

## FCC Part 15E Compliance Test Report

|                                                         |                                                                                                                                                                                                                                                                                         |                                   |                                                                                                                             |
|---------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| <b>Test Report no.:</b>                                 | FCC15E_RM-1085_27.docx                                                                                                                                                                                                                                                                  | <b>Date of Report:</b>            | 24-Sep-2015                                                                                                                 |
| <b>Number of pages:</b>                                 | 119                                                                                                                                                                                                                                                                                     | <b>Customer's Contact person:</b> | Tia Melava                                                                                                                  |
| <b>Testing laboratory:</b>                              | TCC Microsoft Salo Laboratory<br>P.O.Box(86)<br>Joensuunkatu 7E<br>FIN-24101 SALO, FINLAND<br>Tel. +358 (0) 7180 08000<br>Fax. +358 71 80 44122                                                                                                                                         | <b>Customer:</b>                  | Microsoft<br>P.O.Box(86)<br>Joensuunkatu 7E<br>FIN-24101 SALO, FINLAND<br>Tel. +358 (0) 7180 08000<br>Fax. +358 71 80 44122 |
| <b>FCC listing no.:</b>                                 | 533467                                                                                                                                                                                                                                                                                  |                                   |                                                                                                                             |
| <b>IC recognition no.:</b>                              | 661V-1                                                                                                                                                                                                                                                                                  |                                   |                                                                                                                             |
| <b>Tested devices/ accessories:</b>                     | <b>Phone RM-1085 / Dummy Battery SD-241R / Headset WH-308</b>                                                                                                                                                                                                                           |                                   |                                                                                                                             |
| <b>FCC ID:</b>                                          | PYARM-1085                                                                                                                                                                                                                                                                              | <b>IC:</b>                        | 661X-RM1085                                                                                                                 |
| <b>Supplement reports:</b>                              | -                                                                                                                                                                                                                                                                                       |                                   |                                                                                                                             |
| <b>Testing has been carried out in accordance with:</b> | CFR 47, FCC rules Part 15 Subpart E, ANSI C63.4 (2014), DTS procedures KDB 789033 D02 v01, IC standards, RSS-210 (Issue 8, December 2010). Deviations, modifications or clarifications (if any) to above mentioned documents are written in each section under "Test method and limit". |                                   |                                                                                                                             |
| <b>Documentation:</b>                                   | The test report must always be reproduced in full; reproduction of an excerpt only is subject to written approval of the testing laboratory. The documentation of the testing performed on the tested devices is archived for 15 years at TCC Microsoft.                                |                                   |                                                                                                                             |
| <b>Test Results:</b>                                    | <b>The EUT complies with the requirements in respect of all parameters subject to the test.</b><br>The test results relate only to devices specified in this document                                                                                                                   |                                   |                                                                                                                             |
| <b>Date and signature for the contents:</b>             | <div style="display: flex; align-items: center;">  <div> <b>Hannu Söderholm</b><br/> 2015.09.24<br/> 15:54:06 +03'00' </div> </div>                                      |                                   |                                                                                                                             |

Hannu Söderholm, Engineer, EMC

## 1. Summary for FCC Part 15E Compliance Test Report

|                               |                                                       |
|-------------------------------|-------------------------------------------------------|
| Date of receipt               | 15-Jun-2015                                           |
| Testing completed             | 01-Sep-2015                                           |
| The customer's contact person | Tia Melava                                            |
| Test Plan referred to         | T:\Projects\RM-1085\TestPlan\RS_TestPlan_RM-1085.xlsm |
| Notes                         | -                                                     |
| Document name                 | T:\Projects\RM-1085\EMC\FCC15E_RM-1085_27.docx        |

### 1.1. EUT and Accessory Information

The EUT is a mobile phone with following features:

GSM/WCDMA/WLAN/Bluetooth

The EUT is tested with maximum rated TX power.

Devices under tests

| Product       | Type    | SN                      | HW   | MV | SW                      | DUT    |
|---------------|---------|-------------------------|------|----|-------------------------|--------|
| Phone         | RM-1085 | 004402742320777;059W5J6 | 2111 | -  | 01063.00001.15244.09000 | 100012 |
| Dummy Battery | SD-241R | -                       | V2   | -  | -                       | 100016 |
| Headset       | WH-308  | 51251B1                 | -    | -  | -                       | 100029 |

### 1.2. Summary of Test Results

#### 5 GHz RLAN:

| Section in CFR 47 | Section in RSS-GEN or RSS-210 | Name of the test                     | Result |
|-------------------|-------------------------------|--------------------------------------|--------|
| 15.407(a)         | A9.2                          | Conducted peak output power          | PASSED |
| 15.407(b)         | A9.2                          | Band edge compliance of RF emissions |        |
| 15.407(b)         | A9.2                          | Spurious radiated emissions          |        |
| 15.407(b)(6)      | A9.2                          | AC powerline conducted emissions     |        |
|                   | A9.2                          | 6dB(bandwidth)                       |        |
|                   | A9.2                          | 26dB(bandwidth)                      |        |
| 15.407(a)         | A9.2                          | Maximum power spectral density       | PASSED |

PASSED

FAILED

NP

The EUT complies with the essential requirements in the standard.

The EUT does not comply with the essential requirements in the standard.

The test was not performed by the TCC Microsoft Laboratory.

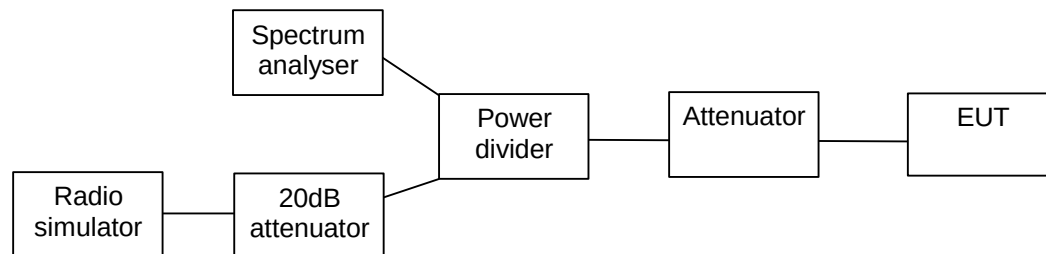
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## 2. Conducted peak output power (FCC §15.407(a), RSS-210 A9.2)

|                                                 |                                          |
|-------------------------------------------------|------------------------------------------|
| EUT with DUT number                             | RM-1085, DUT 100012                      |
| Accessories with DUT numbers                    | SD-241R, DUT 100016 ; WH-308, DUT 100029 |
| Operation Voltage [V] / [Hz]                    | Nominal                                  |
| Results                                         | PASSED                                   |
| Remarks                                         | -                                        |
| Temp [°C] / Humidity [%RH] / Air Pressure [kPa] | 20 / 49 / 101.4                          |
| Date of measurements                            | 01-Sep-2015                              |
| Measured by                                     | Jari Keto                                |

### 2.1. Test Setup



### 2.2. Test method and limit

The measurement is made according to Public Notice KDB 789033 D02 v01 and IC standard RSS-210.

Limits for Maximum conducted output power measurements

| Frequency range [MHz] | Limit [mW] / (dBm) | Limit [dBm] | Limit [dBm] for B=20 MHz |
|-----------------------|--------------------|-------------|--------------------------|
| 5150-5250             | 250 (24)           | -           | 24                       |
| 5250-5350             | 250 (24)           | 11+10 log B | 24                       |
| 5470-5725             | 250 (24)           | 11+10 log B | 24                       |
| 5725-5850             | 1000 (30)          | -           | 30                       |

### 2.3. Power results summary

| Channel / fC [MHz] | Mode          | Modulation | Data rate        | Level [dBm] |
|--------------------|---------------|------------|------------------|-------------|
| 36 / 5180          | 802.11n MIMO  | BPSK       | 6.5 / 7.25 Mbps  | 18.65       |
| 40 / 5200          | 802.11n MIMO  | BPSK       | 6.5 / 7.25 Mbps  | 18.47       |
| 48 / 5240          | 802.11n MIMO  | BPSK       | 6.5 / 7.25 Mbps  | 18.63       |
| 52 / 5260          | 802.11n MIMO  | BPSK       | 6.5 / 7.25 Mbps  | 18.78       |
| 60 / 5300          | 802.11n MIMO  | BPSK       | 6.5 / 7.25 Mbps  | 18.75       |
| 64 / 5320          | 802.11n MIMO  | BPSK       | 6.5 / 7.25 Mbps  | 18.79       |
| 100 / 5500         | 802.11n MIMO  | BPSK       | 6.5 / 7.25 Mbps  | 18.95       |
| 116 / 5580         | 802.11n MIMO  | BPSK       | 6.5 / 7.25 Mbps  | 19.05       |
| 140 / 5700         | 802.11n MIMO  | BPSK       | 6.5 / 7.25 Mbps  | 19.18       |
| 149 / 5745         | 802.11n MIMO  | BPSK       | 6.5 / 7.25 Mbps  | 19.14       |
| 157 / 5785         | 802.11n MIMO  | BPSK       | 6.5 / 7.25 Mbps  | 18.97       |
| 165 / 5825         | 802.11n MIMO  | BPSK       | 6.5 / 7.25 Mbps  | 19.06       |
| 36+40 / 5190       | 802.11n MIMO  | BPSK       | 13.5 / 15.0 Mbps | 18.2        |
| 44+48 / 5230       | 802.11n MIMO  | BPSK       | 13.5 / 15.0 Mbps | 18.2        |
| 52+56 / 5270       | 802.11n MIMO  | BPSK       | 13.5 / 15.0 Mbps | 18.47       |
| 60+64 / 5310       | 802.11n MIMO  | BPSK       | 13.5 / 15.0 Mbps | 18.43       |
| 100+104 / 5510     | 802.11n MIMO  | BPSK       | 13.5 / 15.0 Mbps | 18.75       |
| 108+112 / 5550     | 802.11n MIMO  | BPSK       | 13.5 / 15.0 Mbps | 18.78       |
| 132+136 / 5670     | 802.11n MIMO  | BPSK       | 13.5 / 15.0 Mbps | 18.72       |
| 149+153 / 5755     | 802.11n MIMO  | BPSK       | 13.5 / 15.0 Mbps | 18.8        |
| 157+161 / 5795     | 802.11n MIMO  | BPSK       | 13.5 / 15.0 Mbps | 18.75       |
| 36-48 / 5210       | 802.11ac MIMO | BPSK       | 29.3 / 32.5 Mbps | 17.1        |
| 52-64 / 5290       | 802.11ac MIMO | BPSK       | 29.3 / 32.5 Mbps | 17.12       |
| 100-112 / 5530     | 802.11ac MIMO | BPSK       | 29.3 / 32.5 Mbps | 17.64       |
| 149-161 / 5775     | 802.11ac MIMO | BPSK       | 29.3 / 32.5 Mbps | 17.53       |
| 36 / 5180          | 802.11a MIMO  | 16QAM      | 24 Mbps          | 18.88       |
| 40 / 5200          | 802.11a MIMO  | 16QAM      | 24 Mbps          | 18.69       |
| 48 / 5240          | 802.11a MIMO  | 16QAM      | 24 Mbps          | 18.85       |
| 52 / 5260          | 802.11a MIMO  | 16QAM      | 24 Mbps          | 18.96       |
| 60 / 5300          | 802.11a MIMO  | 16QAM      | 24 Mbps          | 18.89       |
| 64 / 5320          | 802.11a MIMO  | 16QAM      | 24 Mbps          | 18.93       |
| 100 / 5500         | 802.11a MIMO  | 16QAM      | 24 Mbps          | 19.22       |
| 116 / 5580         | 802.11a MIMO  | 16QAM      | 24 Mbps          | 19.3        |
| 140 / 5700         | 802.11a MIMO  | 16QAM      | 24 Mbps          | 19.52       |
| 149 / 5745         | 802.11a MIMO  | 16QAM      | 24 Mbps          | 19.44       |
| 157 / 5785         | 802.11a MIMO  | 16QAM      | 24 Mbps          | 19.25       |
| 165 / 5825         | 802.11a MIMO  | 16QAM      | 24 Mbps          | 19.19       |
| 36+40 / 5190       | 802.11n MIMO  | QPSK       | 27.0 / 30.0 Mbps | 18.16       |
| 44+48 / 5230       | 802.11n MIMO  | QPSK       | 27.0 / 30.0 Mbps | 18.16       |
| 52+56 / 5270       | 802.11n MIMO  | QPSK       | 27.0 / 30.0 Mbps | 18.37       |
| 60+64 / 5310       | 802.11n MIMO  | QPSK       | 27.0 / 30.0 Mbps | 18.37       |
| 100+104 / 5510     | 802.11n MIMO  | QPSK       | 27.0 / 30.0 Mbps | 18.66       |
| 108+112 / 5550     | 802.11n MIMO  | QPSK       | 27.0 / 30.0 Mbps | 18.65       |
| 132+136 / 5670     | 802.11n MIMO  | QPSK       | 27.0 / 30.0 Mbps | 18.65       |
| 149+153 / 5755     | 802.11n MIMO  | QPSK       | 27.0 / 30.0 Mbps | 18.72       |
| 157+161 / 5795     | 802.11n MIMO  | QPSK       | 27.0 / 30.0 Mbps | 18.67       |

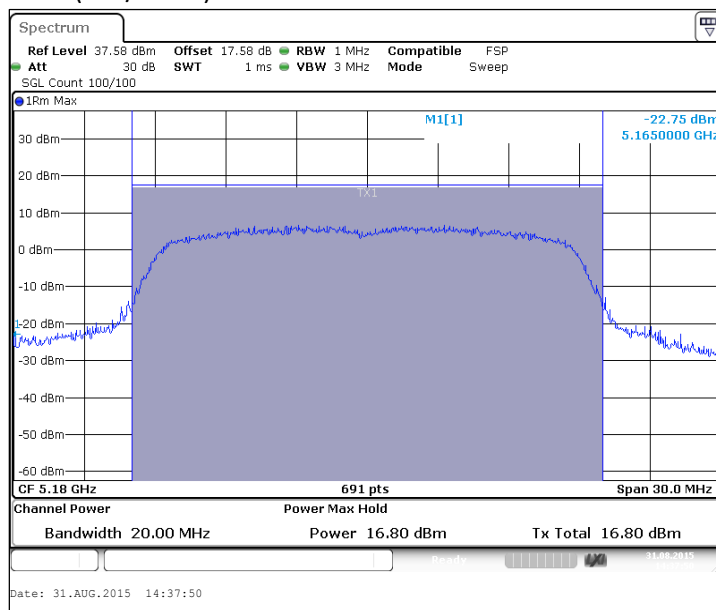
|                |               |      |                  |       |
|----------------|---------------|------|------------------|-------|
| 36-48 / 5210   | 802.11ac MIMO | QPSK | 58.5 / 65.0 Mbps | 17.11 |
| 52-64 / 5290   | 802.11ac MIMO | QPSK | 58.5 / 65.0 Mbps | 17.1  |
| 100-112 / 5530 | 802.11ac MIMO | QPSK | 58.5 / 65.0 Mbps | 17.65 |
| 149-161 / 5775 | 802.11ac MIMO | QPSK | 58.5 / 65.0 Mbps | 17.53 |

## 2.4. 5 GHz RLAN Test results

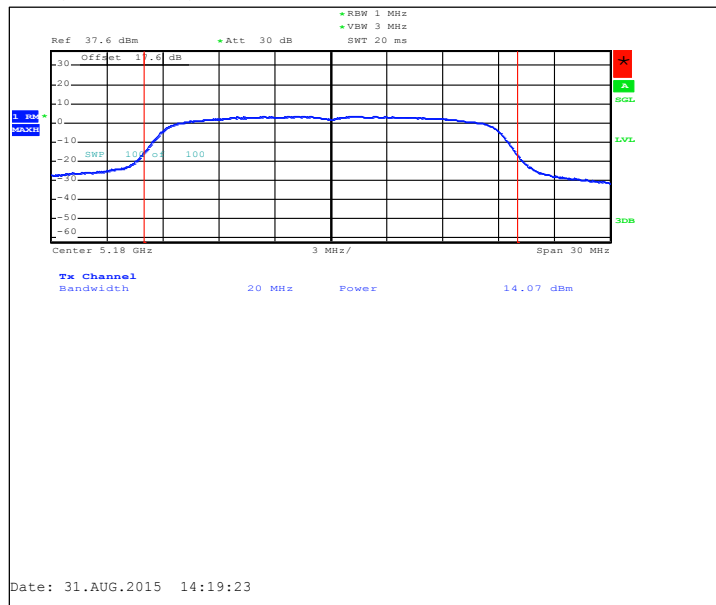
### 2.4.1 802.11n MIMO mode, BPSK modulation, 6.5 / 7.25 Mbps data rate

| Channel / f <sub>c</sub> [MHz] | Sum [dBm] | Main [dBm] | Aux [dBm] | Antenna Gain Main [dBi] | Antenna Gain Aux [dBi] | Antenna Gain DG [dBi] | Limit [dBm] | Limit adjusted [dBm] | Result |
|--------------------------------|-----------|------------|-----------|-------------------------|------------------------|-----------------------|-------------|----------------------|--------|
| 36 / 5180                      | 18.65     | 16.8       | 14.07     | 1.4                     | 1.4                    | 1.4                   | 24          | 24                   | PASSED |
| 40 / 5200                      | 18.47     | 16.52      | 14.05     | 1.4                     | 1.4                    | 1.4                   | 24          | 24                   | PASSED |
| 48 / 5240                      | 18.63     | 16.64      | 14.29     | 1.4                     | 1.4                    | 1.4                   | 24          | 24                   | PASSED |
| 52 / 5260                      | 18.78     | 16.89      | 14.24     | 1.4                     | 1.4                    | 1.4                   | 24          | 24                   | PASSED |
| 60 / 5300                      | 18.75     | 16.8       | 14.34     | 1.4                     | 1.4                    | 1.4                   | 24          | 24                   | PASSED |
| 64 / 5320                      | 18.79     | 16.81      | 14.42     | 1.4                     | 1.4                    | 1.4                   | 24          | 24                   | PASSED |
| 100 / 5500                     | 18.95     | 17.01      | 14.5      | 1.4                     | 1.4                    | 1.4                   | 24          | 24                   | PASSED |
| 116 / 5580                     | 19.05     | 17.25      | 14.38     | 1.4                     | 1.4                    | 1.4                   | 24          | 24                   | PASSED |
| 140 / 5700                     | 19.18     | 17.34      | 14.56     | 1.4                     | 1.4                    | 1.4                   | 24          | 24                   | PASSED |
| 149 / 5745                     | 19.14     | 17.29      | 14.55     | 1.4                     | 1.4                    | 1.4                   | 30          | 30                   | PASSED |
| 157 / 5785                     | 18.97     | 17.22      | 14.18     | 1.4                     | 1.4                    | 1.4                   | 30          | 30                   | PASSED |
| 165 / 5825                     | 19.06     | 17.26      | 14.37     | 1.4                     | 1.4                    | 1.4                   | 30          | 30                   | PASSED |

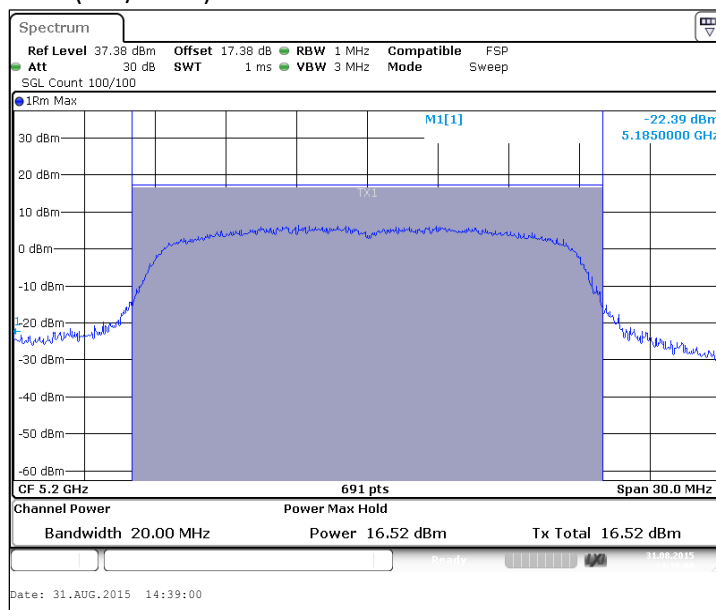
#### Main ( 36 / 5180)



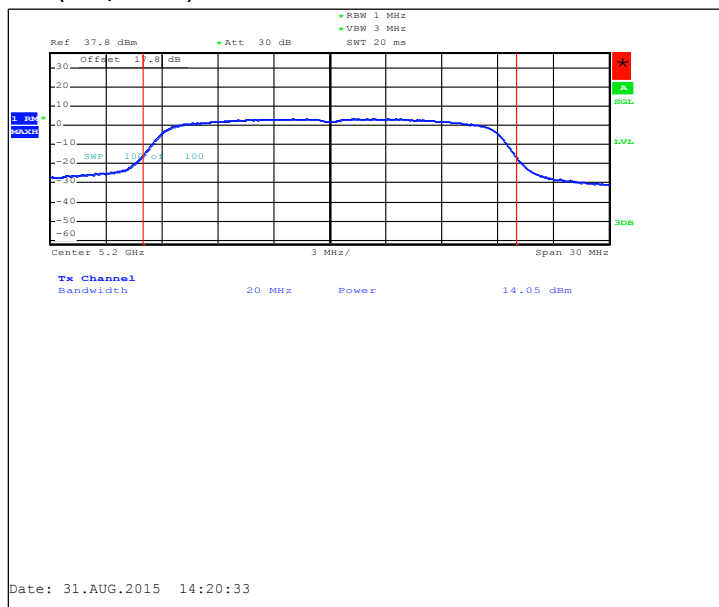
## Aux ( 36 / 5180)



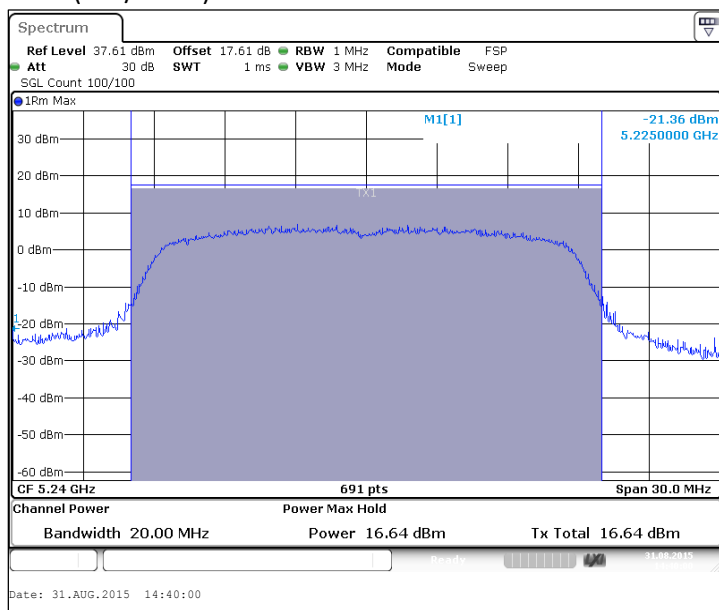
## Main ( 40 / 5200)



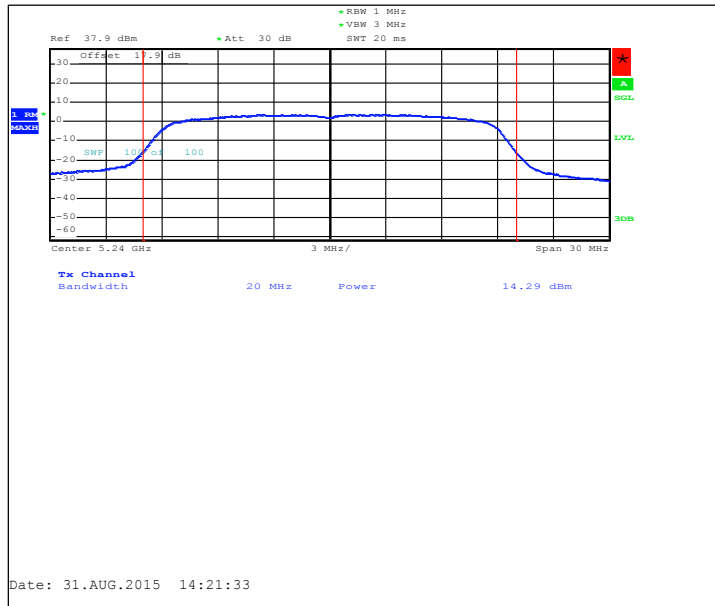
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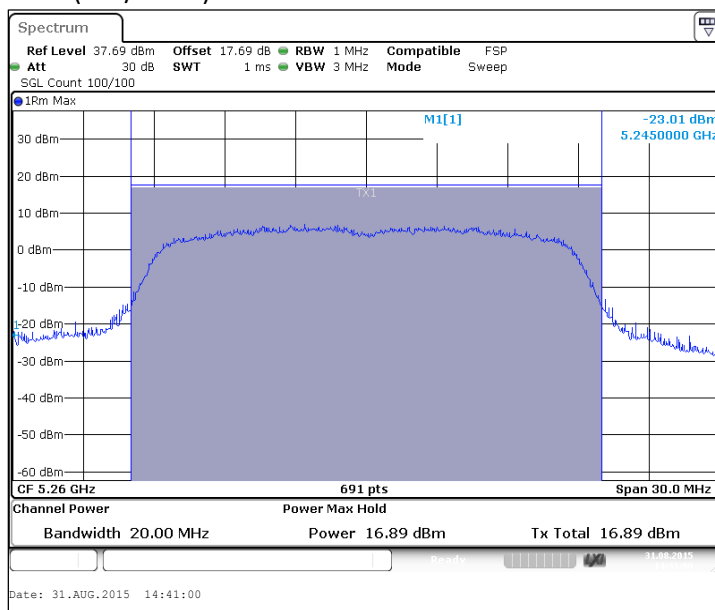
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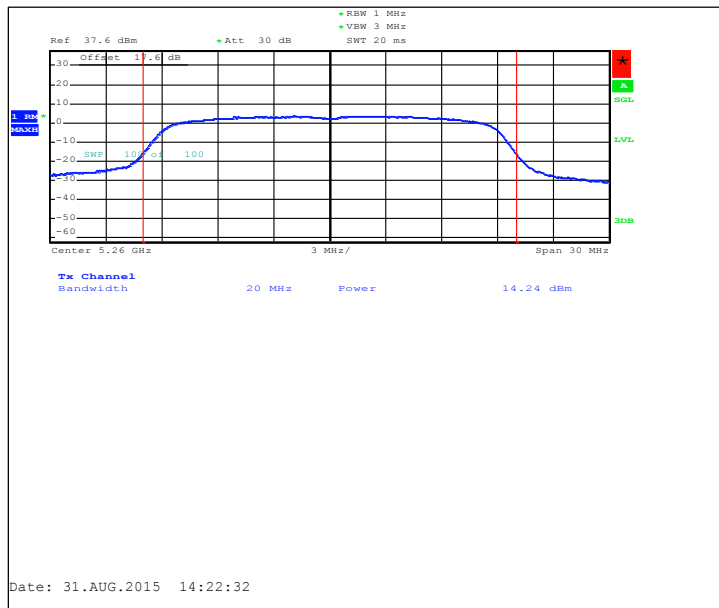
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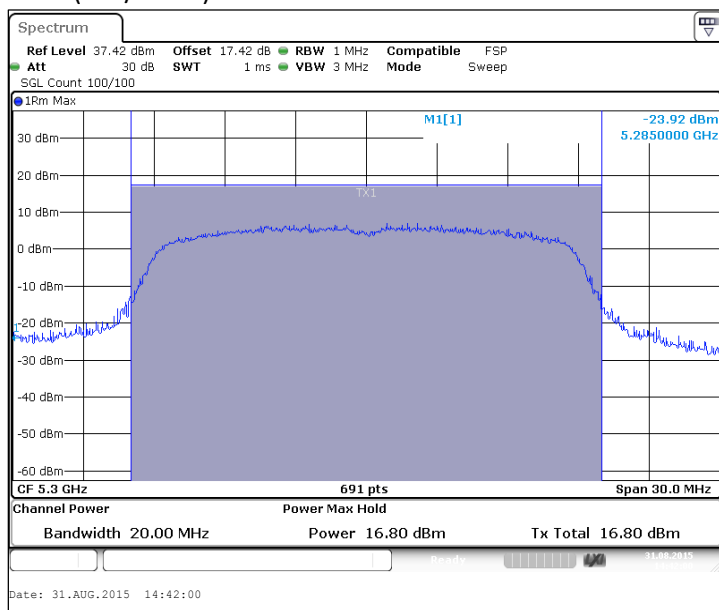
## Main ( 52 / 5260)



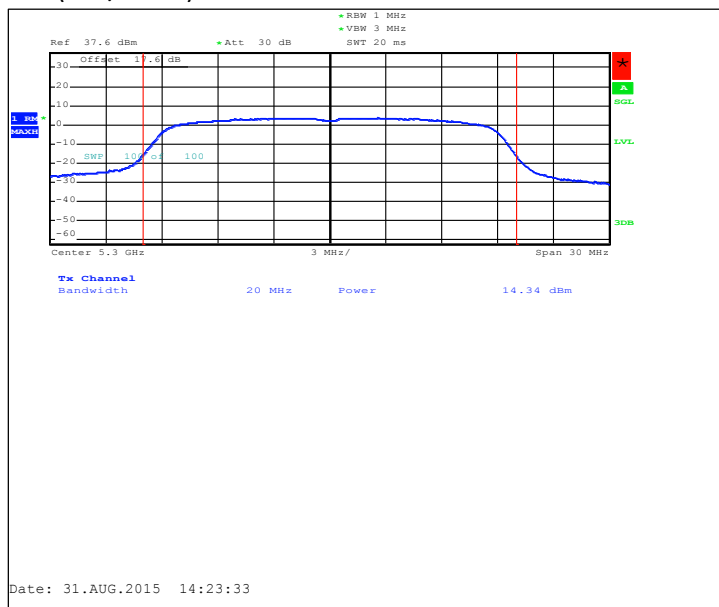
## Aux ( 52 / 5260)



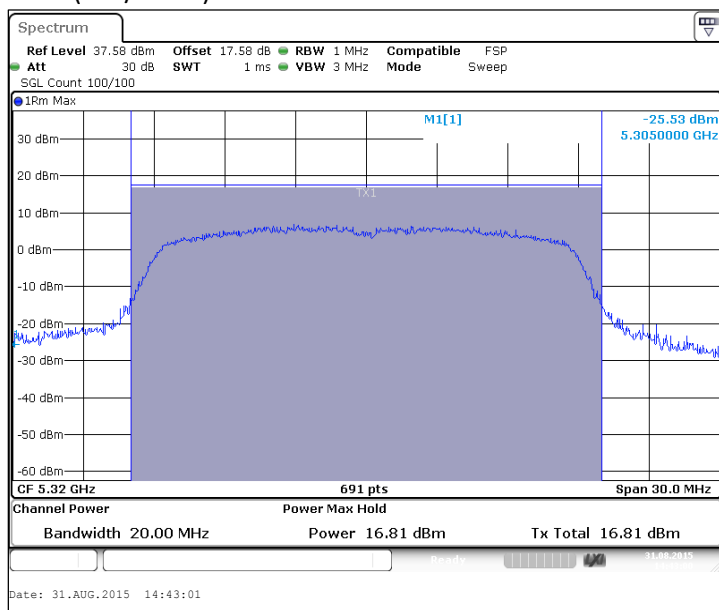
## Main ( 60 / 5300)



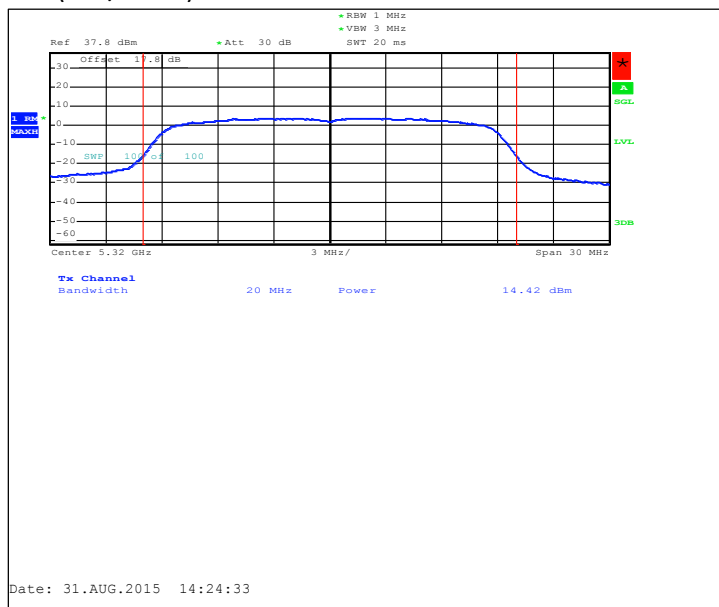
## Aux ( 60 / 5300)



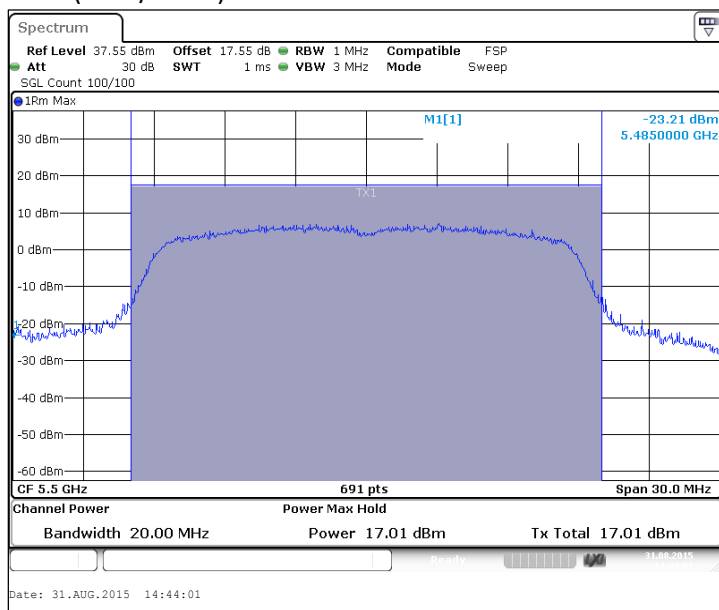
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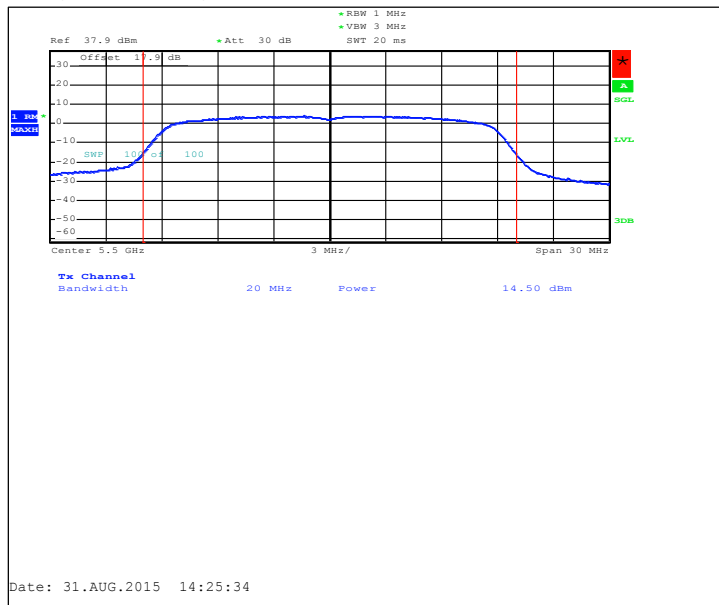
## Aux ( 64 / 5320)



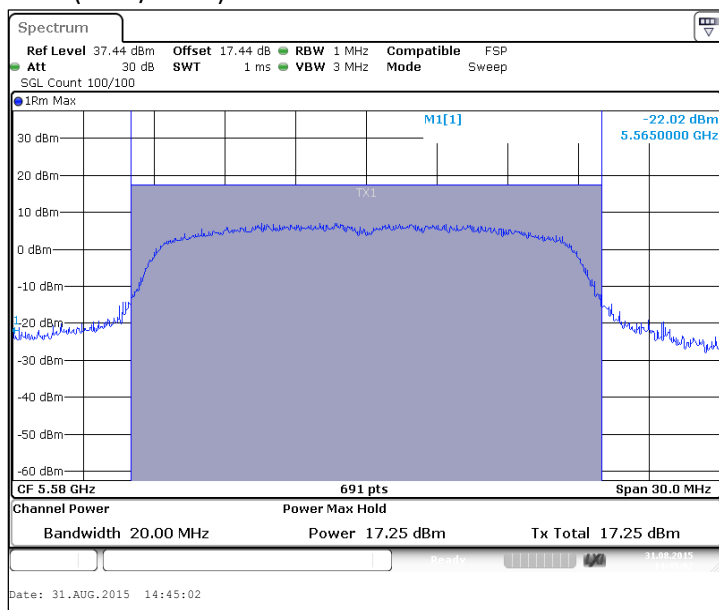
## Main ( 100 / 5500)



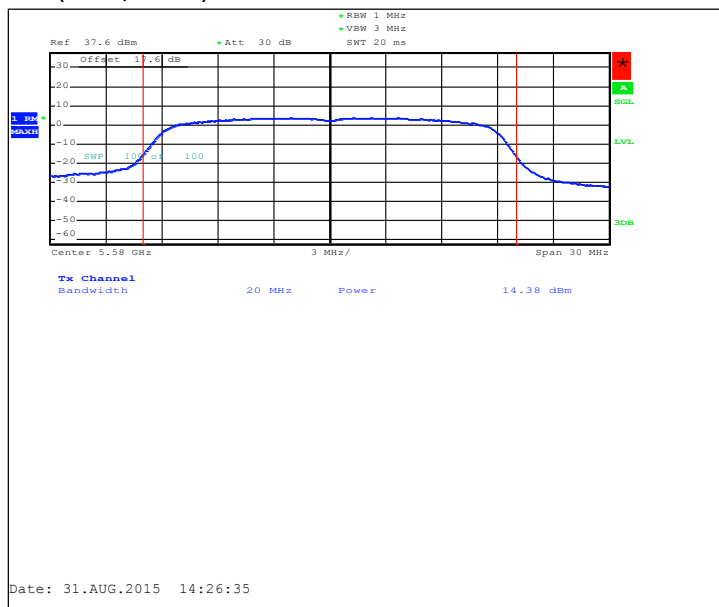
## Aux ( 100 / 5500)



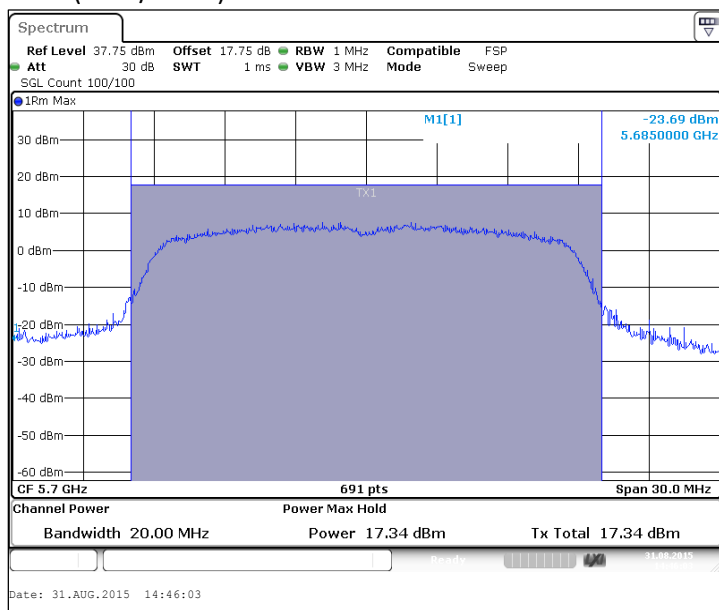
## Main ( 116 / 5580)



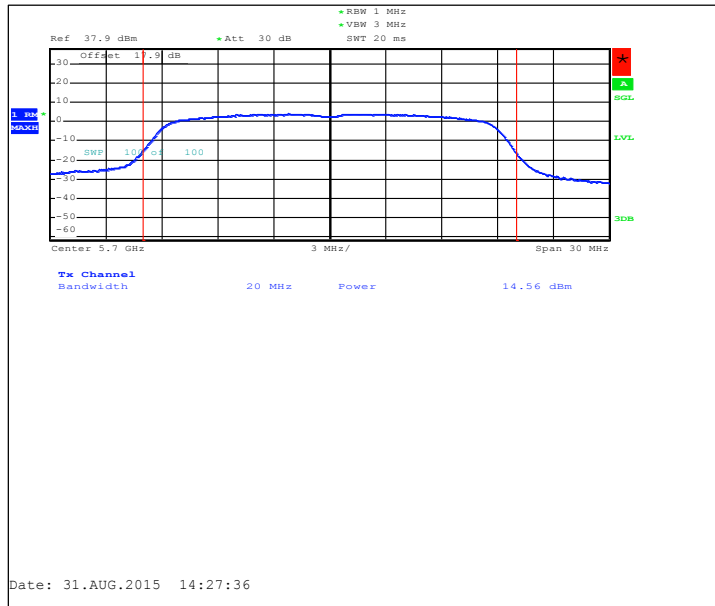
## Aux ( 116 / 5580)



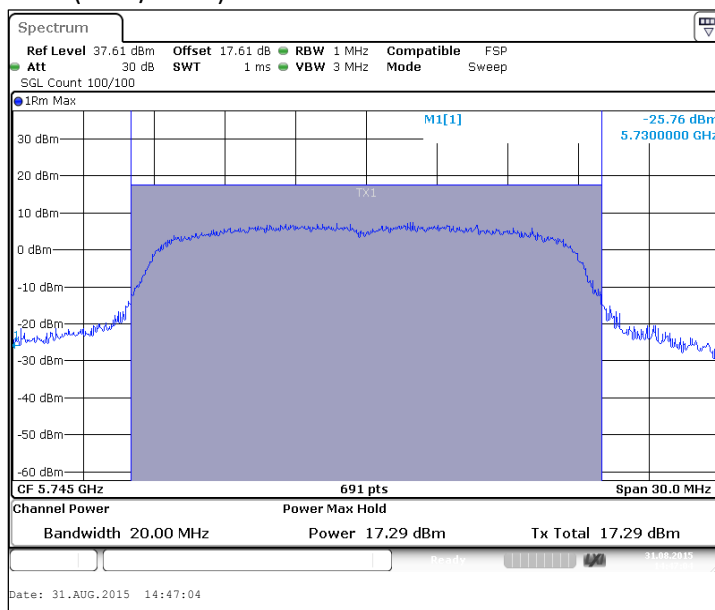
## Main ( 140 / 5700)



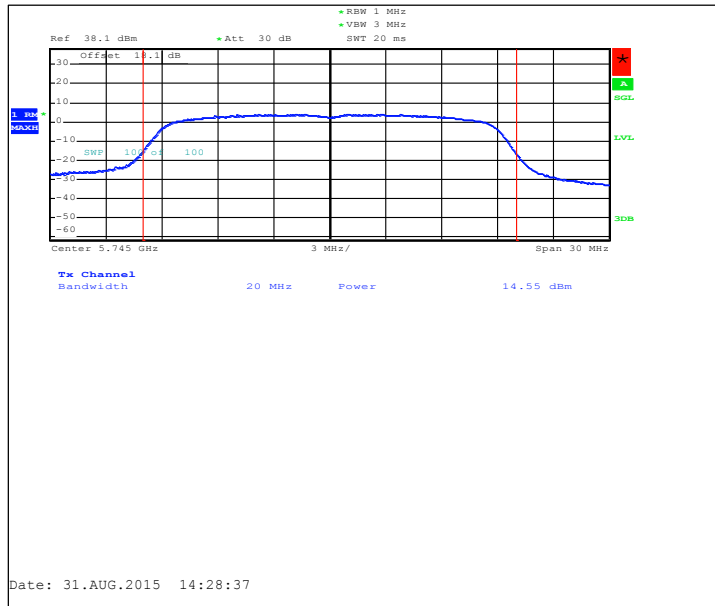
## Aux ( 140 / 5700)



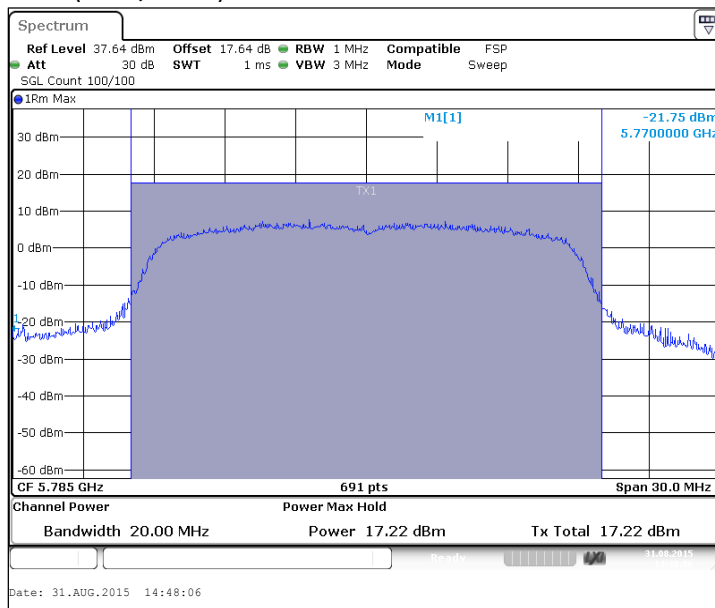
## Main ( 149 / 5745)



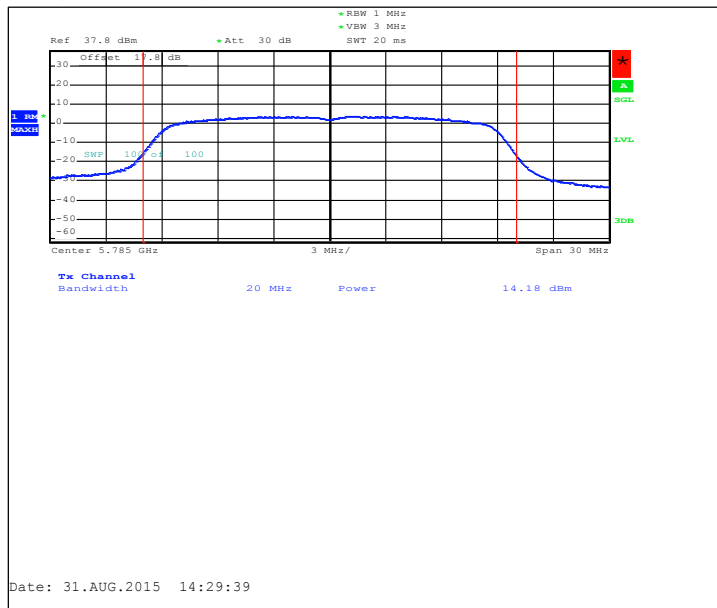
## Aux ( 149 / 5745)



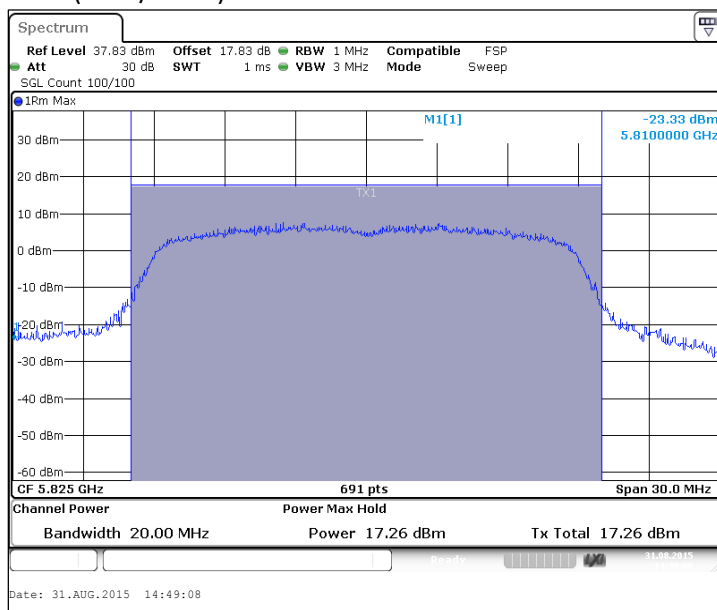
## Main ( 157 / 5785)



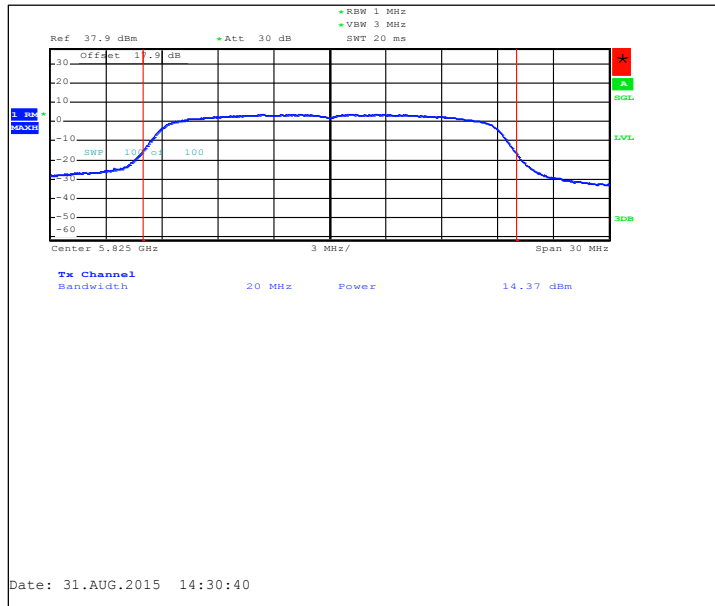
## Aux ( 157 / 5785)



## Main ( 165 / 5825)



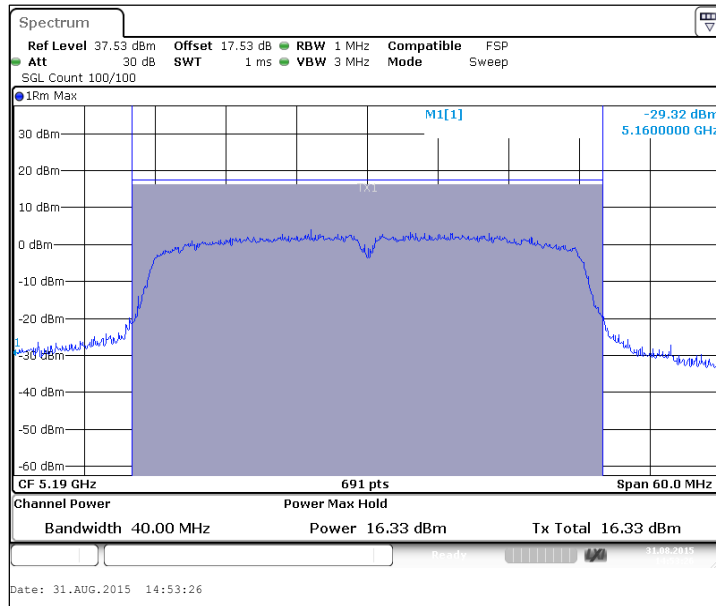
Aux ( 165 / 5825)



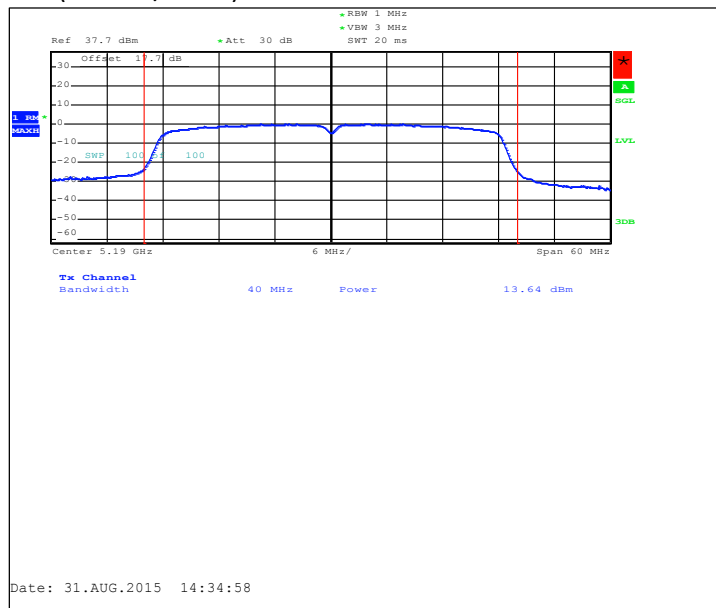
#### 2.4.2 802.11n MIMO mode, BPSK modulation, 13.5 / 15.0 Mbps data rate

| Channel /<br>f <sub>c</sub> [MHz] | Sum<br>[dBm] | Main<br>[dBm] | Aux<br>[dBm] | Antenna<br>Gain<br>Main<br>[dBi] | Antenna<br>Gain<br>Aux [dBi] | Antenna<br>Gain<br>DG<br>[dBi] | Limit<br>[dBm] | Limit<br>adjusted<br>[dBm] | Result |
|-----------------------------------|--------------|---------------|--------------|----------------------------------|------------------------------|--------------------------------|----------------|----------------------------|--------|
| 36+40 /<br>5190                   | 18.2         | 16.33         | 13.64        | 1.4                              | 1.4                          | 1.4                            | 24             | 24                         | PASSED |
| 44+48 /<br>5230                   | 18.2         | 16.15         | 13.96        | 1.4                              | 1.4                          | 1.4                            | 24             | 24                         | PASSED |
| 52+56 /<br>5270                   | 18.47        | 16.56         | 13.97        | 1.4                              | 1.4                          | 1.4                            | 24             | 24                         | PASSED |
| 60+64 /<br>5310                   | 18.43        | 16.42         | 14.11        | 1.4                              | 1.4                          | 1.4                            | 24             | 24                         | PASSED |
| 100+104 /<br>5510                 | 18.75        | 16.87         | 14.21        | 1.4                              | 1.4                          | 1.4                            | 24             | 24                         | PASSED |
| 108+112 /<br>5550                 | 18.78        | 16.98         | 14.1         | 1.4                              | 1.4                          | 1.4                            | 24             | 24                         | PASSED |
| 132+136 /<br>5670                 | 18.72        | 16.85         | 14.16        | 1.4                              | 1.4                          | 1.4                            | 24             | 24                         | PASSED |
| 149+153 /<br>5755                 | 18.8         | 17.02         | 14.07        | 1.4                              | 1.4                          | 1.4                            | 30             | 30                         | PASSED |
| 157+161 /<br>5795                 | 18.75        | 17.01         | 13.92        | 1.4                              | 1.4                          | 1.4                            | 30             | 30                         | PASSED |

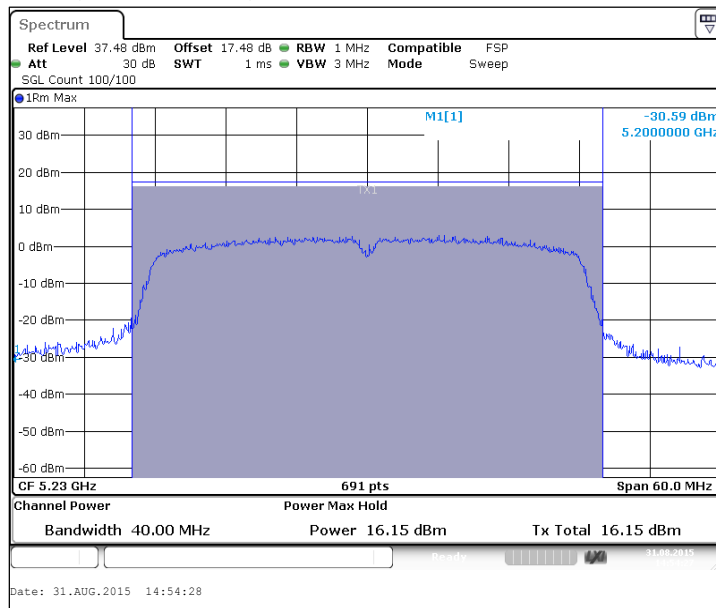
## Main ( 36+40 / 5190)



## Aux ( 36+40 / 5190)



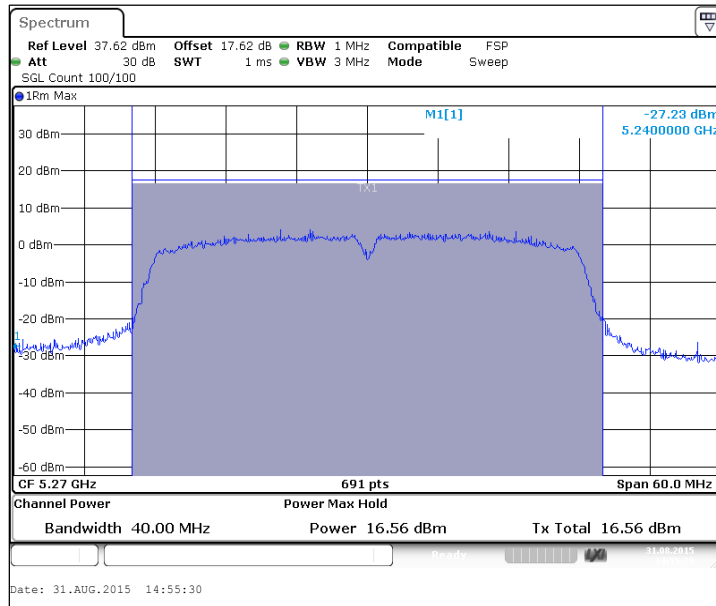
## Main ( 44+48 / 5230)



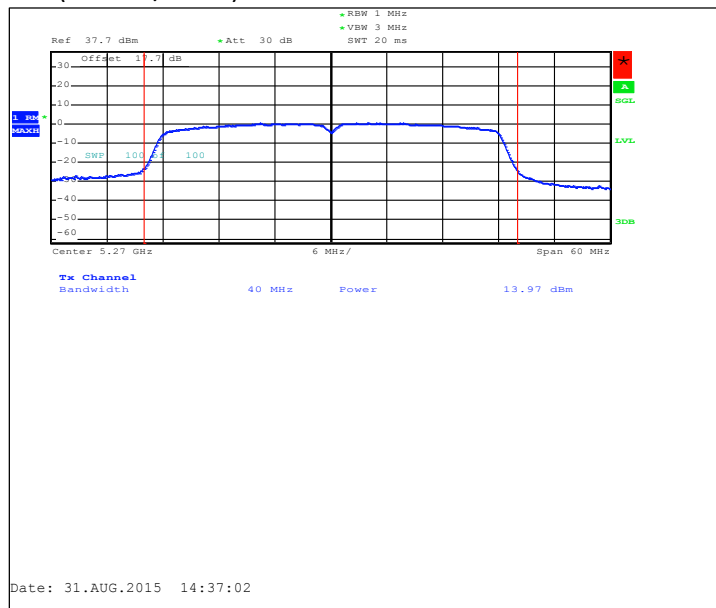
## Aux ( 44+48 / 5230)



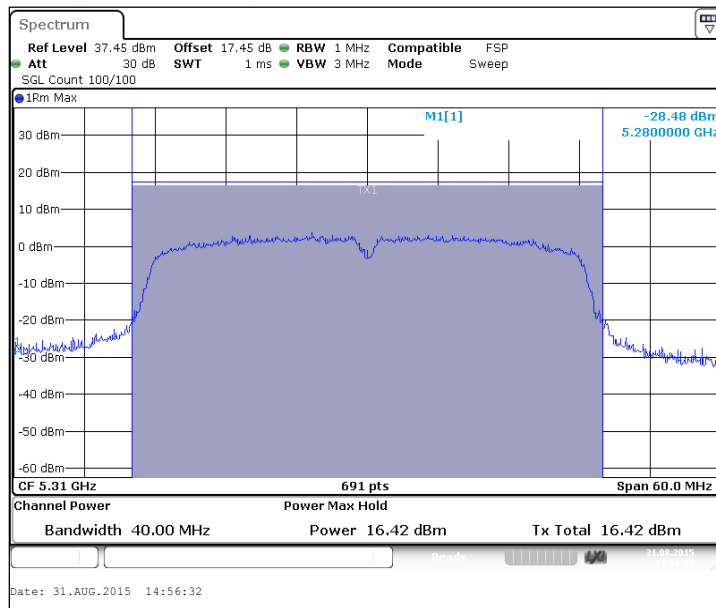
## Main ( 52+56 / 5270)



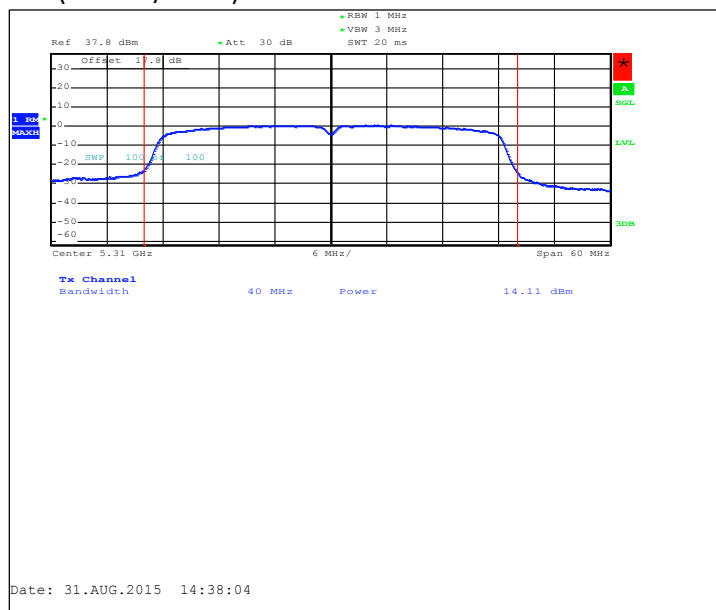
## Aux ( 52+56 / 5270)



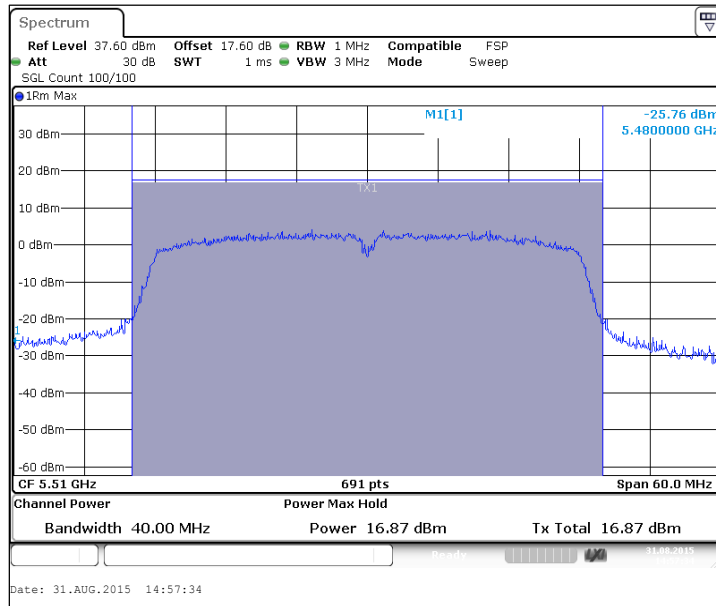
## Main ( 60+64 / 5310)



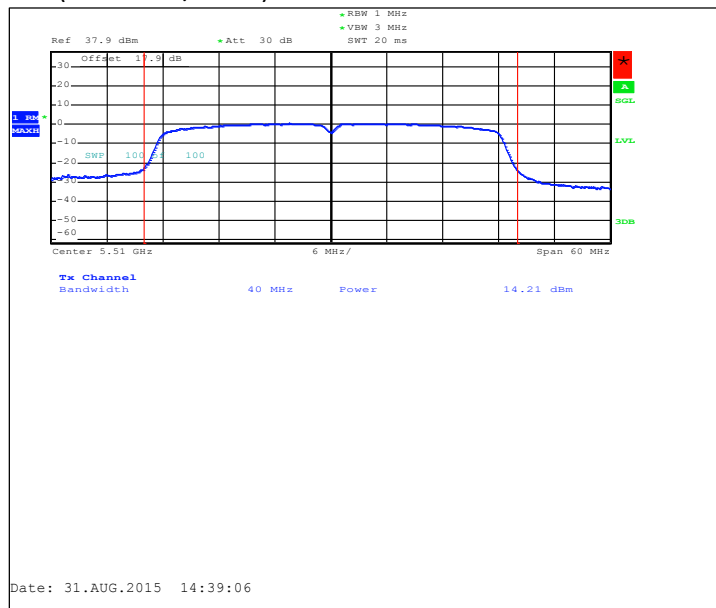
## Aux ( 60+64 / 5310)



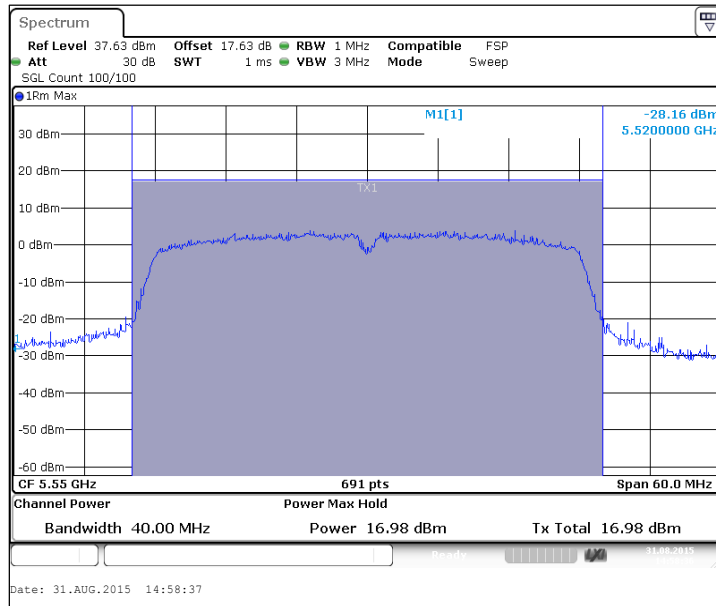
## Main ( 100+104 / 5510)



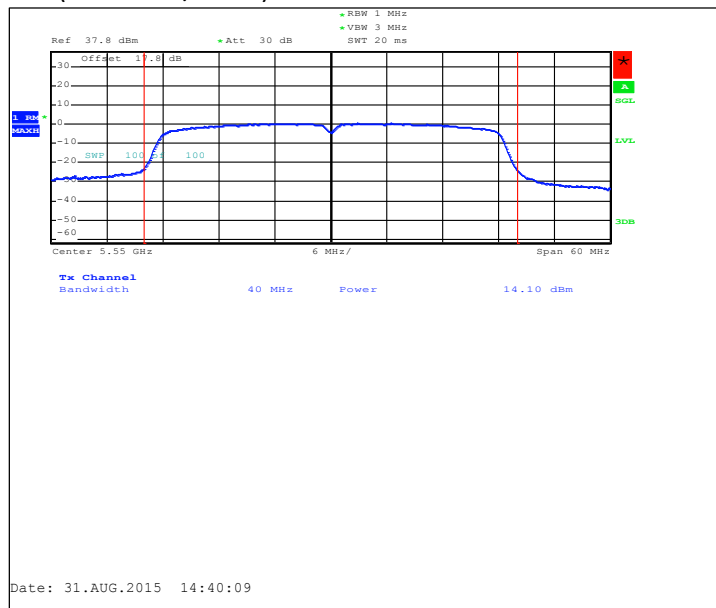
## Aux ( 100+104 / 5510)



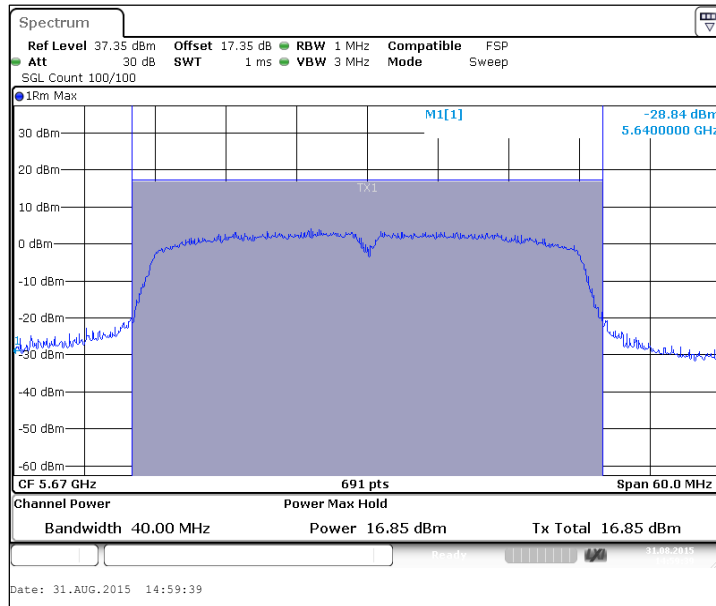
## Main ( 108+112 / 5550)



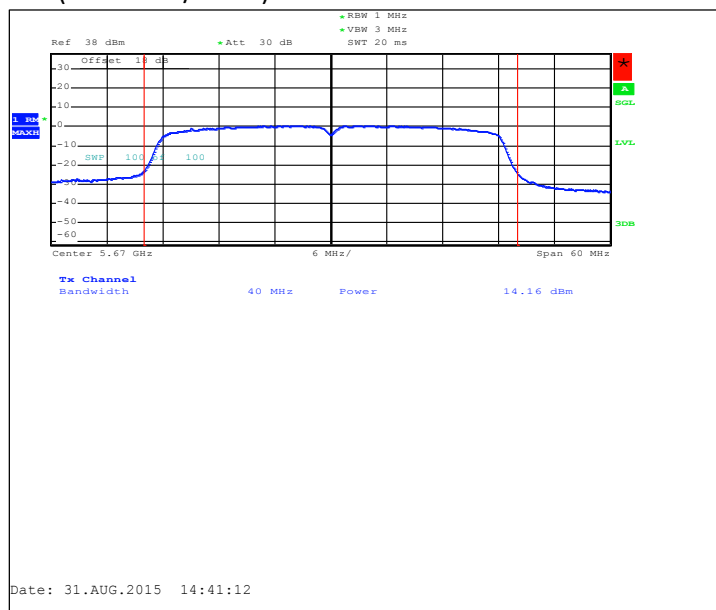
## Aux ( 108+112 / 5550)



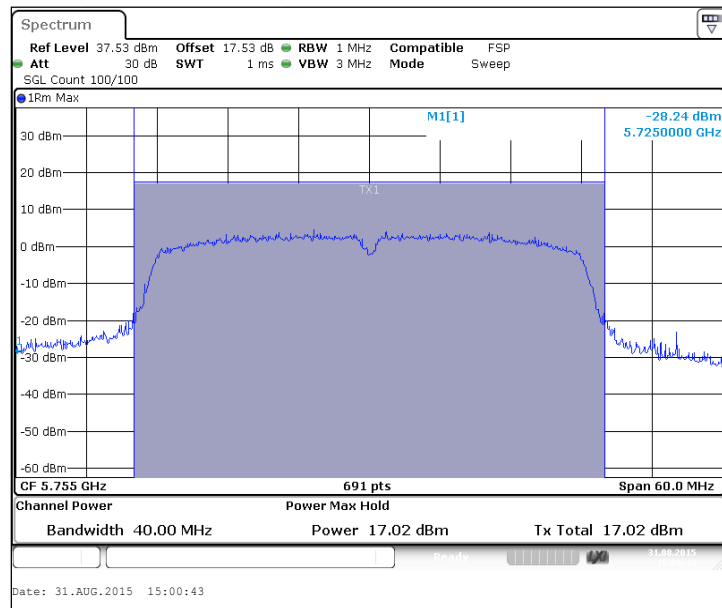
## Main ( 132+136 / 5670)



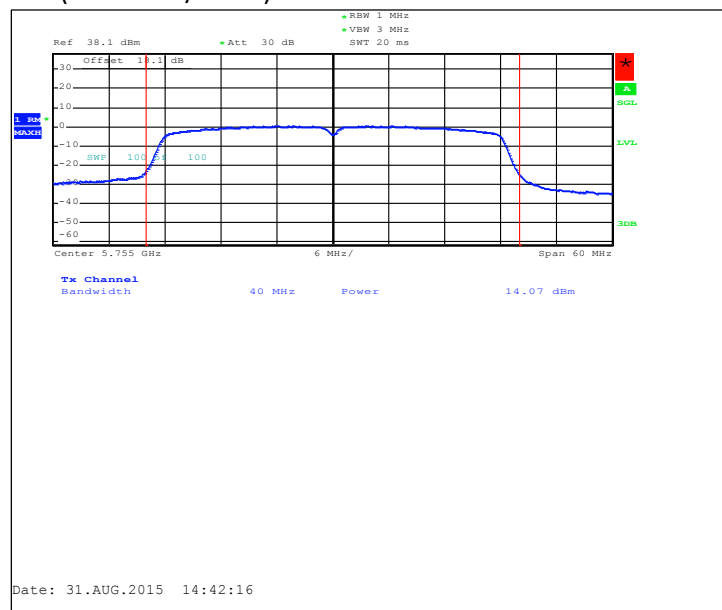
## Aux ( 132+136 / 5670)



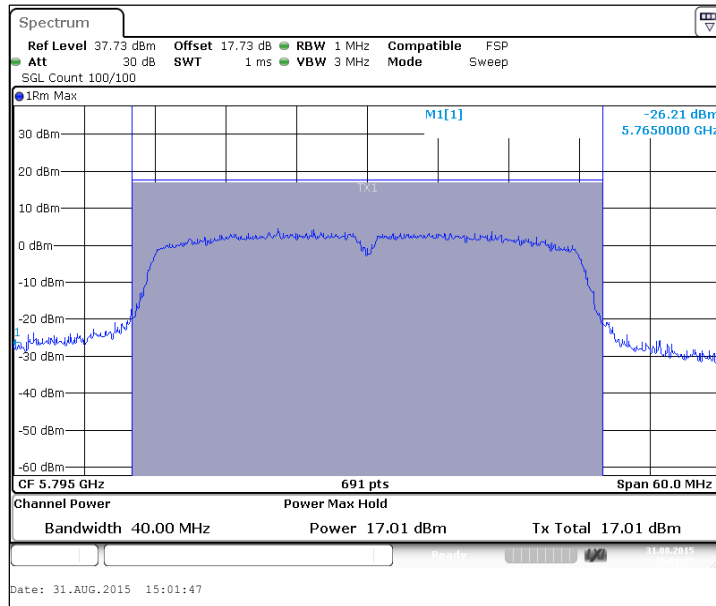
## Main ( 149+153 / 5755)



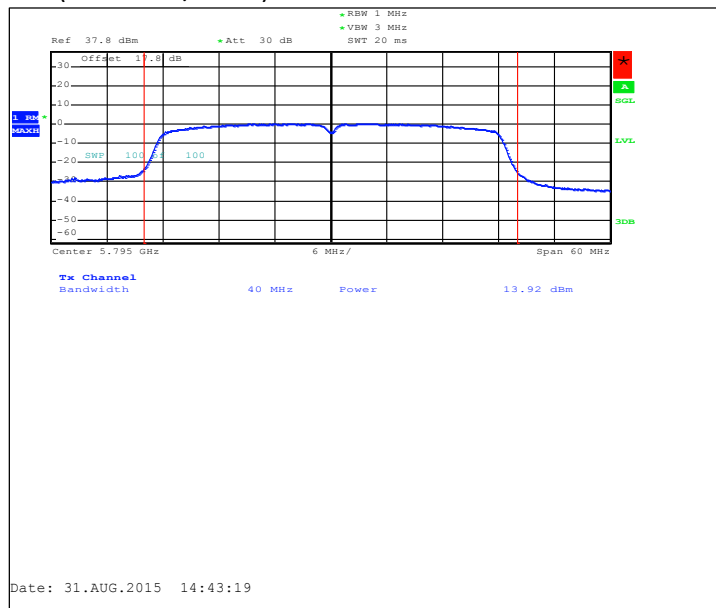
## Aux ( 149+153 / 5755)



## Main ( 157+161 / 5795)



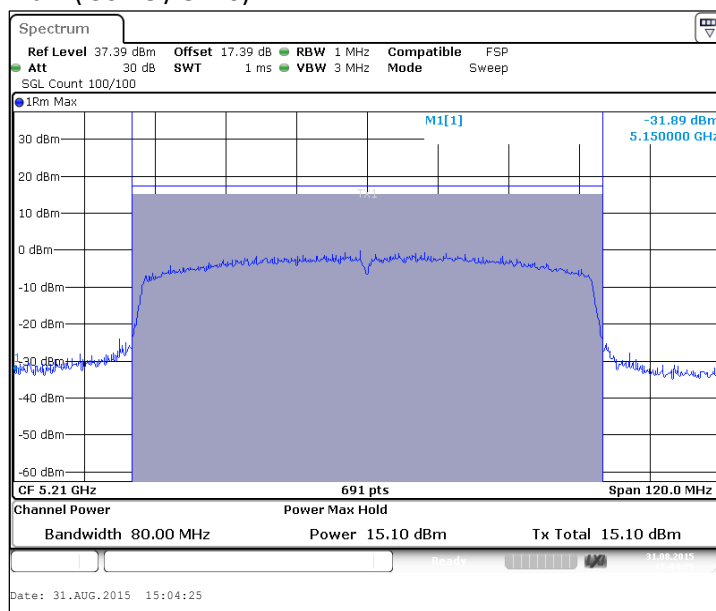
## Aux ( 157+161 / 5795)



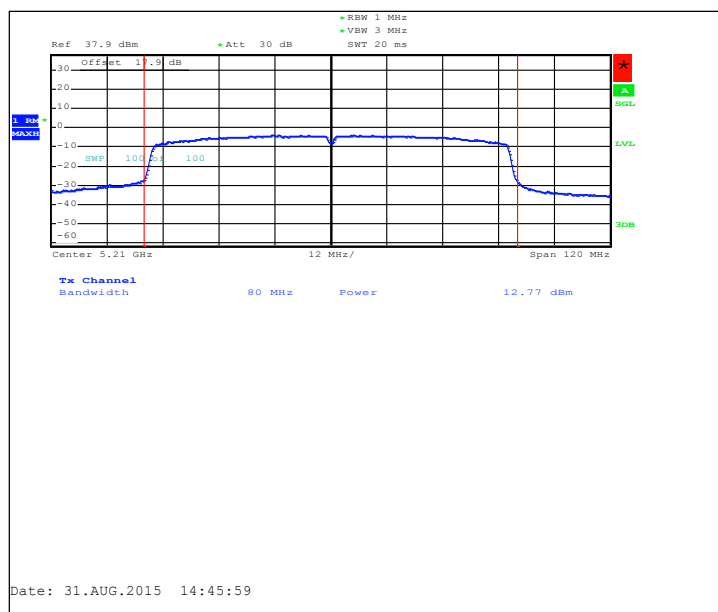
### 2.4.3 802.11ac MIMO mode, BPSK modulation, 29.3 / 32.5 Mbps data rate

| Channel /<br>f <sub>c</sub> [MHz] | Sum<br>[dBm] | Main<br>[dBm] | Aux<br>[dBm] | Antenna<br>Gain<br>Main<br>[dBi] | Antenna<br>Gain<br>Aux [dBi] | Antenna<br>Gain<br>DG<br>[dBi] | Limit<br>[dBm] | Limit<br>adjusted<br>[dBm] | Result |
|-----------------------------------|--------------|---------------|--------------|----------------------------------|------------------------------|--------------------------------|----------------|----------------------------|--------|
| 36-48 /<br>5210                   | 17.1         | 15.1          | 12.77        | 1.4                              | 1.4                          | 1.4                            | 24             | 24                         | PASSED |
| 52-64 /<br>5290                   | 17.12        | 15.26         | 12.54        | 1.4                              | 1.4                          | 1.4                            | 24             | 24                         | PASSED |
| 100-112 /<br>5530                 | 17.64        | 15.77         | 13.07        | 1.4                              | 1.4                          | 1.4                            | 24             | 24                         | PASSED |
| 149-161 /<br>5775                 | 17.53        | 15.74         | 12.8         | 1.4                              | 1.4                          | 1.4                            | 30             | 30                         | PASSED |

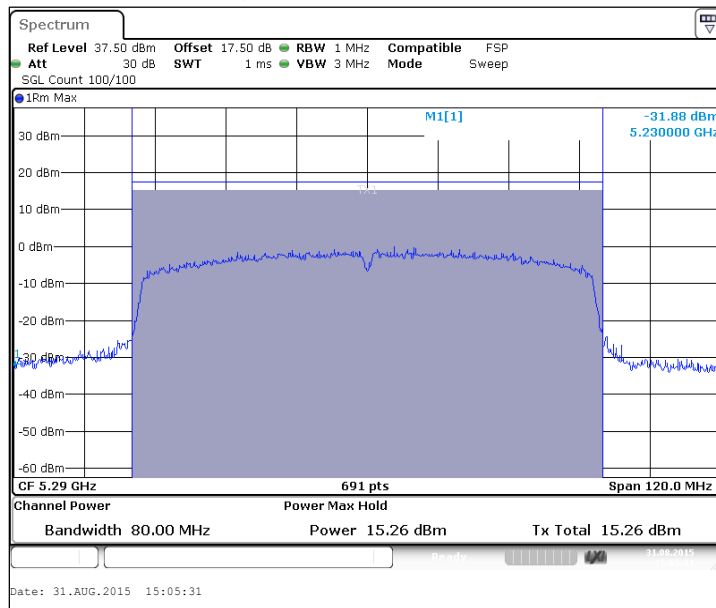
#### Main ( 36-48 / 5210)



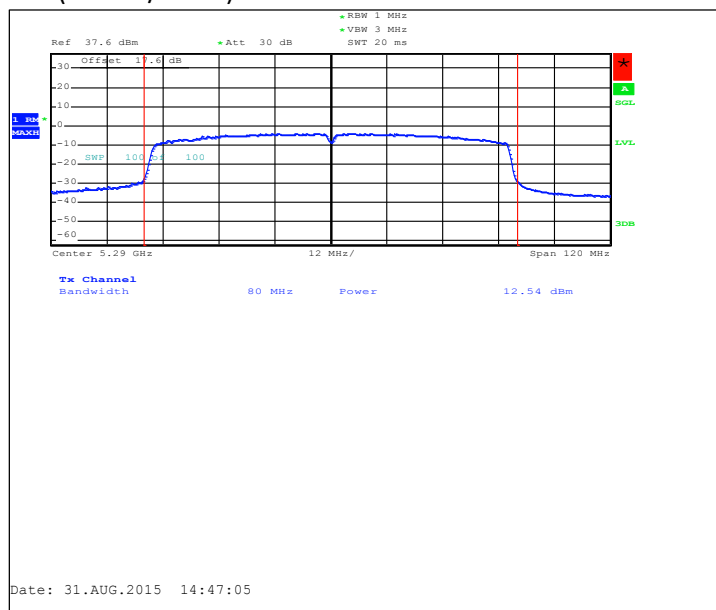
#### Aux ( 36-48 / 5210)



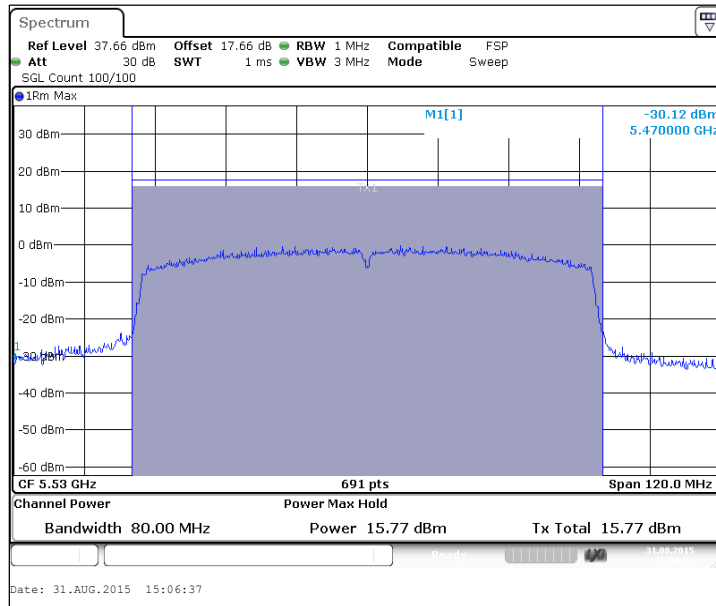
## Main ( 52-64 / 5290)



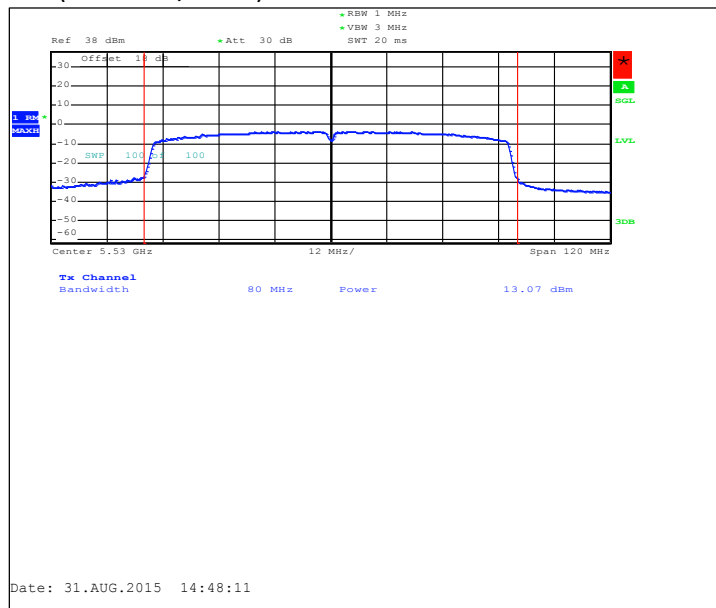
## Aux ( 52-64 / 5290)



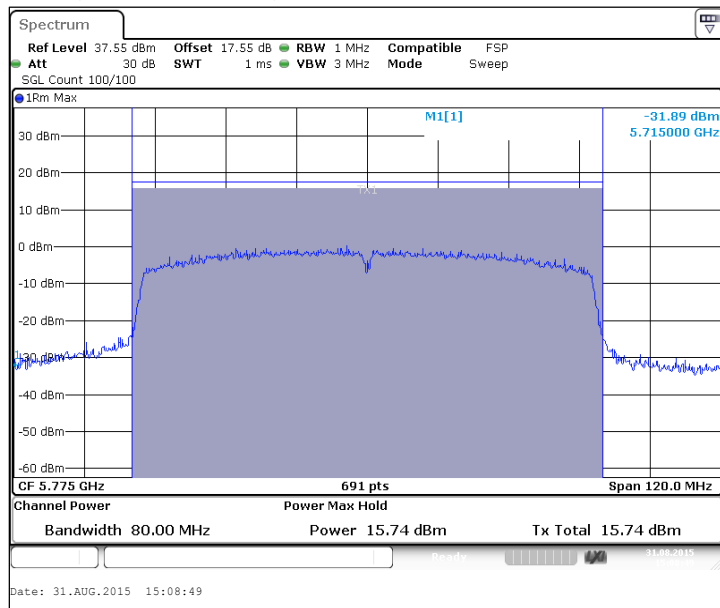
## Main ( 100-112 / 5530)



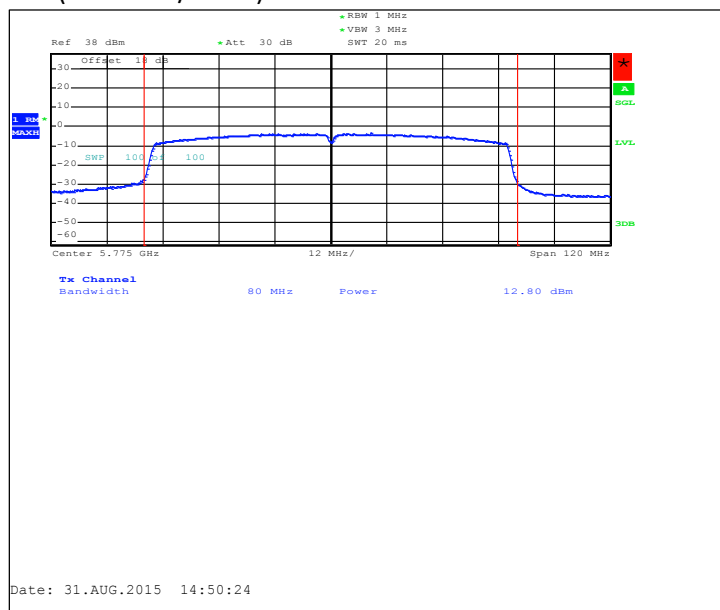
## Aux ( 100-112 / 5530)



## Main ( 149-161 / 5775)



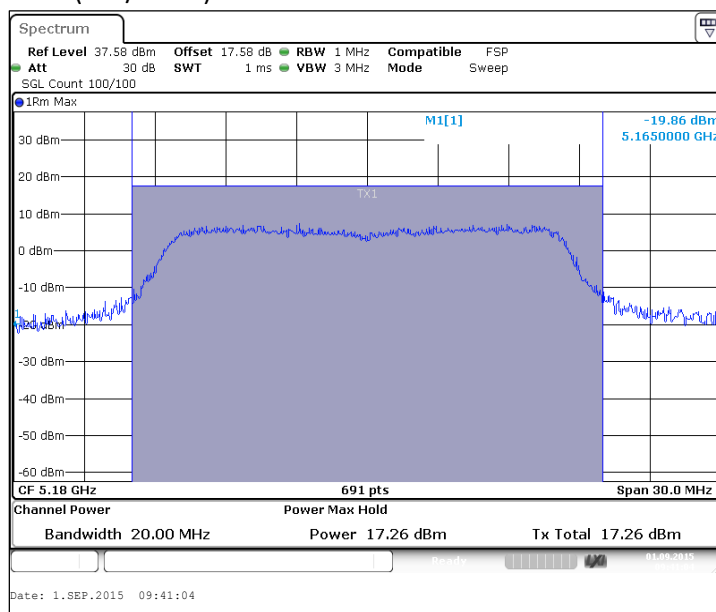
## Aux ( 149-161 / 5775)



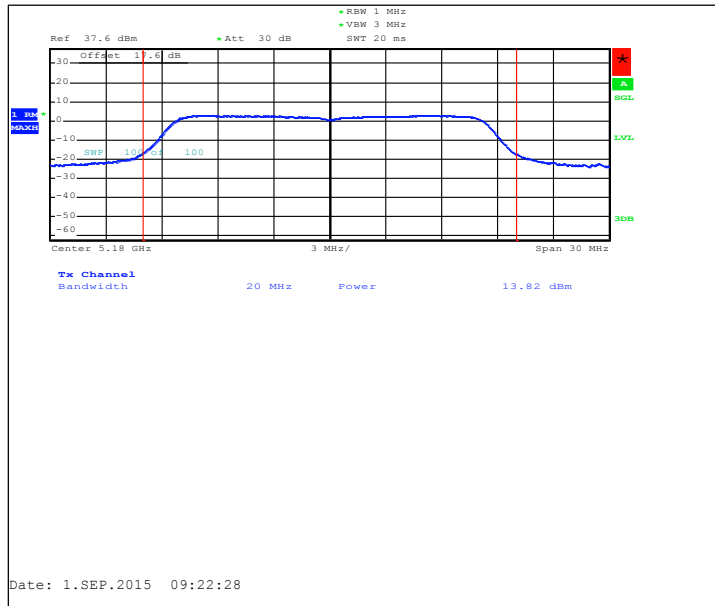
#### 2.4.4 802.11a MIMO mode, 16QAM modulation, 24 Mbps data rate

| Channel / f <sub>c</sub> [MHz] | Sum [dBm] | Main [dBm] | Aux [dBm] | Antenna Gain Main [dBi] | Antenna Gain Aux [dBi] | Antenna Gain DG [dBi] | Limit [dBm] | Limit adjusted [dBm] | Result |
|--------------------------------|-----------|------------|-----------|-------------------------|------------------------|-----------------------|-------------|----------------------|--------|
| 36 / 5180                      | 18.88     | 17.26      | 13.82     | 1.4                     | 1.4                    | 1.4                   | 24          | 24                   | PASSED |
| 40 / 5200                      | 18.69     | 16.98      | 13.79     | 1.4                     | 1.4                    | 1.4                   | 24          | 24                   | PASSED |
| 48 / 5240                      | 18.85     | 17.05      | 14.16     | 1.4                     | 1.4                    | 1.4                   | 24          | 24                   | PASSED |
| 52 / 5260                      | 18.96     | 17.29      | 13.99     | 1.4                     | 1.4                    | 1.4                   | 24          | 24                   | PASSED |
| 60 / 5300                      | 18.89     | 17.2       | 13.98     | 1.4                     | 1.4                    | 1.4                   | 24          | 24                   | PASSED |
| 64 / 5320                      | 18.93     | 17.22      | 14.05     | 1.4                     | 1.4                    | 1.4                   | 24          | 24                   | PASSED |
| 100 / 5500                     | 19.22     | 17.46      | 14.44     | 1.4                     | 1.4                    | 1.4                   | 24          | 24                   | PASSED |
| 116 / 5580                     | 19.3      | 17.61      | 14.36     | 1.4                     | 1.4                    | 1.4                   | 24          | 24                   | PASSED |
| 140 / 5700                     | 19.52     | 17.91      | 14.42     | 1.4                     | 1.4                    | 1.4                   | 24          | 24                   | PASSED |
| 149 / 5745                     | 19.44     | 17.81      | 14.39     | 1.4                     | 1.4                    | 1.4                   | 30          | 30                   | PASSED |
| 157 / 5785                     | 19.25     | 17.67      | 14.1      | 1.4                     | 1.4                    | 1.4                   | 30          | 30                   | PASSED |
| 165 / 5825                     | 19.19     | 17.53      | 14.2      | 1.4                     | 1.4                    | 1.4                   | 30          | 30                   | PASSED |

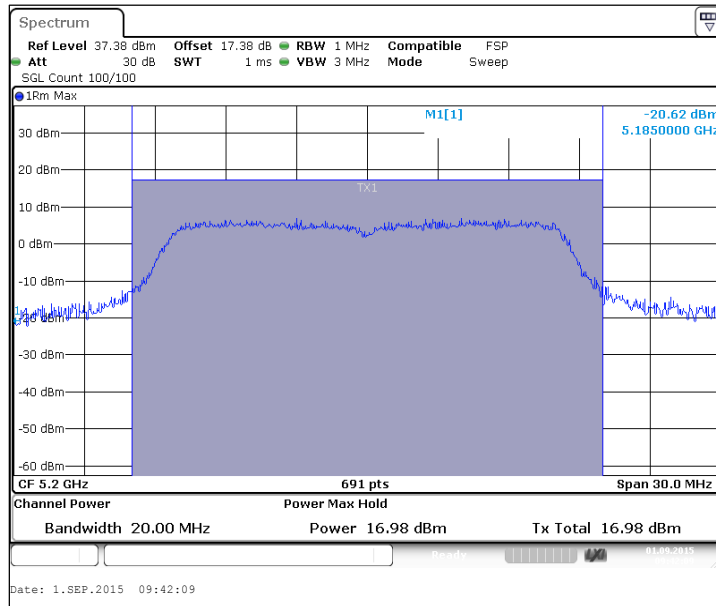
#### Main ( 36 / 5180)



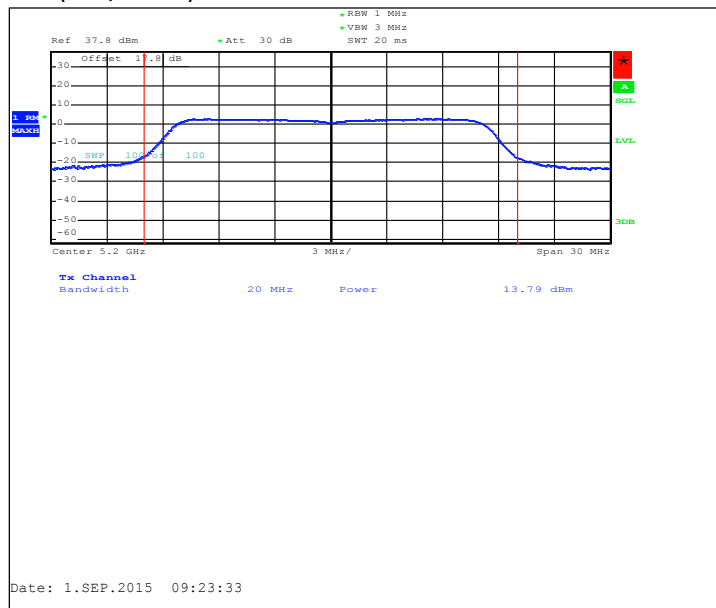
Aux ( 36 / 5180)



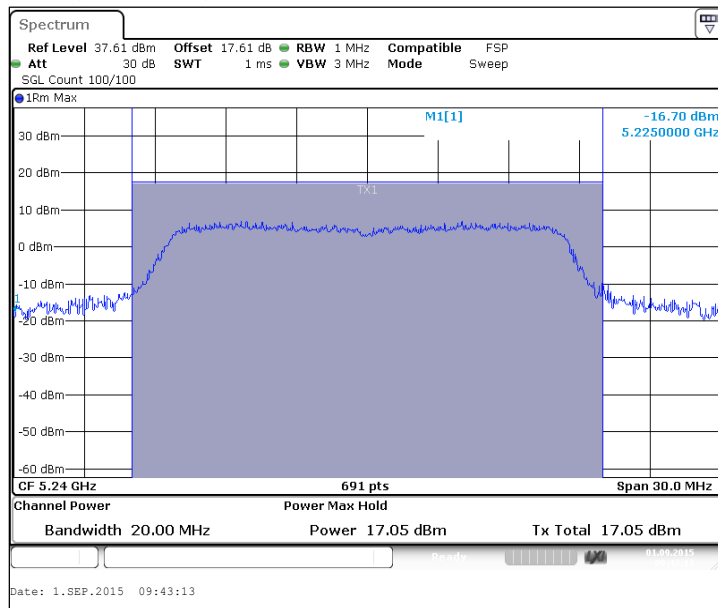
## Main ( 40 / 5200)



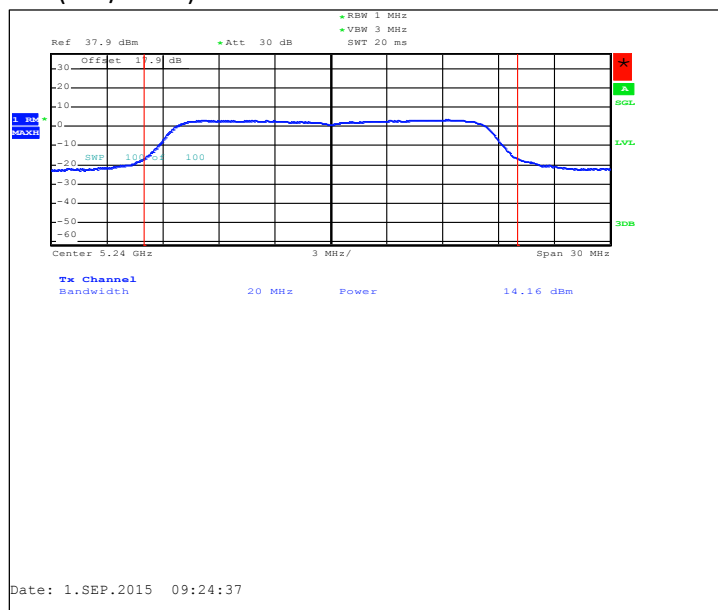
## Aux ( 40 / 5200)



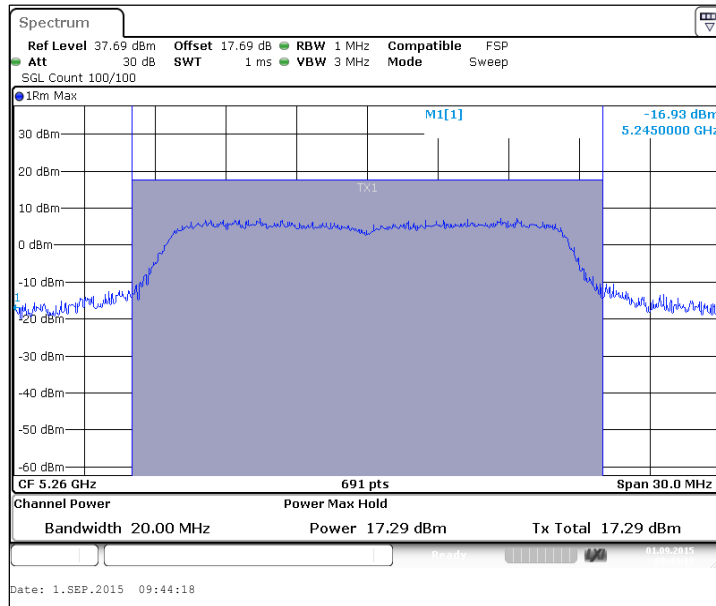
## Main ( 48 / 5240)



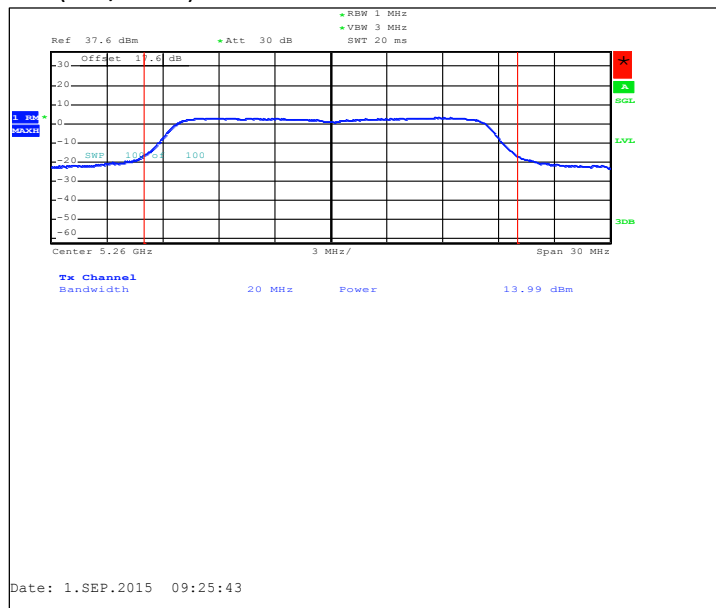
## Aux ( 48 / 5240)



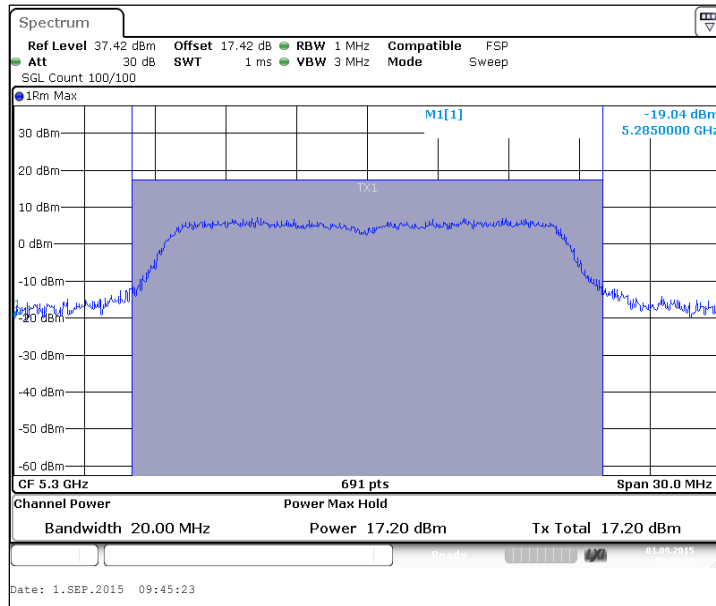
## Main ( 52 / 5260)



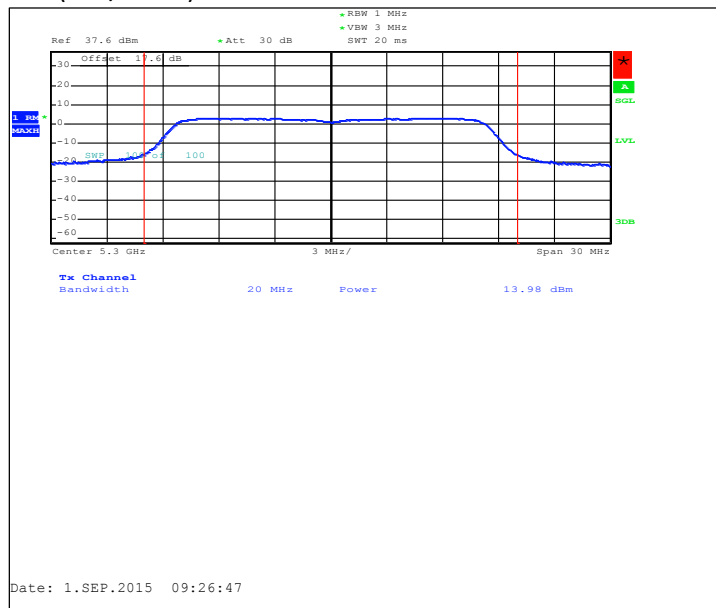
## Aux ( 52 / 5260)



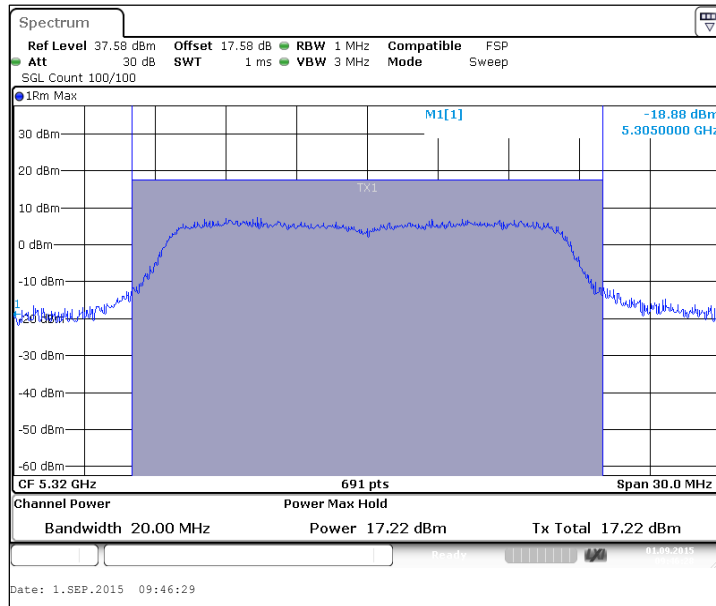
## Main ( 60 / 5300)



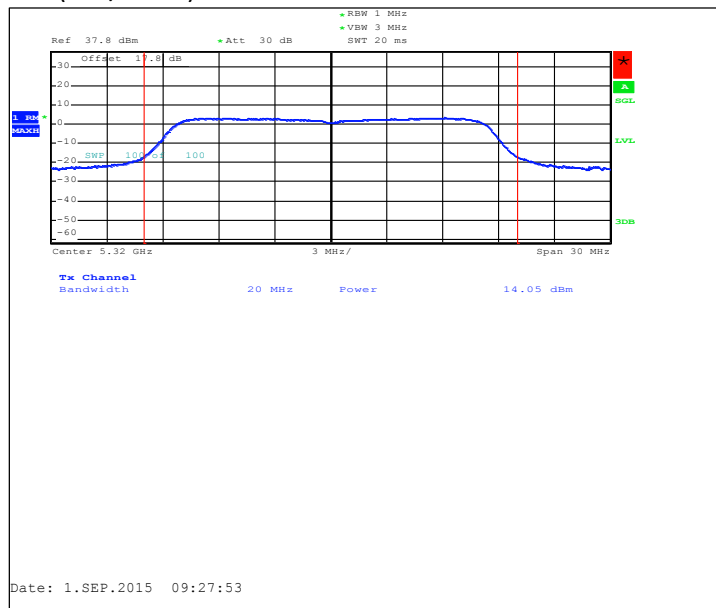
## Aux ( 60 / 5300)



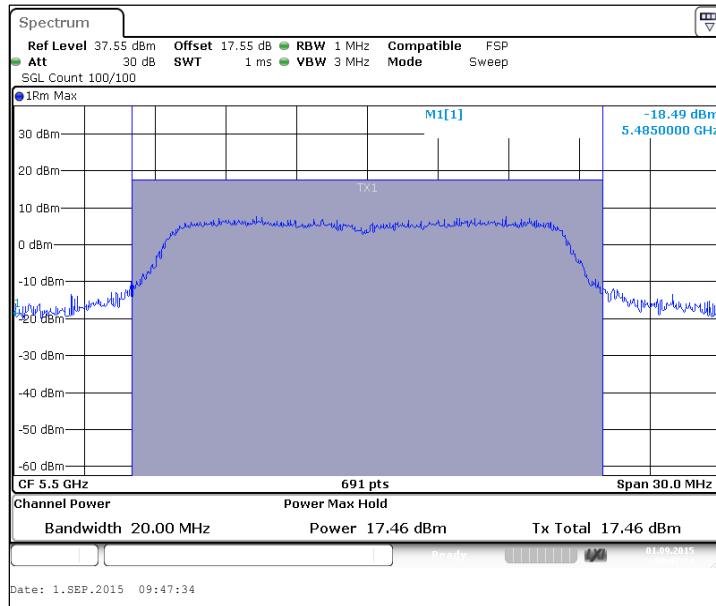
## Main ( 64 / 5320)



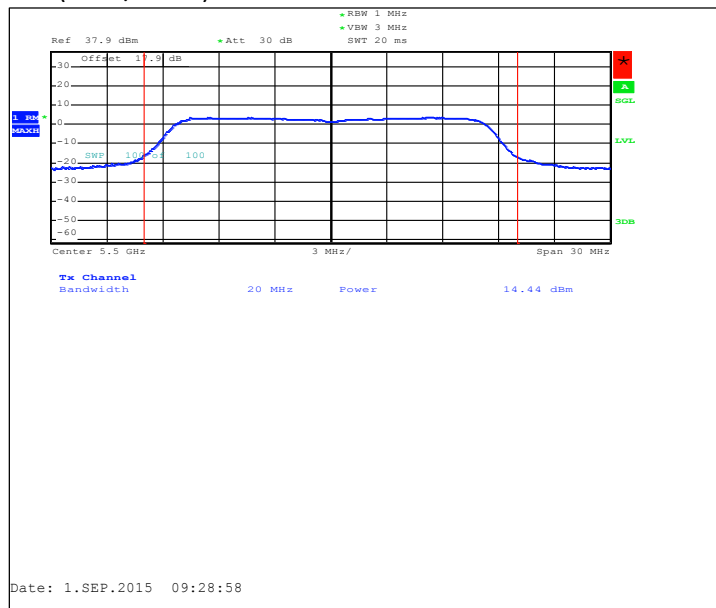
## Aux ( 64 / 5320)



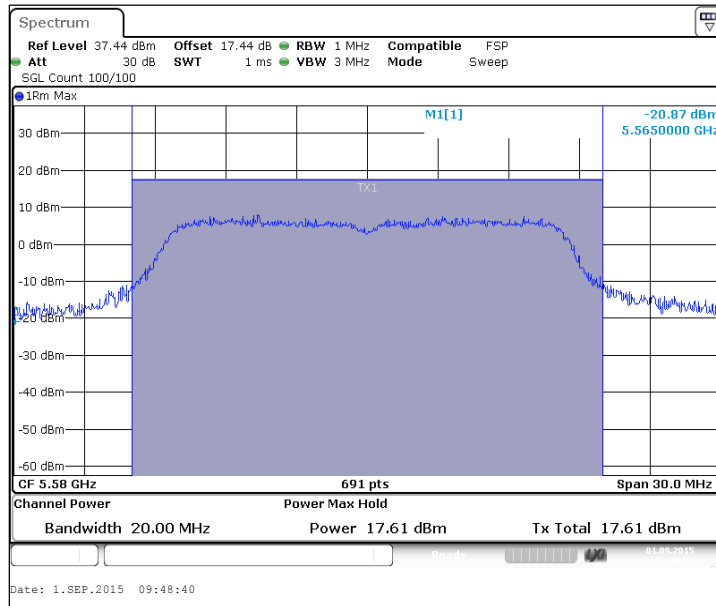
## Main ( 100 / 5500)



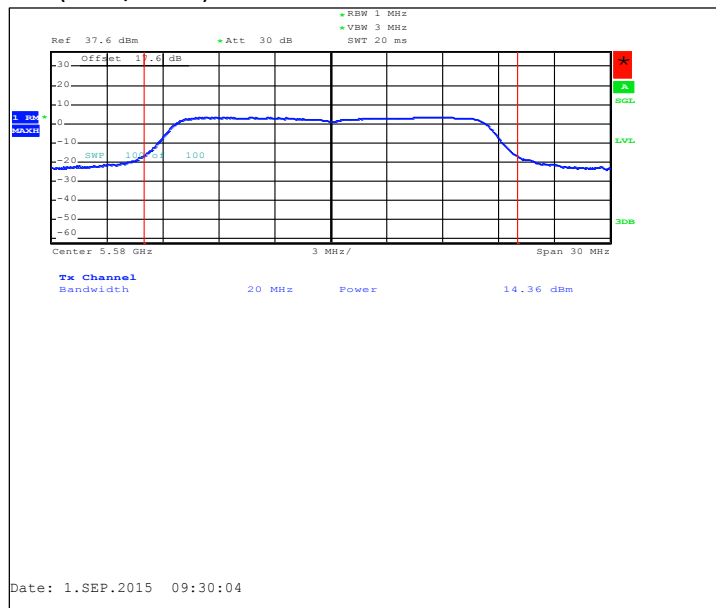
## Aux ( 100 / 5500)



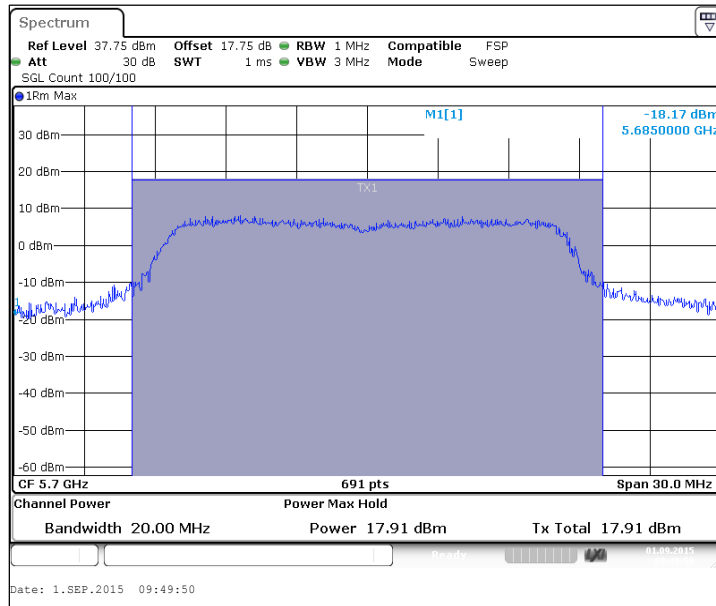
## Main ( 116 / 5580)



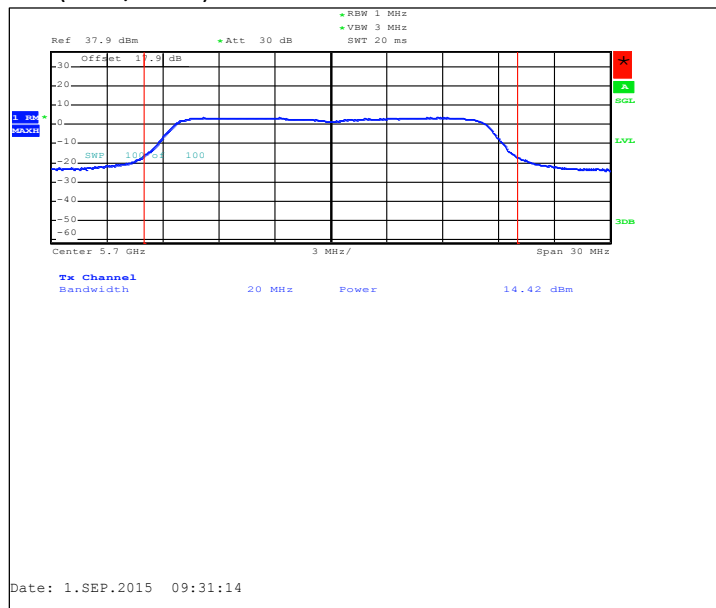
## Aux ( 116 / 5580)



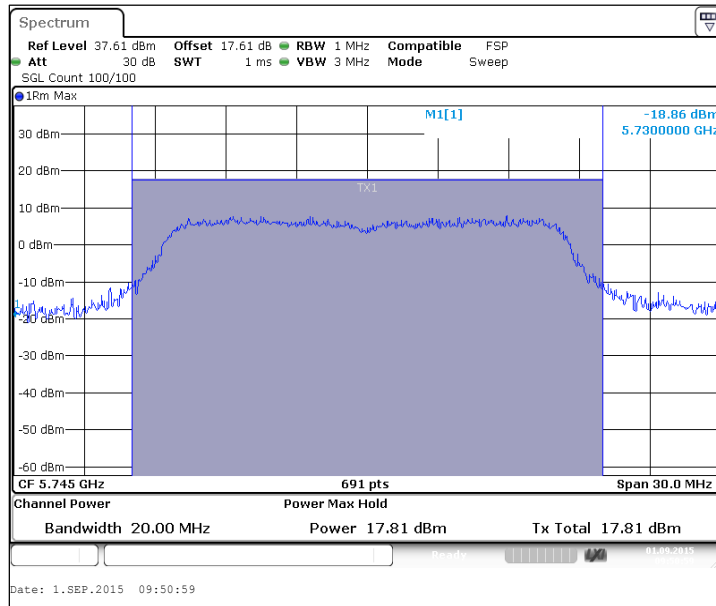
## Main ( 140 / 5700)



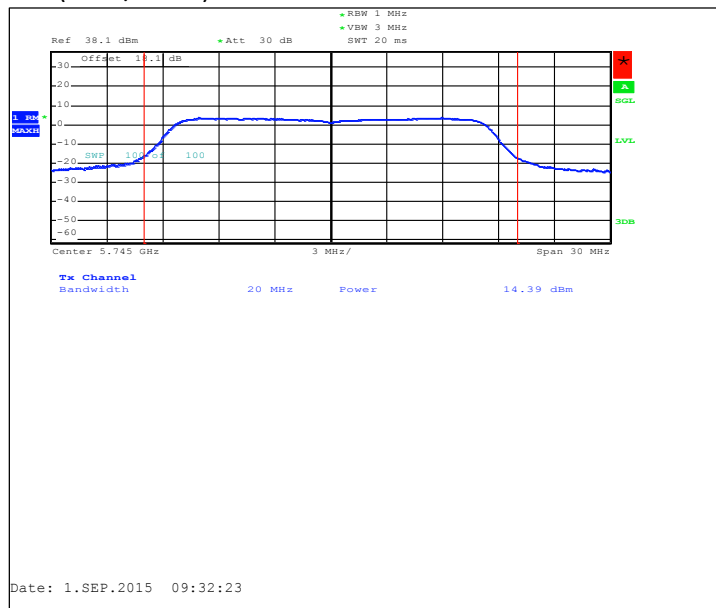
## Aux ( 140 / 5700)



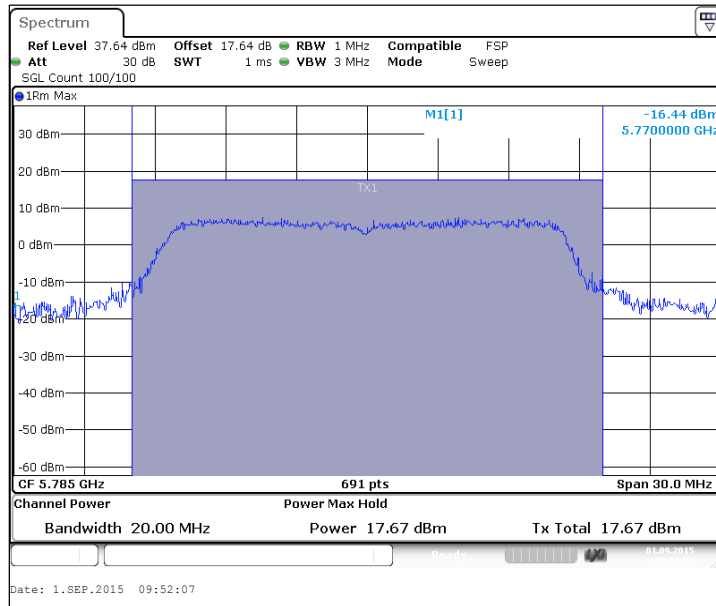
## Main ( 149 / 5745)



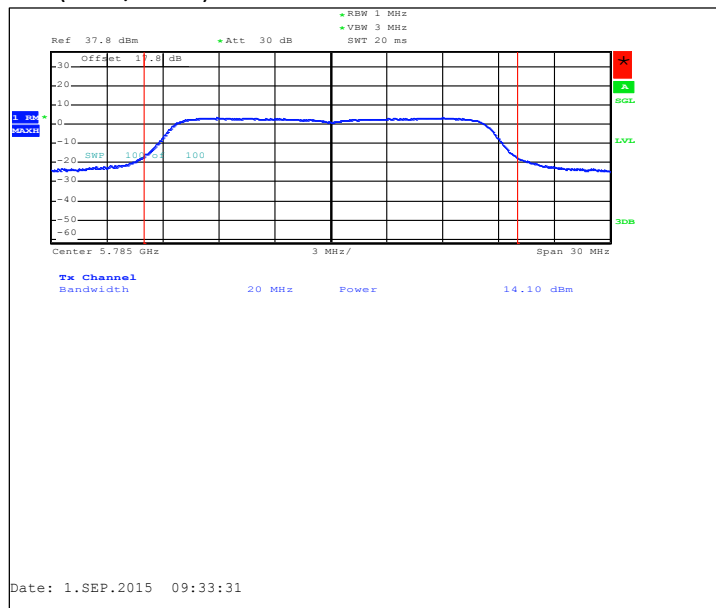
## Aux ( 149 / 5745)



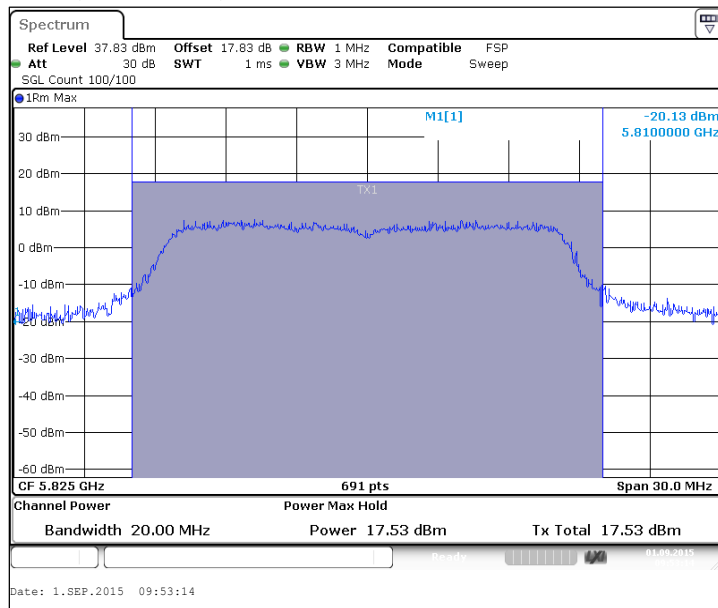
## Main ( 157 / 5785)



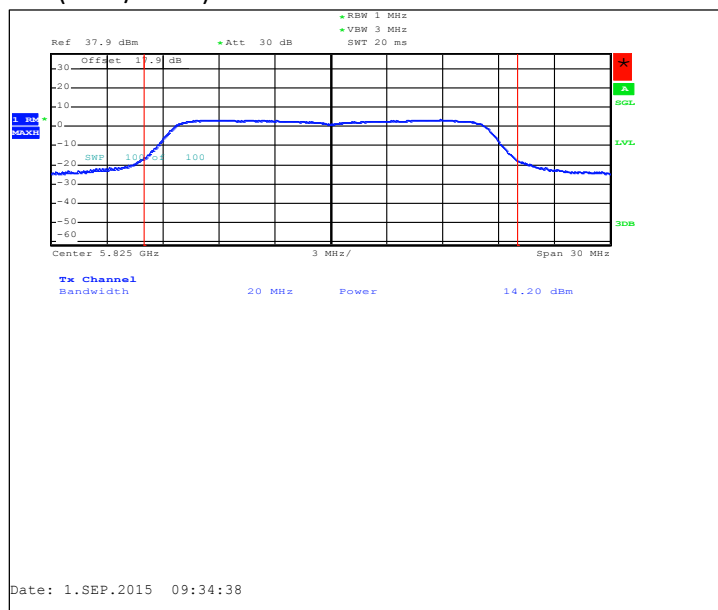
## Aux ( 157 / 5785)



## Main ( 165 / 5825)



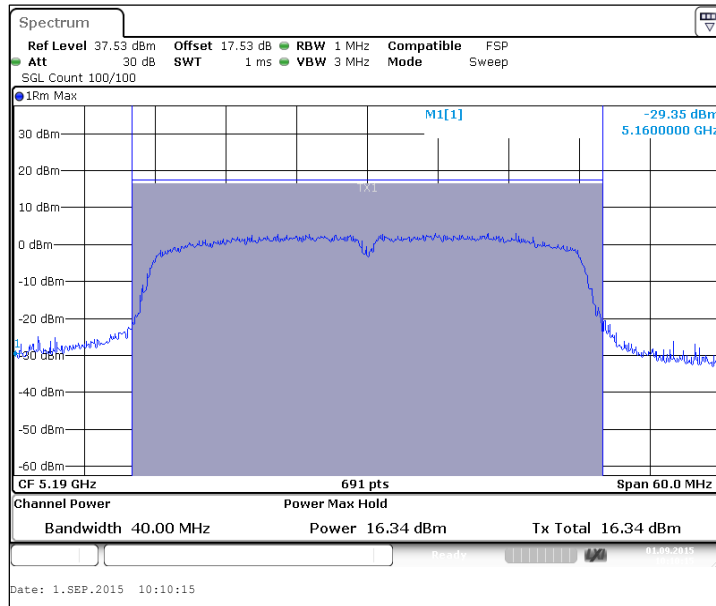
## Aux ( 165 / 5825)



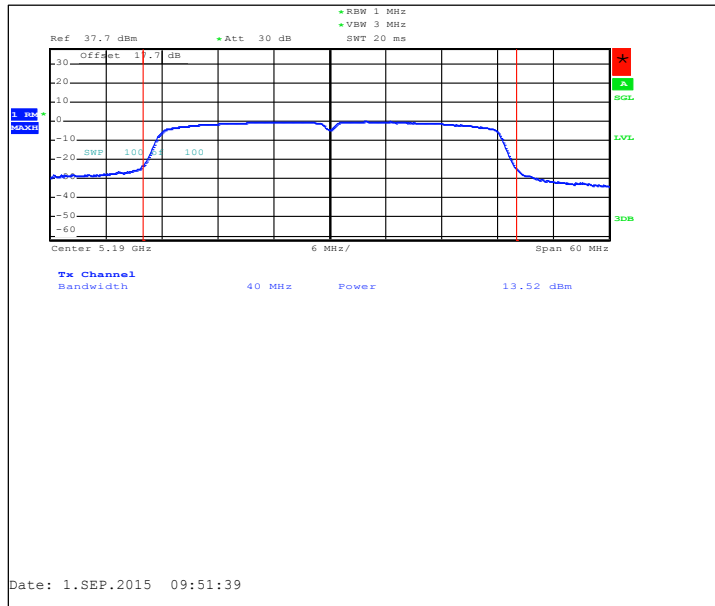
## 2.4.5 802.11n MIMO mode, QPSK modulation, 27.0 / 30.0 Mbps data rate

| Channel / f <sub>c</sub> [MHz] | Sum [dBm] | Main [dBm] | Aux [dBm] | Antenna Gain Main [dBi] | Antenna Gain Aux [dBi] | Antenna Gain DG [dBi] | Limit [dBm] | Limit adjusted [dBm] | Result |
|--------------------------------|-----------|------------|-----------|-------------------------|------------------------|-----------------------|-------------|----------------------|--------|
| 36+40 / 5190                   | 18.16     | 16.34      | 13.52     | 1.4                     | 1.4                    | 1.4                   | 24          | 24                   | PASSED |
| 44+48 / 5230                   | 18.16     | 16.14      | 13.85     | 1.4                     | 1.4                    | 1.4                   | 24          | 24                   | PASSED |
| 52+56 / 5270                   | 18.37     | 16.48      | 13.84     | 1.4                     | 1.4                    | 1.4                   | 24          | 24                   | PASSED |
| 60+64 / 5310                   | 18.37     | 16.41      | 13.98     | 1.4                     | 1.4                    | 1.4                   | 24          | 24                   | PASSED |
| 100+104 / 5510                 | 18.66     | 16.78      | 14.11     | 1.4                     | 1.4                    | 1.4                   | 24          | 24                   | PASSED |
| 108+112 / 5550                 | 18.65     | 16.83      | 14.01     | 1.4                     | 1.4                    | 1.4                   | 24          | 24                   | PASSED |
| 132+136 / 5670                 | 18.65     | 16.8       | 14.07     | 1.4                     | 1.4                    | 1.4                   | 24          | 24                   | PASSED |
| 149+153 / 5755                 | 18.72     | 16.96      | 13.95     | 1.4                     | 1.4                    | 1.4                   | 30          | 30                   | PASSED |
| 157+161 / 5795                 | 18.67     | 16.95      | 13.82     | 1.4                     | 1.4                    | 1.4                   | 30          | 30                   | PASSED |

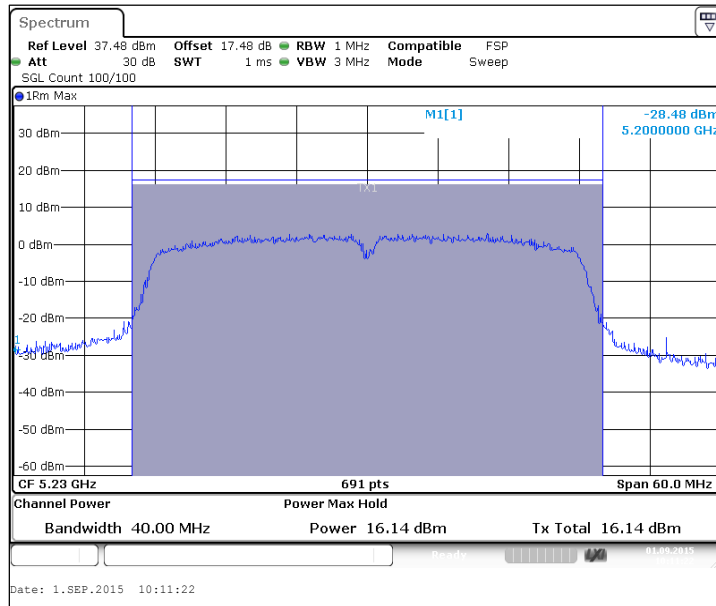
### Main ( 36+40 / 5190)



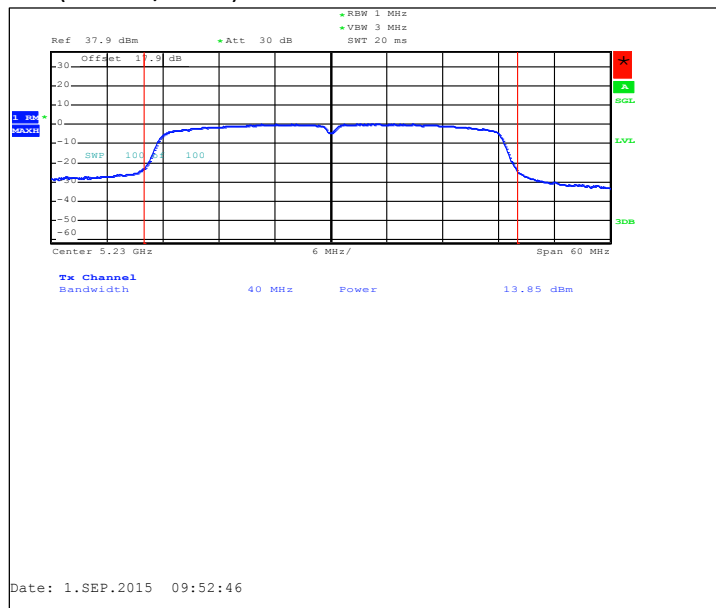
# Aux ( 36+40 / 5190)



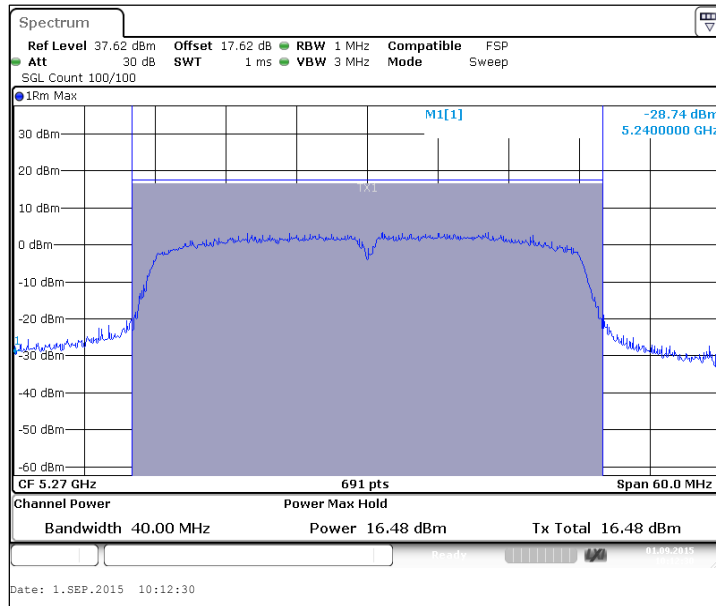
## Main ( 44+48 / 5230)



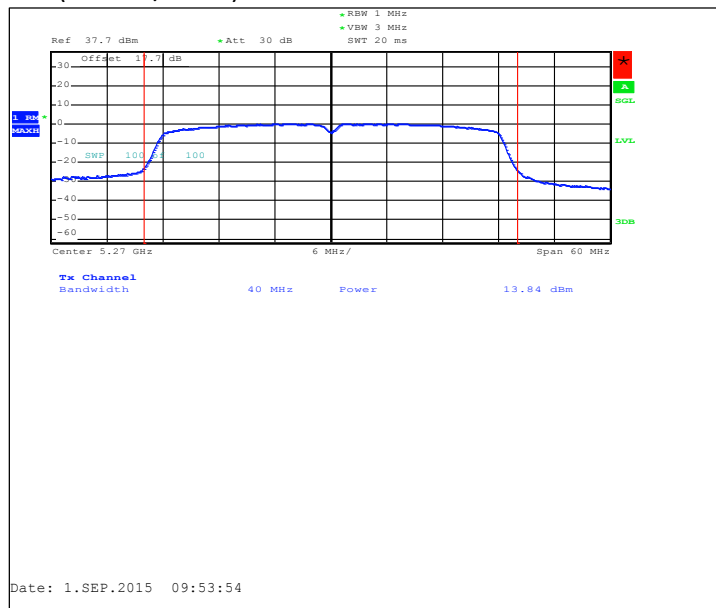
## Aux ( 44+48 / 5230)



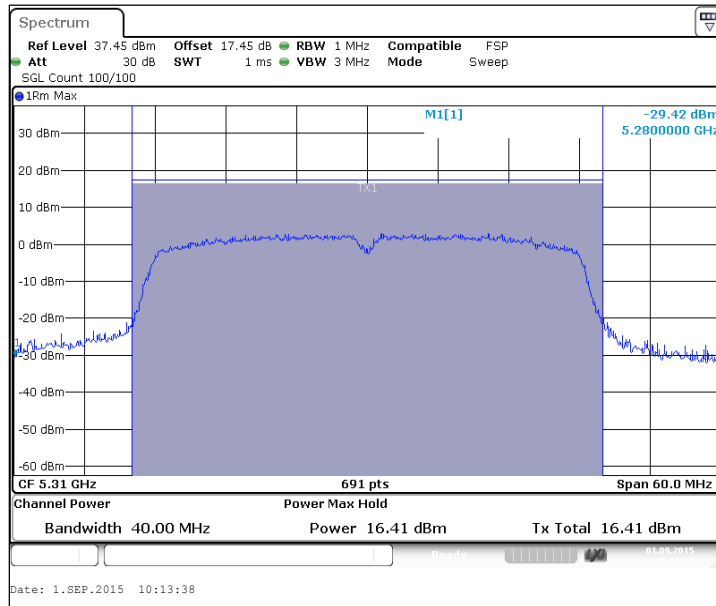
## Main ( 52+56 / 5270)



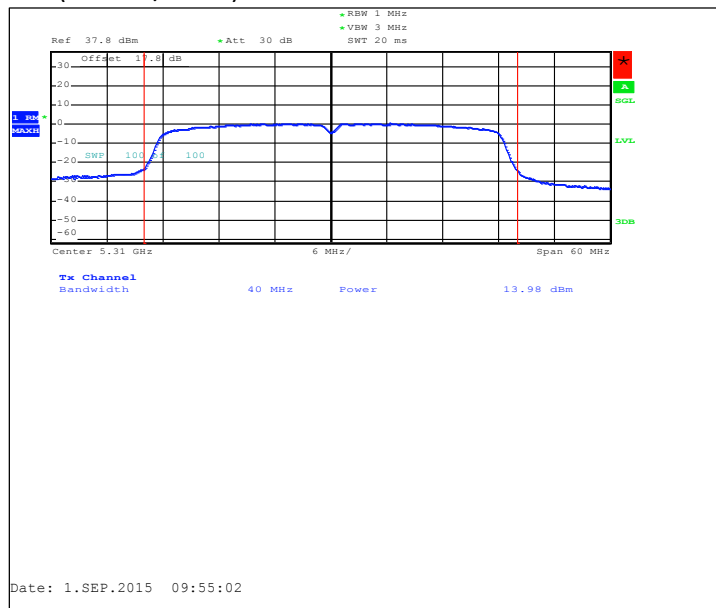
## Aux ( 52+56 / 5270)



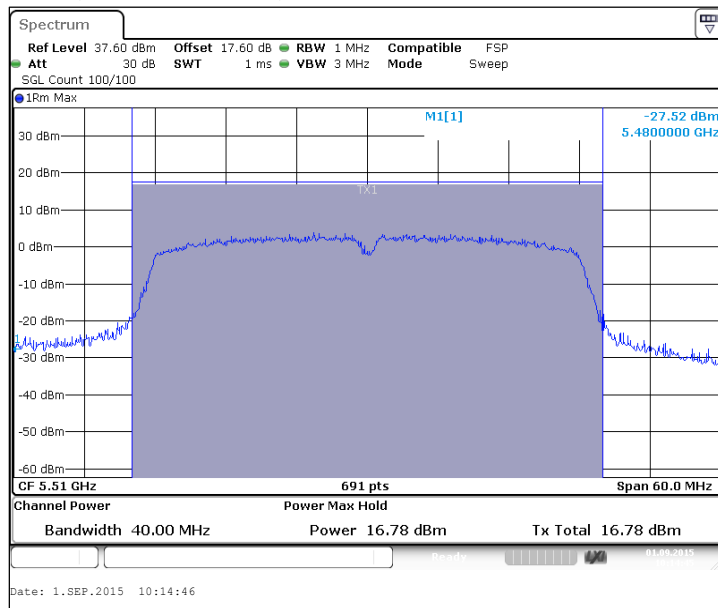
## Main ( 60+64 / 5310)



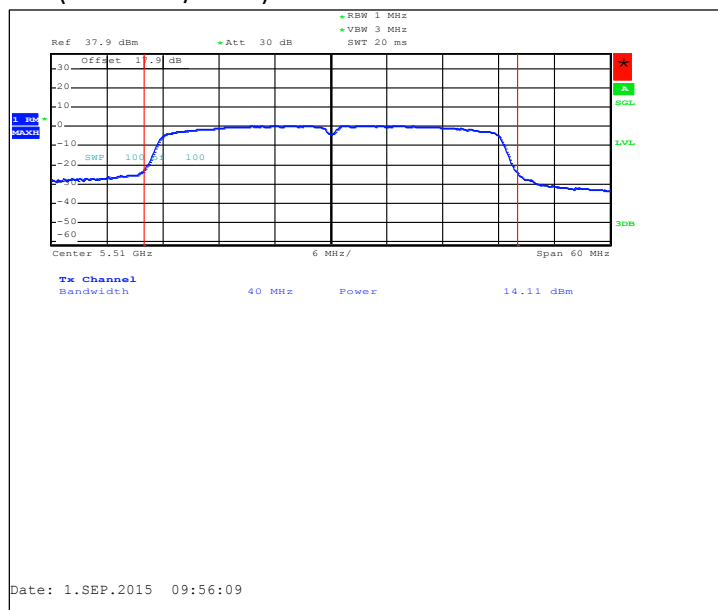
## Aux ( 60+64 / 5310)



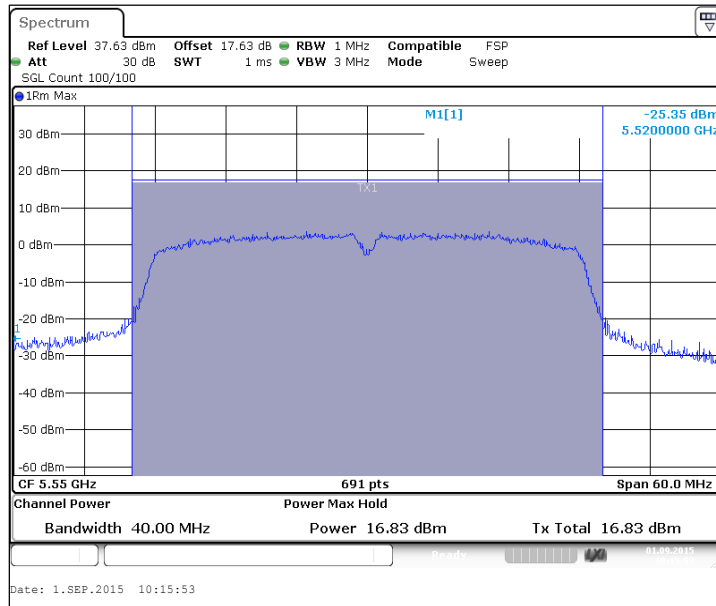
## Main ( 100+104 / 5510)



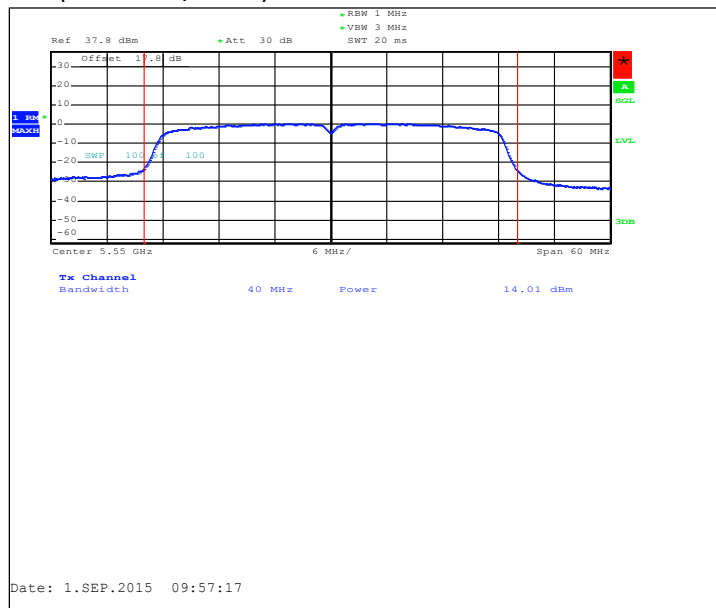
## Aux ( 100+104 / 5510)



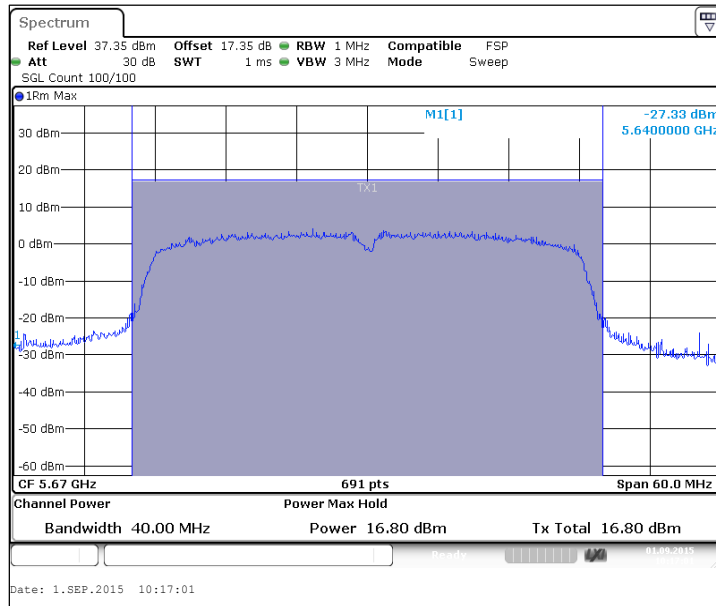
## Main ( 108+112 / 5550)



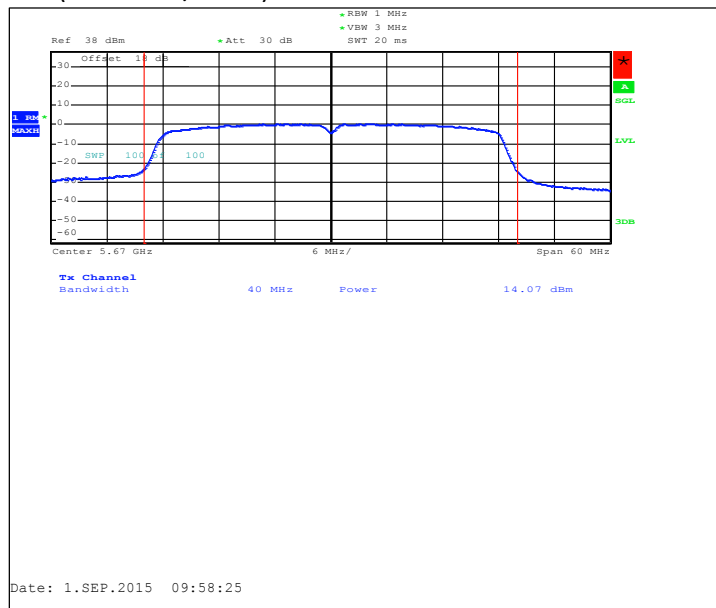
## Aux ( 108+112 / 5550)



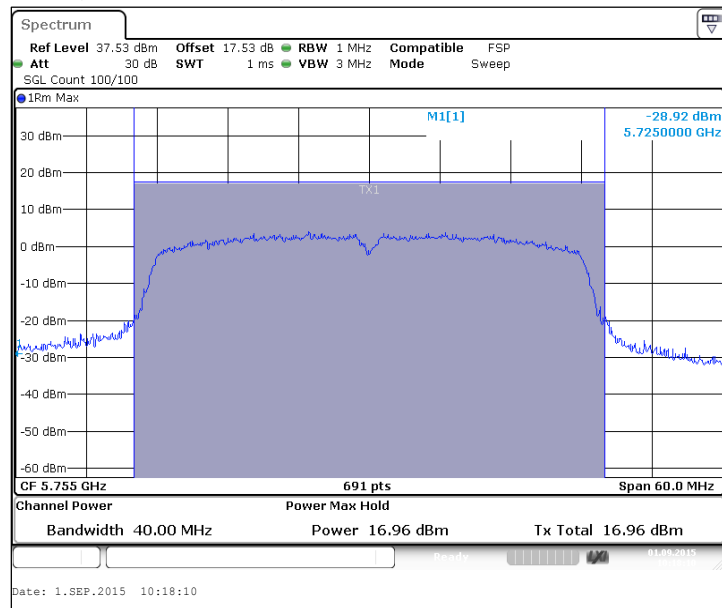
## Main ( 132+136 / 5670)



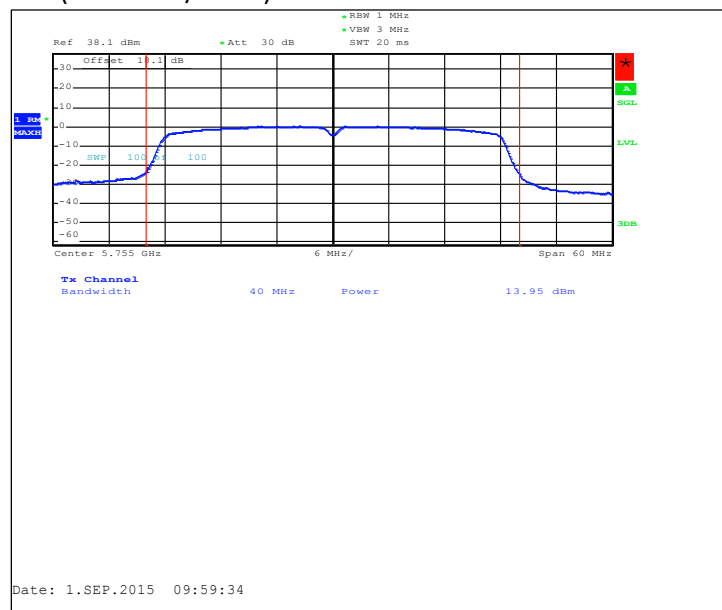
## Aux ( 132+136 / 5670)



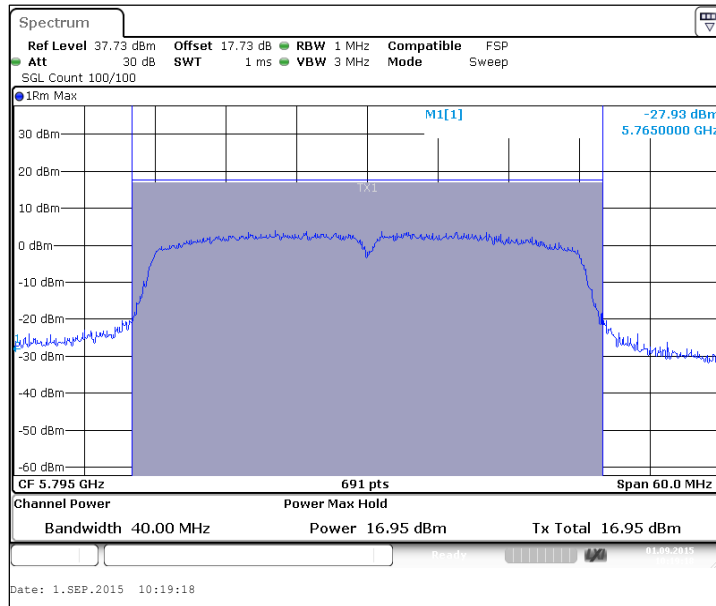
## Main ( 149+153 / 5755)



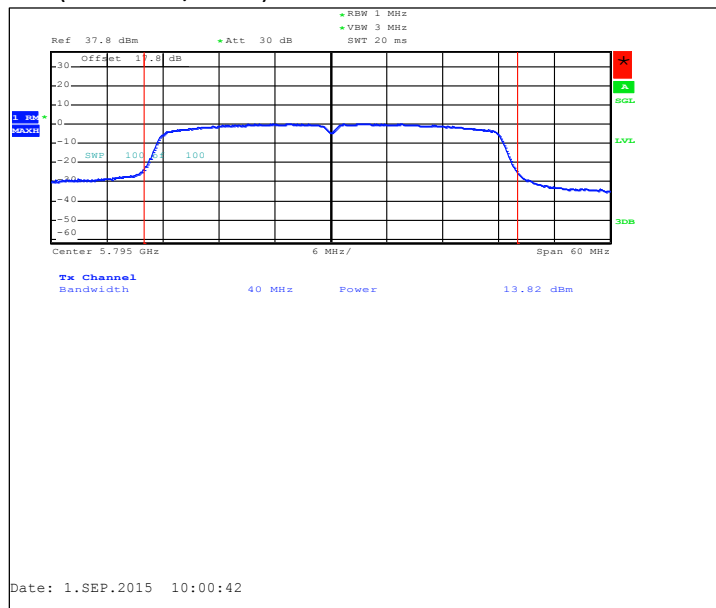
## Aux ( 149+153 / 5755)



## Main ( 157+161 / 5795)



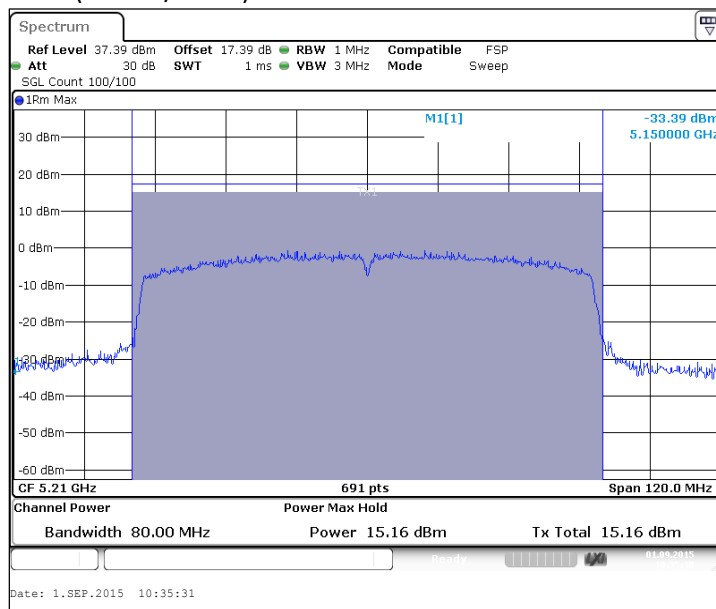
## Aux ( 157+161 / 5795)



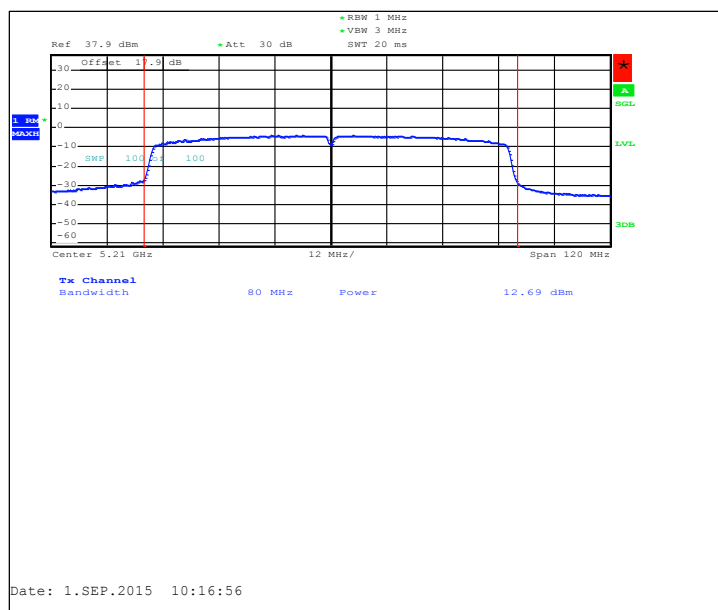
## 2.4.6 802.11ac MIMO mode, QPSK modulation, 58.5 / 65.0 Mbps data rate

| Channel / f <sub>c</sub> [MHz] | Sum [dBm] | Main [dBm] | Aux [dBm] | Antenna Gain Main [dBi] | Antenna Gain Aux [dBi] | Antenna Gain DG [dBi] | Limit [dBm] | Limit adjusted [dBm] | Result |
|--------------------------------|-----------|------------|-----------|-------------------------|------------------------|-----------------------|-------------|----------------------|--------|
| 36-48 / 5210                   | 17.11     | 15.16      | 12.69     | 1.4                     | 1.4                    | 1.4                   | 24          | 24                   | PASSED |
| 52-64 / 5290                   | 17.1      | 15.28      | 12.45     | 1.4                     | 1.4                    | 1.4                   | 24          | 24                   | PASSED |
| 100-112 / 5530                 | 17.65     | 15.81      | 13.03     | 1.4                     | 1.4                    | 1.4                   | 24          | 24                   | PASSED |
| 149-161 / 5775                 | 17.53     | 15.79      | 12.72     | 1.4                     | 1.4                    | 1.4                   | 30          | 30                   | PASSED |

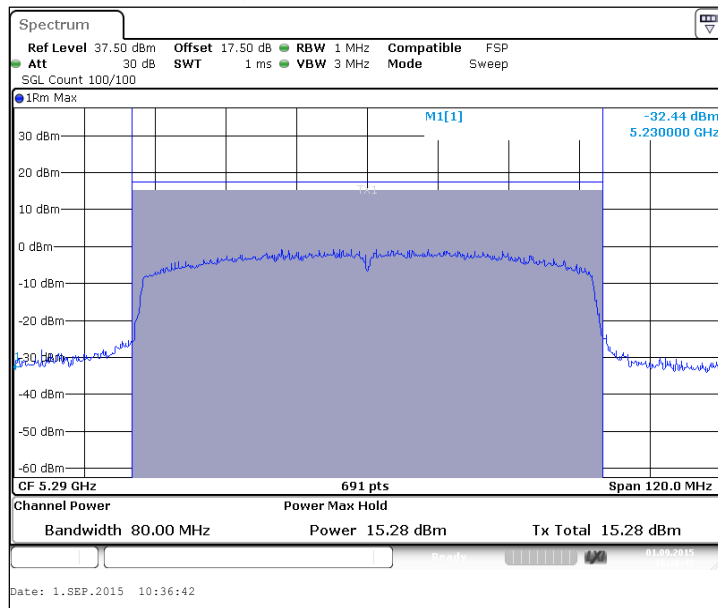
### Main ( 36-48 / 5210)



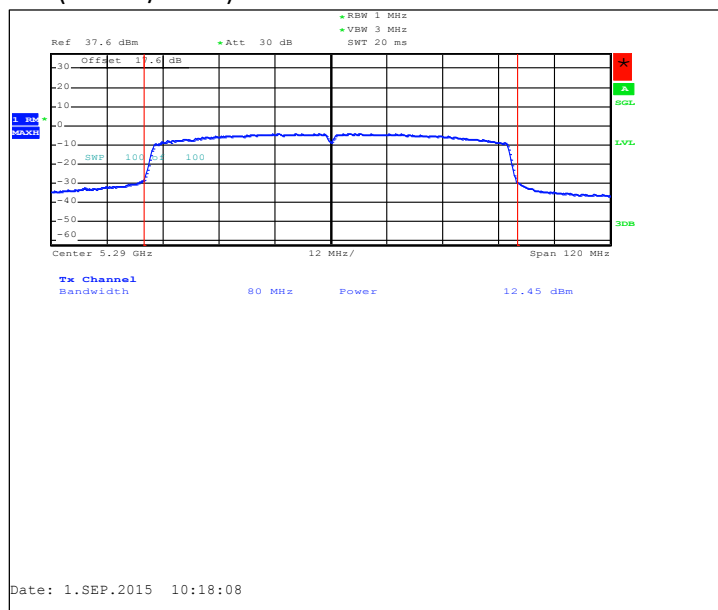
### Aux ( 36-48 / 5210)



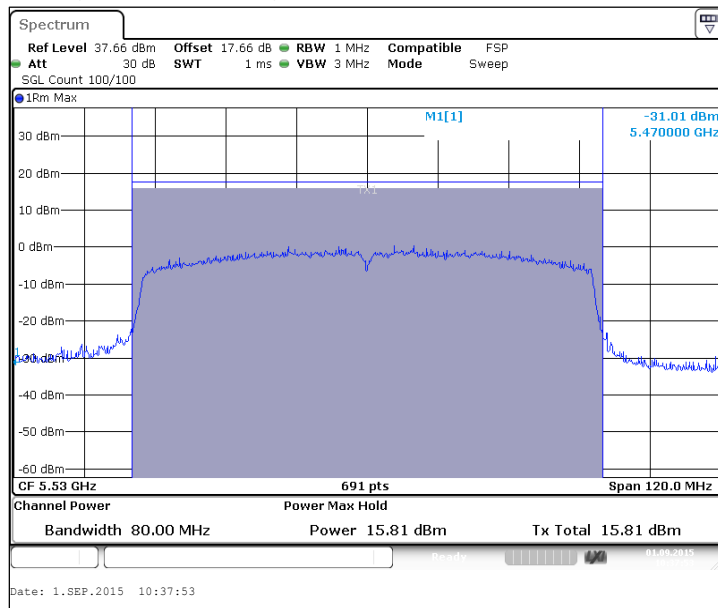
## Main ( 52-64 / 5290)



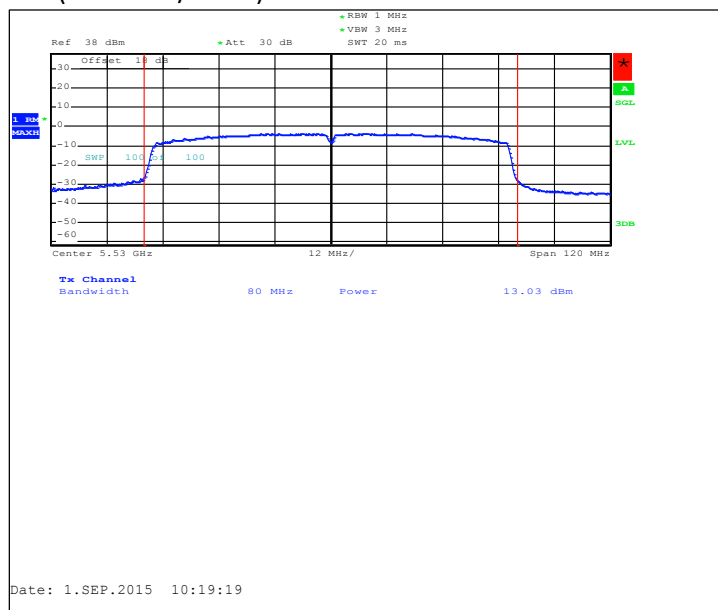
## Aux ( 52-64 / 5290)



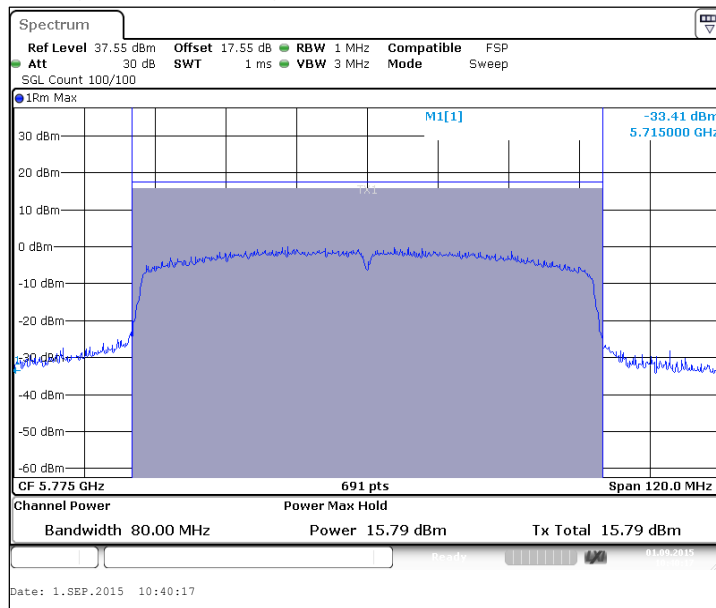
## Main ( 100-112 / 5530)



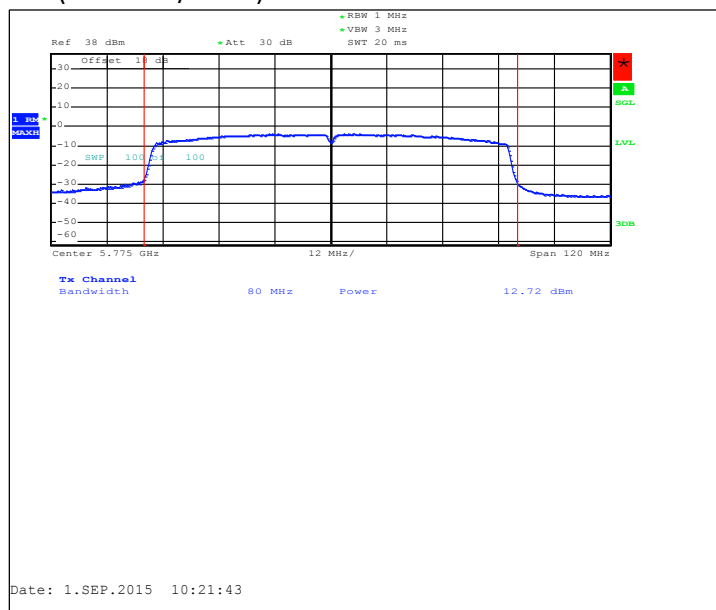
## Aux ( 100-112 / 5530)



## Main ( 149-161 / 5775)



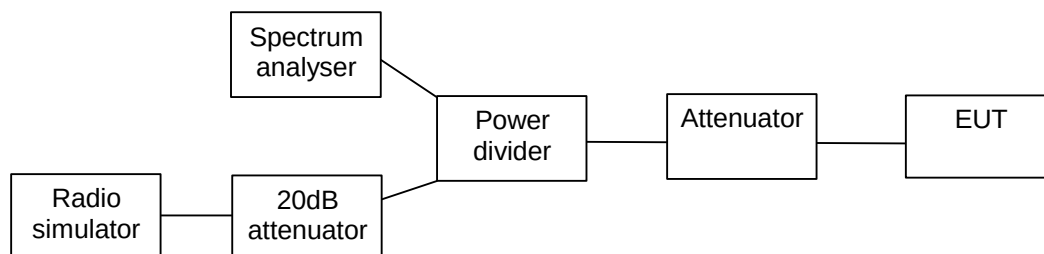
## Aux ( 149-161 / 5775)



### 3. Maximum power spectral density (FCC §15.407(a), RSS-210 A9.2)

|                                                        |                                          |
|--------------------------------------------------------|------------------------------------------|
| <b>EUT with DUT number</b>                             | RM-1085, DUT 100012                      |
| <b>Accessories with DUT numbers</b>                    | SD-241R, DUT 100016 ; WH-308, DUT 100029 |
| <b>Operation Voltage [V] / [Hz]</b>                    | Nominal                                  |
| <b>Results</b>                                         | PASSED                                   |
| <b>Remarks</b>                                         | -                                        |
| <b>Temp [°C] / Humidity [%RH] / Air Pressure [kPa]</b> | 20 / 47 / 101.9                          |
| <b>Date of measurements</b>                            | 20-Jul-2015                              |
| <b>Measured by</b>                                     | Jari Keto                                |

#### 3.1. Test Setup



#### 3.2. Test method and limit

The measurement is made according to Public Notice KDB 789033 D02 v01 and IC standard RSS-210.

Limits for maximum power spectral density measurements

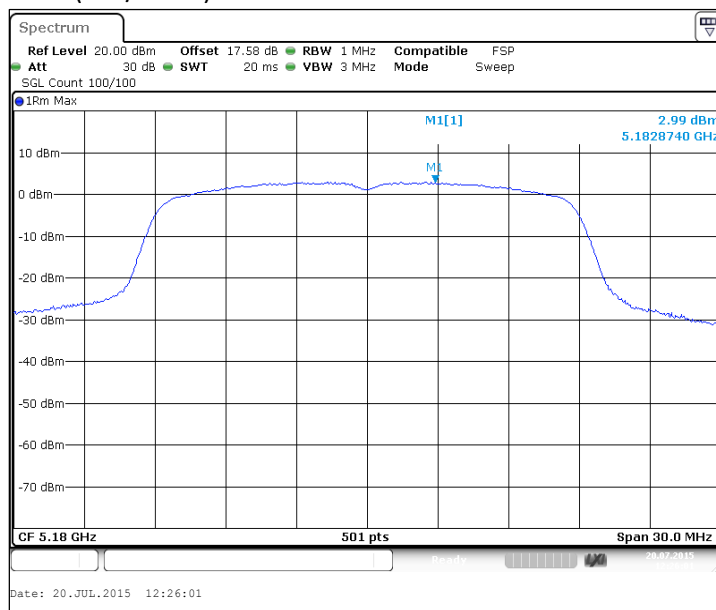
| Frequency range [MHz] | Limit [dBm]      |
|-----------------------|------------------|
| 5150-5250             | 11 dBm / MHz     |
| 5250-5350             | 11 dBm / MHz     |
| 5470-5725             | 11 dBm / MHz     |
| 5725-5850             | 30 dBm / 500 kHz |

### 3.3. 5 GHz RLAN Test results

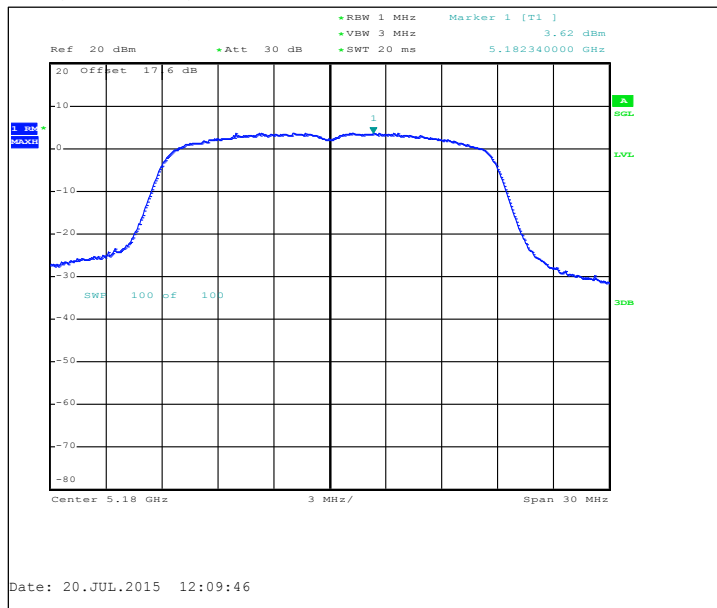
#### 3.3.1 802.11n MIMO mode, BPSK modulation, 6.5 / 7.25 Mbps data rate

| Channel / f <sub>c</sub> [MHz] | Sum [dBm] | Main [dBm] | Aux [dBm] | Antenna Gain Main [dBi] | Antenna Gain Aux [dBi] | Antenna Gain DG [dBi] | Limit [dBm] | Limit adjusted [dBm] | Result |
|--------------------------------|-----------|------------|-----------|-------------------------|------------------------|-----------------------|-------------|----------------------|--------|
| 36 / 5180                      | 6.33      | 2.99       | 3.62      | 5                       | 0.5                    | 5                     | 11          | 11                   | PASSED |
| 40 / 5200                      | 6.42      | 3          | 3.78      | 5                       | 0.5                    | 5                     | 11          | 11                   | PASSED |
| 48 / 5240                      | 6.45      | 3.06       | 3.78      | 5                       | 0.5                    | 5                     | 11          | 11                   | PASSED |
| 52 / 5260                      | 6.59      | 3.34       | 3.81      | 5                       | 0.5                    | 5                     | 11          | 11                   | PASSED |
| 60 / 5300                      | 6.49      | 3.08       | 3.85      | 5                       | 0.5                    | 5                     | 11          | 11                   | PASSED |
| 64 / 5320                      | 6.56      | 3.22       | 3.84      | 5                       | 0.5                    | 5                     | 11          | 11                   | PASSED |
| 100 / 5500                     | 6.6       | 3.18       | 3.96      | 5                       | 0.5                    | 5                     | 11          | 11                   | PASSED |
| 116 / 5580                     | 6.61      | 3.33       | 3.84      | 5                       | 0.5                    | 5                     | 11          | 11                   | PASSED |
| 140 / 5700                     | 6.78      | 3.28       | 4.21      | 5                       | 0.5                    | 5                     | 11          | 11                   | PASSED |
| 149 / 5745                     | 4.33      | 1.19       | 1.45      | 5                       | 0.5                    | 5                     | 30          | 30                   | PASSED |
| 157 / 5785                     | 4.43      | 1.38       | 1.47      | 5                       | 0.5                    | 5                     | 30          | 30                   | PASSED |
| 165 / 5825                     | 4.6       | 1.27       | 1.89      | 5                       | 0.5                    | 5                     | 30          | 30                   | PASSED |

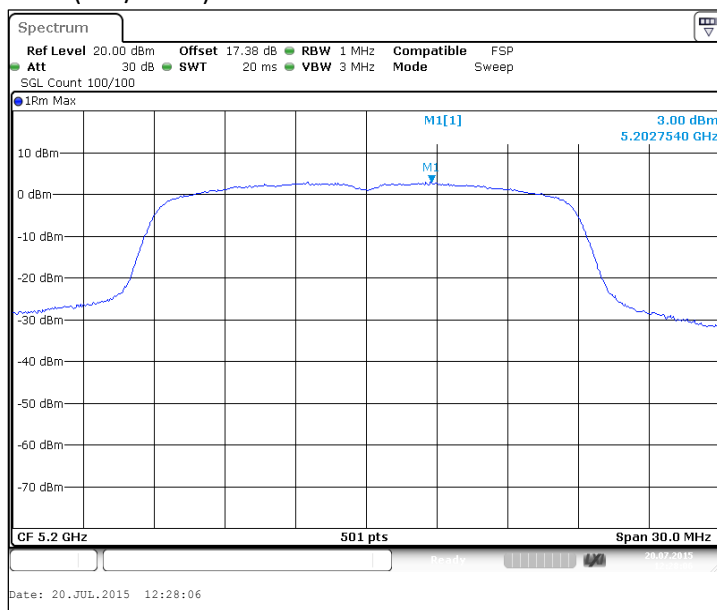
#### Main ( 36 / 5180)



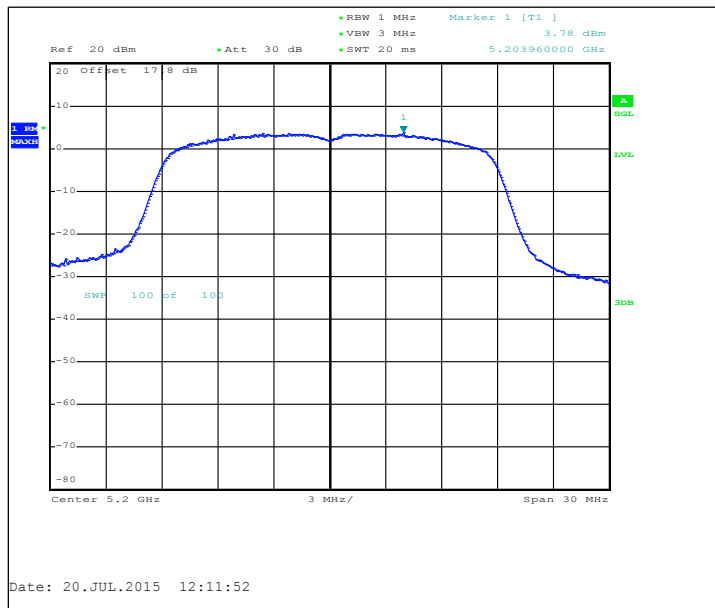
## Aux ( 36 / 5180)



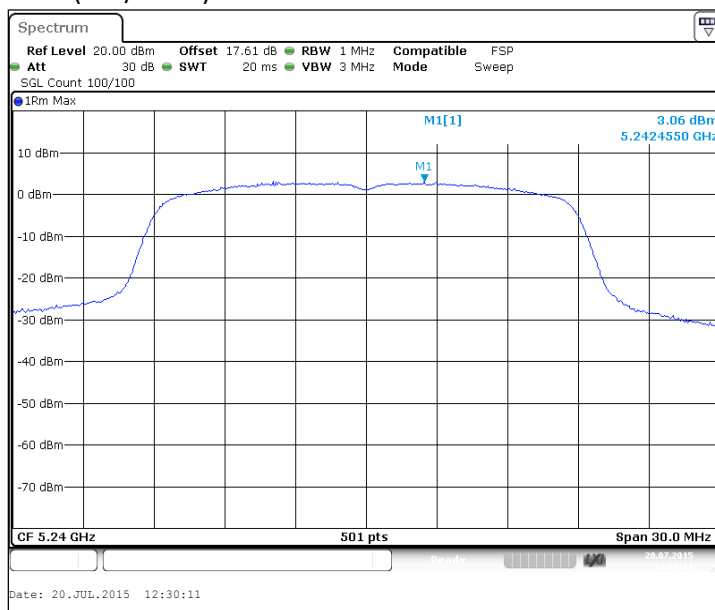
## Main ( 40 / 5200)



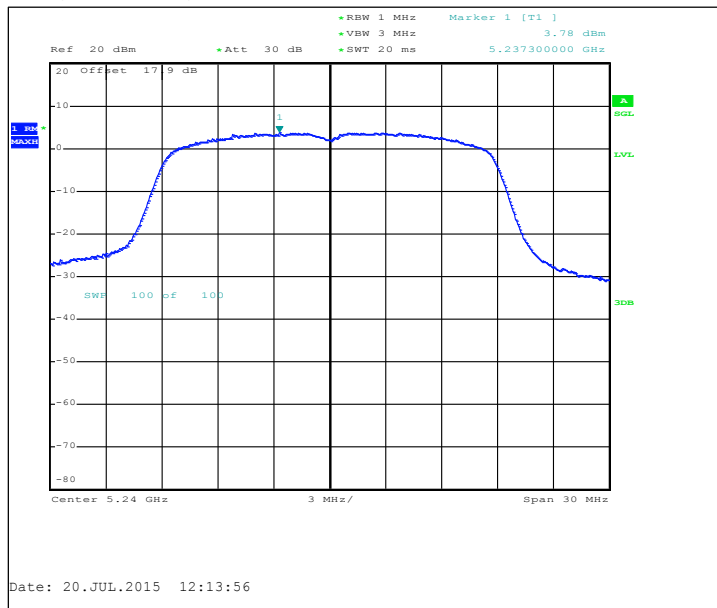
## Aux ( 40 / 5200)



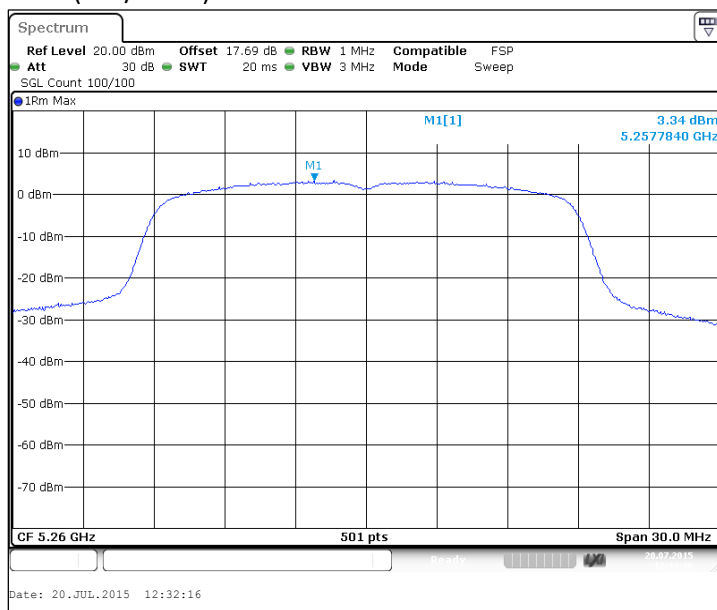
## Main ( 48 / 5240)



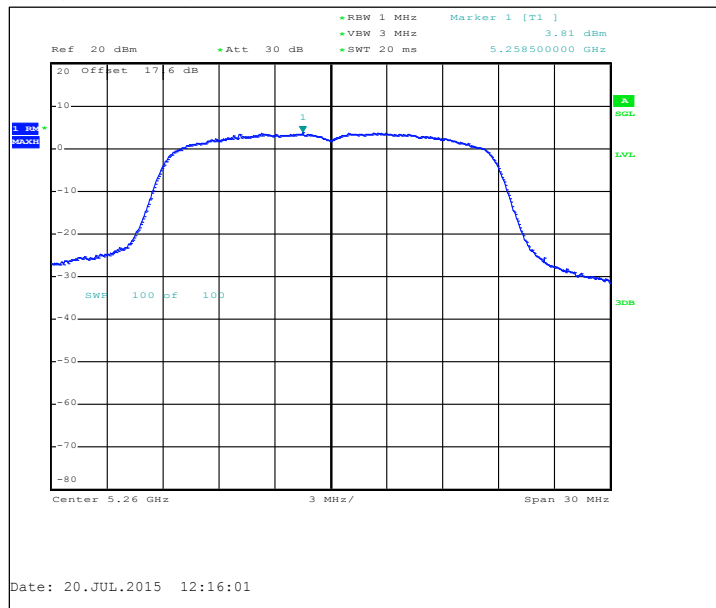
## Aux ( 48 / 5240)



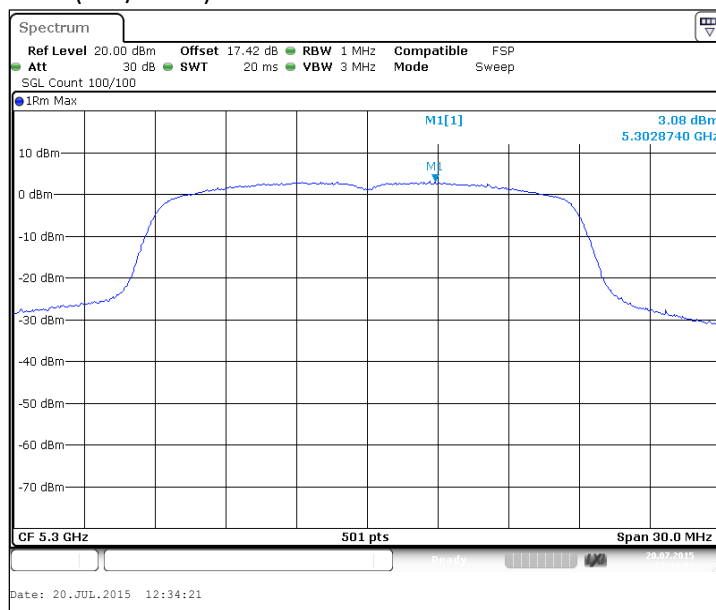
## Main ( 52 / 5260)



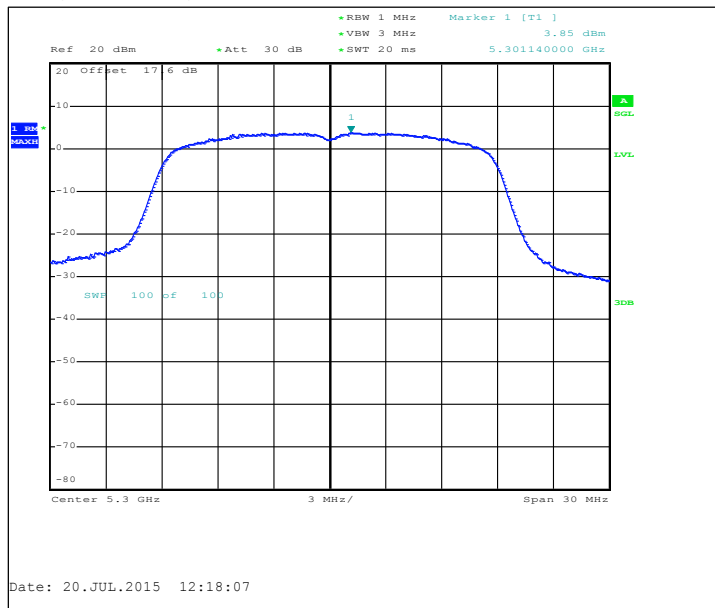
## Aux ( 52 / 5260)



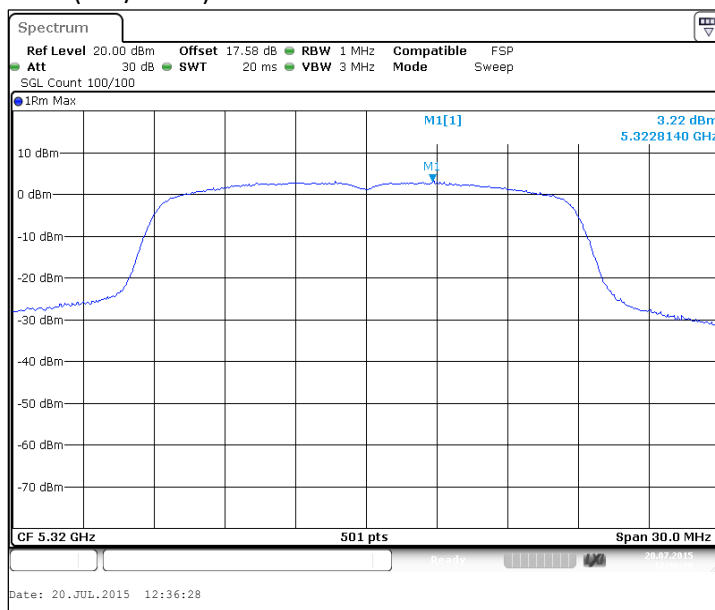
## Main ( 60 / 5300)



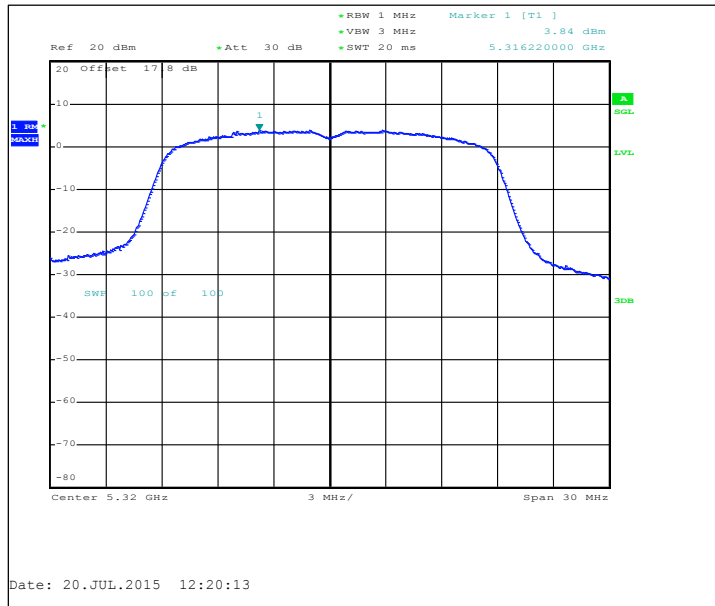
## Aux ( 60 / 5300)



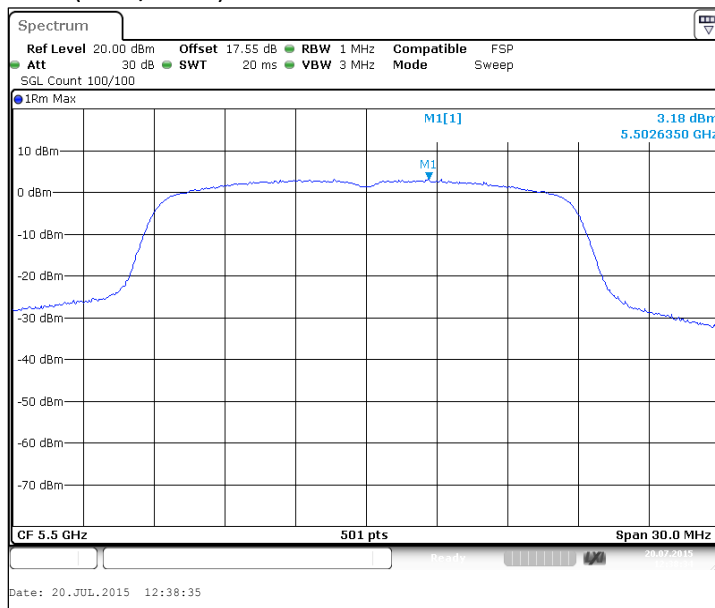
## Main ( 64 / 5320)



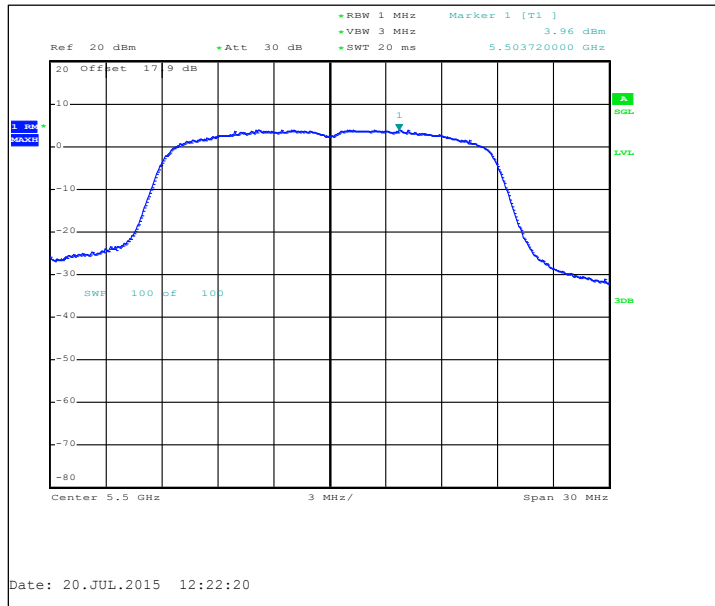
## Aux ( 64 / 5320)



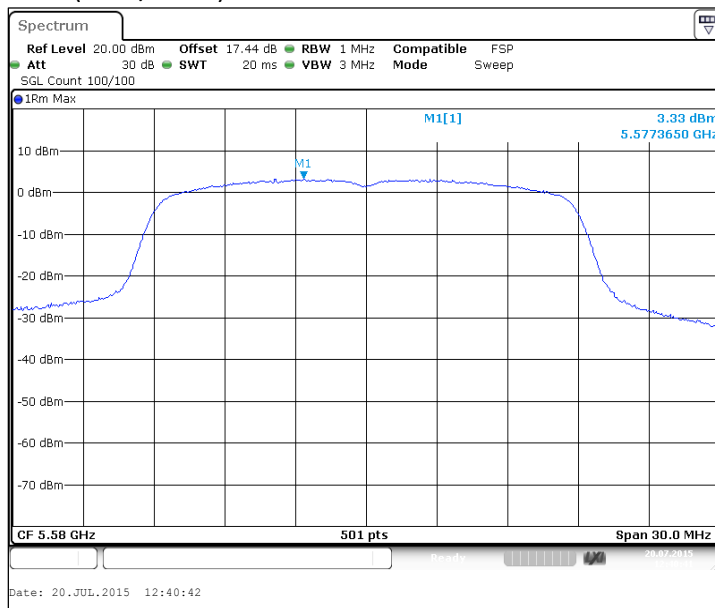
## Main ( 100 / 5500)



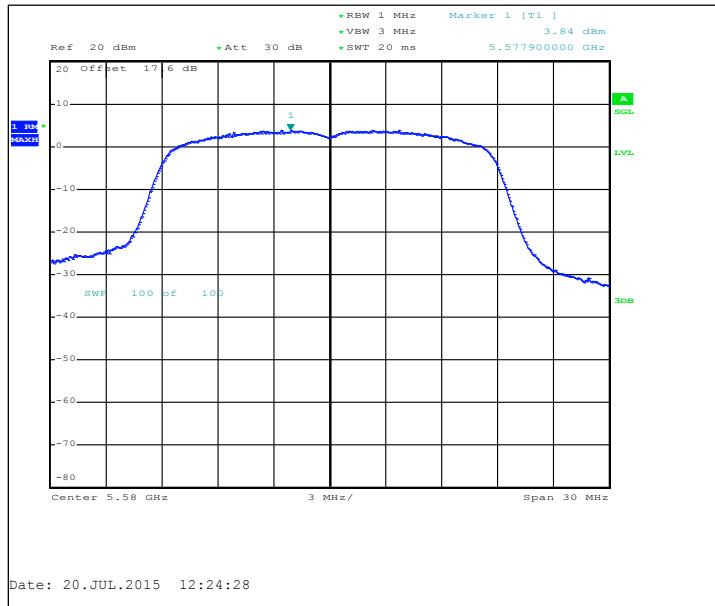
## Aux ( 100 / 5500)



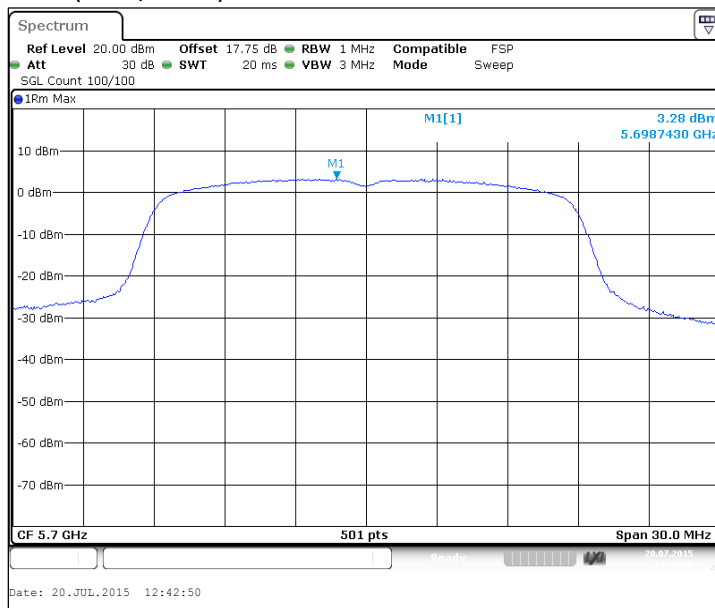
## Main ( 116 / 5580)



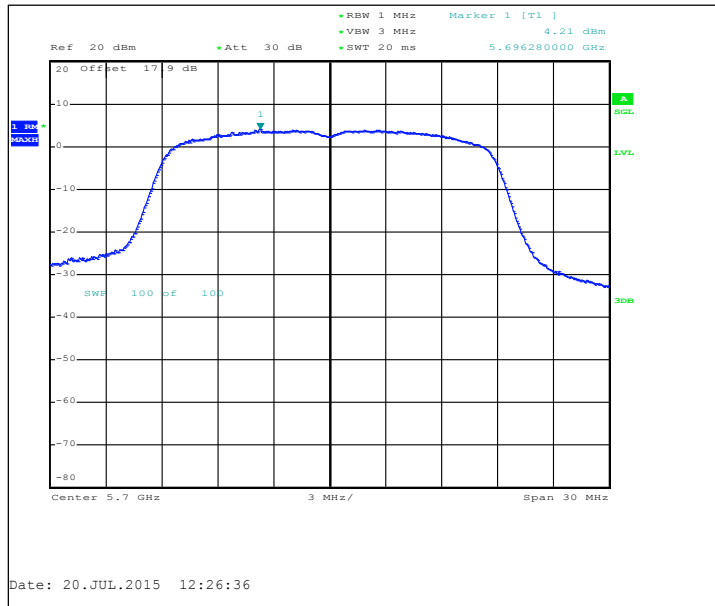
## Aux ( 116 / 5580)



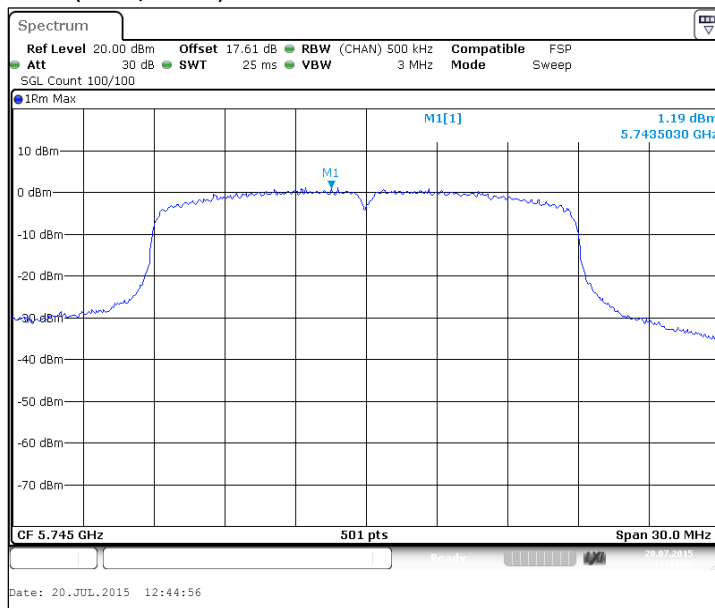
## Main ( 140 / 5700)



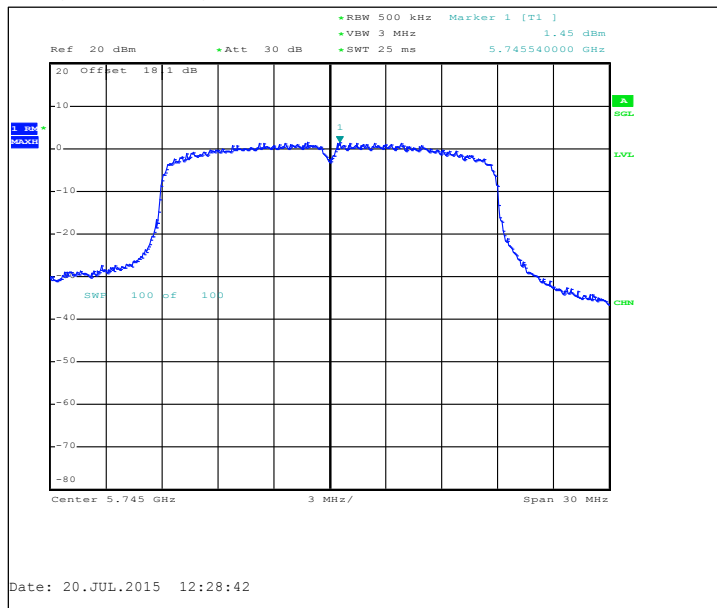
## Aux ( 140 / 5700)



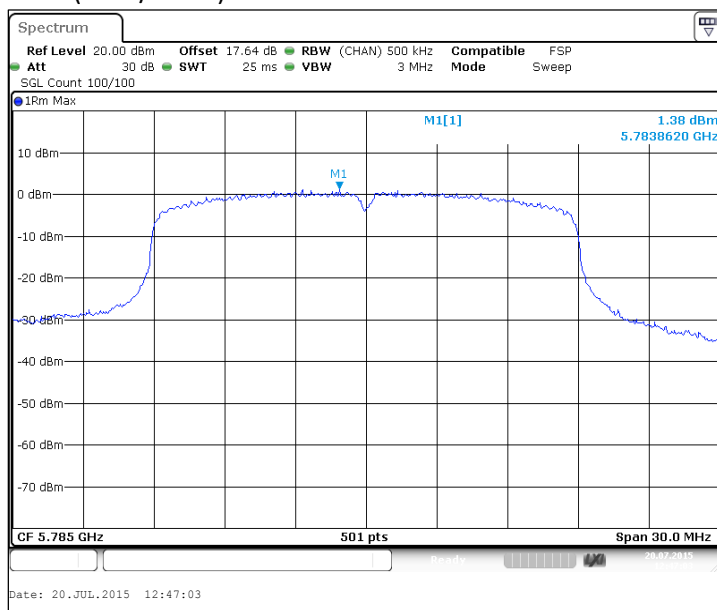
## Main ( 149 / 5745)



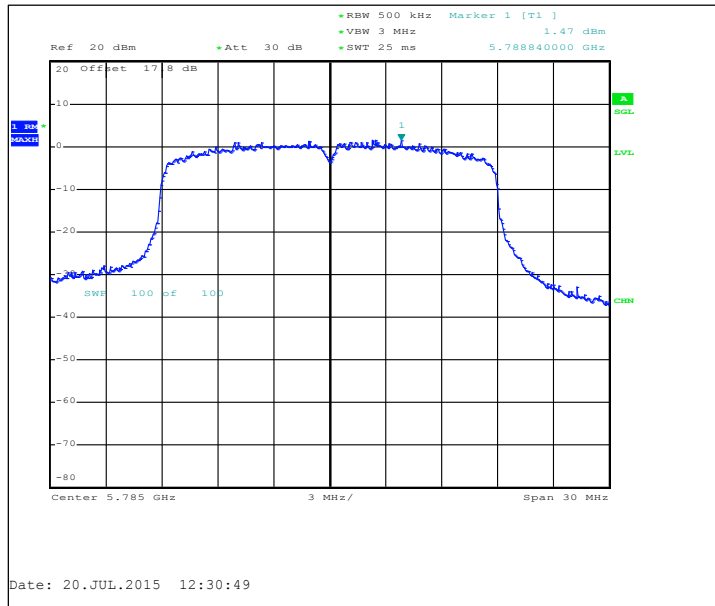
## Aux ( 149 / 5745)



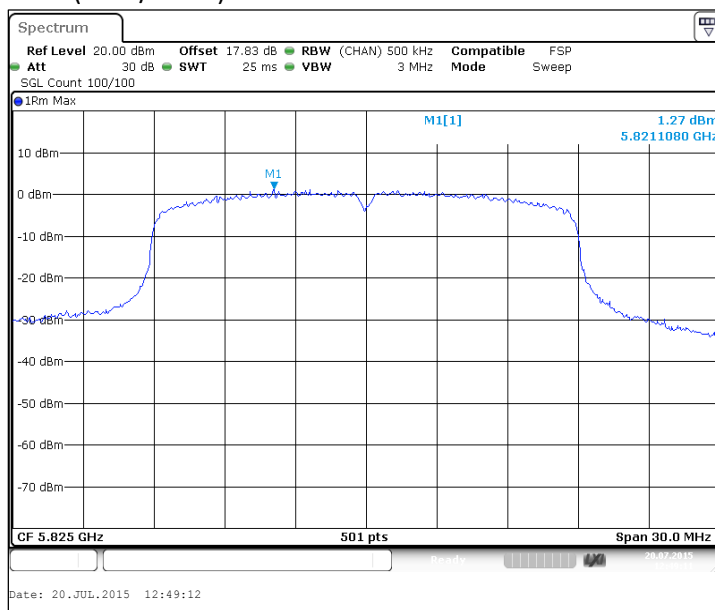
## Main ( 157 / 5785)



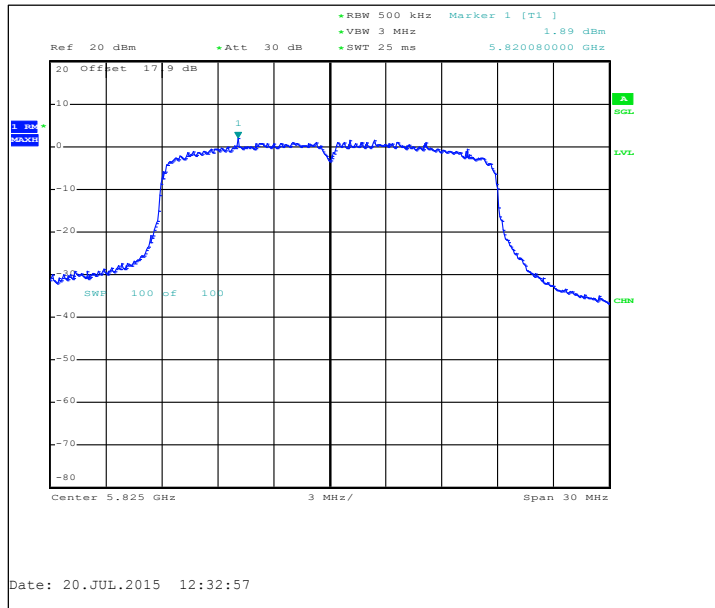
## Aux ( 157 / 5785)



## Main ( 165 / 5825)



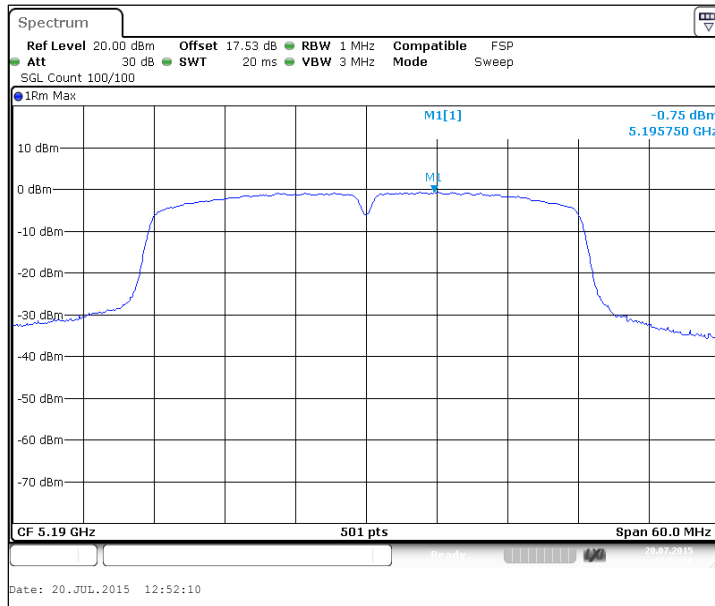
Aux ( 165 / 5825)



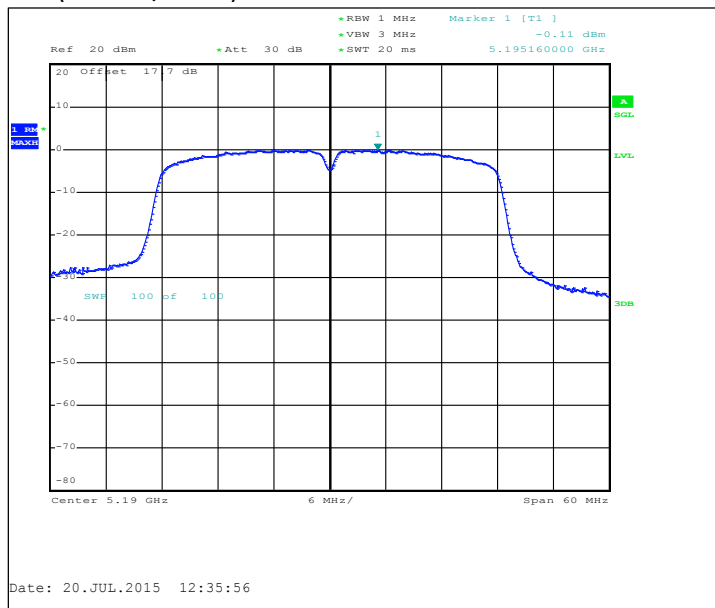
### 3.3.2 802.11n MIMO mode, BPSK modulation, 13.5 / 15.0 Mbps data rate

| Channel /<br>f <sub>c</sub> [MHz] | Sum<br>[dBm] | Main<br>[dBm] | Aux<br>[dBm] | Antenna<br>Gain<br>Main<br>[dBi] | Antenna<br>Gain<br>Aux [dBi] | Antenna<br>Gain<br>DG<br>[dBi] | Limit<br>[dBm] | Limit<br>adjusted<br>[dBm] | Result |
|-----------------------------------|--------------|---------------|--------------|----------------------------------|------------------------------|--------------------------------|----------------|----------------------------|--------|
| 36+40 /<br>5190                   | 2.59         | -0.75         | -0.11        | 5                                | 0.5                          | 5                              | 11             | 11                         | PASSED |
| 44+48 /<br>5230                   | 2.79         | -0.76         | 0.26         | 5                                | 0.5                          | 5                              | 11             | 11                         | PASSED |
| 52+56 /<br>5270                   | 2.91         | -0.49         | 0.25         | 5                                | 0.5                          | 5                              | 11             | 11                         | PASSED |
| 60+64 /<br>5310                   | 2.87         | -0.7          | 0.36         | 5                                | 0.5                          | 5                              | 11             | 11                         | PASSED |
| 100+104 /<br>5510                 | 3.05         | -0.49         | 0.51         | 5                                | 0.5                          | 5                              | 11             | 11                         | PASSED |
| 108+112 /<br>5550                 | 3.09         | -0.27         | 0.41         | 5                                | 0.5                          | 5                              | 11             | 11                         | PASSED |
| 132+136 /<br>5670                 | 3.07         | -0.44         | 0.5          | 5                                | 0.5                          | 5                              | 11             | 11                         | PASSED |
| 149+153 /<br>5755                 | 0.18         | -3.11         | -2.57        | 5                                | 0.5                          | 5                              | 30             | 30                         | PASSED |
| 157+161 /<br>5795                 | 0.04         | -3.27         | -2.69        | 5                                | 0.5                          | 5                              | 30             | 30                         | PASSED |

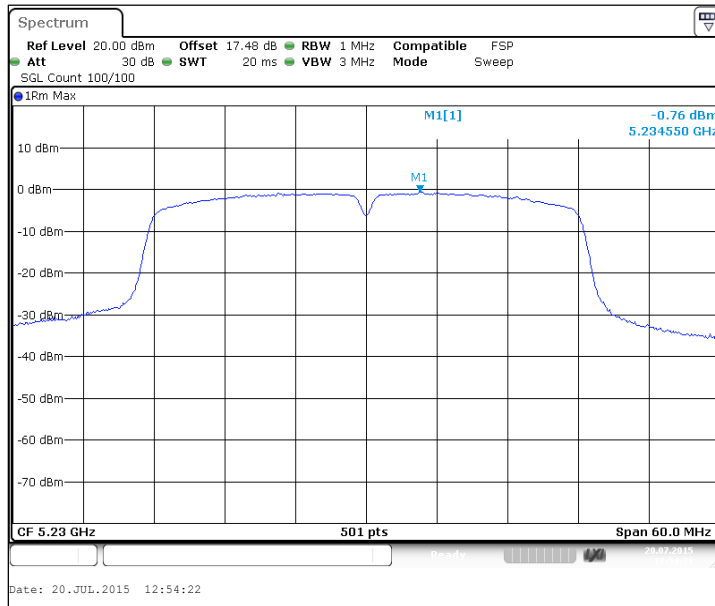
## Main ( 36+40 / 5190)



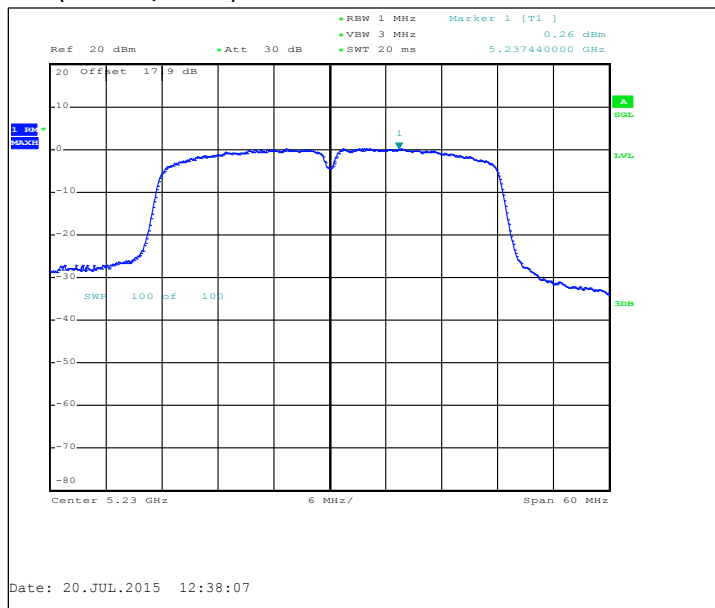
## Aux ( 36+40 / 5190)



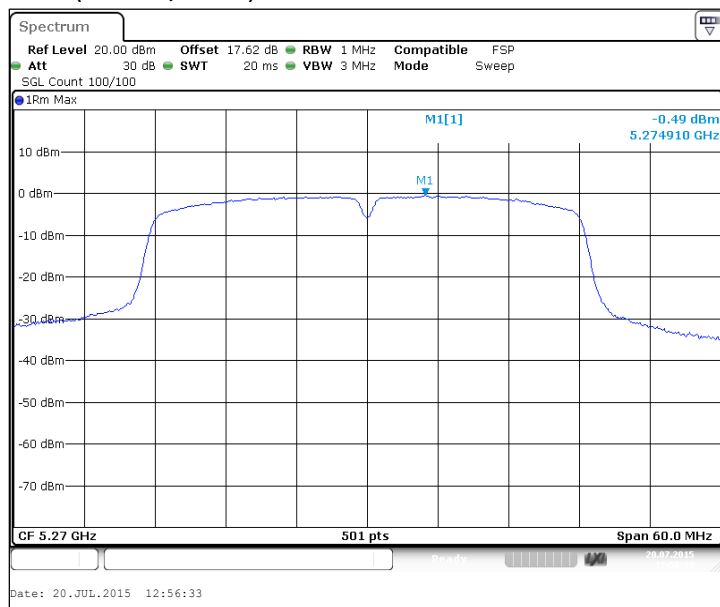
## Main ( 44+48 / 5230)



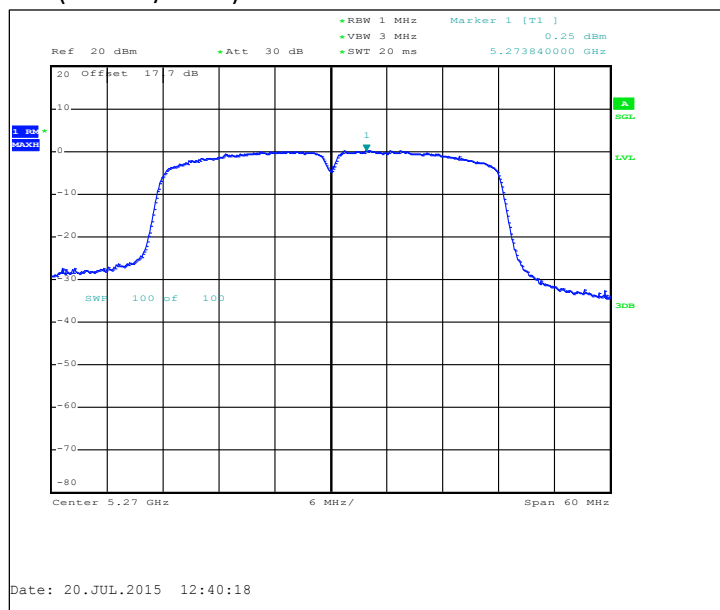
## Aux ( 44+48 / 5230)



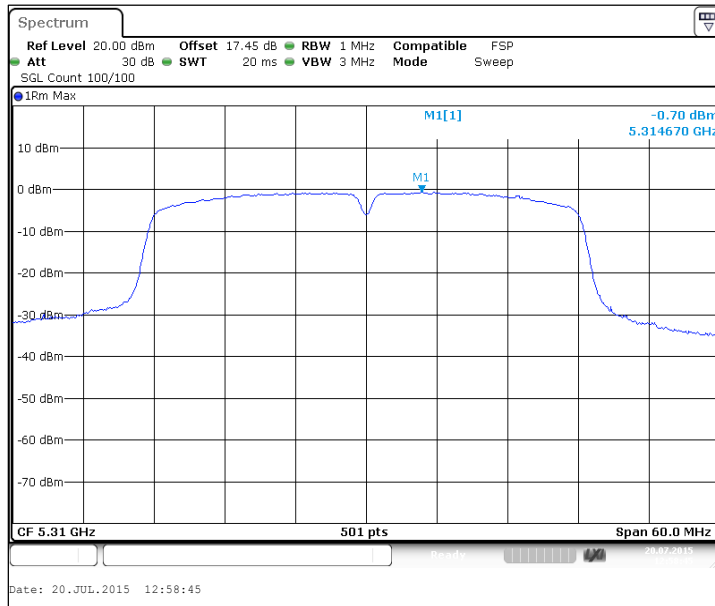
## Main ( 52+56 / 5270)



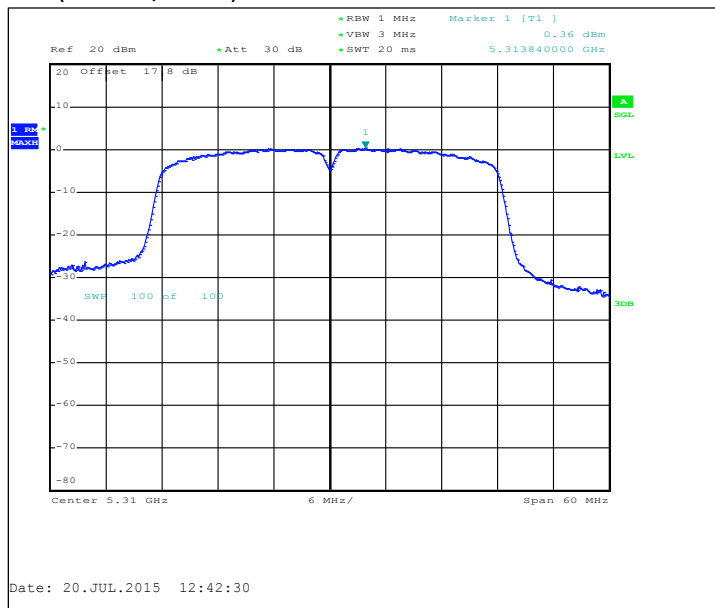
## Aux ( 52+56 / 5270)



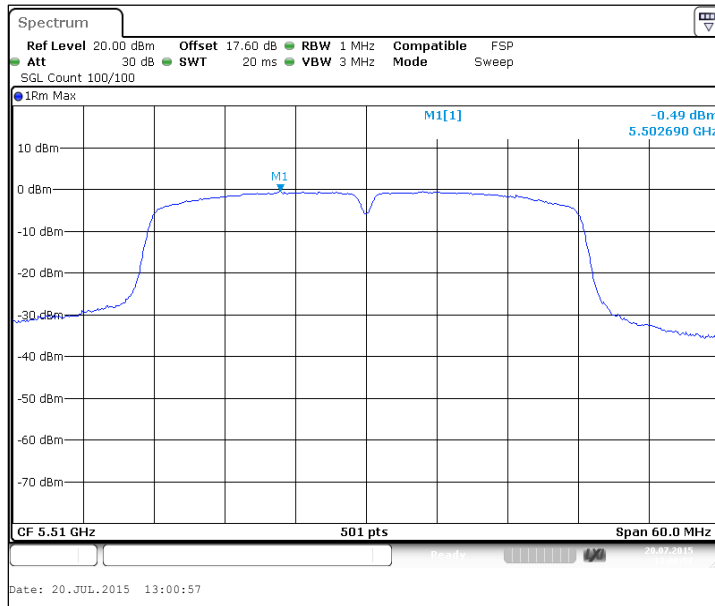
## Main ( 60+64 / 5310)



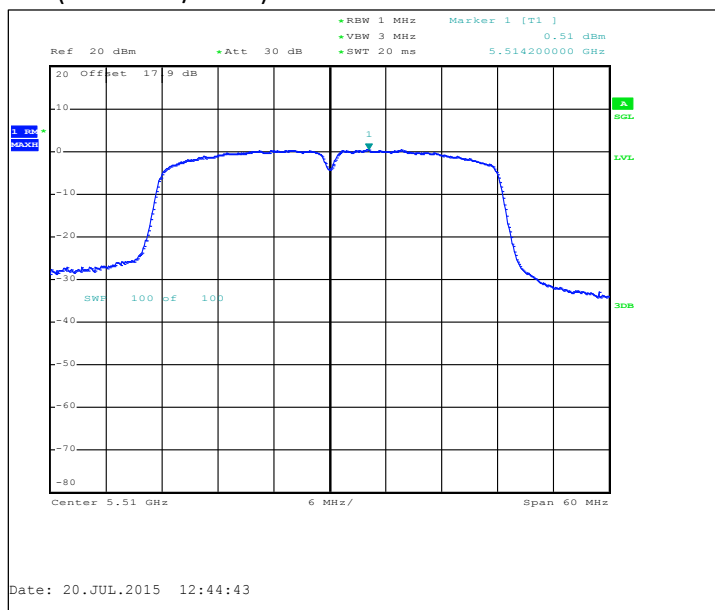
## Aux ( 60+64 / 5310)



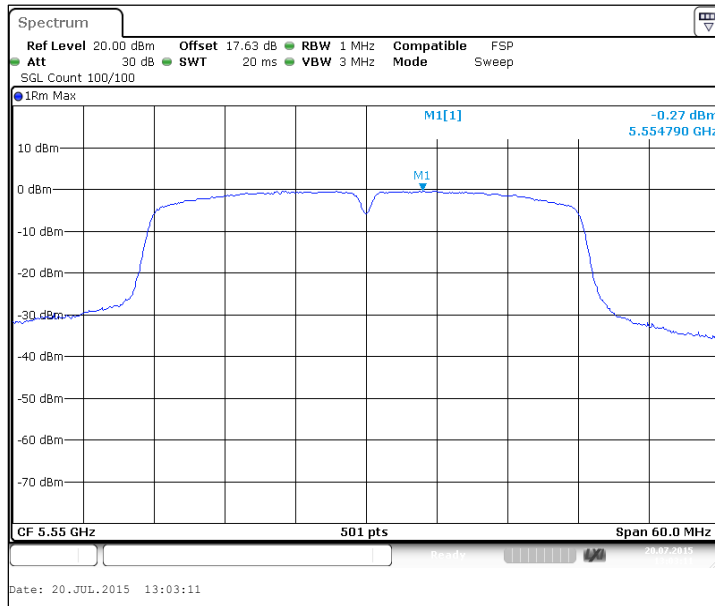
## Main ( 100+104 / 5510)



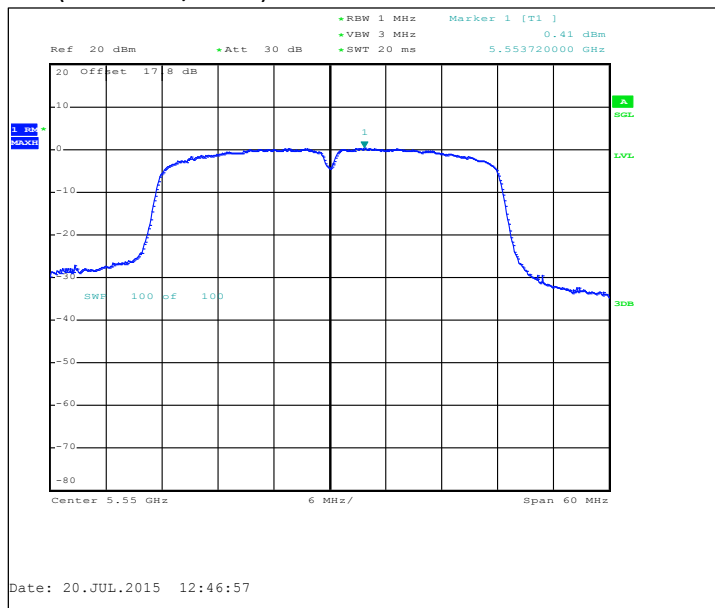
## Aux ( 100+104 / 5510)



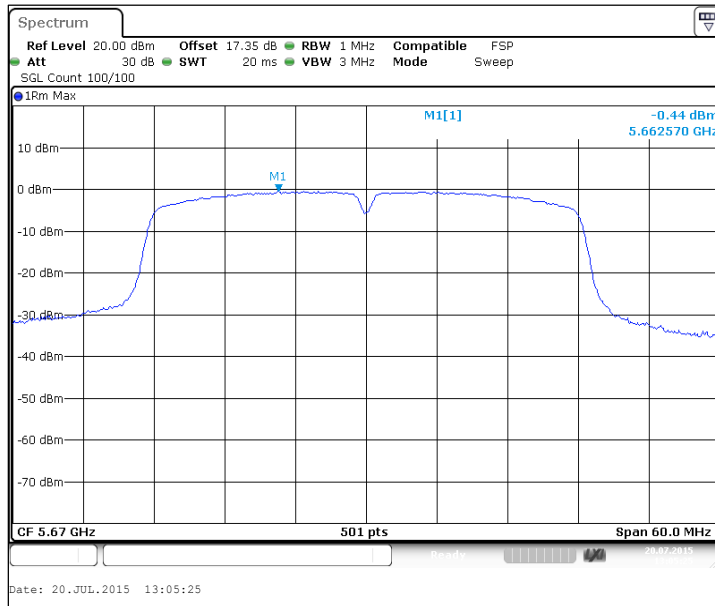
## Main ( 108+112 / 5550)



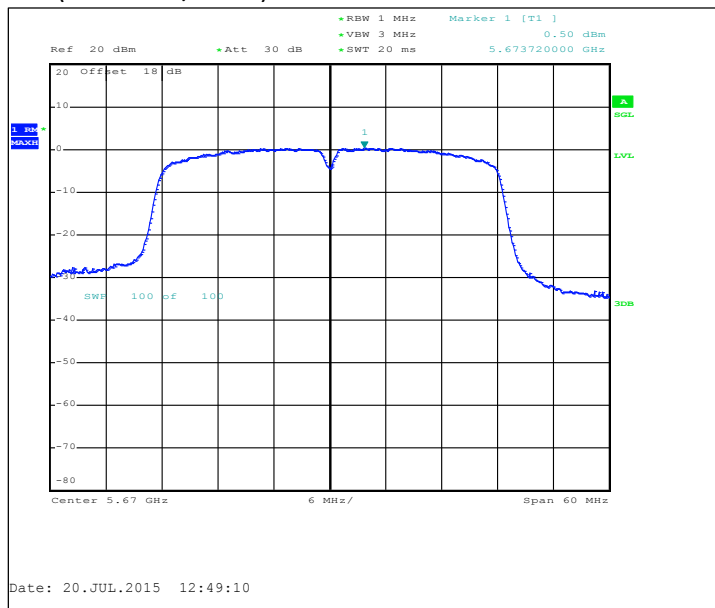
## Aux ( 108+112 / 5550)



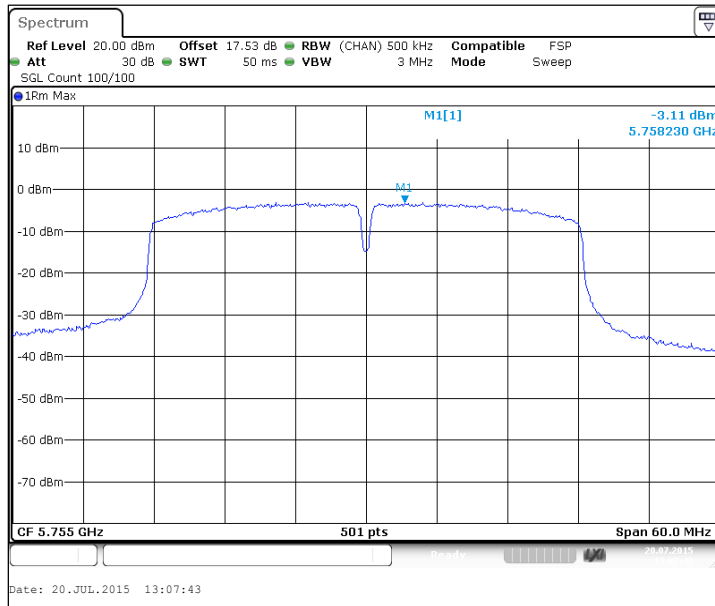
## Main ( 132+136 / 5670)



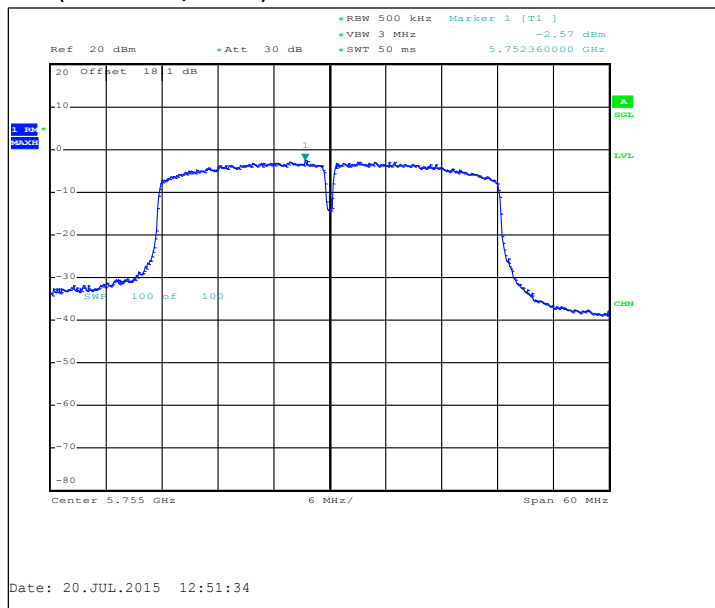
## Aux ( 132+136 / 5670)



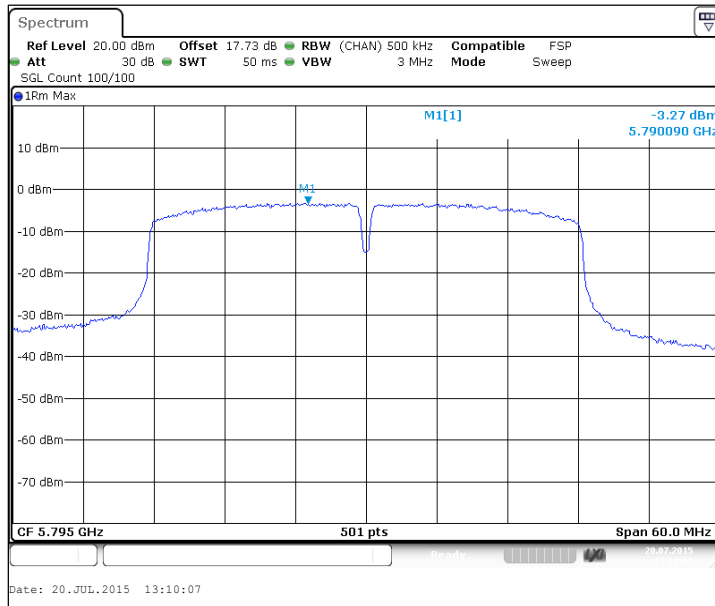
## Main ( 149+153 / 5755)



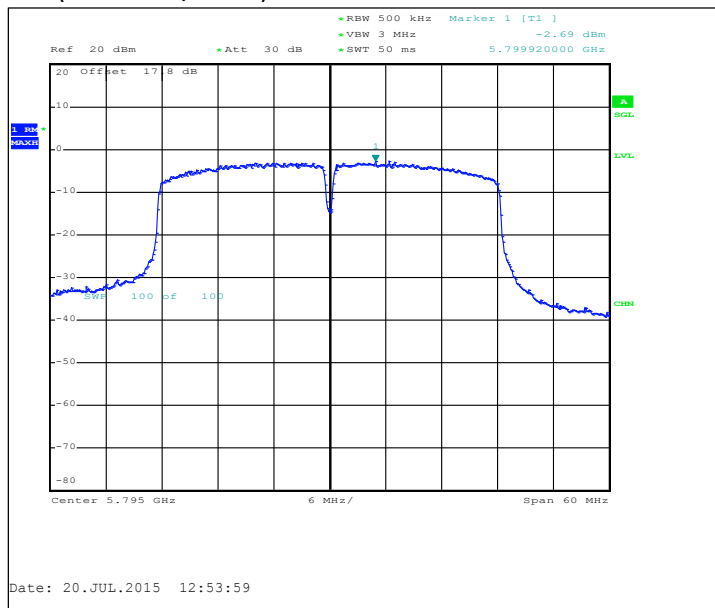
## Aux ( 149+153 / 5755)



## Main ( 157+161 / 5795)



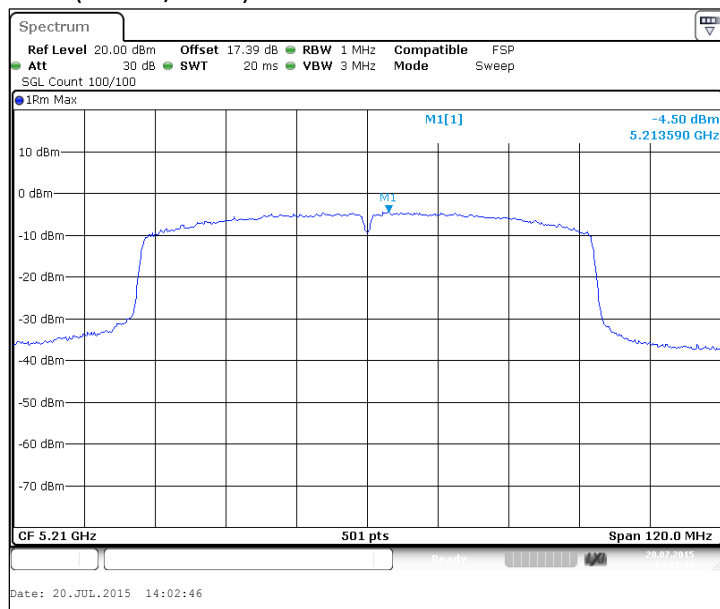
## Aux ( 157+161 / 5795)



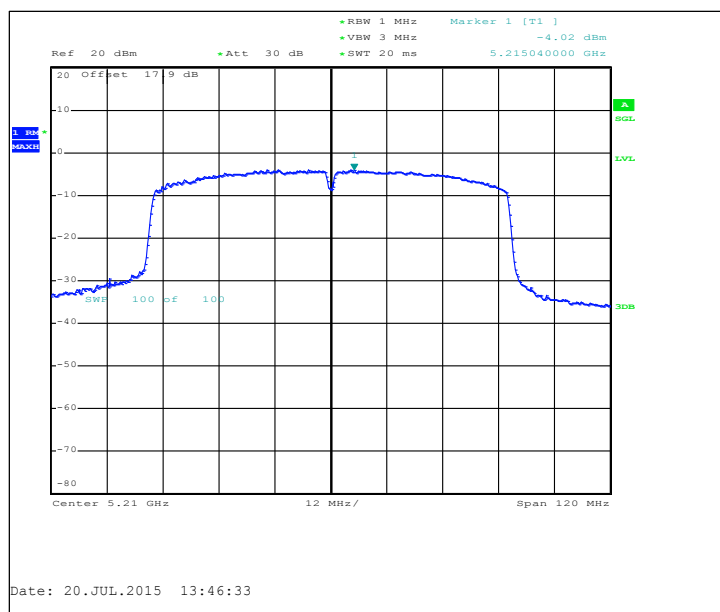
### 3.3.3 802.11ac MIMO mode, BPSK modulation, 29.3 / 32.5 Mbps data rate

| Channel / f <sub>c</sub> [MHz] | Sum [dBm] | Main [dBm] | Aux [dBm] | Antenna Gain Main [dBi] | Antenna Gain Aux [dBi] | Antenna Gain DG [dBi] | Limit [dBm] | Limit adjusted [dBm] | Result |
|--------------------------------|-----------|------------|-----------|-------------------------|------------------------|-----------------------|-------------|----------------------|--------|
| 36-48 / 5210                   | -1.24     | -4.5       | -4.02     | 5                       | 0.5                    | 5                     | 11          | 11                   | PASSED |
| 52-64 / 5290                   | -1.37     | -4.44      | -4.32     | 5                       | 0.5                    | 5                     | 11          | 11                   | PASSED |
| 100-112 / 5530                 | -0.86     | -4.16      | -3.6      | 5                       | 0.5                    | 5                     | 11          | 11                   | PASSED |
| 149-161 / 5775                 | -4.76     | -7.81      | -7.74     | 5                       | 0.5                    | 5                     | 30          | 30                   | PASSED |

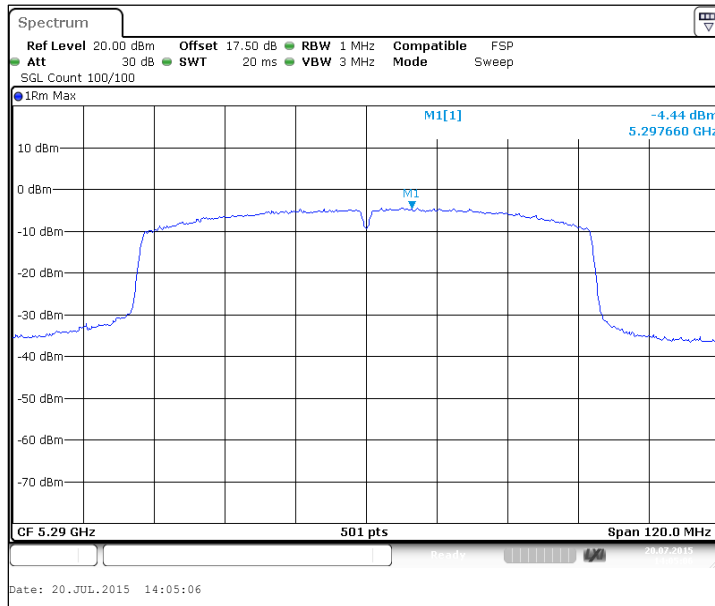
#### Main ( 36-48 / 5210)



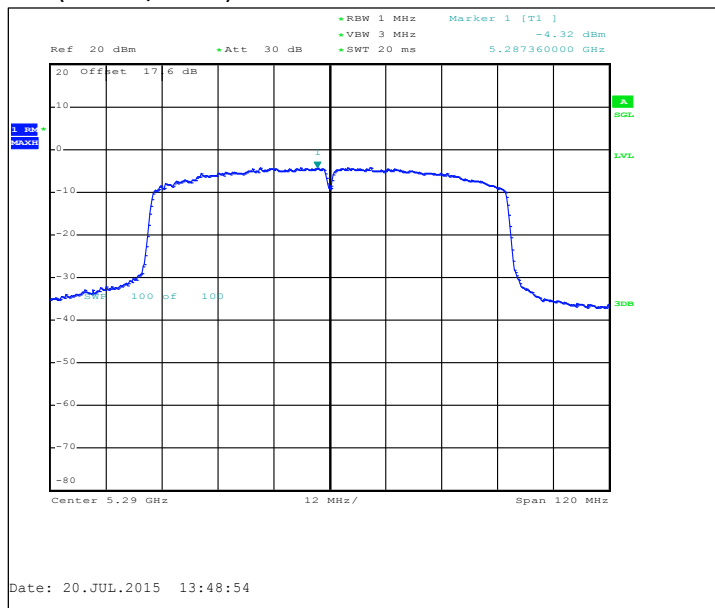
#### Aux ( 36-48 / 5210)



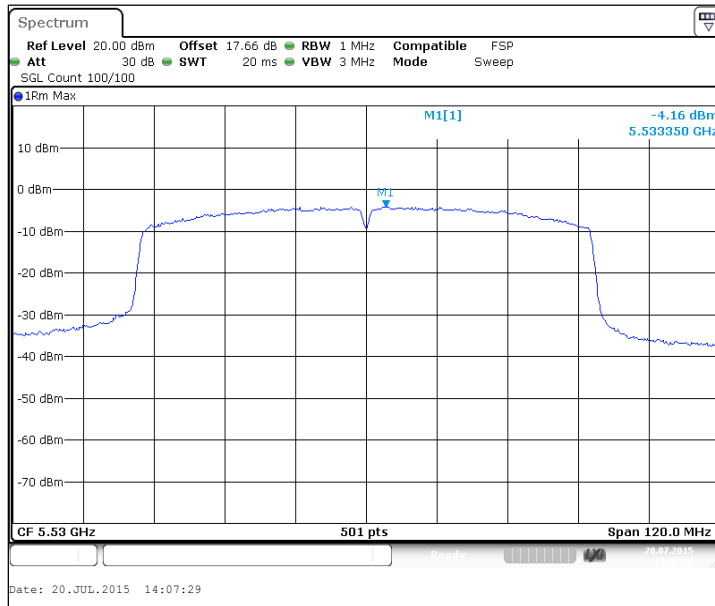
## Main ( 52-64 / 5290)



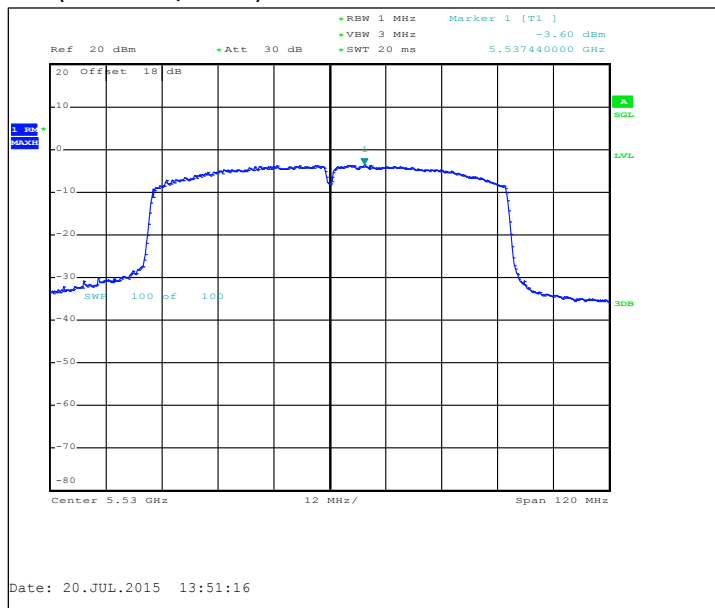
## Aux ( 52-64 / 5290)



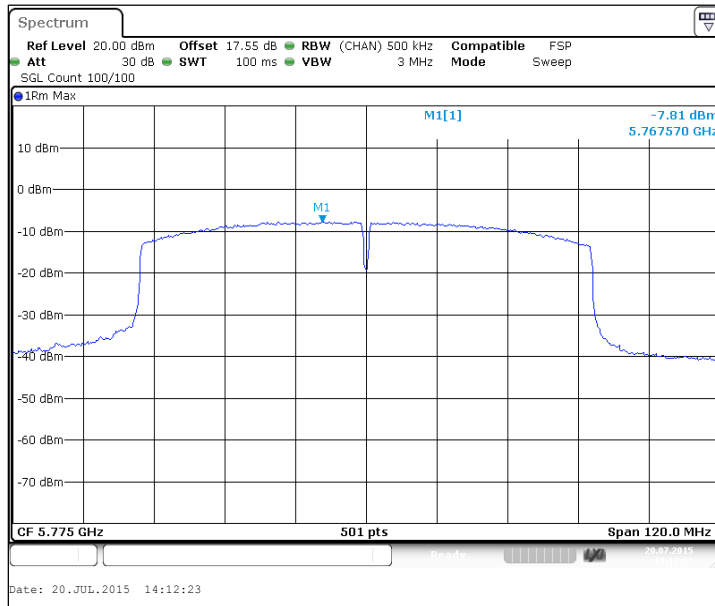
## Main ( 100-112 / 5530)



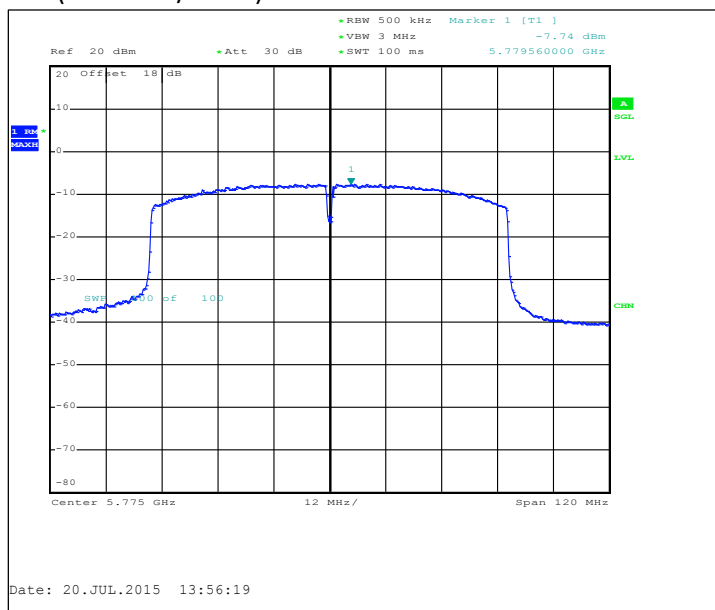
## Aux ( 100-112 / 5530)



## Main ( 149-161 / 5775)



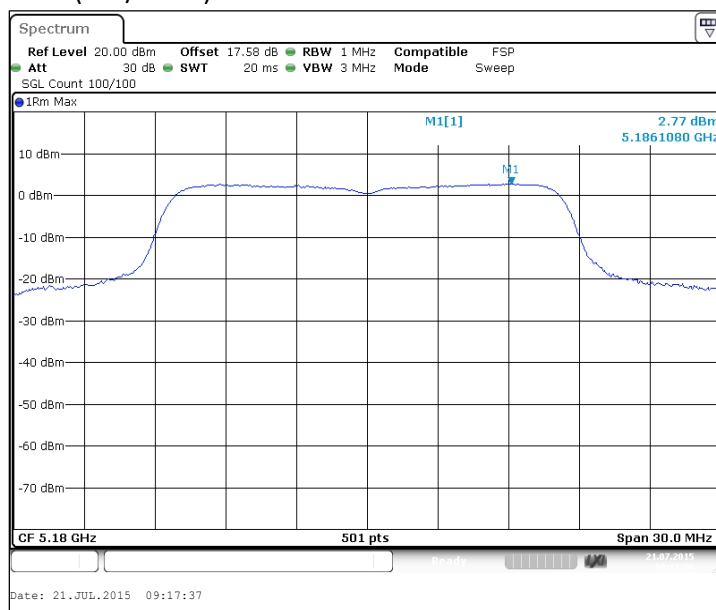
## Aux ( 149-161 / 5775)



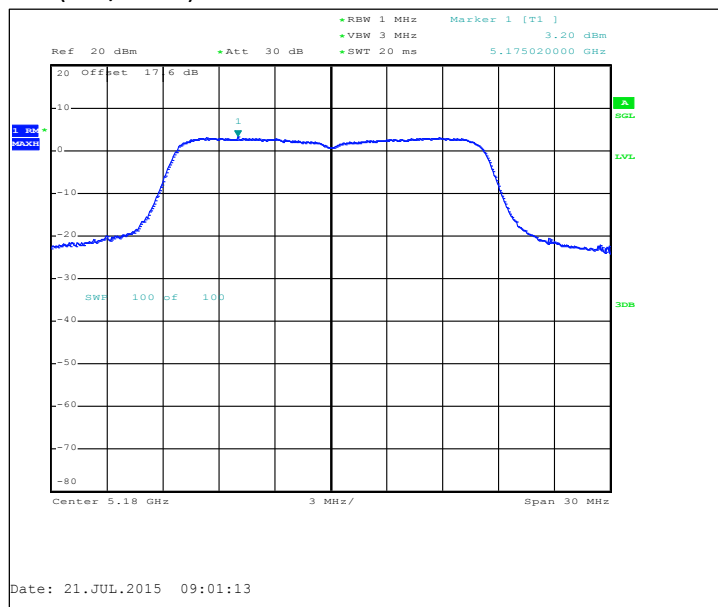
### 3.3.4 802.11a MIMO mode, 16QAM modulation, 24 Mbps data rate

| Channel / f <sub>c</sub> [MHz] | Sum [dBm] | Main [dBm] | Aux [dBm] | Antenna Gain Main [dBi] | Antenna Gain Aux [dBi] | Antenna Gain DG [dBi] | Limit [dBm] | Limit adjusted [dBm] | Result |
|--------------------------------|-----------|------------|-----------|-------------------------|------------------------|-----------------------|-------------|----------------------|--------|
| 36 / 5180                      | 6         | 2.77       | 3.2       | 5                       | 0.5                    | 5                     | 11          | 11                   | PASSED |
| 40 / 5200                      | 5.93      | 2.51       | 3.29      | 5                       | 0.5                    | 5                     | 11          | 11                   | PASSED |
| 48 / 5240                      | 6.04      | 2.62       | 3.4       | 5                       | 0.5                    | 5                     | 11          | 11                   | PASSED |
| 52 / 5260                      | 6.08      | 2.76       | 3.36      | 5                       | 0.5                    | 5                     | 11          | 11                   | PASSED |
| 60 / 5300                      | 5.82      | 2.59       | 3.01      | 5                       | 0.5                    | 5                     | 11          | 11                   | PASSED |
| 64 / 5320                      | 6.01      | 2.8        | 3.2       | 5                       | 0.5                    | 5                     | 11          | 11                   | PASSED |
| 100 / 5500                     | 6.26      | 2.92       | 3.56      | 5                       | 0.5                    | 5                     | 11          | 11                   | PASSED |
| 116 / 5580                     | 6.31      | 2.98       | 3.59      | 5                       | 0.5                    | 5                     | 11          | 11                   | PASSED |
| 140 / 5700                     | 6.59      | 3.33       | 3.82      | 5                       | 0.5                    | 5                     | 11          | 11                   | PASSED |
| 149 / 5745                     | 4.04      | 0.47       | 1.52      | 5                       | 0.5                    | 5                     | 30          | 30                   | PASSED |
| 157 / 5785                     | 3.96      | 0.9        | 1.01      | 5                       | 0.5                    | 5                     | 30          | 30                   | PASSED |
| 165 / 5825                     | 3.88      | 0.33       | 1.35      | 5                       | 0.5                    | 5                     | 30          | 30                   | PASSED |

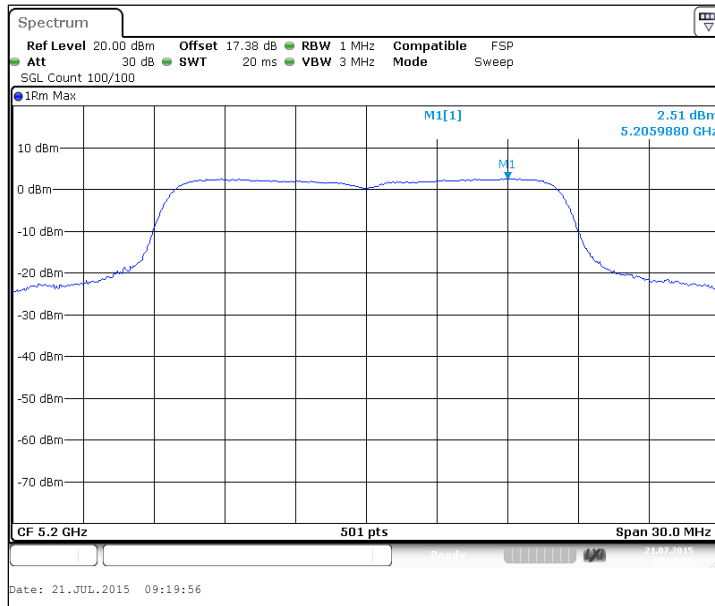
#### Main ( 36 / 5180)



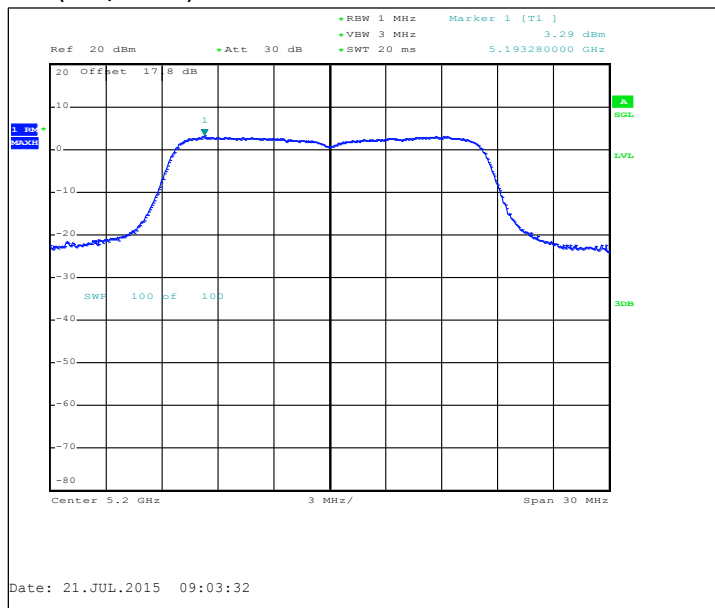
Aux ( 36 / 5180)



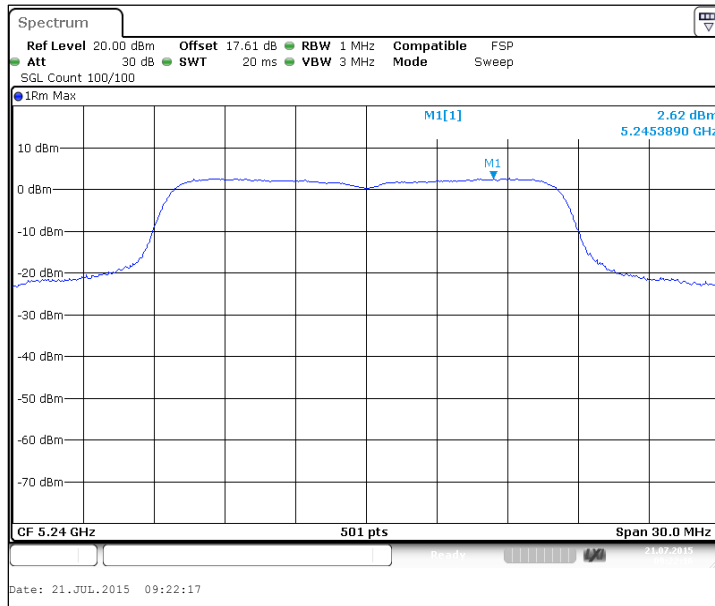
## Main ( 40 / 5200)



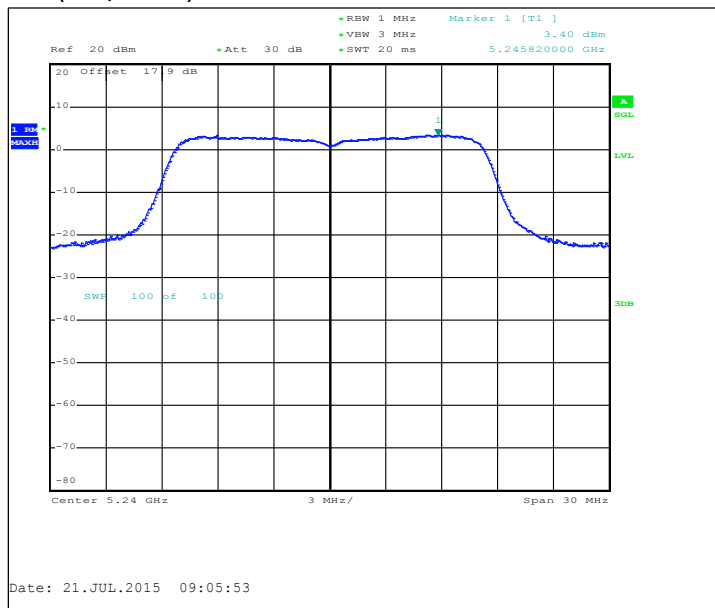
## Aux ( 40 / 5200)



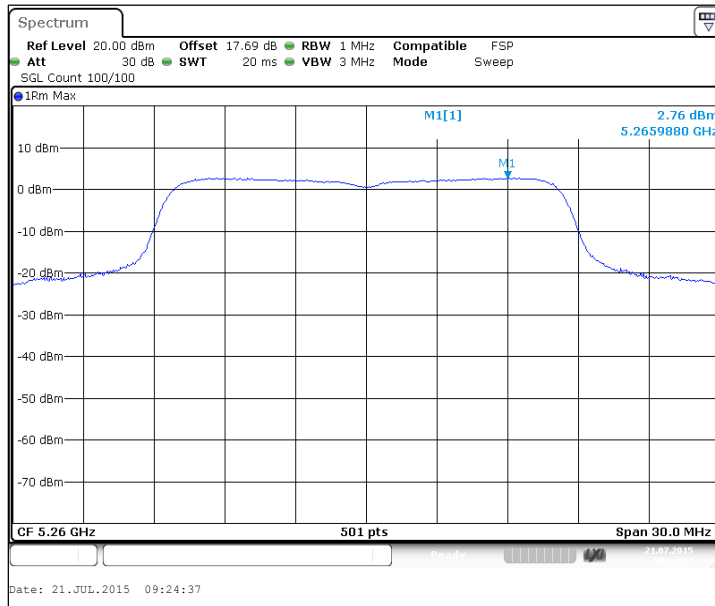
## Main ( 48 / 5240)



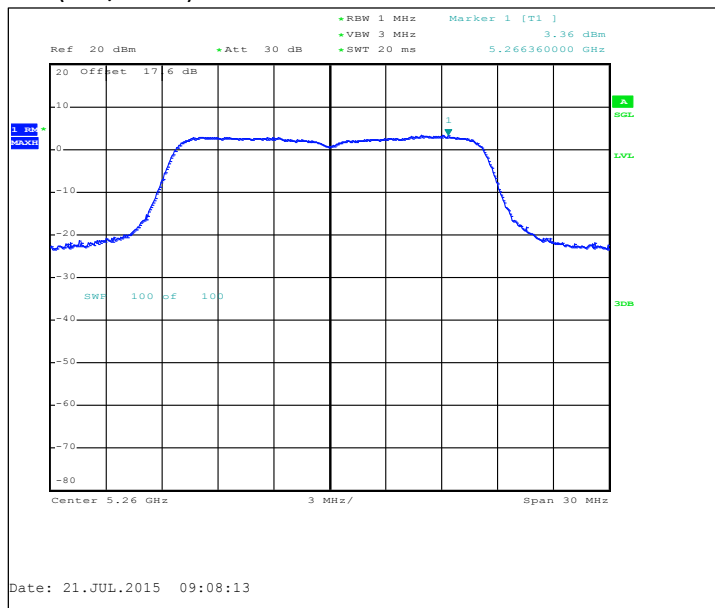
## Aux ( 48 / 5240)



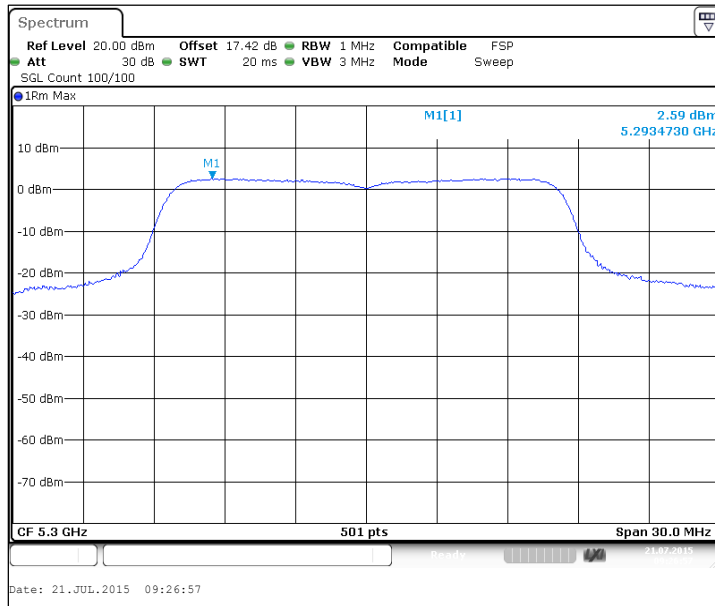
## Main ( 52 / 5260)



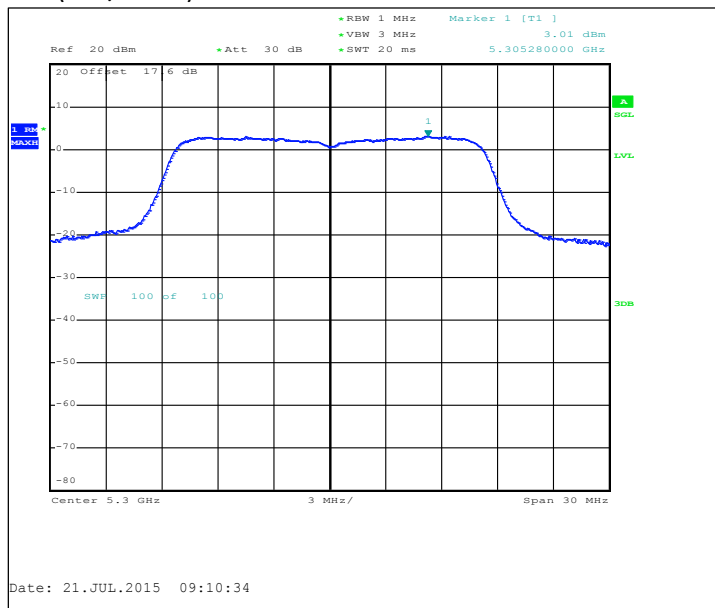
## Aux ( 52 / 5260)



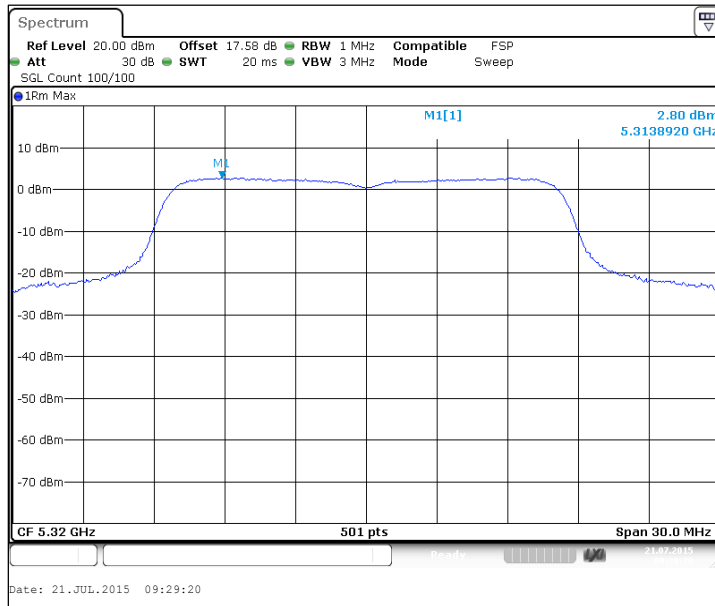
## Main ( 60 / 5300)



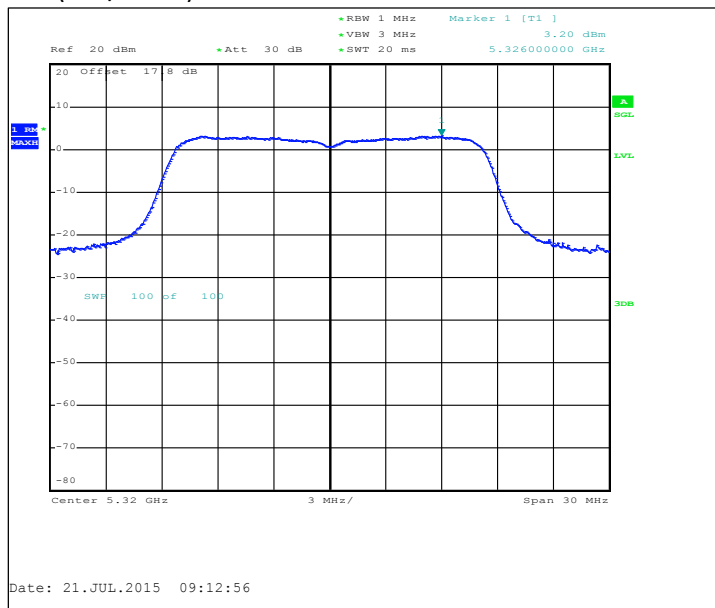
## Aux ( 60 / 5300)



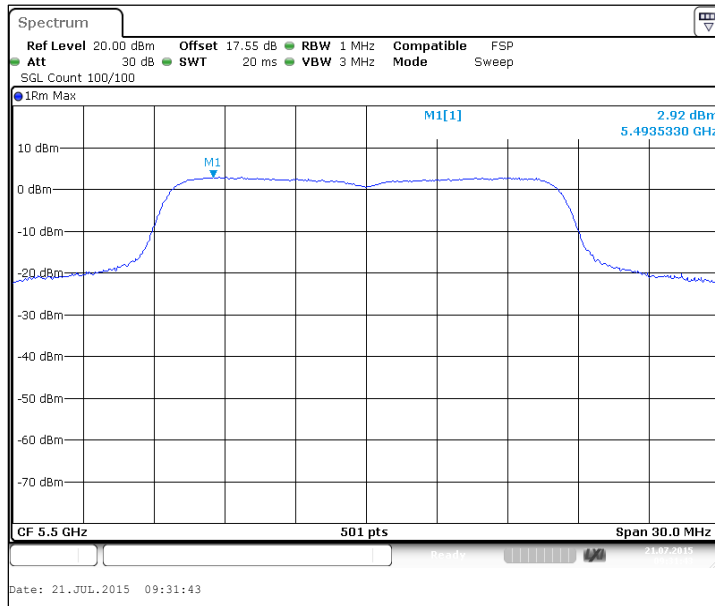
## Main ( 64 / 5320)



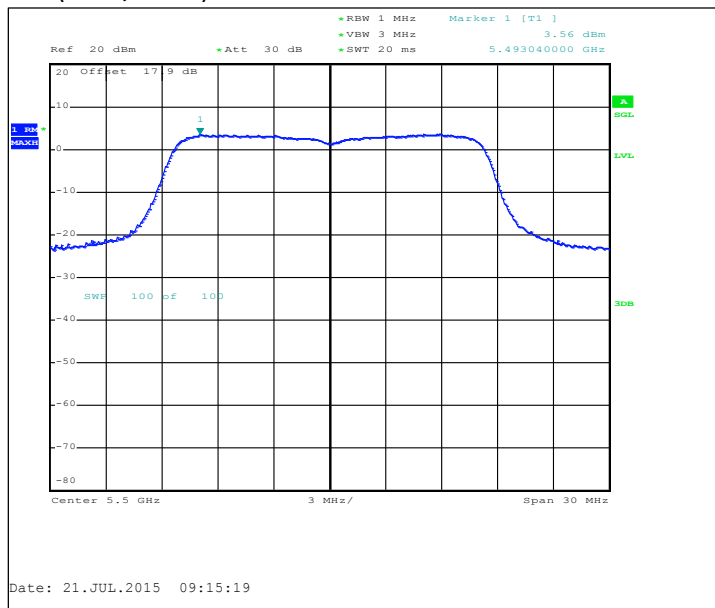
## Aux ( 64 / 5320)



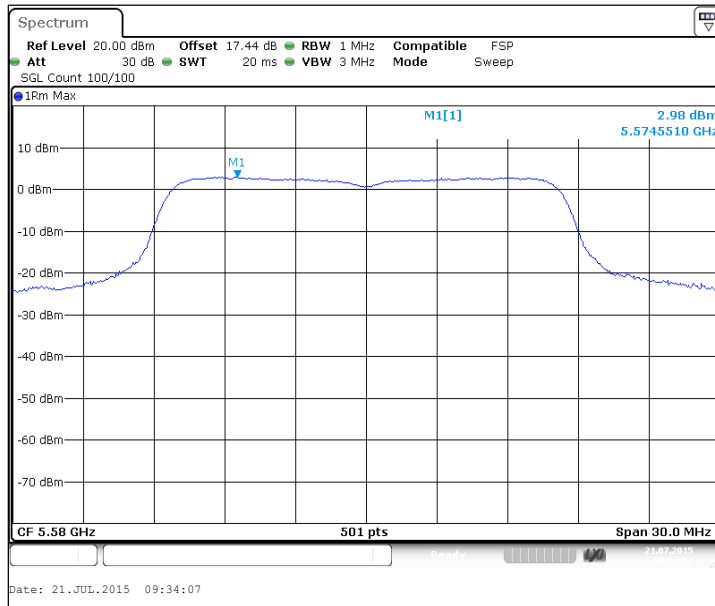
## Main ( 100 / 5500)



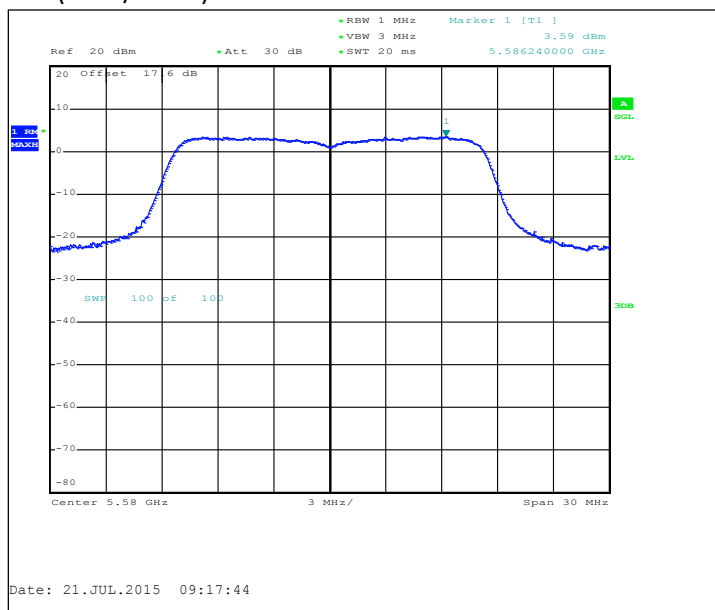
## Aux ( 100 / 5500)



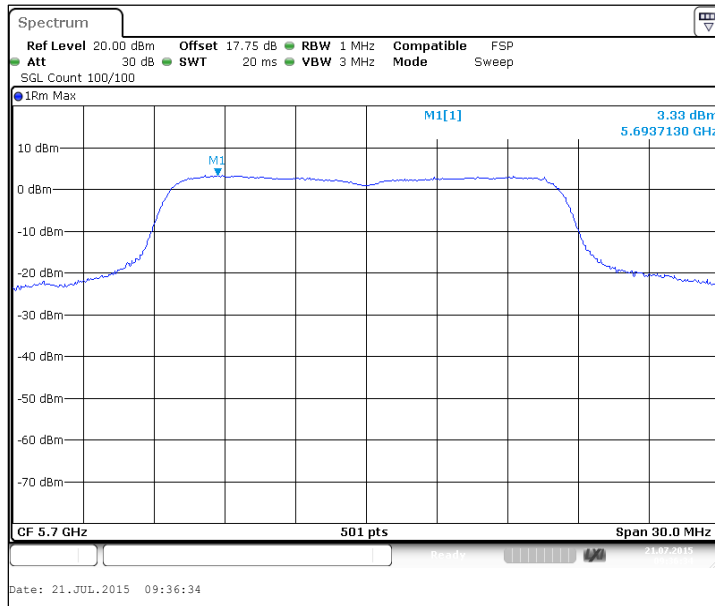
## Main ( 116 / 5580)



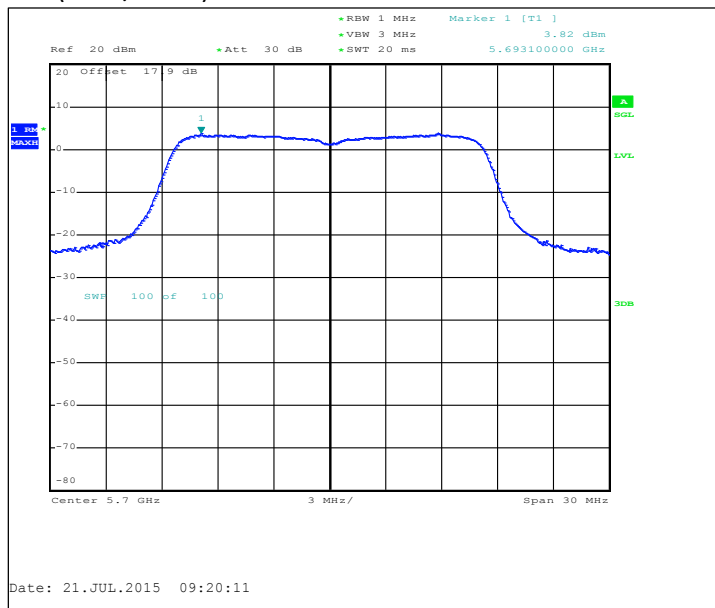
## Aux ( 116 / 5580)



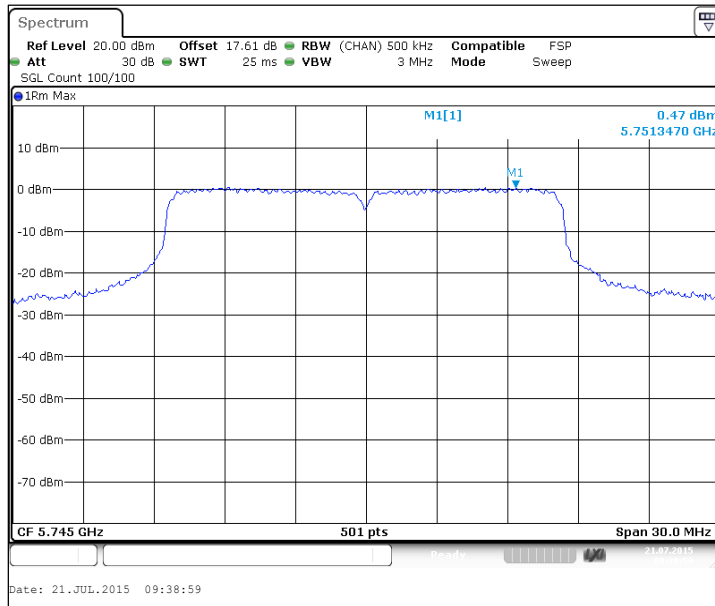
## Main ( 140 / 5700)



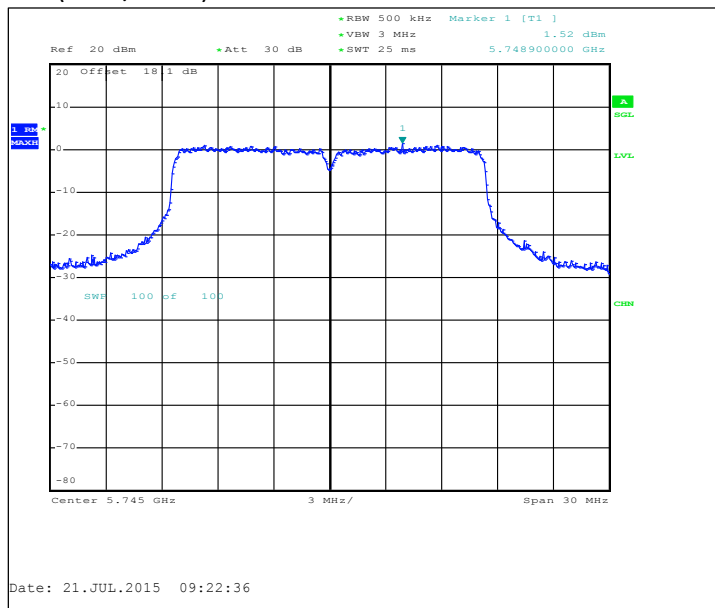
## Aux ( 140 / 5700)



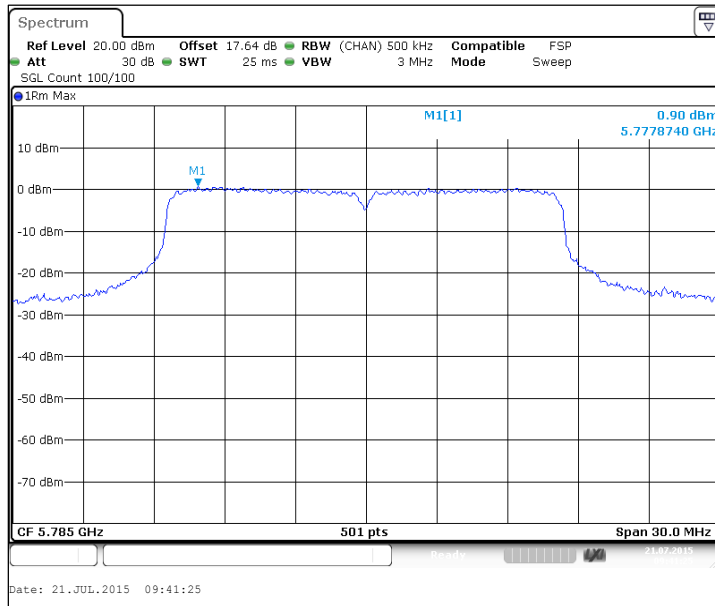
## Main ( 149 / 5745)



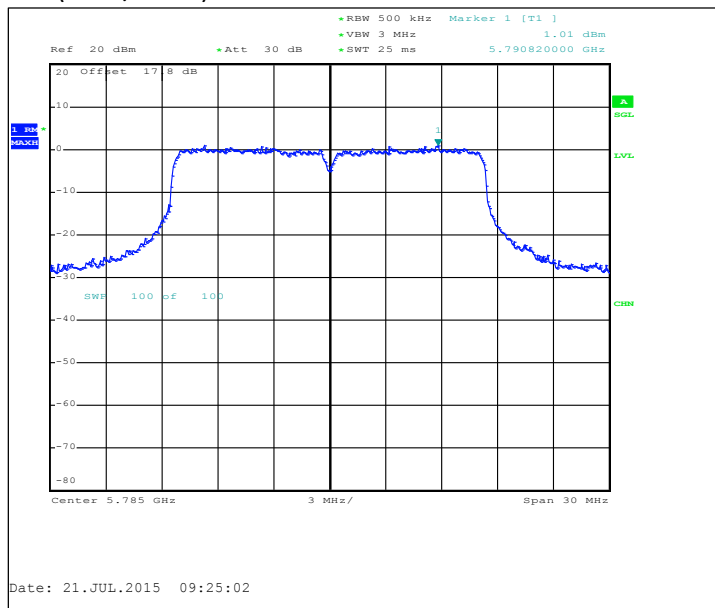
## Aux ( 149 / 5745)



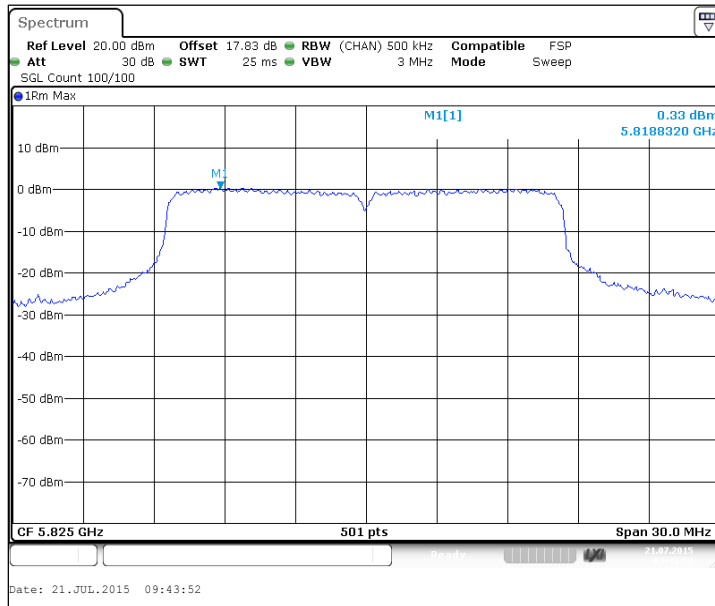
## Main ( 157 / 5785)



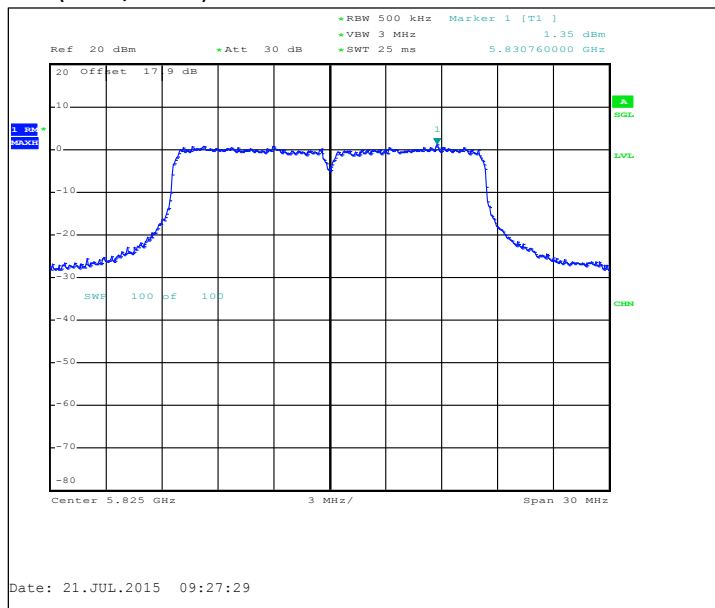
## Aux ( 157 / 5785)



## Main ( 165 / 5825)



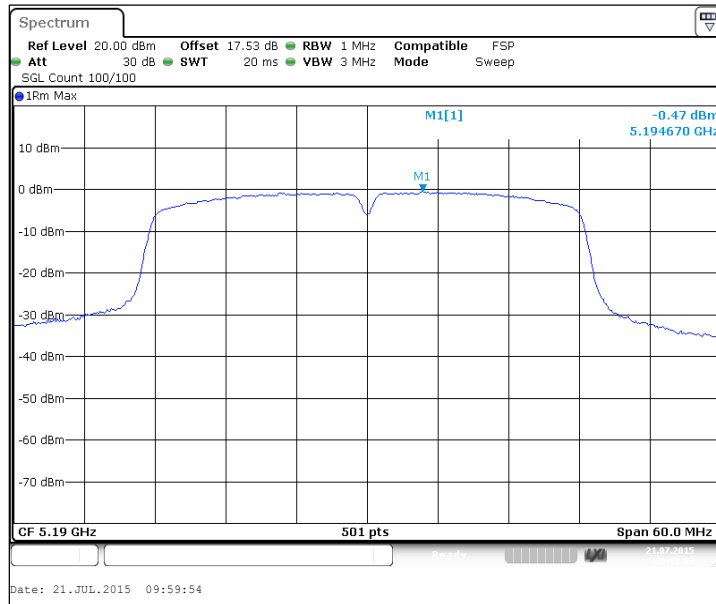
## Aux ( 165 / 5825)



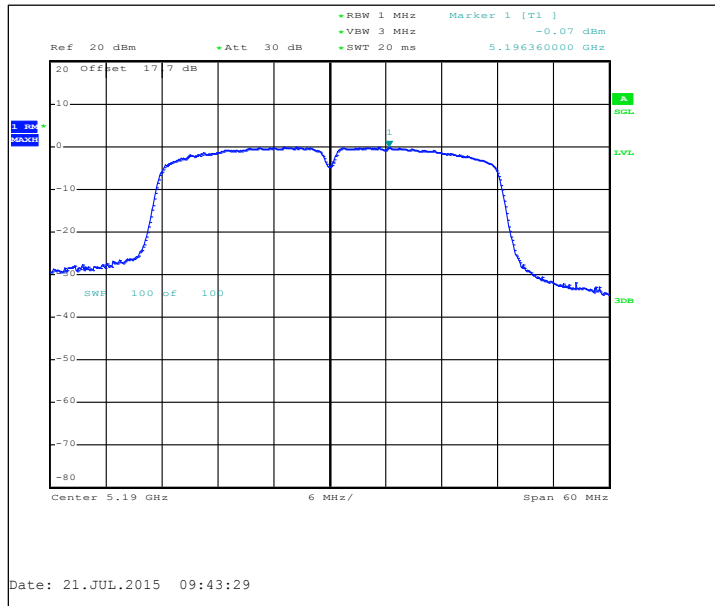
### 3.3.5 802.11n MIMO mode, QPSK modulation, 27.0 / 30.0 Mbps data rate

| Channel /<br>f <sub>c</sub> [MHz] | Sum<br>[dBm] | Main<br>[dBm] | Aux<br>[dBm] | Antenna<br>Gain<br>Main<br>[dBi] | Antenna<br>Gain<br>Aux [dBi] | Antenna<br>Gain<br>DG<br>[dBi] | Limit<br>[dBm] | Limit<br>adjusted<br>[dBm] | Result |
|-----------------------------------|--------------|---------------|--------------|----------------------------------|------------------------------|--------------------------------|----------------|----------------------------|--------|
| 36+40 /<br>5190                   | 2.75         | -0.47         | -0.07        | 5                                | 0.5                          | 5                              | 11             | 11                         | PASSED |
| 44+48 /<br>5230                   | 2.76         | -0.73         | 0.18         | 5                                | 0.5                          | 5                              | 11             | 11                         | PASSED |
| 52+56 /<br>5270                   | 2.91         | -0.49         | 0.26         | 5                                | 0.5                          | 5                              | 11             | 11                         | PASSED |
| 60+64 /<br>5310                   | 2.8          | -0.73         | 0.26         | 5                                | 0.5                          | 5                              | 11             | 11                         | PASSED |
| 100+104 /<br>5510                 | 3.05         | -0.46         | 0.49         | 5                                | 0.5                          | 5                              | 11             | 11                         | PASSED |
| 108+112 /<br>5550                 | 3.09         | -0.33         | 0.46         | 5                                | 0.5                          | 5                              | 11             | 11                         | PASSED |
| 132+136 /<br>5670                 | 3.06         | -0.44         | 0.49         | 5                                | 0.5                          | 5                              | 11             | 11                         | PASSED |
| 149+153 /<br>5755                 | -0.03        | -3.35         | -2.76        | 5                                | 0.5                          | 5                              | 30             | 30                         | PASSED |
| 157+161 /<br>5795                 | 0.33         | -3.23         | -2.2         | 5                                | 0.5                          | 5                              | 30             | 30                         | PASSED |

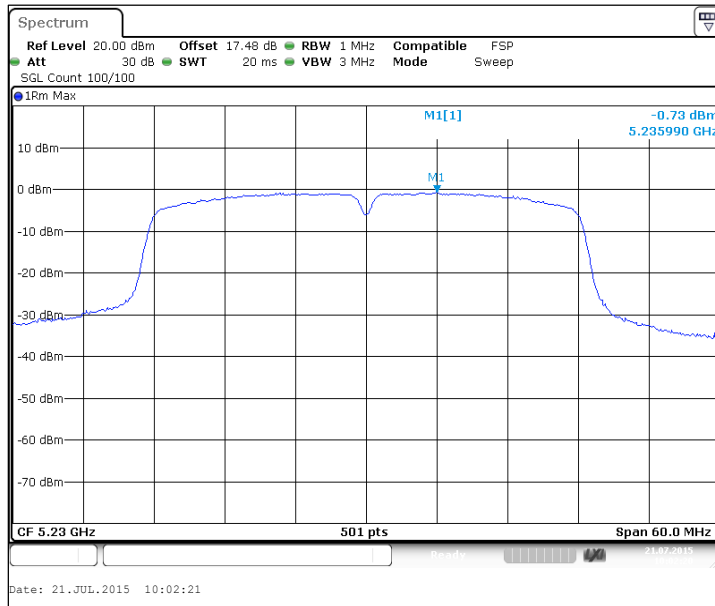
#### Main ( 36+40 / 5190)



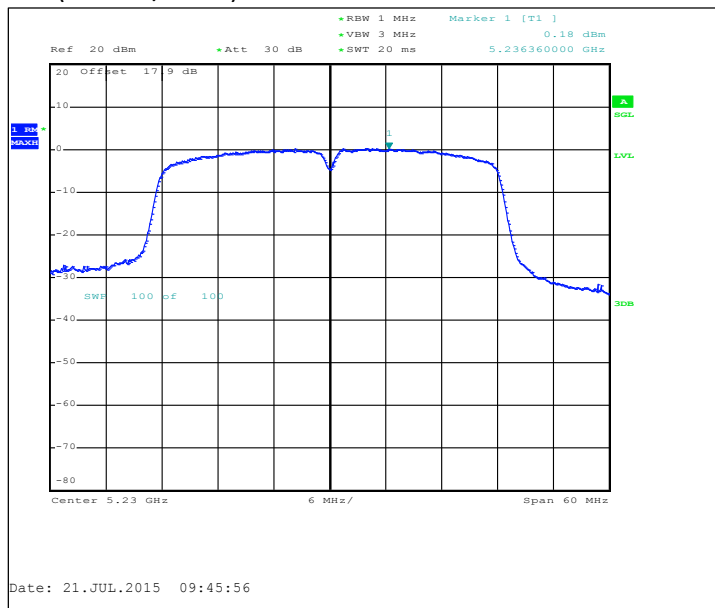
Aux ( 36+40 / 5190)



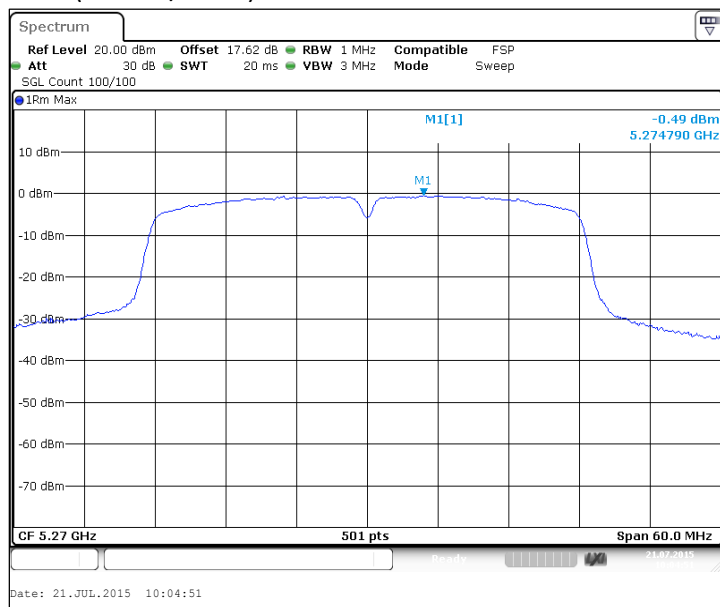
## Main ( 44+48 / 5230)



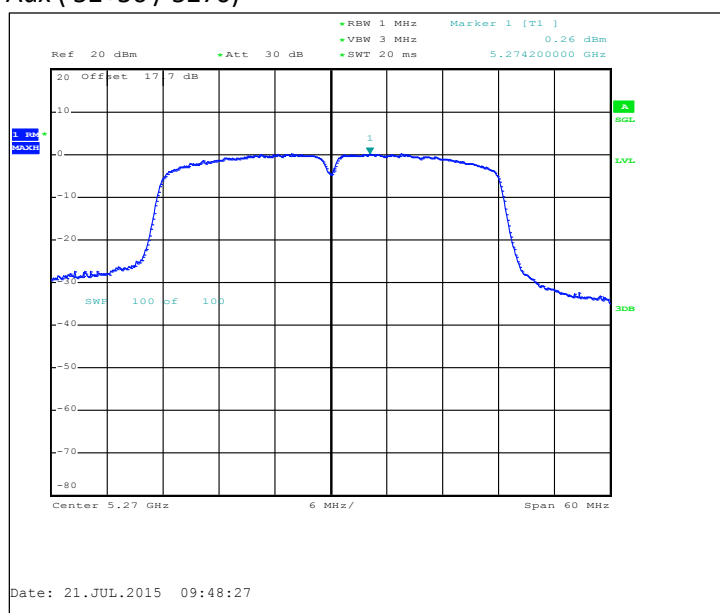
## Aux ( 44+48 / 5230)



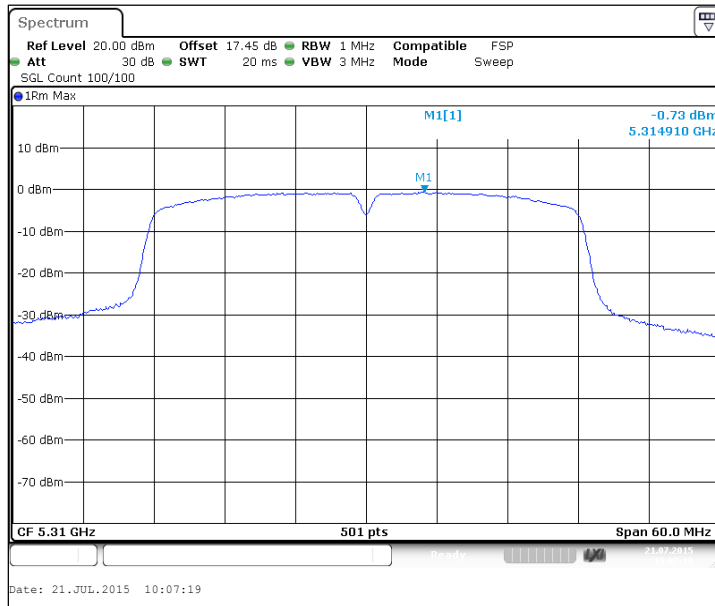
## Main ( 52+56 / 5270)



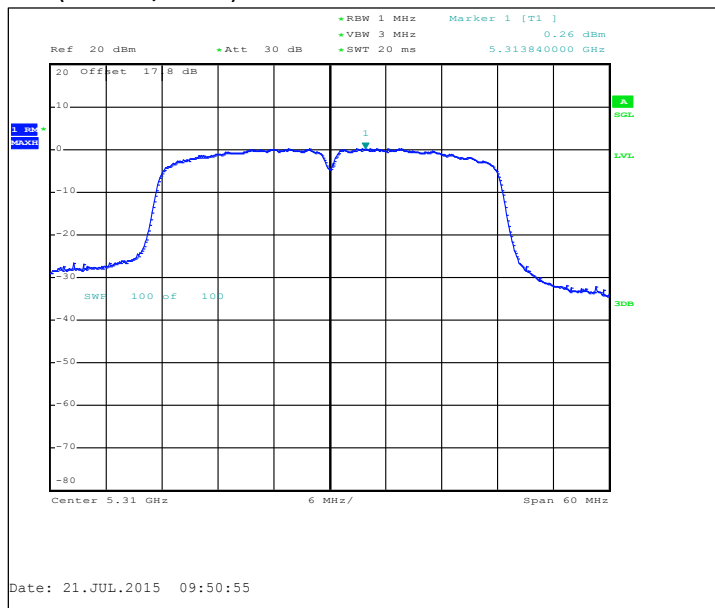
## Aux ( 52+56 / 5270)



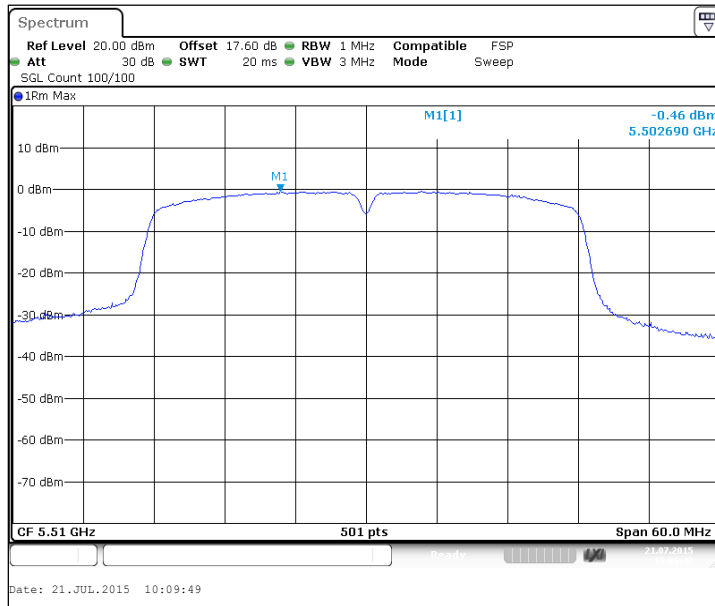
## Main ( 60+64 / 5310)



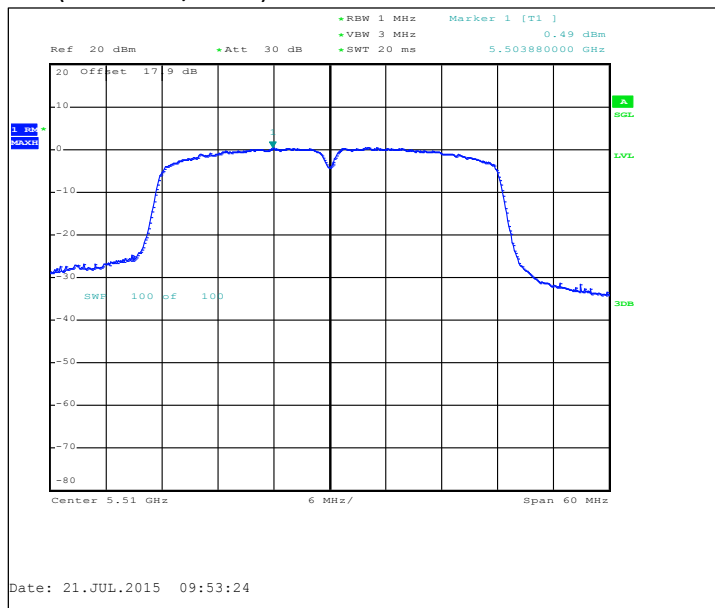
## Aux ( 60+64 / 5310)



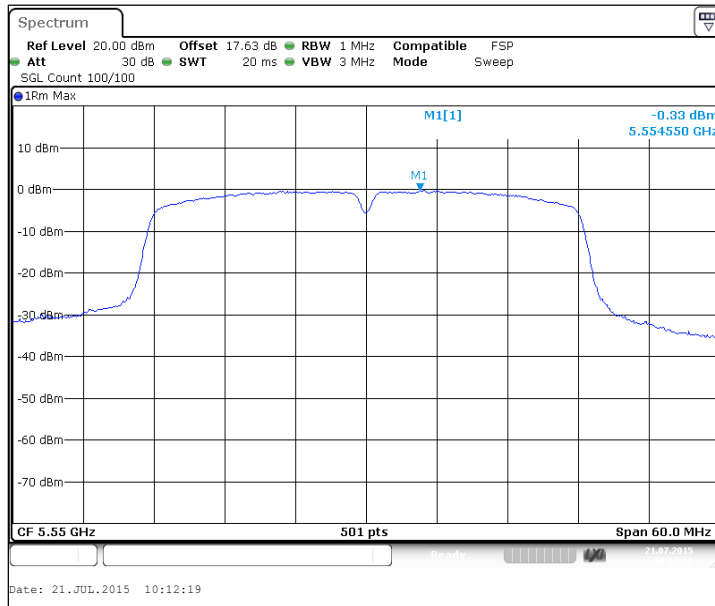
## Main ( 100+104 / 5510)



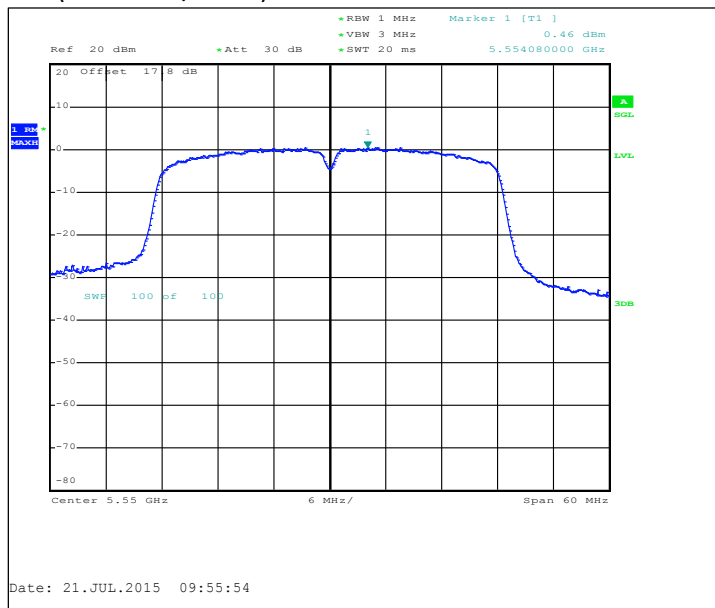
## Aux ( 100+104 / 5510)



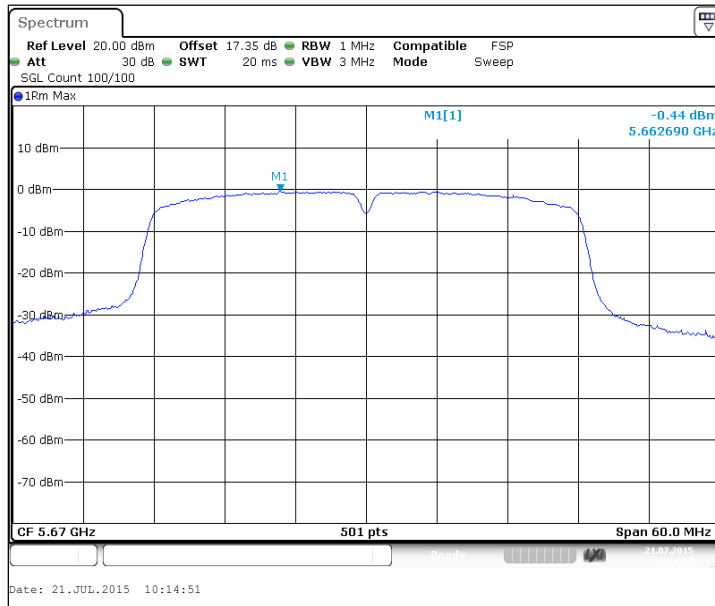
## Main ( 108+112 / 5550)



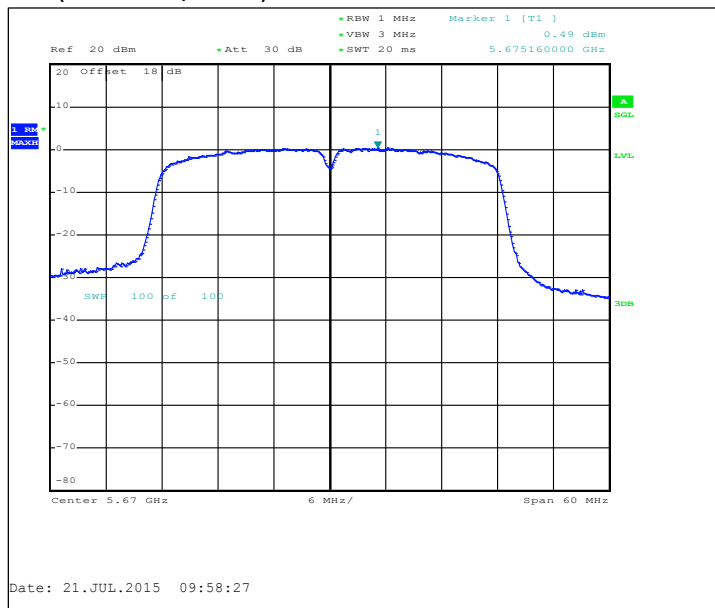
## Aux ( 108+112 / 5550)



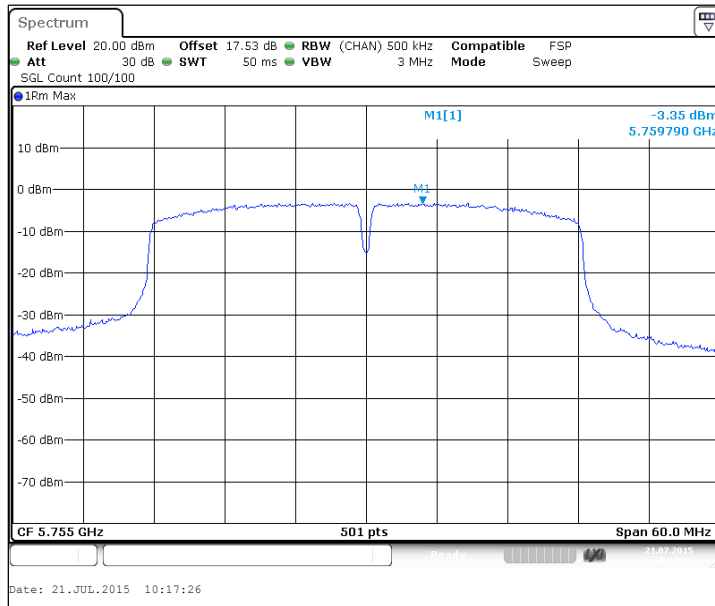
## Main ( 132+136 / 5670)



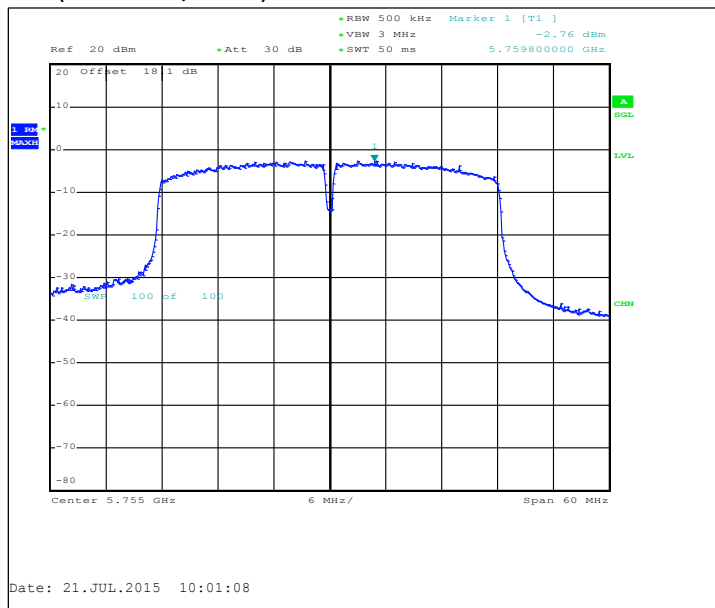
## Aux ( 132+136 / 5670)



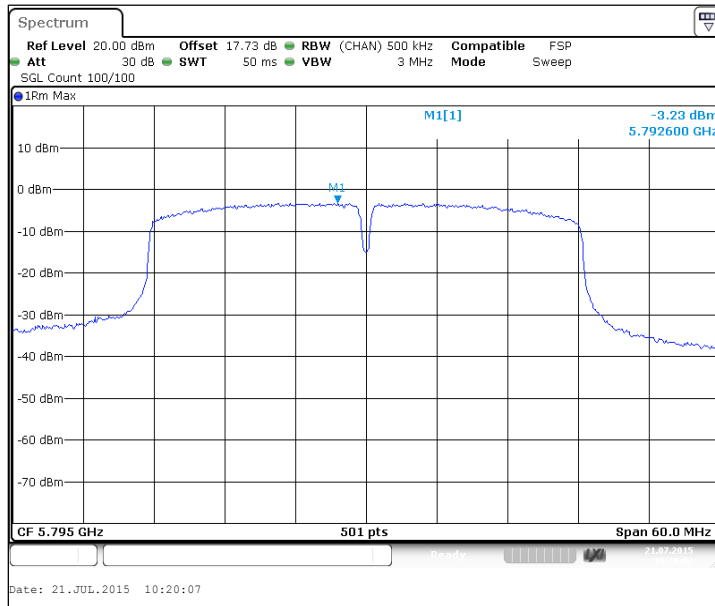
## Main ( 149+153 / 5755)



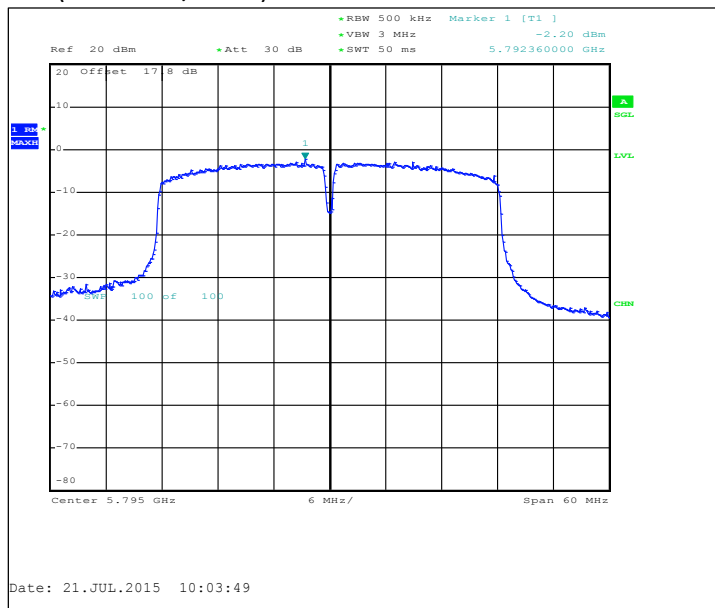
## Aux ( 149+153 / 5755)



## Main ( 157+161 / 5795)



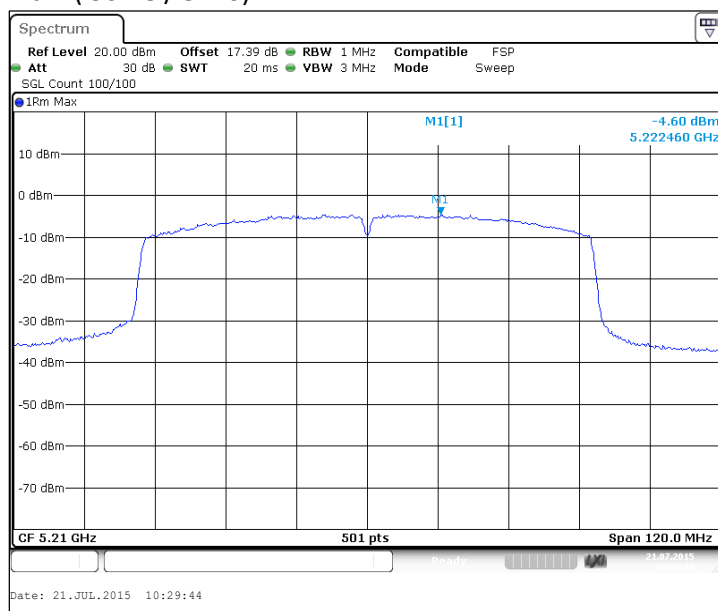
## Aux ( 157+161 / 5795)



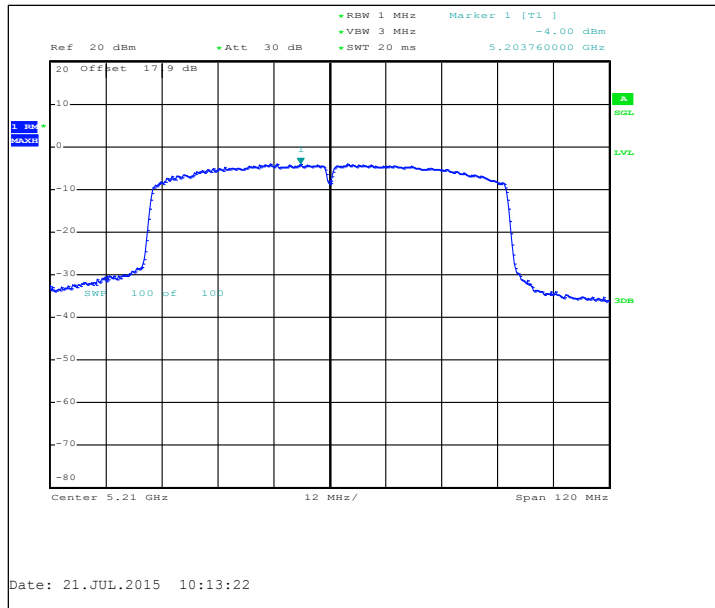
### 3.3.6 802.11ac MIMO mode, QPSK modulation, 58.5 / 65.0 Mbps data rate

| Channel / f <sub>c</sub> [MHz] | Sum [dBm] | Main [dBm] | Aux [dBm] | Antenna Gain Main [dBi] | Antenna Gain Aux [dBi] | Antenna Gain DG [dBi] | Limit [dBm] | Limit adjusted [dBm] | Result |
|--------------------------------|-----------|------------|-----------|-------------------------|------------------------|-----------------------|-------------|----------------------|--------|
| 36-48 / 5210                   | -1.28     | -4.6       | -4        | 5                       | 0.5                    | 5                     | 11          | 11                   | PASSED |
| 52-64 / 5290                   | -1.25     | -4.51      | -4.02     | 5                       | 0.5                    | 5                     | 11          | 11                   | PASSED |
| 100-112 / 5530                 | -0.87     | -4.05      | -3.72     | 5                       | 0.5                    | 5                     | 11          | 11                   | PASSED |
| 149-161 / 5775                 | -4.78     | -7.87      | -7.72     | 5                       | 0.5                    | 5                     | 30          | 30                   | PASSED |

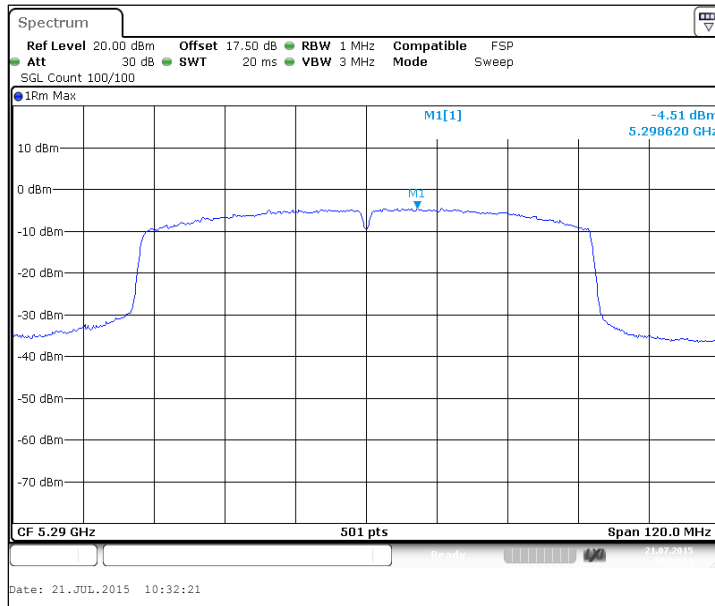
#### Main ( 36-48 / 5210)



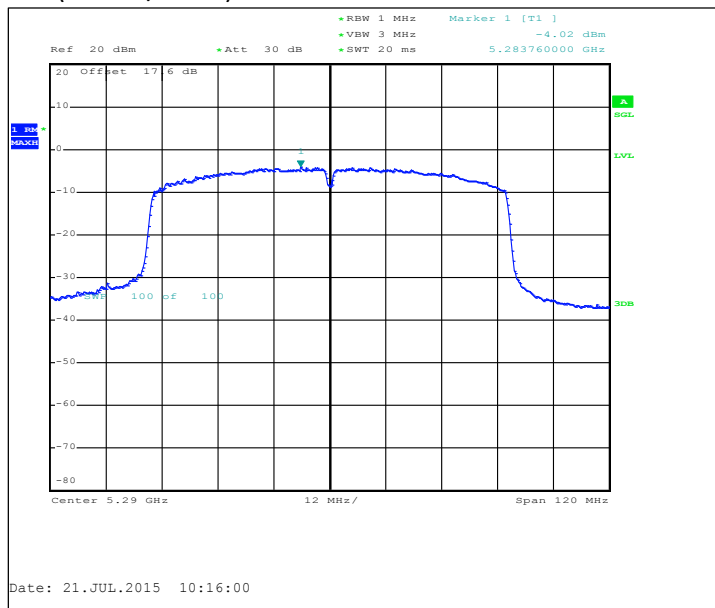
#### Aux ( 36-48 / 5210)



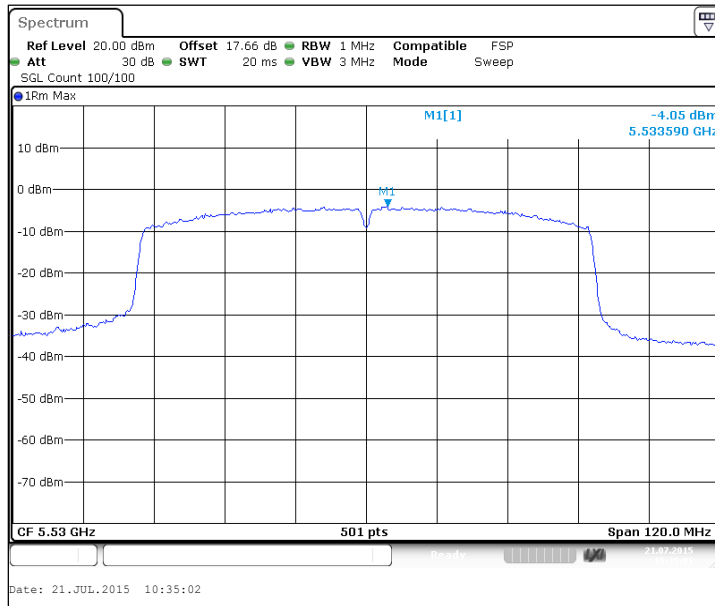
## Main ( 52-64 / 5290)



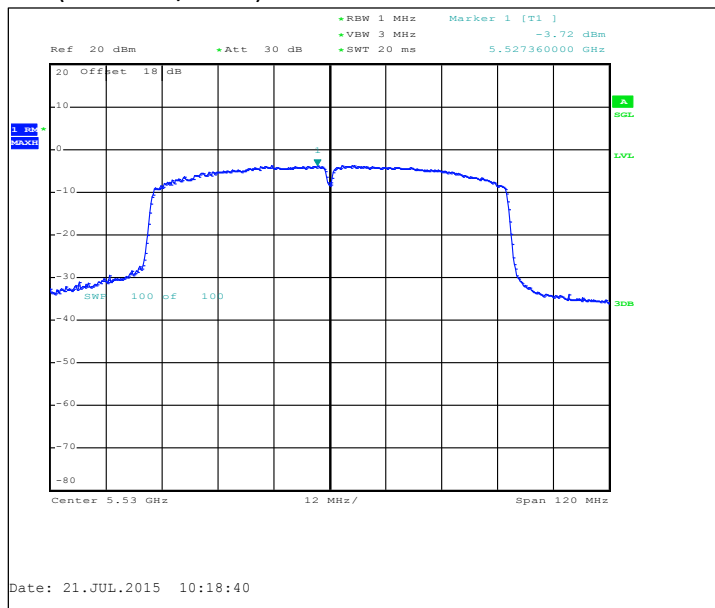
## Aux ( 52-64 / 5290)



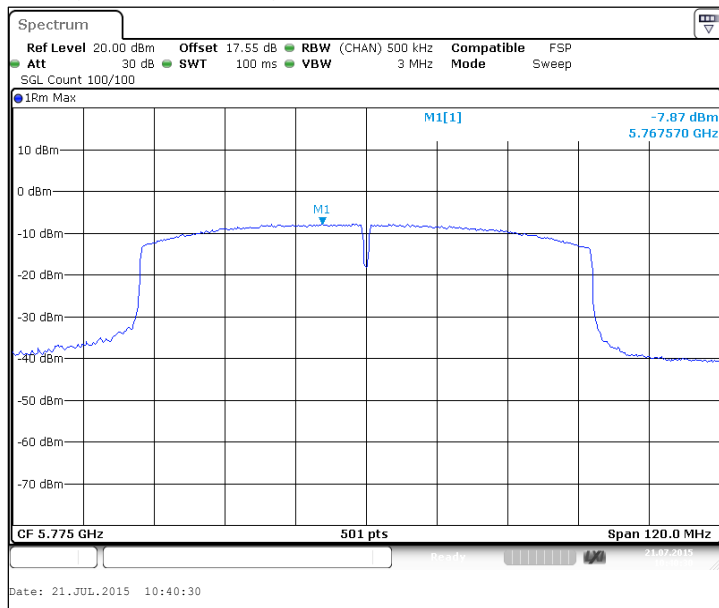
## Main ( 100-112 / 5530)



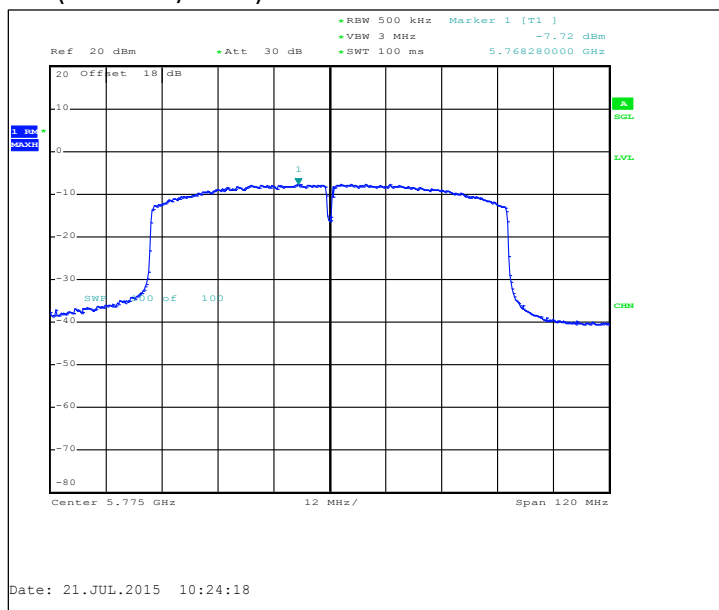
## Aux ( 100-112 / 5530)



## Main ( 149-161 / 5775)



## Aux ( 149-161 / 5775)



## 4. Test Equipment

### 4.1. Conducted measurements

| Eq. No | Equipment                       | Type          | Manufacturer  | Used in            |
|--------|---------------------------------|---------------|---------------|--------------------|
| 6039   | USB Interface                   | 5541765       | Testo         | 22/24/27, 15C, 15B |
| 6044   | V-network                       | ESH3-Z6       | R&S           | -                  |
| 2059   | V-network                       | ESH3-Z6       | R&S           | -                  |
| 1759   | LISN 50 µH                      | ESH3-Z5       | R&S           | 22/24/27, 15C, 15B |
| 2097   | Pulse Limiter                   | ESH3-Z2       | R&S           | 22/24/27, 15C, 15B |
| 1999   | Receiver                        | ESIB26        | R&S           | 22/24/27, 15C, 15B |
| 2180   | Communication Tester            | CMU200        | R&S           | 22/24/27, 15C, 15B |
| 2390   | Directional Coupler             | DC2600        | AR            | -                  |
| -      | RF immunity / Emission Software | EMC32         | R&S           | 22/24/27, 15C, 15B |
| 2060   | LISN 50 µH                      | ESH3-Z5       | R&S           | 15C, 15B           |
| 1759   | LISN 50 µH                      | ESH3-Z5       | R&S           | 15C, 15B           |
| 2039   | Power Supply                    | PL330QMD      | Thurlby       | 15C, 15B           |
| 6036   | Data Logger                     | 175-H2        | Testo         | 22/24/27, 15C, 15B |
| 2359   | Temperature Test Chamber        | VT4002        | Vötsch        | 22/24/27           |
| 2352   | Spectrum Analyzer               | FSP-30        | R&S           | 22/24/27, 15C      |
| 6109   | Communication Tester            | CMU200        | R&S           | 22/24/27, 15C      |
| 6246   | Power Supply                    | 66332A        | HP            | 22/24/27, 15C      |
| 1992   | Signal Generator                | 83630B        | Agilent       | 15C, 15B           |
| 6098   | Signal Generator                | 8648C         | Agilent       | -                  |
| 6046   | Attenuator 10dB                 | 8493C         | Agilent       | 22/24/27, 15C      |
| 6047   | Attenuator 20dB                 | 8493C         | Agilent       | 22/24/27, 15C      |
| 6045   | Power splitter                  | 11667B        | Agilent       | 22/24/27, 15C      |
| 6247   | Communication Tester            | CBT           | R&S           | 22/24/27, 15C 15B  |
| 6052   | Communication Tester            | CMU200        | R&S           | 22/24/27, 15C 15B  |
| 6248   | Power Supply                    | 6632B         | -             | 22/24/27, 15C 15B  |
| 6106   | Spectrum Analyzer               | FSP-30        | R&S           | 22/24/27, 15C 15B  |
| 6113   | Signal Generator                | SMF100A       | R&S           | 22/24/27, 15C 15B  |
| 6202   | Temperature Test Chamber        | VT4002        | Vötsch        | 22/24/27, 15C 15B  |
| 6122   | Power Splitter                  | 11667B        | Agilent       | 22/24/27, 15C 15B  |
| 6134   | Attenuator 10dB                 | BW-S10-2W263+ | Mini-Circuits | 22/24/27, 15C      |
| 6136   | Attenuator 20dB                 | BW-S20-2W263+ | Mini-Circuits | 22/24/27, 15C      |
| 6103   | Bluetooth tester                | CBT           | R&S           | 22/24/27, 15C 15B  |
| 6250   | Power Supply                    | 6651A         | Agilent       | 22/24/27, 15C 15B  |
| 6108   | Communication Tester            | CMU200        | R&S           | 22/24/27, 15C 15B  |
| 6105   | Spectrum Analyzer               | FSV-30        | R&S           | 22/24/27, 15C 15B  |
| 6251   | Temperature Test Chamber        | VT4002        | Vötsch        | 22/24/27, 15C 15B  |
| 6243   | Power Splitter                  | 1167B         | Agilent       | 22/24/27, 15C 15B  |
| 6245   | Attenuator 10dB                 | BW-S10-2W263+ | Mini-Circuits | 22/24/27, 15C 15B  |
| 6244   | Attenuator 20dB                 | BW-S20-2W263+ | Mini-Circuits | 22/24/27, 15C 15B  |

### 4.2. Radiated measurements

| Eq. No | Equipment            | Type      | Manufacturer | Used in            |
|--------|----------------------|-----------|--------------|--------------------|
| 2388   | Bluetooth Tester     | CBT       | R&S          | 15B                |
| 10479  | Communication Tester | CMW500    | R&S          | 22/24/27, 15C, 15B |
| 2347   | Communication Tester | CMU200    | R&S          | 22/24/27, 15C, 15B |
| 2009   | Signal Generator     | SMP 22    | R&S          | 22/24/27, 15C, 15B |
| 2348   | Controller           | G-1000DXC | Yaesu        | 22/24/27, 15C, 15B |
| 2349   | Computer Controller  | g-1000DXC | Yaesu        | 22/24/27, 15C, 15B |
| 2116   | Controller           | EMCO 2090 | ETS          | 22/24/27, 15C, 15B |
| 2109   | Power Supply         | PL330QMD  | Thurlby      | 22/24/27, 15C, 15B |

| Eq. No | Equipment                       | Type                                   | Manufacturer | Used in            |
|--------|---------------------------------|----------------------------------------|--------------|--------------------|
| 2353   | Receiver                        | ESIB26                                 | R&S          | 22/24/27, 15C, 15B |
| 6115   | Open switch and control unit    | OSP 130                                | R&S          | 22/24/27, 15C, 15B |
| 6116   | Open switch and control unit    | OSP 150                                | R&S          | 22/24/27, 15C, 15B |
| 6117   | Open switch and control unit    | OSP 150                                | R&S          | 22/24/27, 15C, 15B |
| 6131   | Notch Filter                    | WRCT902.4-0.4/40-8SS                   | Wainwright   | 22/24/27, 15C, 15B |
| 6130   | Notch Filter                    | WRCD1880-1.1.25/50-10SS                | Wainwright   | 22/24/27           |
| 6159   | Band Reject Filter              | WRCD1747.8-0.4/40-5SS                  | Wainwright   | 22/24/27, 15C, 15B |
| 6158   | Band Reject Filter              | WRCT836.6-0.4/40-8SS                   | Wainwright   | 22/24/27, 15C, 15B |
| 6197   | Band Reject Filter              | WRCJV2531/2539-2523/2547-60/12SS       | Wainwright   | 22/24/27, 15C, 15B |
| 2231   | Band Reject Filter              | WRCG1947/1953-1940/1960-40/6SS         | Wainwright   | 22/24/27, 15C, 15B |
| 2391   | Band Reject Filter              | WRCG1729.4/1735.4-1722.4/1742.4-40/6SS | Wainwright   | 27                 |
| 2386   | Band Reject Filter              | WRCG1764.4/1770.4-1760.4/1774.4-40/6SS | Wainwright   | 22/24/27, 15C, 15B |
| 2385   | Band Reject Filter              | WRCG1744.4/1750.4-1740.4/1754.4-40/6SS | Wainwright   | 22/24/27, 15C, 15B |
| 2357   | Band Reject Filter              | WRCG2400/2483-2390/2493-35/10SS        | Wainwright   | 15C                |
| 2188   | Preamplifier                    | AFS4-00100300-20-23P-6                 | Miteq        | 22/24/27, 15C, 15B |
| 6195   | High Pass Filter                | -                                      | Wainwright   | 22/24/27, 15C, 15B |
| 2364   | Band Reject Filter              | WRCG1877/1883 - 1870/1890-40/6SS       | Wainwright   | 24                 |
| 2361   | Anechoic Chamber                | 3 m Semi / Full Anechoic Chamber       | Euroshield   | 22/24/27, 15C, 15B |
| 6212   | Antenna Array system            | -                                      | TCC          | 22/24/27, 15C, 15B |
| -      | RF immunity / Emission Software | EMC32                                  | R&S          | 22/24/27, 15C, 15B |
| 6089   | Antenna                         | HFH2-Z2                                | R&S          | 15C, 15B           |
| 2027   | CDN                             | M2 (modified) DC1                      | MEB          | 22/24/27, 15C, 15B |
| 2028   | CDN                             | M3 (modified) DC2                      | MEB          | 22/24/27, 15C, 15B |
| 2176   | CDN                             | CDN 801-M3                             | Lüthi        | 22/24/27, 15C, 15B |
| 2135   | CDN                             | CDN 801-M3                             | Lüthi        | 22/24/27, 15C, 15B |
| 2029   | Power Supply                    | PL330                                  | Thurlby      | 22/24/27, 15C      |
| 6038   | Data Logger                     | Testo 580                              | Testo        | 22/24/27, 15C, 15B |
| 6037   | Data Logger                     | 175-H2                                 | Testo        | 22/24/27, 15C, 15B |
| 6039   | USB Interface                   | 5541765                                | Testo        | 22/24/27, 15C, 15B |

## END OF REPORT