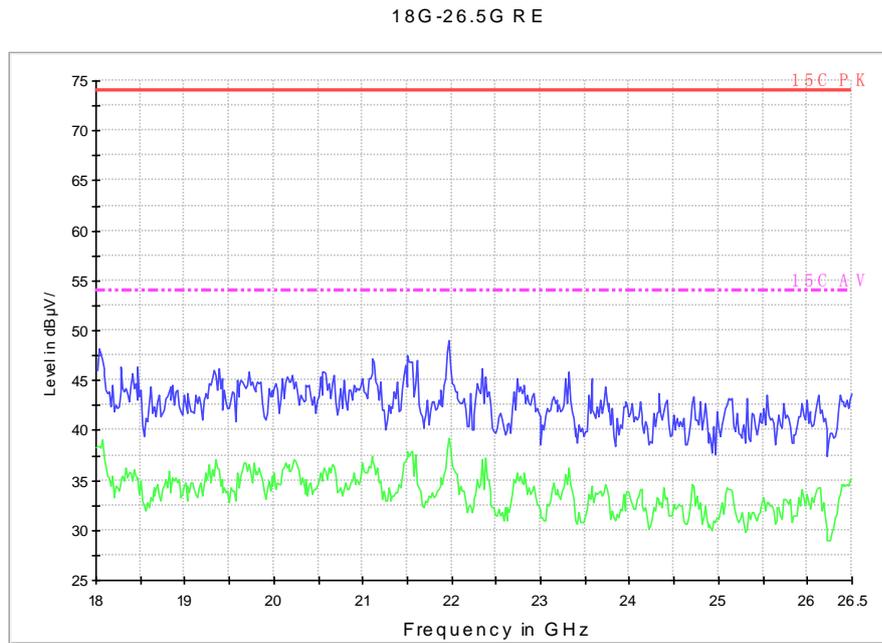


Fig. 71 Radiated Spurious Emission (802.11n-HT20, Ch149, 18 GHz-26.5 GHz)

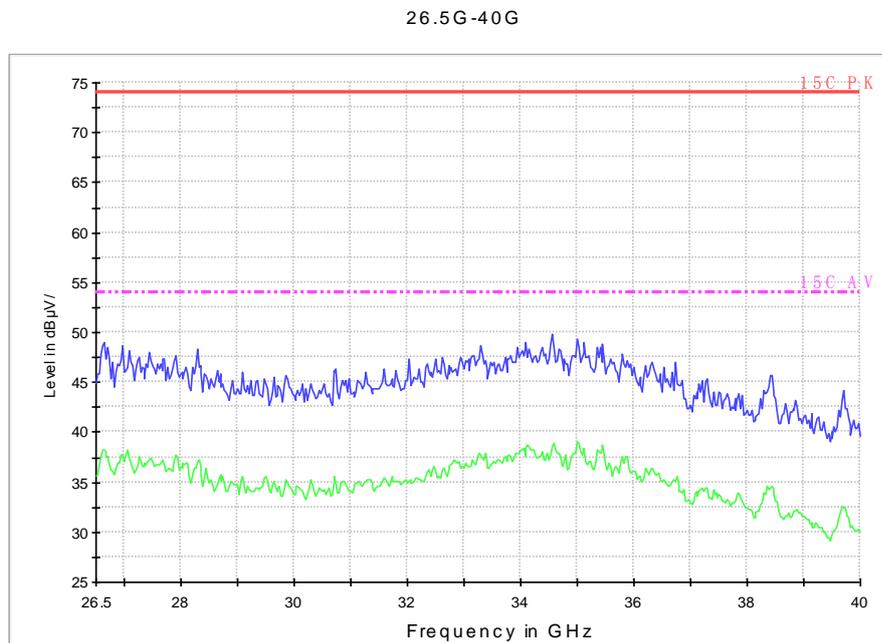


Fig. 72 Radiated Spurious Emission (802.11n-HT20, Ch149, 26.5 GHz-40 GHz)

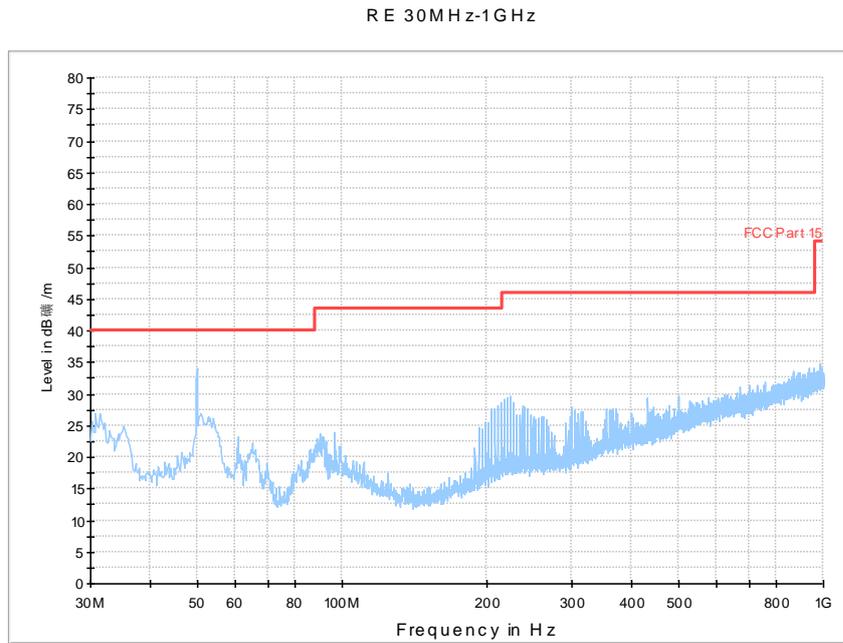


Fig. 73 Radiated Spurious Emission (802.11n-HT20, Ch157, 30 MHz-1 GHz)

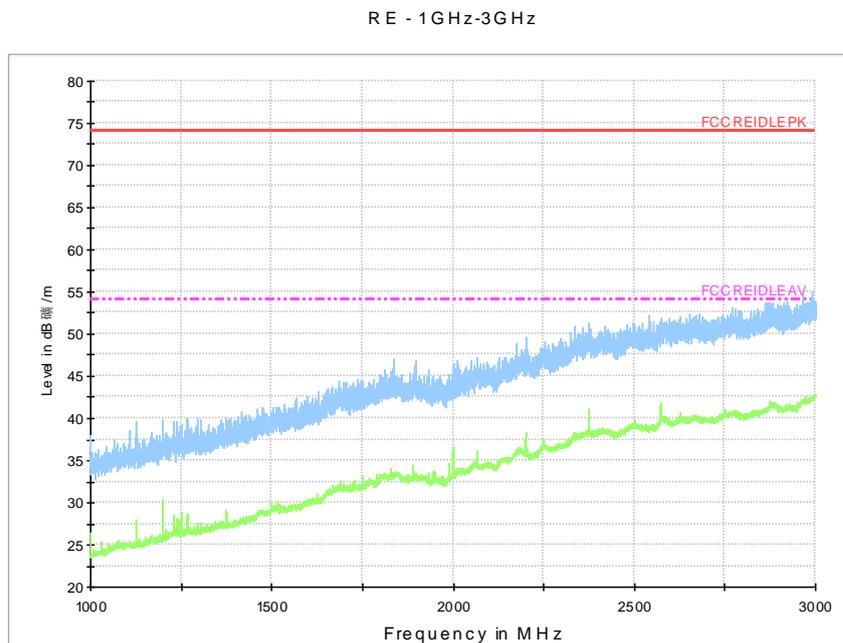


Fig. 74 Radiated Spurious Emission (802.11n-HT20, Ch157, 1 GHz-3 GHz)

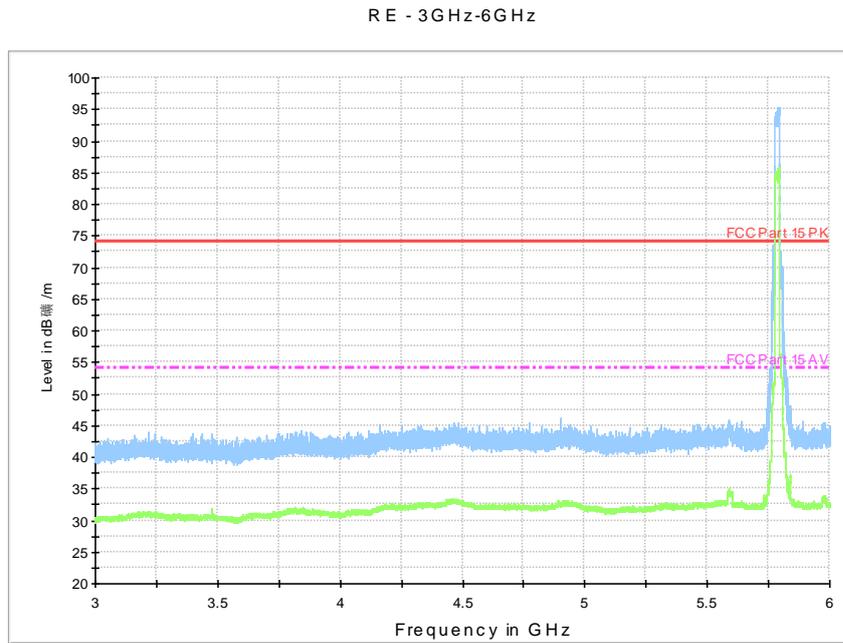


Fig. 75 Radiated Spurious Emission (802.11n-HT20, Ch157, 3 GHz-6 GHz)

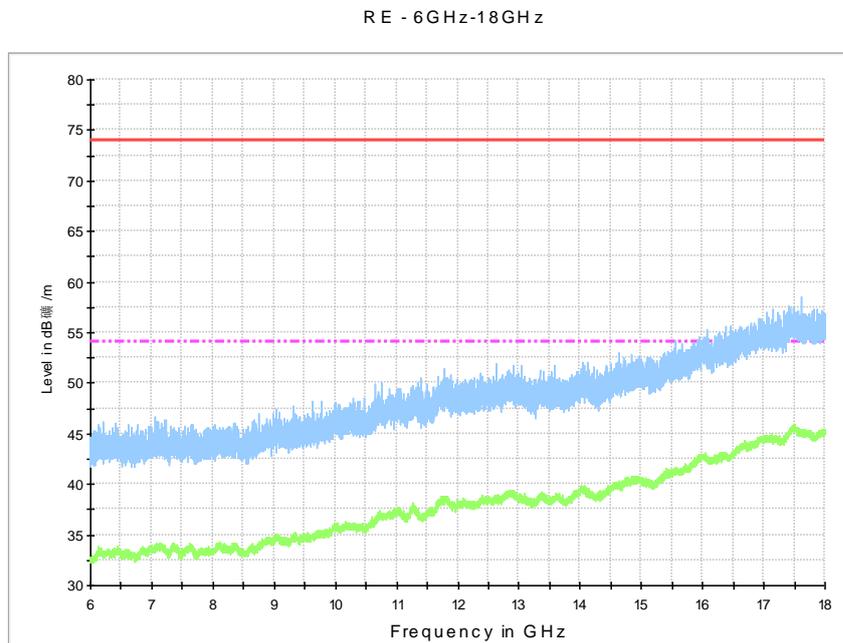


Fig. 76 Radiated Spurious Emission (802.11n-HT20, Ch157, 6 GHz-18 GHz)

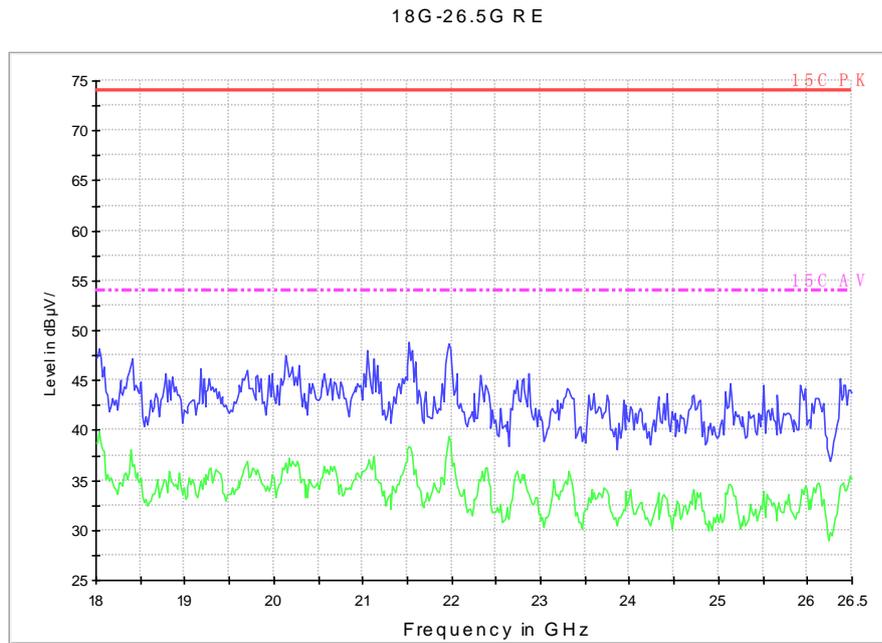


Fig. 77 Radiated Spurious Emission (802.11n-HT20, Ch157, 18 GHz-26.5 GHz)

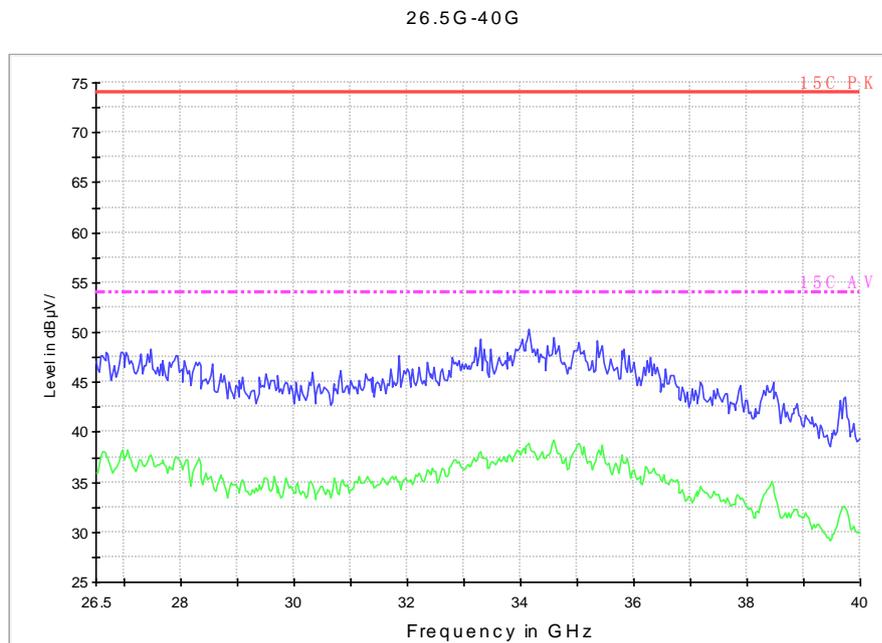


Fig. 78 Radiated Spurious Emission (802.11n-HT20, Ch157, 26.5 GHz-40 GHz)

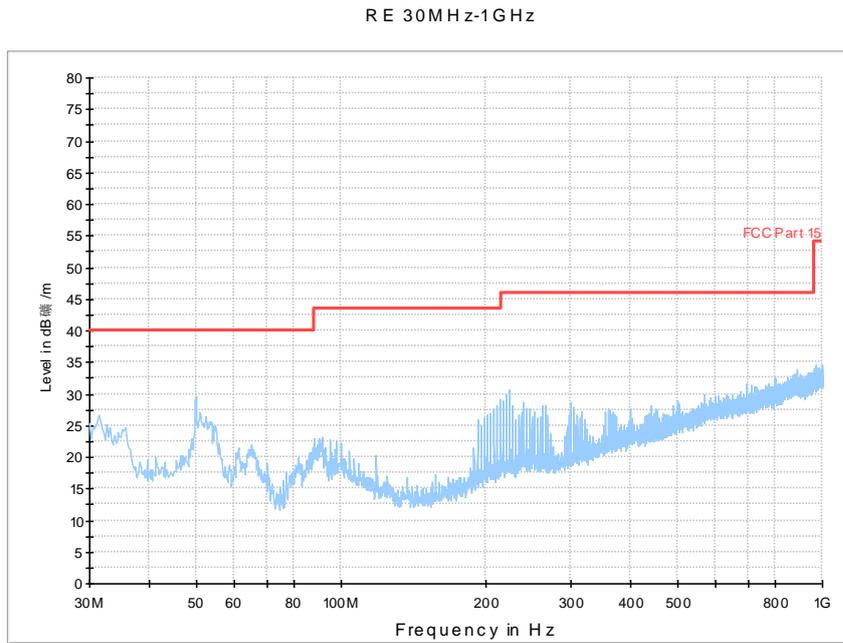


Fig. 79 Radiated Spurious Emission (802.11n-HT20, Ch165, 30 MHz-1 GHz)

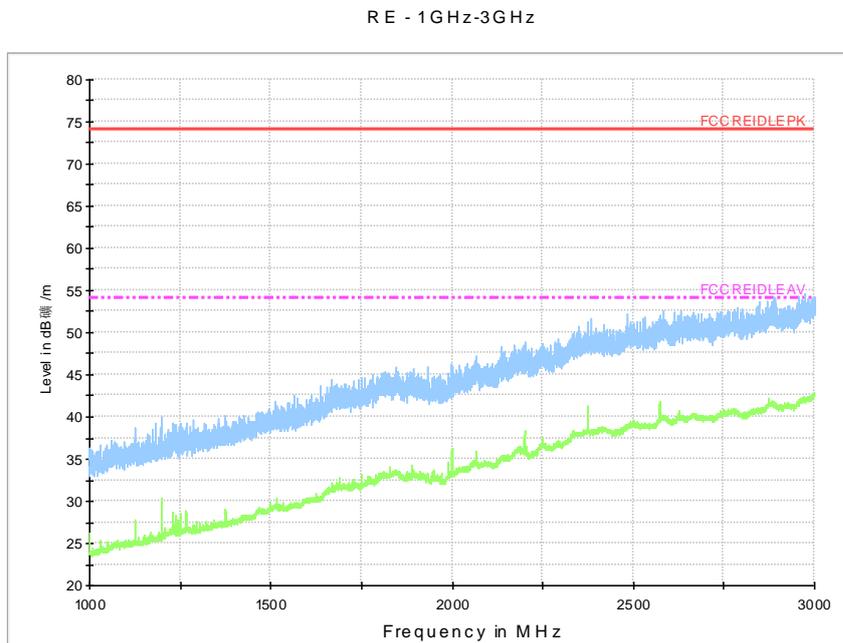


Fig. 80 Radiated Spurious Emission (802.11n-HT20, Ch165, 1 GHz-3 GHz)

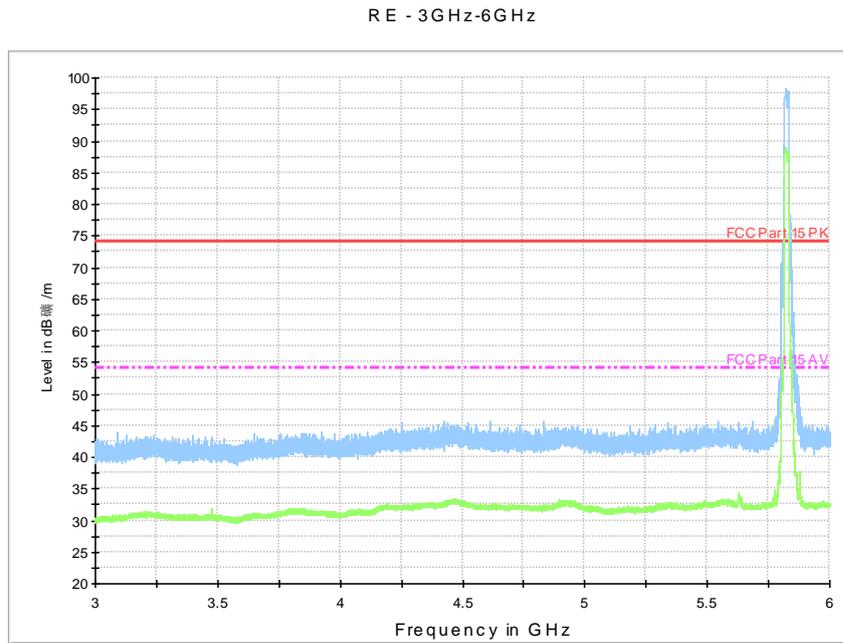


Fig. 81 Radiated Spurious Emission (802.11n-HT20, Ch165, 3 GHz-6 GHz)

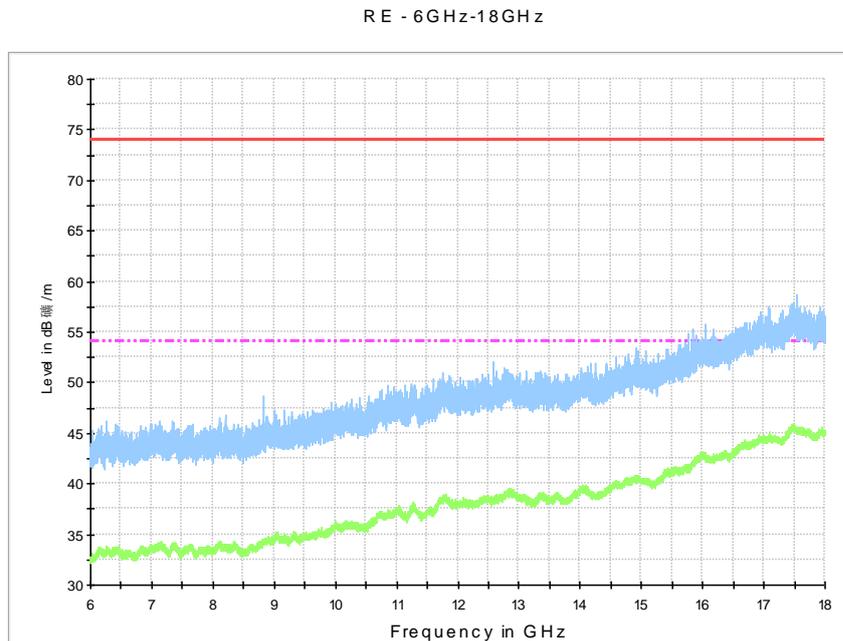


Fig. 82 Radiated Spurious Emission (802.11n-HT20, Ch165, 6 GHz-18 GHz)

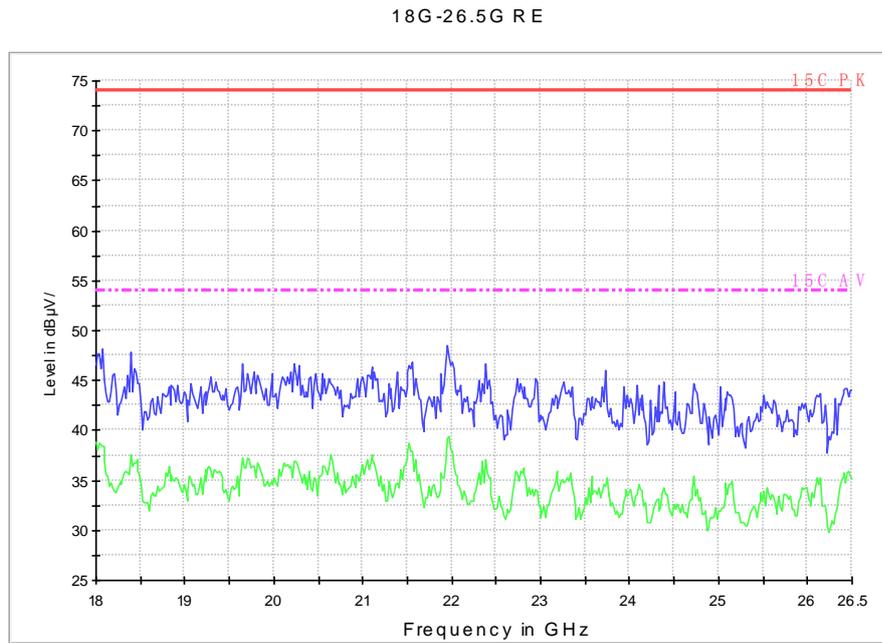


Fig. 83 Radiated Spurious Emission (802.11n-HT20, Ch165, 18 GHz-26.5 GHz)

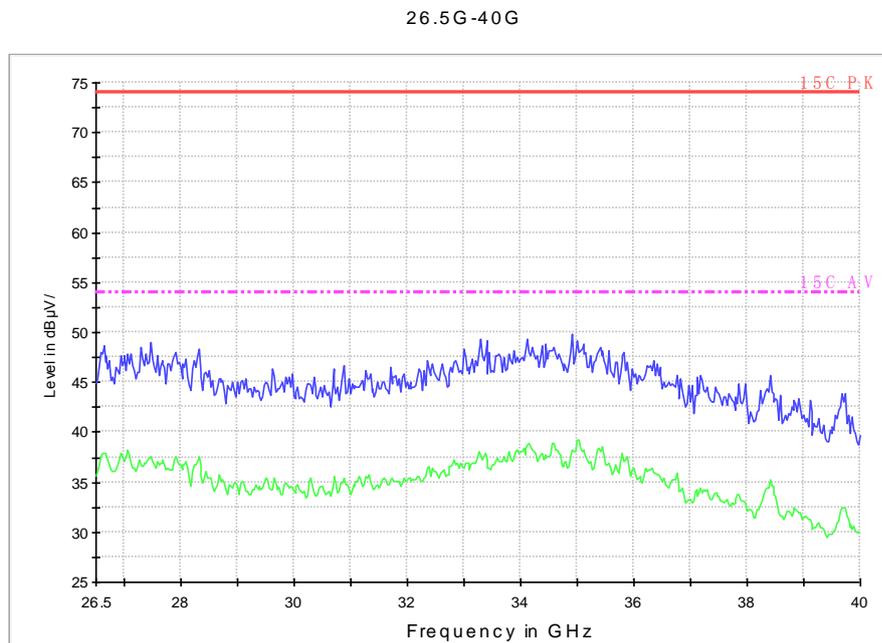


Fig. 84 Radiated Spurious Emission (802.11n-HT20, Ch165, 26.5 GHz-40 GHz)

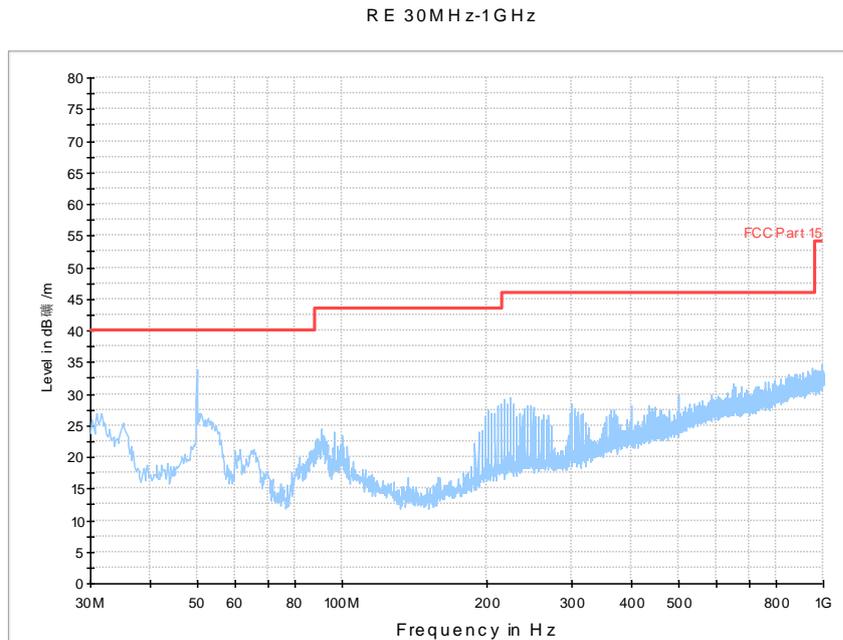


Fig. 85 Radiated Spurious Emission (802.11n-HT40, Ch151, 30 MHz-1 GHz)

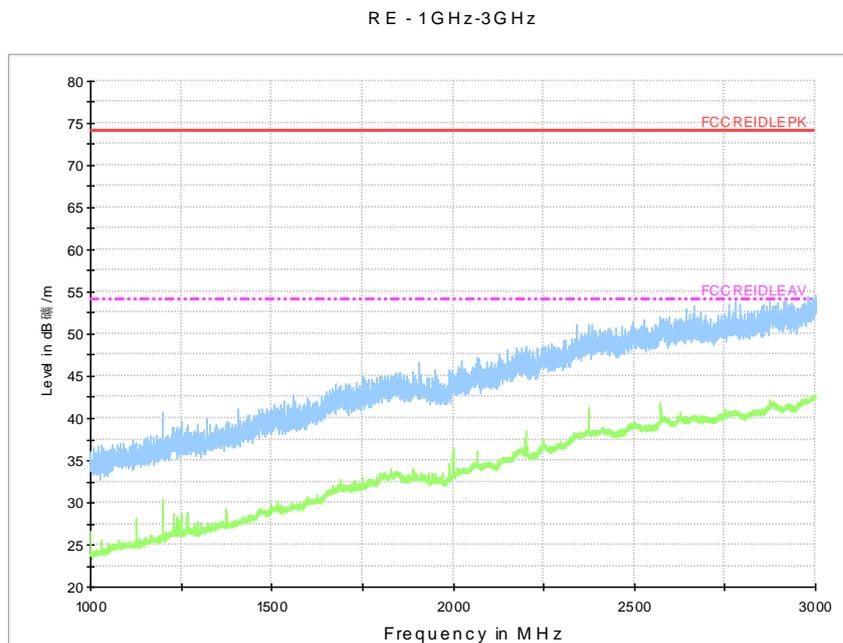


Fig. 86 Radiated Spurious Emission (802.11n-HT40, Ch151, 1 GHz-3 GHz)

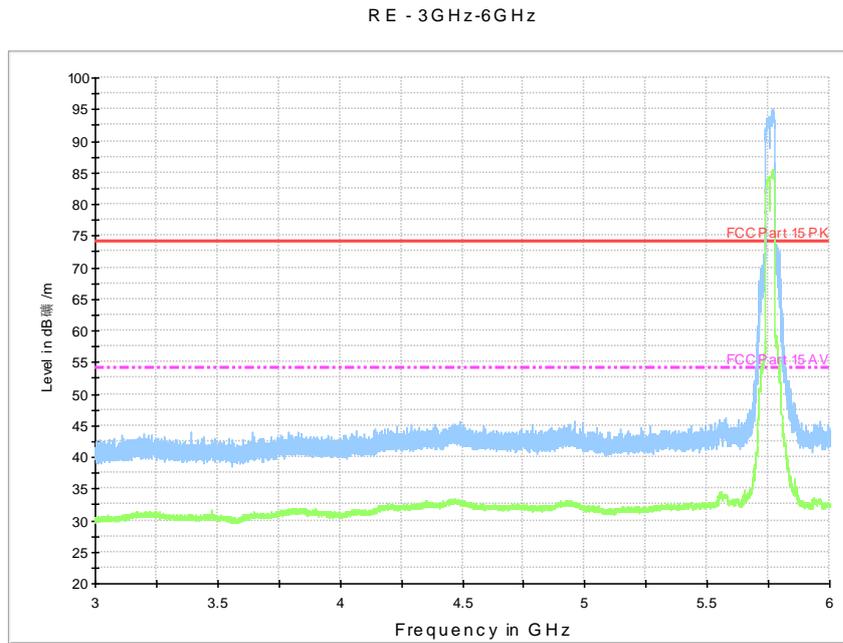


Fig. 87 Radiated Spurious Emission (802.11n-HT40, Ch151, 3 GHz-6 GHz)

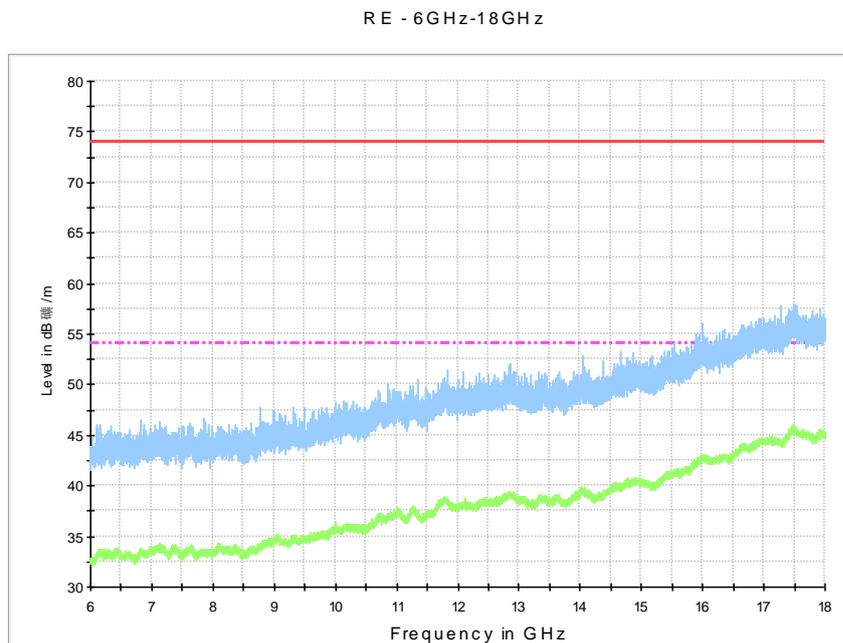


Fig. 88 Radiated Spurious Emission (802.11n-HT40, Ch151, 6 GHz-18 GHz)

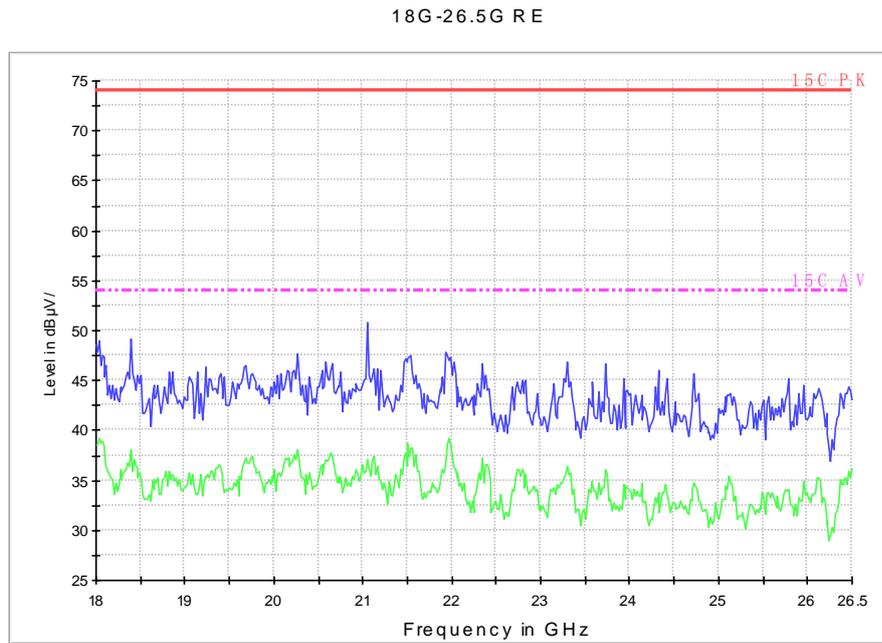


Fig. 89 Radiated Spurious Emission (802.11n-HT40, Ch151, 18 GHz-26.5 GHz)

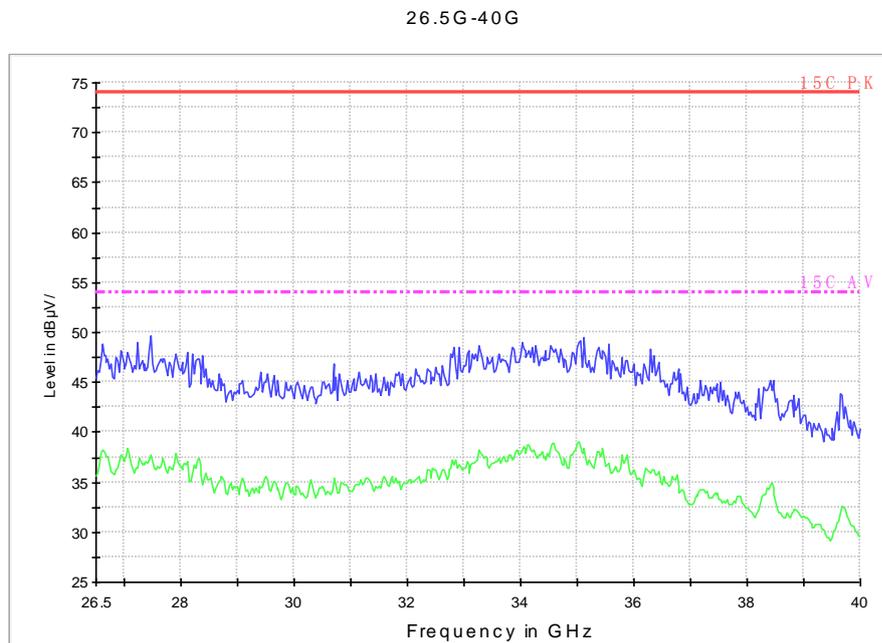


Fig. 90 Radiated Spurious Emission (802.11n-HT40, Ch151, 26.5 GHz-40 GHz)

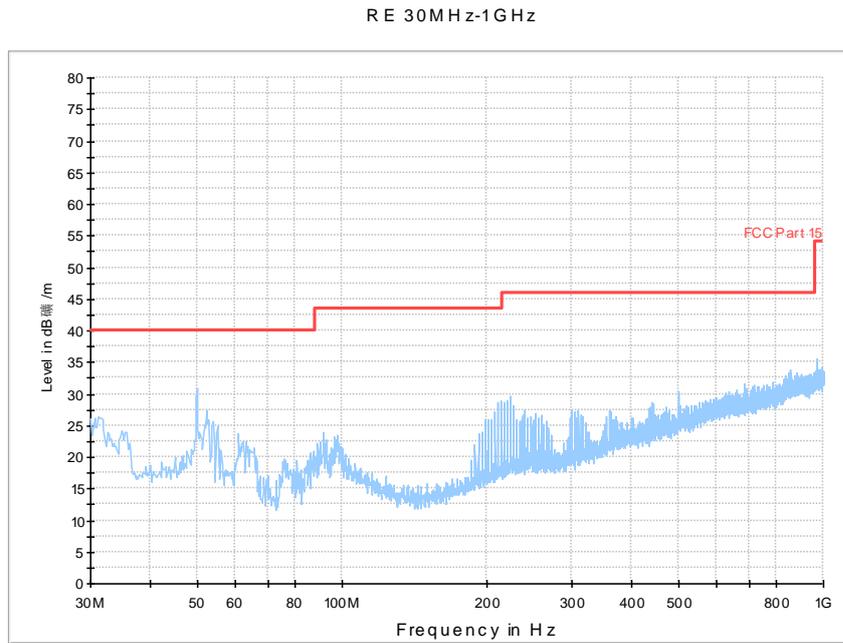


Fig. 91 Radiated Spurious Emission (802.11n-HT40, Ch159, 30 MHz-1 GHz)

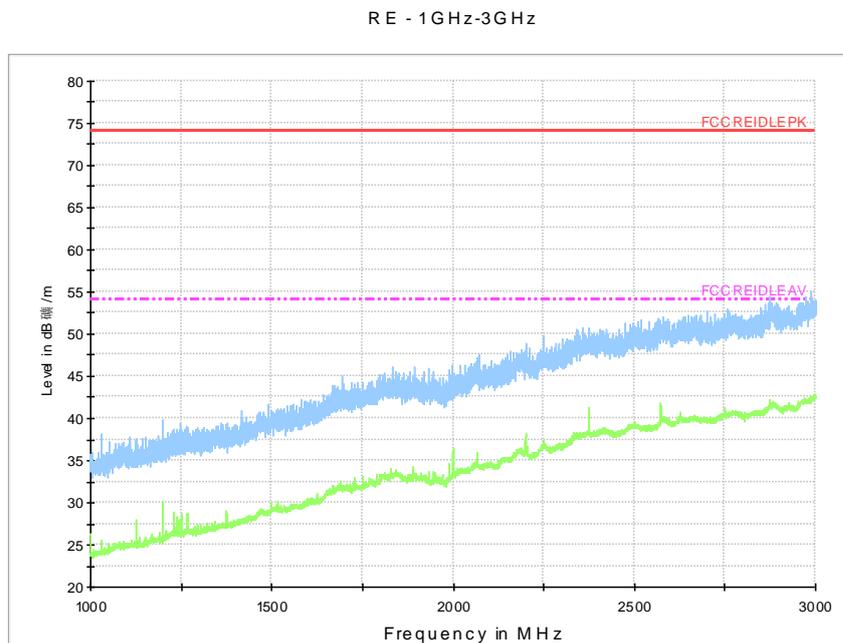


Fig. 92 Radiated Spurious Emission (802.11n-HT40, Ch159, 1 GHz-3 GHz)

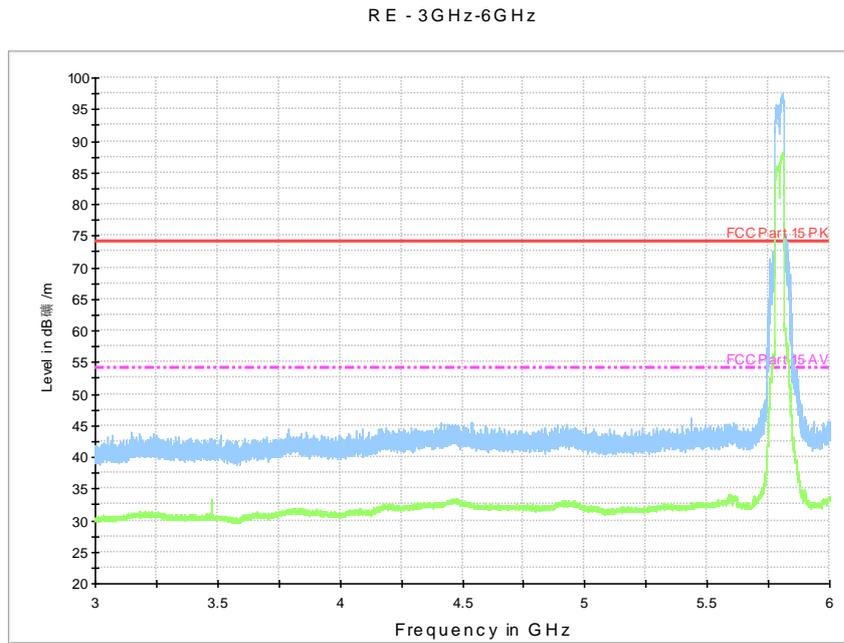


Fig. 93 Radiated Spurious Emission (802.11n-HT40, Ch159, 3 GHz-6 GHz)

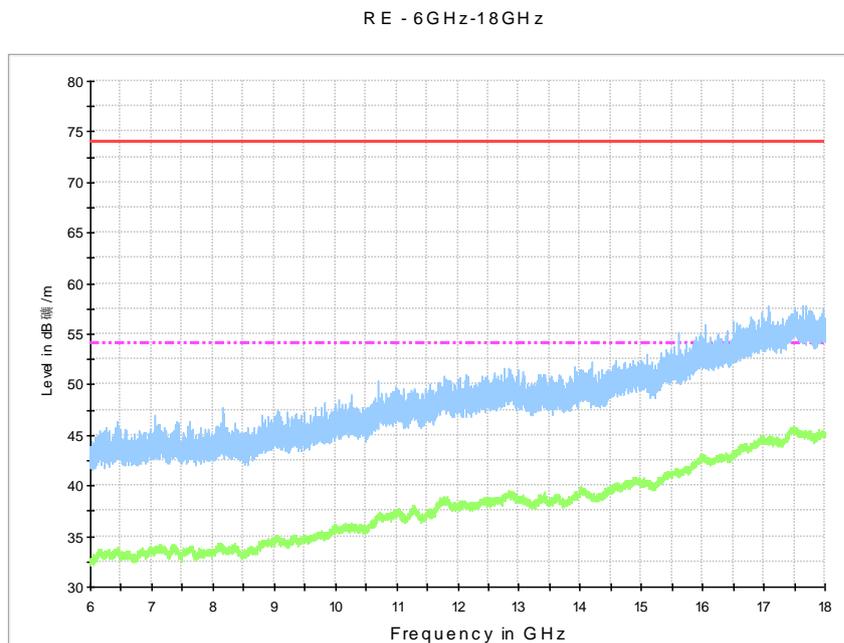


Fig. 94 Radiated Spurious Emission (802.11n-HT40, Ch159, 6 GHz-18 GHz)

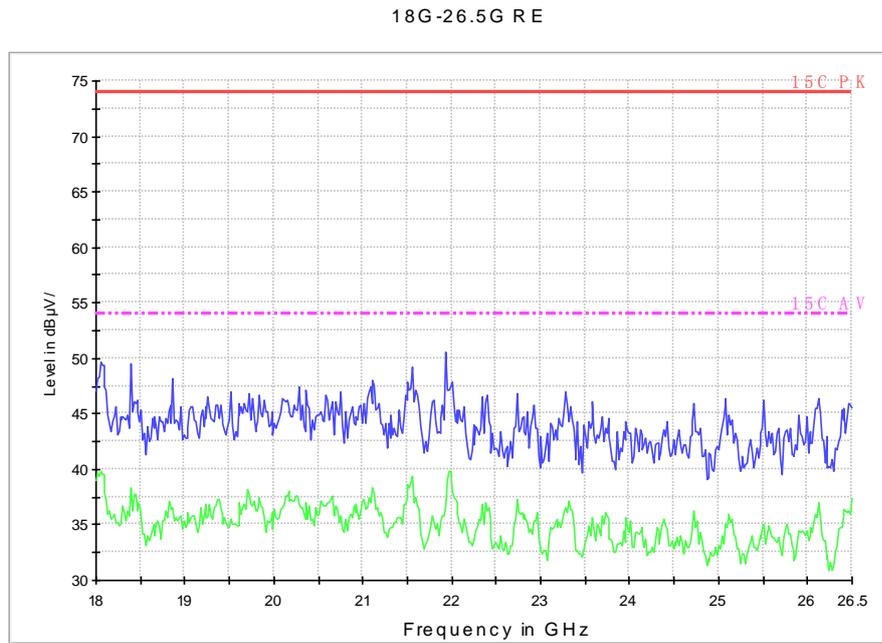


Fig. 95 Radiated Spurious Emission (802.11n-HT40, Ch159, 18 GHz-26.5 GHz)

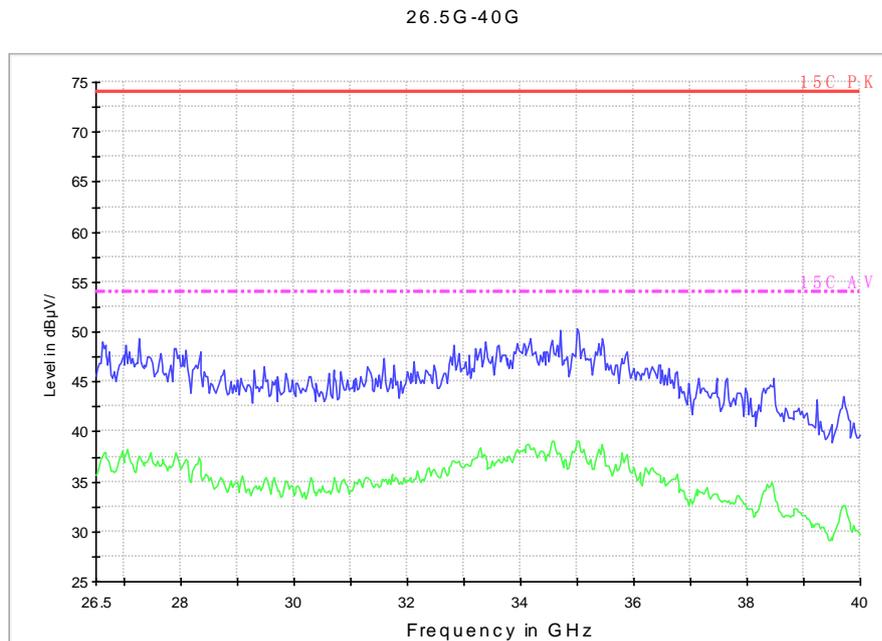


Fig. 96 Radiated Spurious Emission (802.11n-HT40, Ch159, 26.5 GHz - 40 GHz)

A.7. AC Powerline Conducted Emission

Test Condition:

| Voltage (V) | Frequency (Hz) |
|-------------|----------------|
| 110 | 60 |

Measurement Result and limit:

WLAN (Quasi-peak Limit)

| Frequency range (MHz) | Quasi-peak Limit (dB μ V) | Result (dB μ V) | | Conclusion |
|-----------------------|-------------------------------|---------------------|---------|------------|
| | | With charger | | |
| | | 11a mode | Idle | |
| 0.15 to 0.5 | 66 to 56 | Fig. 97 | Fig. 98 | P |
| 0.5 to 5 | 56 | | | |
| 5 to 30 | 60 | | | |

NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

WLAN (Average Limit)

| Frequency range (MHz) | Average Limit (dB μ V) | Result (dB μ V) | | Conclusion |
|-----------------------|----------------------------|---------------------|--------|------------|
| | | With charger | | |
| | | 11a mode | Idle | |
| 0.15 to 0.5 | 56 to 46 | Fig.97 | Fig.98 | P |
| 0.5 to 5 | 46 | | | |
| 5 to 30 | 50 | | | |

NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

The measurement is made according to ANSI C63.4 and KDB558074

Conclusion: PASS

Test graphs as below:

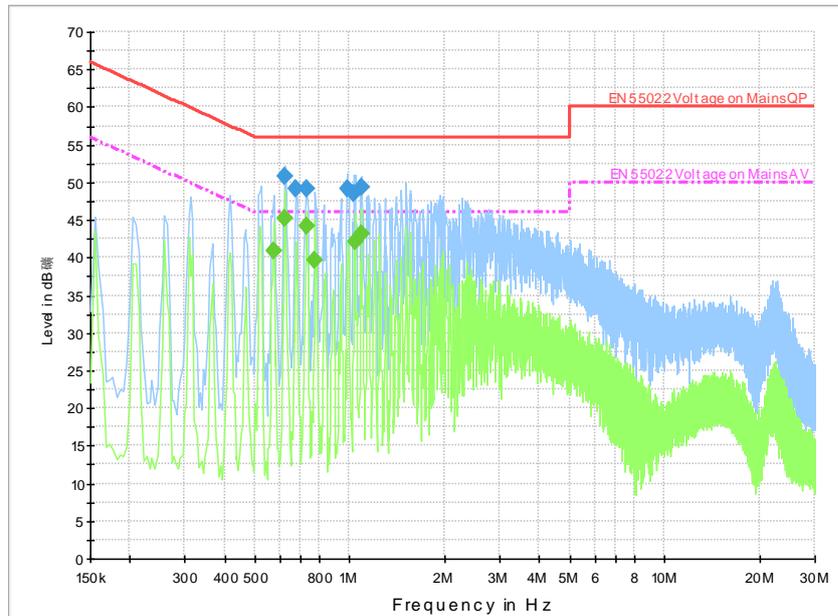


Fig. 97 AC Powerline Conducted Emission-802.11a mode

Final Result 1

| Frequency (MHz) | QuasiPeak (dB μ V) | PE | Line | Corr. (dB) | Margin (dB) | Limit (dB μ V) |
|-----------------|------------------------|-----|------|------------|-------------|--------------------|
| 0.622501 | 50.7 | GND | N | 9.9 | 5.3 | 56.0 |
| 0.676501 | 49.2 | GND | N | 9.9 | 6.8 | 56.0 |
| 0.726001 | 49.2 | GND | N | 9.9 | 6.8 | 56.0 |
| 0.982501 | 49.2 | GND | N | 9.9 | 6.8 | 56.0 |
| 1.032001 | 48.5 | GND | N | 9.9 | 7.5 | 56.0 |
| 1.090501 | 49.3 | GND | N | 9.9 | 6.7 | 56.0 |

Final Result 2

| Frequency (MHz) | CAverage (dB μ V) | PE | Line | Corr. (dB) | Margin (dB) | Limit (dB μ V) |
|-----------------|-----------------------|-----|------|------------|-------------|--------------------|
| 0.573001 | 40.8 | GND | N | 9.9 | 5.2 | 46.0 |
| 0.622501 | 45.3 | GND | N | 9.9 | 0.7 | 46.0 |
| 0.726001 | 44.2 | GND | N | 9.9 | 1.8 | 46.0 |
| 0.775501 | 39.6 | GND | N | 9.9 | 6.4 | 46.0 |
| 1.041001 | 42.1 | GND | N | 9.9 | 3.9 | 46.0 |
| 1.090501 | 43.1 | GND | N | 9.9 | 2.9 | 46.0 |

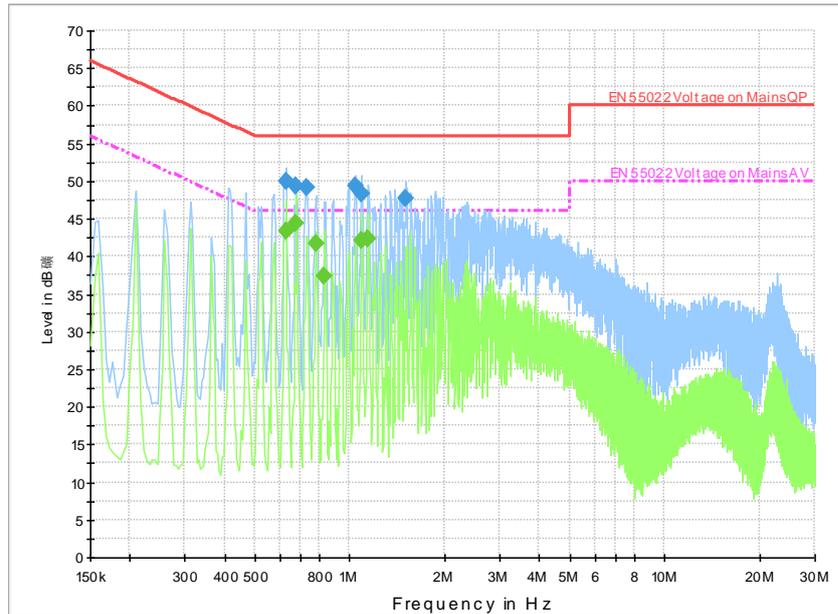


Fig. 98 AC Powerline Conducted Emission-Idle

Final Result1

| Frequency (MHz) | QuasiPeak (dBµV) | PE | Line | Corr. (dB) | Margin (dB) | Limit (dBµV) |
|-----------------|------------------|-----|------|------------|-------------|--------------|
| 1.734000 | 41.5 | GND | L1 | 10.0 | 14.5 | 56.0 |
| 1.846500 | 42.9 | GND | L1 | 10.0 | 13.1 | 56.0 |
| 1.932000 | 41.5 | GND | L1 | 10.0 | 14.5 | 56.0 |
| 1.972500 | 40.1 | GND | L1 | 10.0 | 15.9 | 56.0 |
| 2.724000 | 40.9 | GND | L1 | 10.0 | 15.1 | 56.0 |
| 2.809500 | 39.4 | GND | L1 | 10.0 | 16.6 | 56.0 |

Final Result2

| Frequency (MHz) | Average (dBµV) | PE | Line | Corr. (dB) | Margin (dB) | Limit (dBµV) |
|-----------------|----------------|-----|------|------------|-------------|--------------|
| 0.397500 | 31.4 | GND | L1 | 10.0 | 16.5 | 47.9 |
| 0.672000 | 26.3 | GND | L1 | 10.0 | 19.7 | 46.0 |
| 1.698000 | 27.3 | GND | L1 | 10.0 | 18.7 | 46.0 |
| 1.770000 | 29.5 | GND | L1 | 10.0 | 16.5 | 46.0 |
| 1.896000 | 28.6 | GND | L1 | 10.0 | 17.4 | 46.0 |
| 2.724000 | 27.5 | GND | L1 | 10.0 | 18.5 | 46.0 |

*** END OF REPORT BODY ***