# Appendix A: Transmitter Output Power

# 1 Result Table

## 1.1 Channel Power, Total

NOTE 1: If applicable, the EIPR [W] = 10 ^ ((Channel Power [dBm] + Antenna Gain [dBi]) / 10 - 3), and the ERP [W] = EIRP [W] / 1.64.

NOTE 2: When the EUT is put into service, the practical maximum antenna gain will be changed with the actual antenna conducted power, the combination of the practical output power and the practical antenna gain should NOT exceed the required ERP/EIRP limit.

| EUT Conf. | Channel Power [dBm] | Total power(dBm) | Antenna Gain [dBi] | EIPR [W] | Verdict |
|---|---|---|---|---|---|
| 1U_TM1_B | 40.21 | 40.21 | 5 | 33.19 | Pass |
| 1U_TM1_M | 40.35 | 40.35 | 5 | 34.27 | Pass |
| 1U_TM1_T | 40.09 | 40.09 | 5 | 32.28 | Pass |
| 2U_TM1_B | 37.44/37.8 | 40.63 | 5 | 36.56 | Pass |
| 2U_TM1_M | 37.37/37.33 | 40.36 | 5 | 34.35 | Pass |
| 2U_TM1_T | 37.87/37.25 | 40.58 | 5 | 36.14 | Pass |

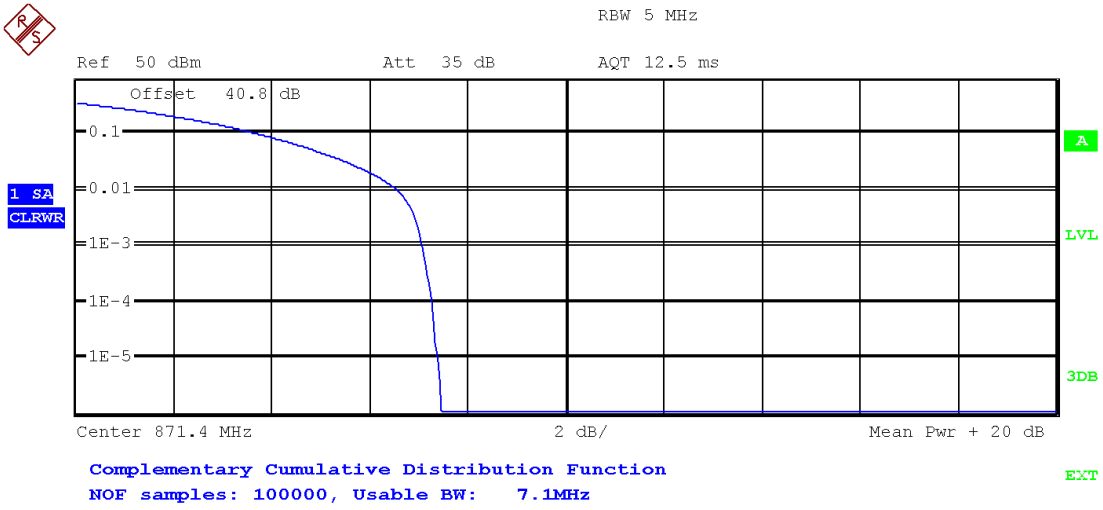
## 1.2 Peak-to-Average Ratio

| EUT Conf. | Peak-to-Average Ratio@0.1% [dB] | Verdict |
|---|---|---|
| 1U_TM1_B | 7.08 | Pass |
| 1U_TM1_M | 7.05 | Pass |
| 1U_TM1_T | 7.28 | Pass |

# 2 Test Plot

## 2.1 Peak-to-Average Ratio

### 2.1.1 1U_TM1_B




**Complementary Cumulative Distribution Function**
**NOF samples: 100000, Usable BW: 7.1MHz**

| | Trace 1 |
|---|---|
| Mean | 39.74 dBm |
| Peak | 47.19 dBm |
| Crest | 7.45 dB |
| 10 % | 3.75 dB |
| 1 % | 6.54 dB |
| .1 % | 7.08 dB |
| .01 % | 7.28 dB |

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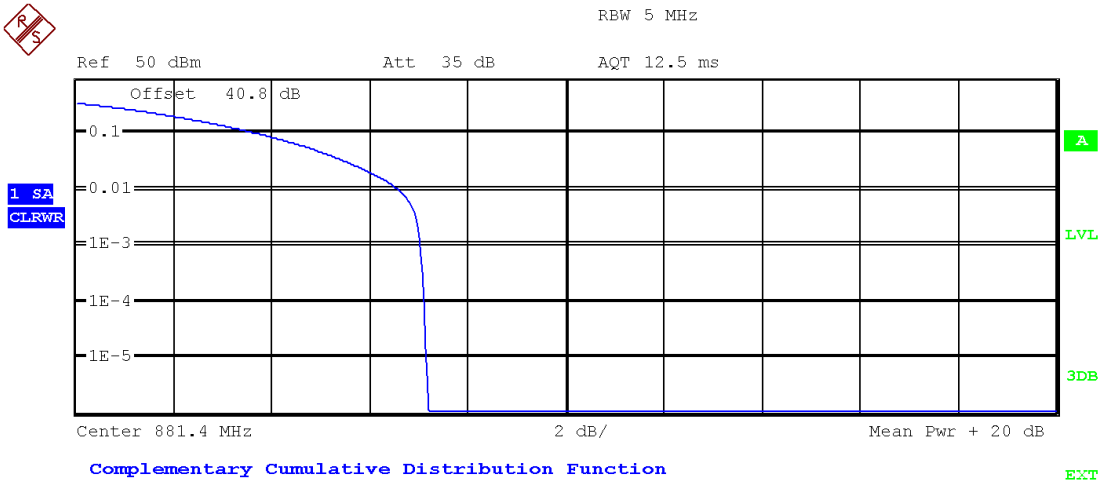
### 2.1.2 1U_TM1_M




**Complementary Cumulative Distribution Function**
**NOF samples: 100000, Usable BW: 7.1MHz**

| | Trace 1 |
|---|---|
| Mean | 39.80 dBm |
| Peak | 46.98 dBm |
| Crest | 7.18 dB |
| 10 % | 3.78 dB |
| 1 % | 6.60 dB |
| .1 % | 7.05 dB |
| .01 % | 7.12 dB |

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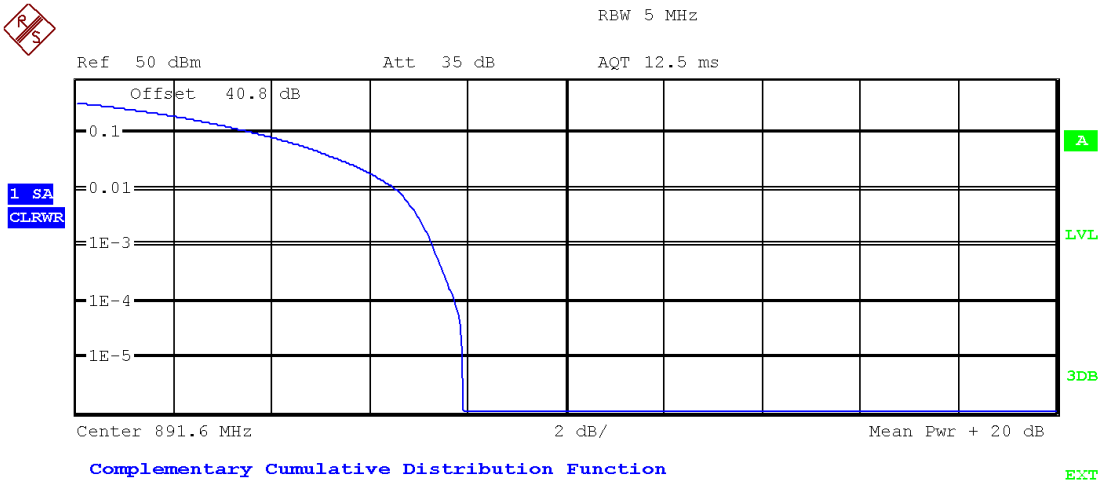
### 2.1.3 1U_TM1_T




**Complementary Cumulative Distribution Function**
**NOF samples: 100000, Usable BW: 7.1MHz**

| | Trace 1 |
|---|---|
| Mean | 39.65 dBm |
| Peak | 47.55 dBm |
| Crest | 7.89 dB |
| 10 % | 3.78 dB |
| 1 % | 6.54 dB |
| .1 % | 7.28 dB |
| .01 % | 7.72 dB |

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# Appendix B: Bandwidth

# 1 Result Table

## 1.1 Occupied Bandwidth

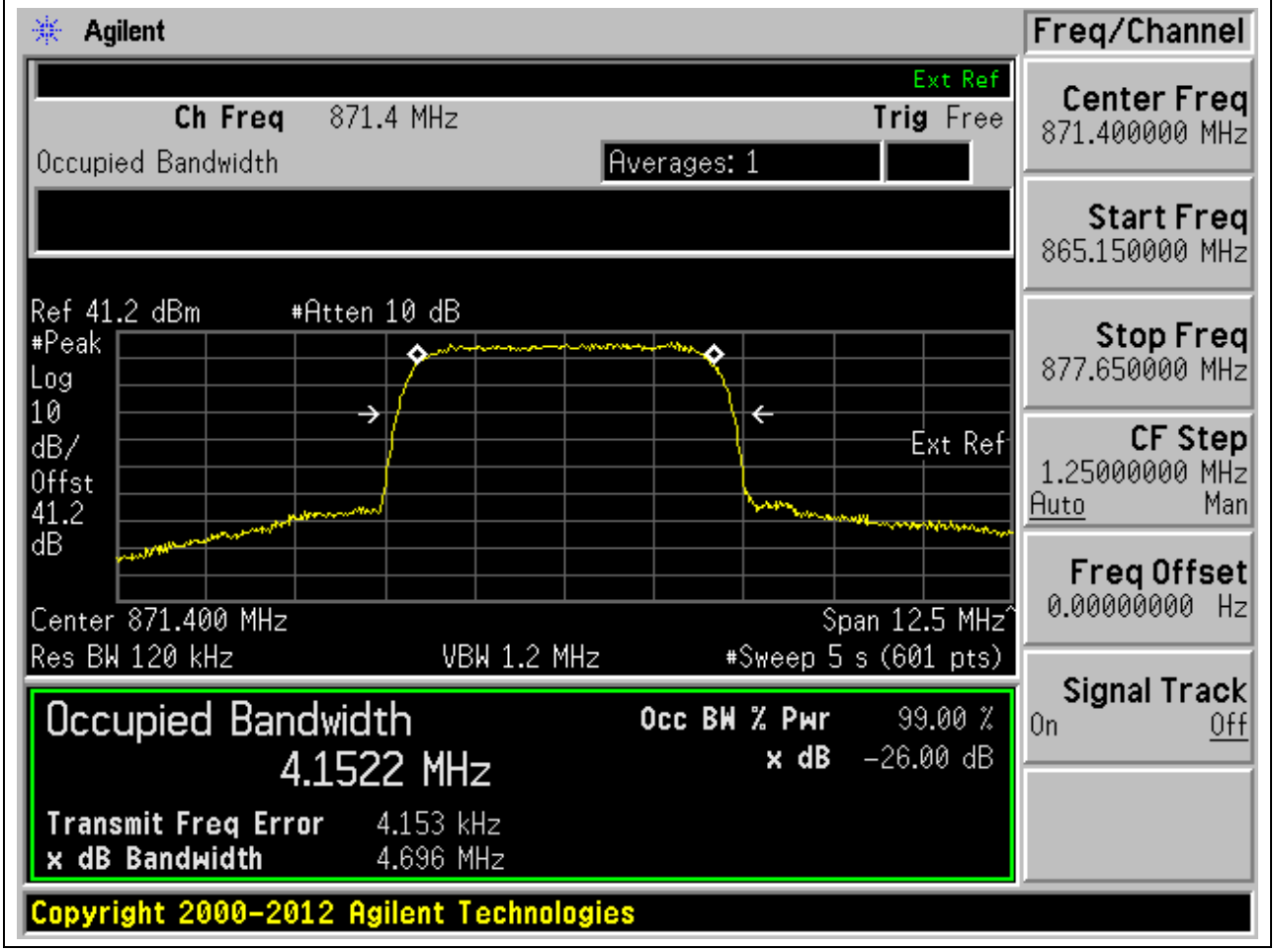
| EUT Conf. | Occupied Bandwidth [MHz] | Verdict |
|---|---|---|
| 1U_TM1_B | 4.1522 | Pass |
| 1U_TM1_M | 4.1561 | Pass |
| 1U_TM1_T | 4.1308 | Pass |

# 2 Test Plot

## 2.1 Occupied Bandwidth

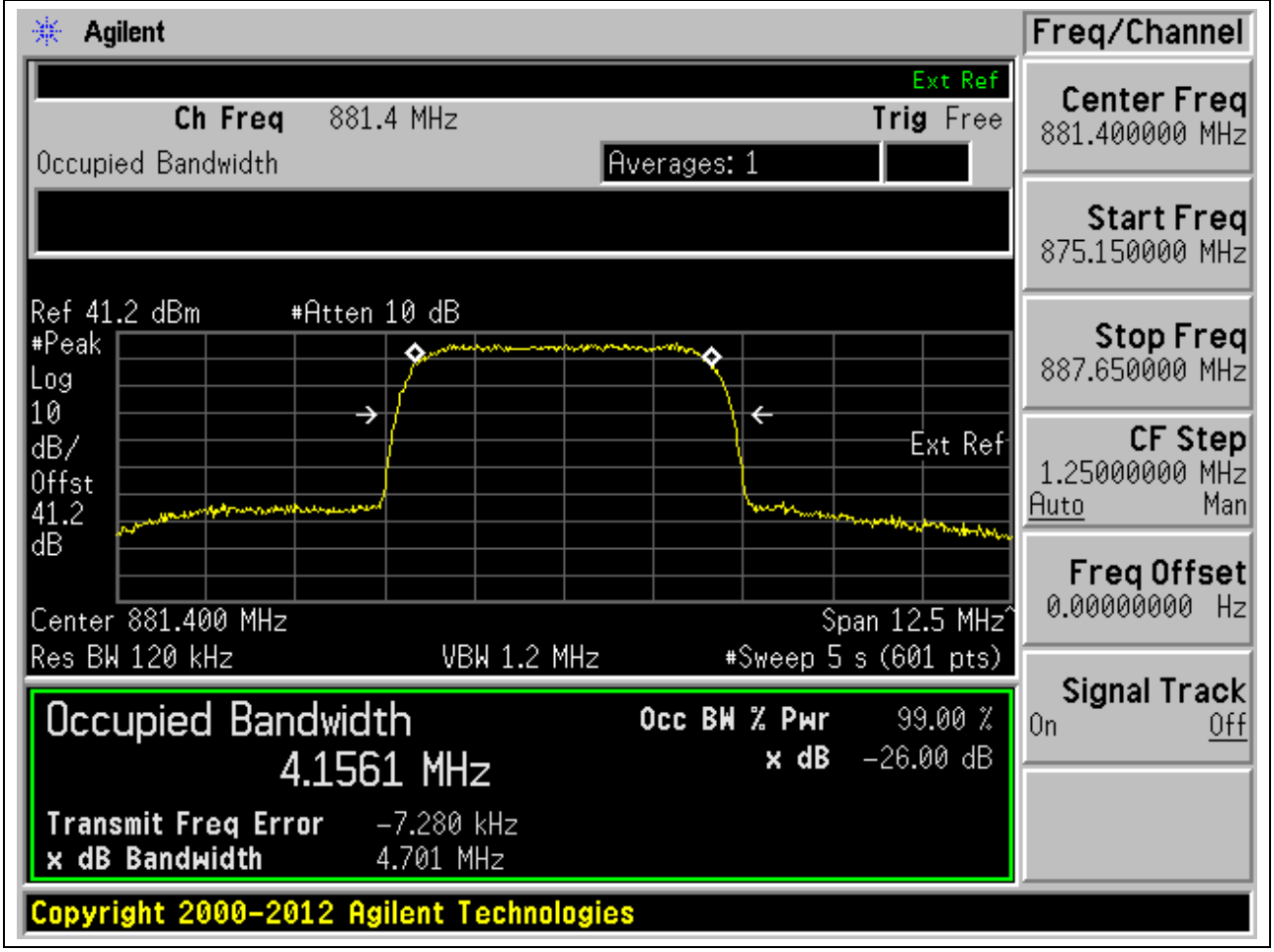
### 2.1.1 1U_TM1_B

| Center Frequency [MHz] | OBW Power [%] | RBW [MHz] | Detector | OBW [MHz] | Verdict |
|---|---|---|---|---|---|
| 871.4 | 99 | Auto | Peak | 4.1522 | No Conclusion |



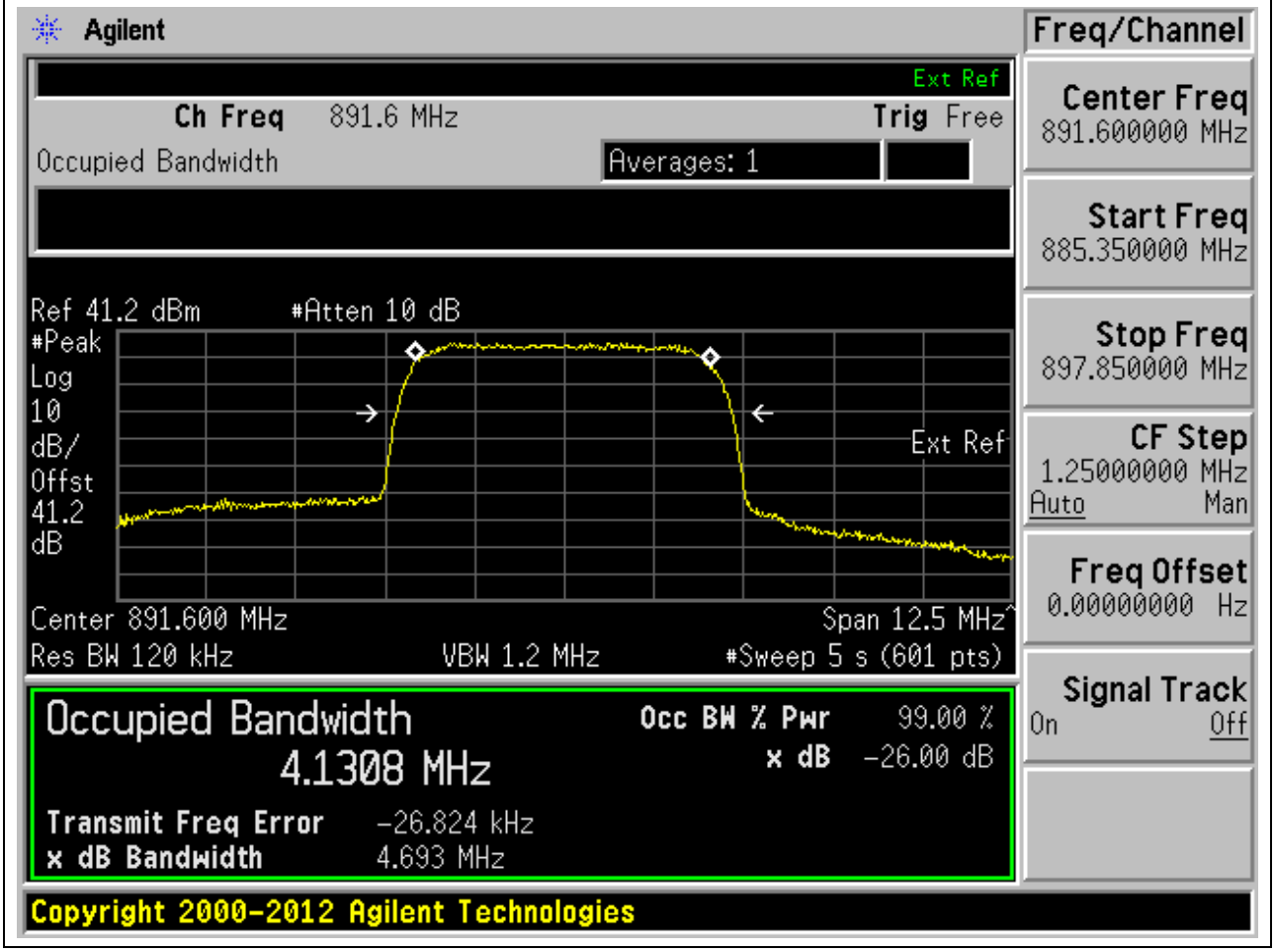
### 2.1.2 1U_TM1_M

| Center Frequency [MHz] | OBW Power [%] | RBW [MHz] | Detector | OBW [MHz] | Verdict |
|---|---|---|---|---|---|
| 881.4 | 99 | Auto | Peak | 4.1561 | No Conclusion |



### 2.1.3 1U_TM1_T

| Center Frequency [MHz] | OBW Power [%] | RBW [MHz] | Detector | OBW [MHz] | Verdict |
|---|---|---|---|---|---|
| 891.6 | 99 | Auto | Peak | 4.1308 | No Conclusion |



# Appendix C: Band Edges Compliance

# 1 Result Table

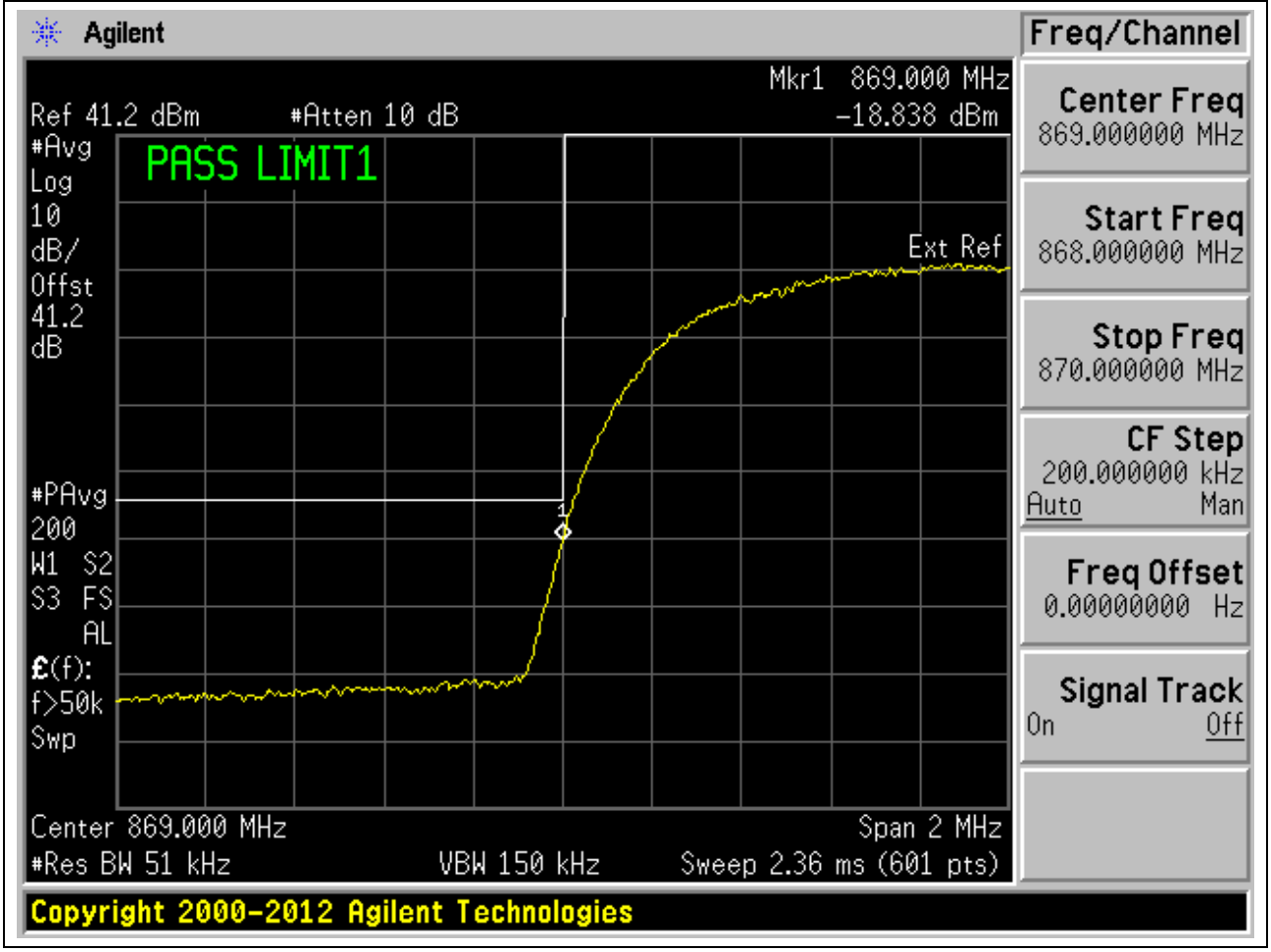
NOTE: The offset of measurement filter -3dB point may be considered when identifying the maximum emission for e.g. the CDMA, WCDMA, WiMAX, LTE systems.

| EUT Conf. | Maximum Emission [dBm] | Verdict |
|---|---|---|
| 1U_TM1_B | -18.838 | Pass |
| 1U_TM1_T | -20.052 | Pass |
| 2U_TM1_B | -21.791 | Pass |
| 2U_TM1_T | -22.127 | Pass |

# 2 Test Plot

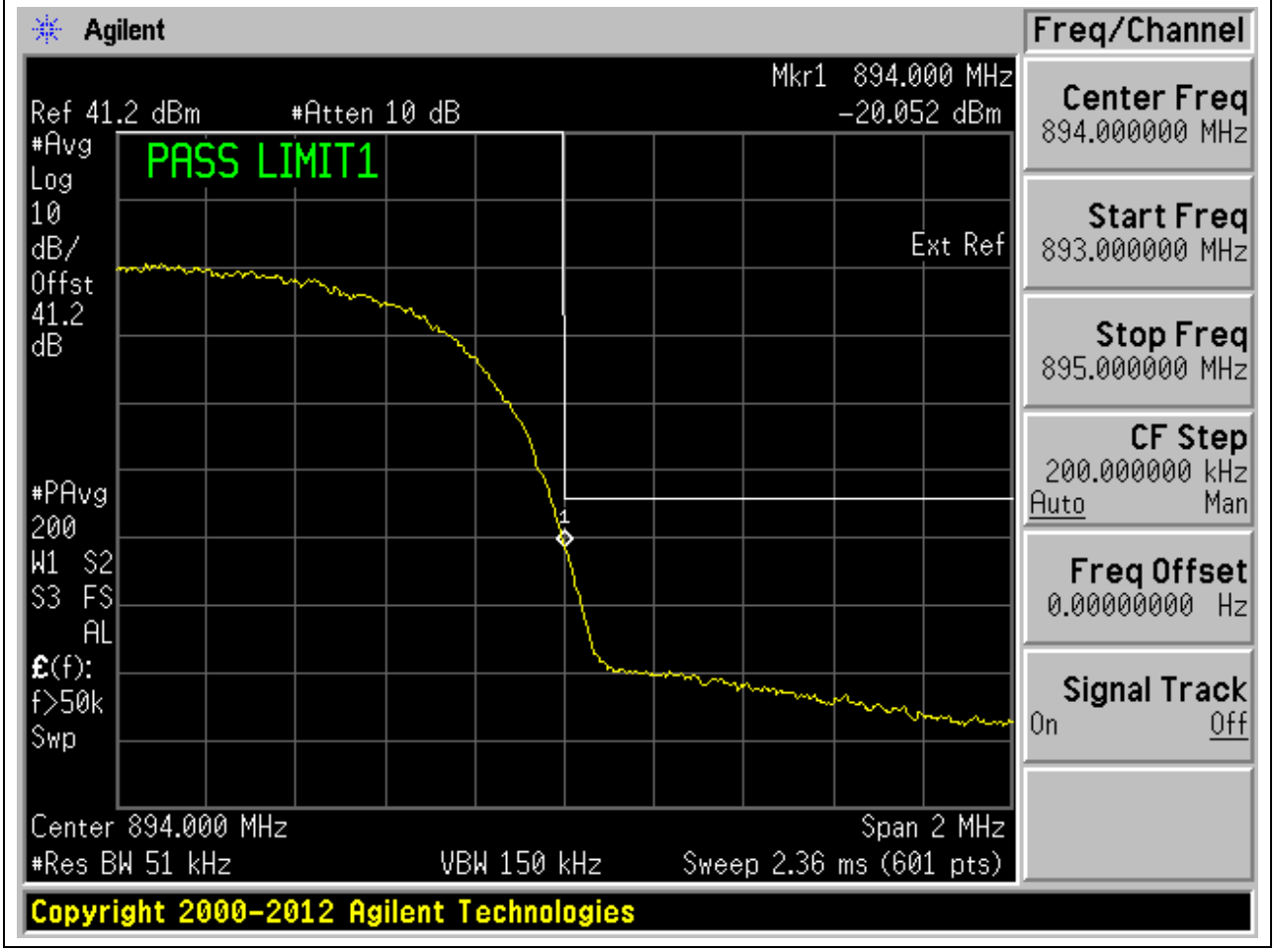
## 2.1 1U_TM1_B

| Center Frequency[MHz] | Span [MHz] | RBW [MHz] | Detector | Verdict | Sweep Point |
|---|---|---|---|---|---|
| 869 | 2 | 0.051 | RMS | Pass | 601 |



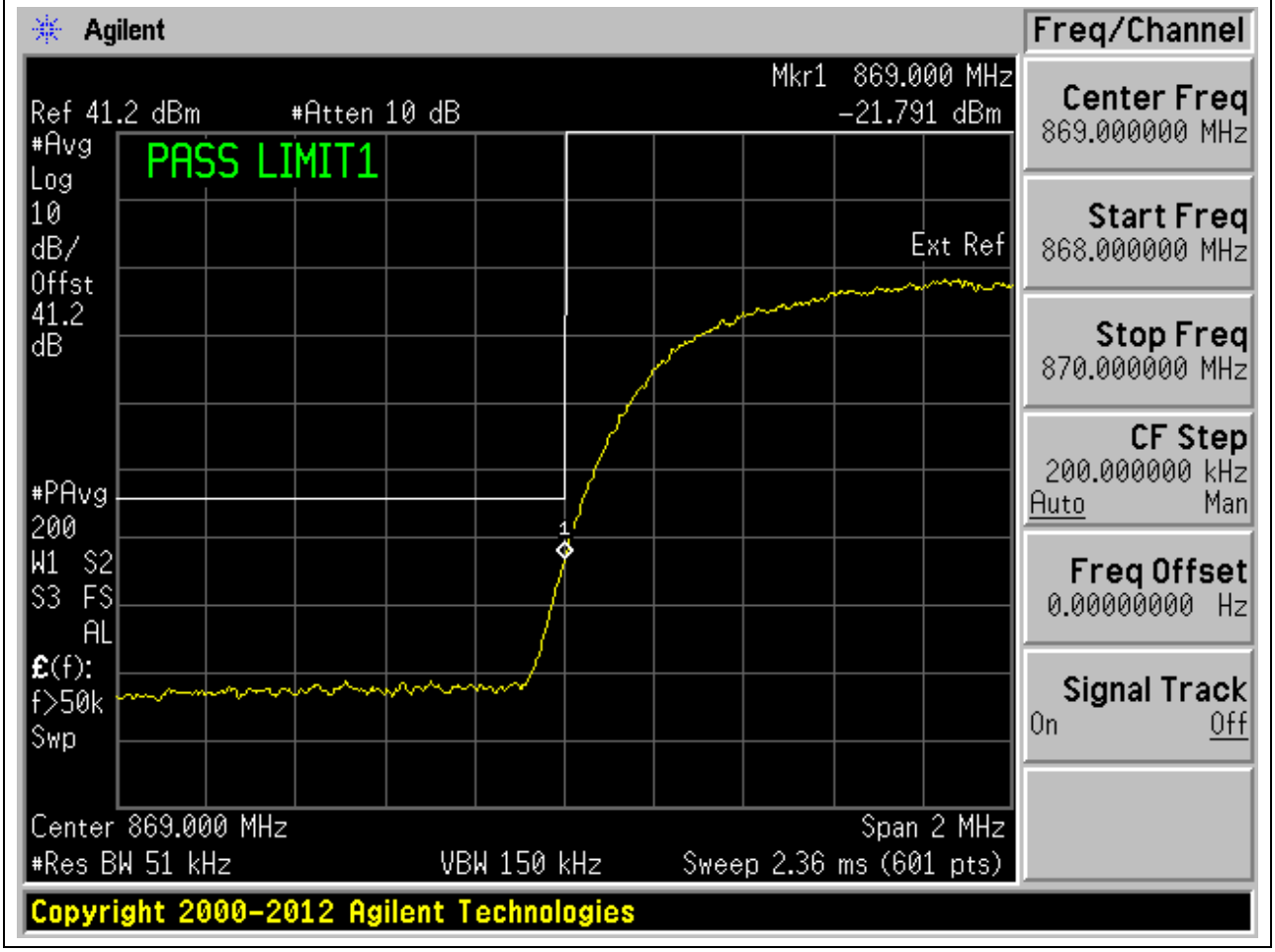
## 2.2 1U_TM1_T

| Center Frequency[MHz] | Span [MHz] | RBW [MHz] | Detector | Verdict | Sweep Point |
|---|---|---|---|---|---|
| 894 | 2 | 0.051 | RMS | Pass | 601 |



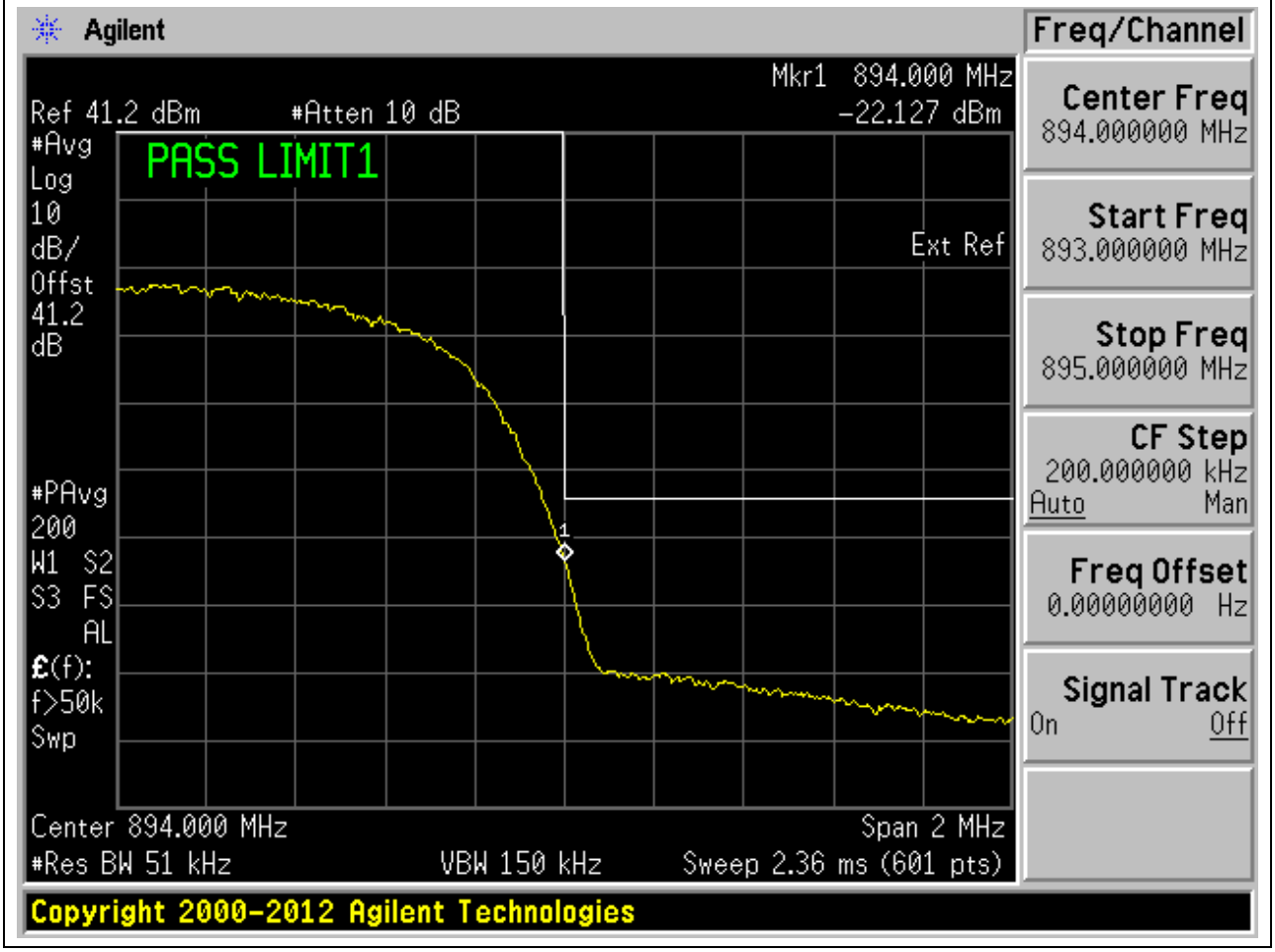
### 2.3 2U_TM1_B

| Center Frequency[MHz] | Span [MHz] | RBW [MHz] | Detector | Verdict | Sweep Point |
|---|---|---|---|---|---|
| 869 | 2 | 0.051 | RMS | Pass | 601 |



## 2.4 2U_TM1_T

| Center Frequency[MHz] | Span [MHz] | RBW [MHz] | Detector | Verdict | Sweep Point |
|---|---|---|---|---|---|
| 894 | 2 | 0.051 | RMS | Pass | 601 |

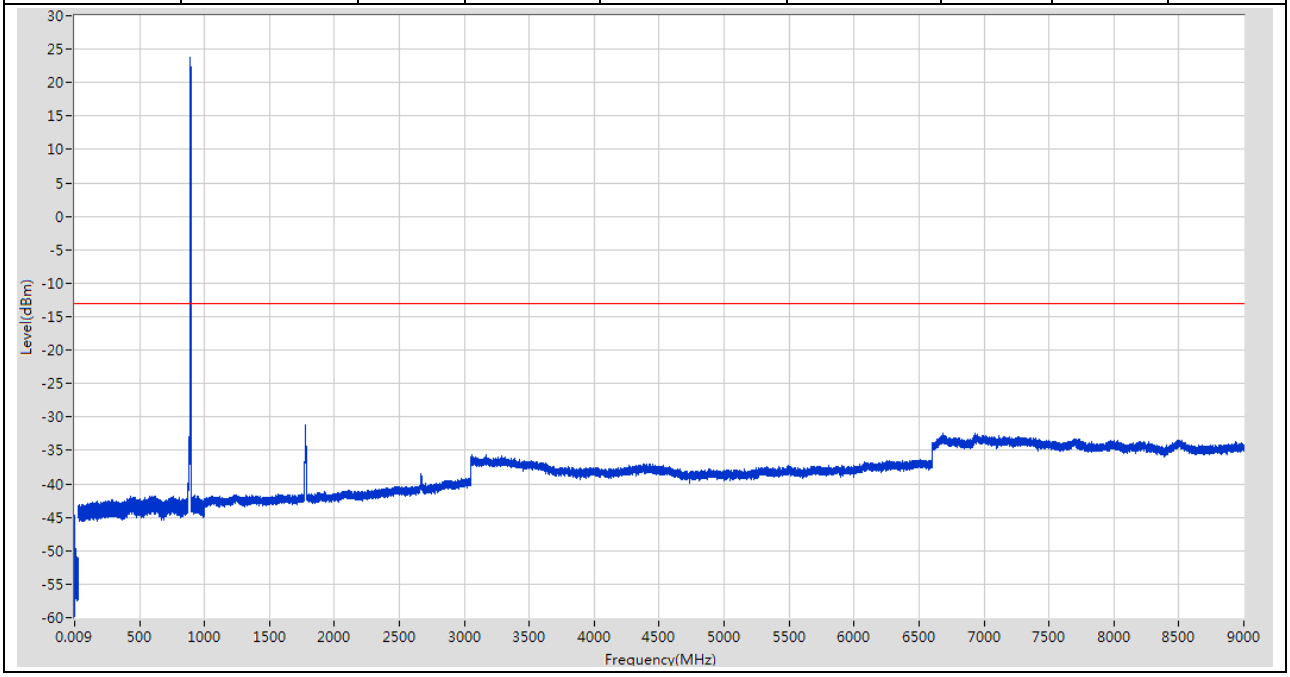


# Appendix D: Spurious Emission at Antenna Terminals

# 1 Test Result and Test Plot

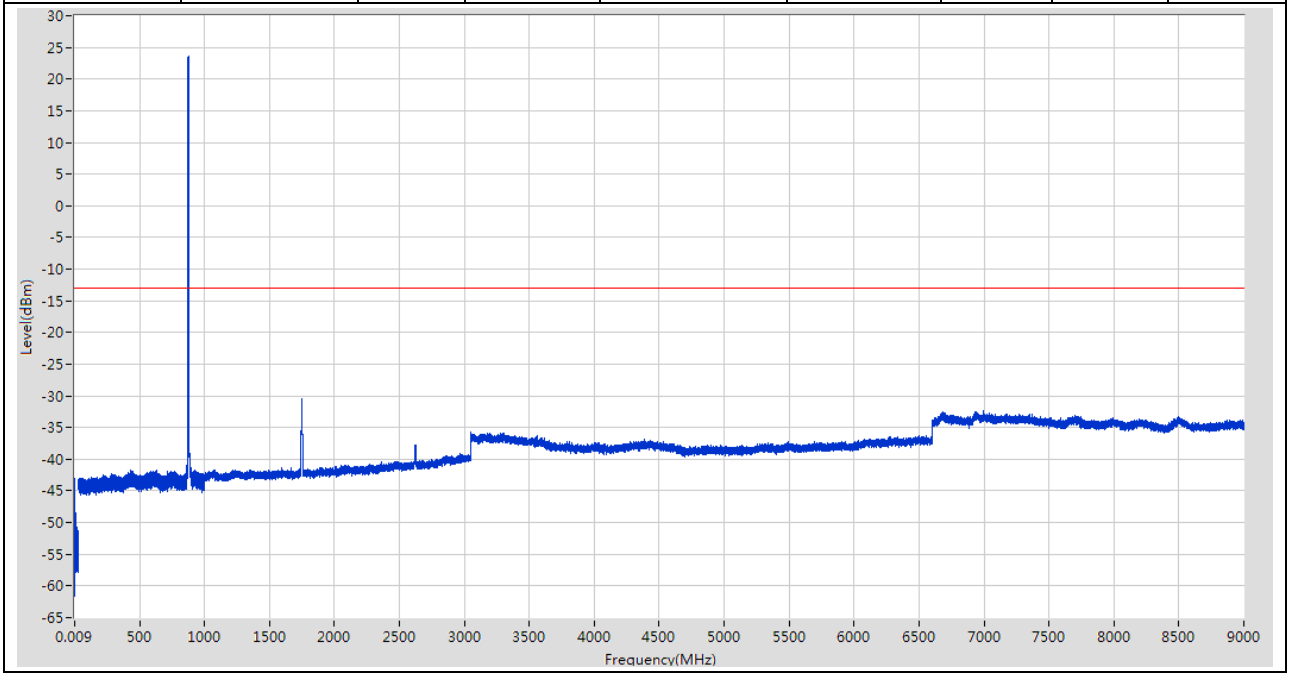
## 1.1 1U_TM1_B

| Start Frequency [MHz] | Stop Frequency [MHz] | RBW [MHz] | Detector | Frequency [Hz] | Emission [dBm] | Limit [dBm] | Verdict | Sweep Point |
|---|---|---|---|---|---|---|---|---|
| 0.009 | 0.15 | 0.001 | RMS | 10.202 k | -46.94 | -13 | Pass | 705 |
| 0.15 | 30 | 0.01 | RMS | 178.003 k | -44.64 | -13 | Pass | 14925 |
| 30 | 500 | 0.1 | RMS | 433.89071 M | -41.92 | -13 | Pass | 23500 |
| 500 | 1000 | 0.1 | RMS | 888.127379 M | 23.75 | -13 | NA | 25177 |
| 1000 | 9000 | 1 | RMS | 1778.495031 M | -31.14 | -13 | Pass | 40000 |



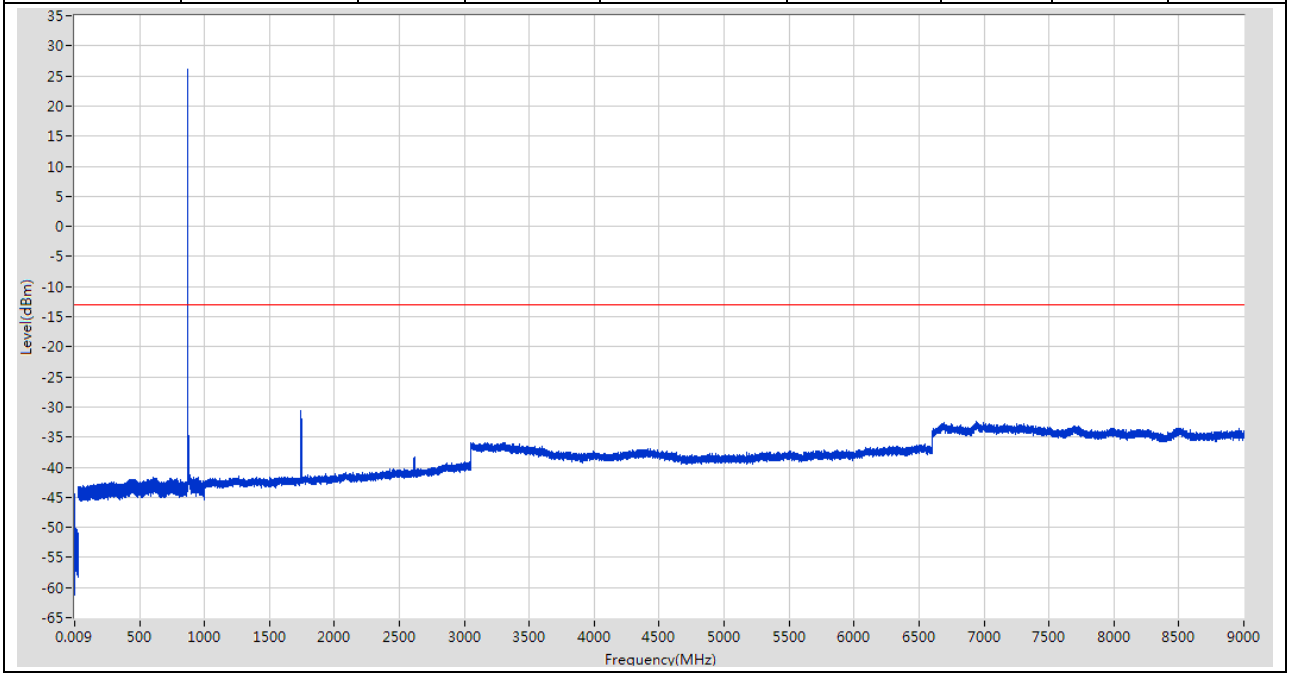
## 1.2 1U_TM1_T

| Start Frequency [MHz] | Stop Frequency [MHz] | RBW [MHz] | Detector | Frequency [Hz] | Emission [dBm] | Limit [dBm] | Verdict | Sweep Point |
|---|---|---|---|---|---|---|---|---|
| 0.009 | 0.15 | 0.001 | RMS | 145.994 k | -47.23 | -13 | Pass | 705 |
| 0.15 | 30 | 0.01 | RMS | 186.004 k | -43.01 | -13 | Pass | 14925 |
| 30 | 500 | 0.1 | RMS | 429.710122 M | -41.73 | -13 | Pass | 23500 |
| 500 | 1000 | 0.1 | RMS | 875.485836 M | 23.63 | -13 | NA | 25177 |
| 1000 | 9000 | 1 | RMS | 1747.891295 M | -30.4 | -13 | Pass | 40000 |



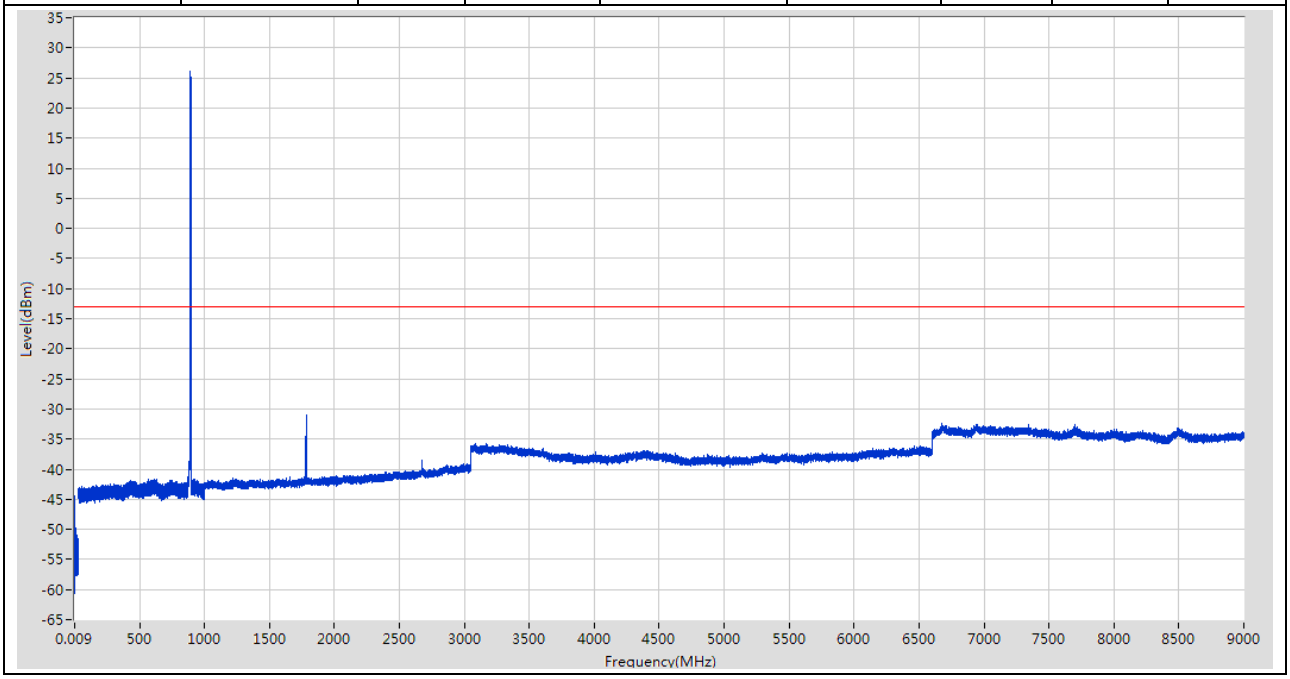
### 1.3 2U_TM1_B

| Start Frequency [MHz] | Stop Frequency [MHz] | RBW [MHz] | Detector | Frequency [Hz] | Emission [dBm] | Limit [dBm] | Verdict | Sweep Point |
|---|---|---|---|---|---|---|---|---|
| 0.009 | 0.15 | 0.001 | RMS | 9.801 k | -47.53 | -13 | Pass | 705 |
| 0.15 | 30 | 0.01 | RMS | 190.005 k | -44.4 | -13 | Pass | 14925 |
| 30 | 500 | 0.1 | RMS | 449.892959 M | -42.03 | -13 | Pass | 23500 |
| 500 | 1000 | 0.1 | RMS | 872.905521 M | 26.05 | -13 | NA | 25177 |
| 1000 | 9000 | 1 | RMS | 1742.290612 M | -30.66 | -13 | Pass | 40000 |



## 1.4 2U_TM1_T

| Start Frequency [MHz] | Stop Frequency [MHz] | RBW [MHz] | Detector | Frequency [Hz] | Emission [dBm] | Limit [dBm] | Verdict | Sweep Point |
|---|---|---|---|---|---|---|---|---|
| 0.009 | 0.15 | 0.001 | RMS | 9.401 k | -45.83 | -13 | Pass | 705 |
| 0.15 | 30 | 0.01 | RMS | 158.001 k | -44.53 | -13 | Pass | 14925 |
| 30 | 500 | 0.1 | RMS | 432.930575 M | -41.97 | -13 | Pass | 23500 |
| 500 | 1000 | 0.1 | RMS | 891.00773 M | 26.18 | -13 | NA | 25177 |
| 1000 | 9000 | 1 | RMS | 1783.095593 M | -31.05 | -13 | Pass | 40000 |



# Appendix E: Field Strength of Spurious Radiation

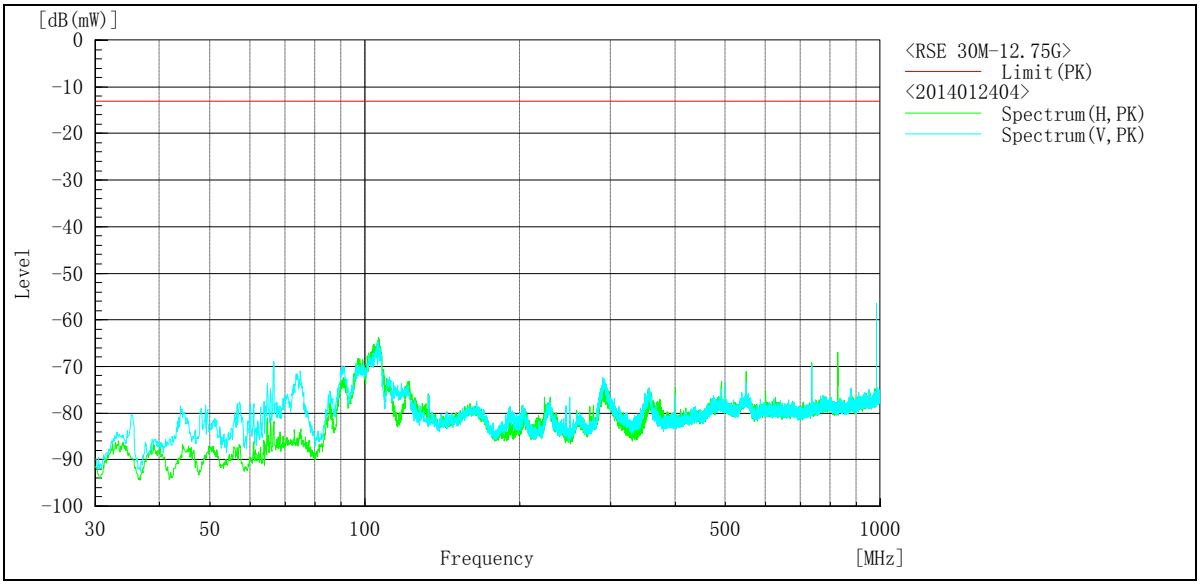
# 1 Result Table

| EUT Conf. | Maximum Emission [dBm] | Verdict |
|---|---|---|
| 1U_TM1_M | < -13 | Pass |

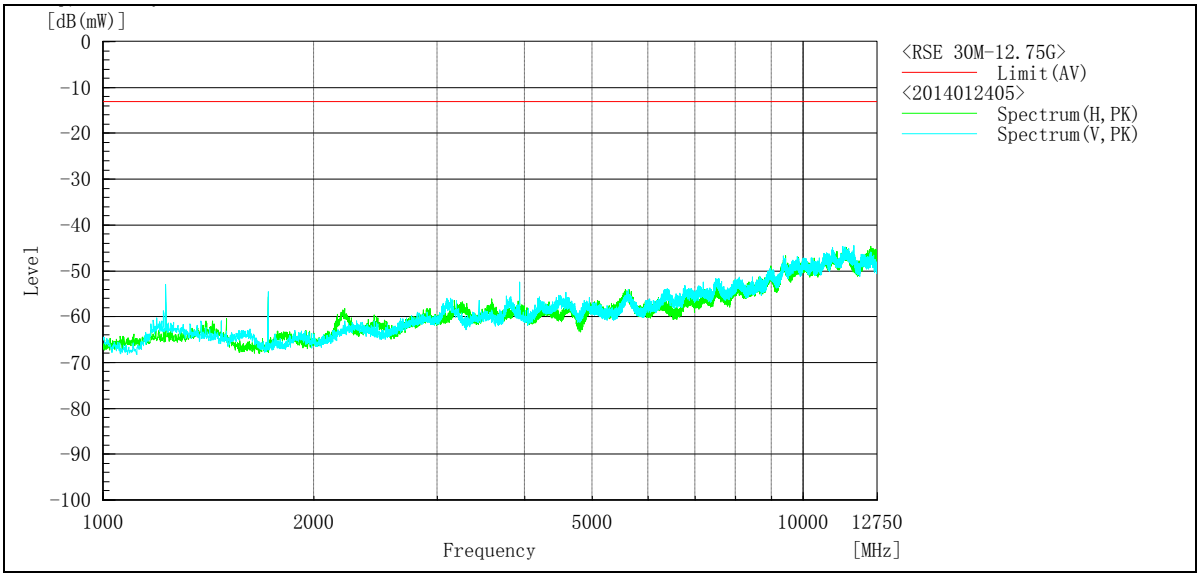
# 2 Test Plot

## 2.1 1U_TM1_M

### 2.1.1 Below 1GHz




### 2.1.2 Above 1GHz



# Appendix F: Frequency Stability

# 1 Result Table

## 1.1 Frequency Error

(1) Frequency Error vs. Temperature:

| EUT Conf. | Voltage | Temperature | Freq. Error, f(offset) [Hz] | Freq. vs. rated [ppm] | Freq. vs. 20 °C [ppm] | Verdict |
|---|---|---|---|---|---|---|
| 1U_TM1_M | 100% | -30 °C | -1.88 | -0.0021 | -0.0021 | Pass |
| | | -20 °C | -1.76 | -0.0019 | -0.0019 | Pass |
| | | -10 °C | -1.97 | -0.0022 | -0.0022 | Pass |
| | | 0 °C | -1.55 | -0.0017 | -0.0017 | Pass |
| | | +10 °C | 0.87 | -0.0009 | -0.0009 | Pass |
| | | +20 °C | 0.16 | 0.0001 | --- | Pass |
| | | +30 °C | 1.23 | 0.0014 | 0.0014 | Pass |
| | | +40 °C | 0.89 | 0.0009 | 0.0009 | Pass |
| | | +50 °C | 0.16 | 0.0001 | 0 | Pass |

(2) Frequency Error vs. Voltage:

| EUT Conf. | Temperature | Voltage | Freq. Error, f(offset) [Hz] | Freq. vs. rated [ppm] | Freq. vs. 20 °C [ppm] | Verdict |
|---|---|---|---|---|---|---|
| 1U_TM1_M | +20 °C | 85 % | 1.01 | 0.0011 | 0.0011 | Pass |
| | | 100 % | 0.16 | 0.0001 | --- | Pass |
| | | 115 % | 0.89 | 0.0009 | 0.0009 | Pass |

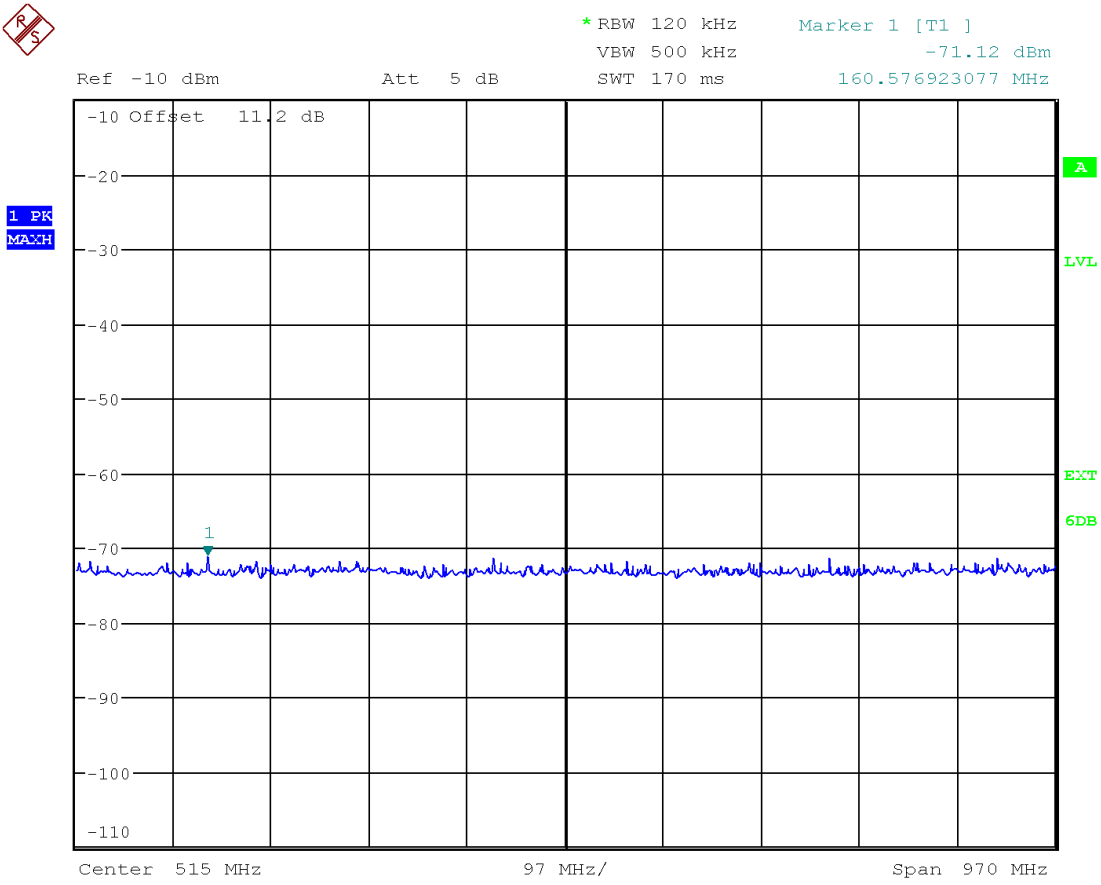
# Appendix G: Receiver Spurious Emissions

# 1 Result Table

| EUT Conf. | Maximum Emission [dBm] | Verdict |
|---|---|---|
| 1U_TM1_B | -69.25 | Pass |
| 1U_TM1_M | -68.46 | Pass |
| 1U_TM1_T | -69.31 | Pass |

# 2 Test Plot

## 2.1 1U_TM1_B

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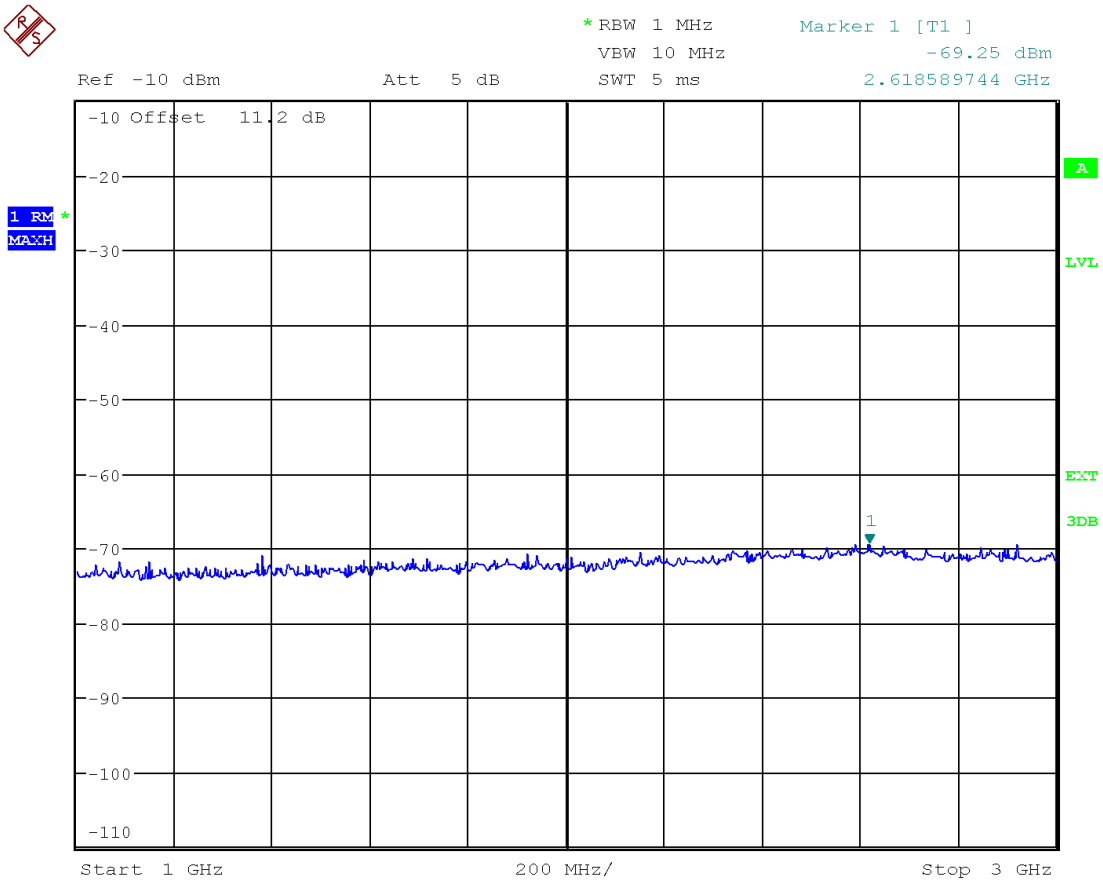


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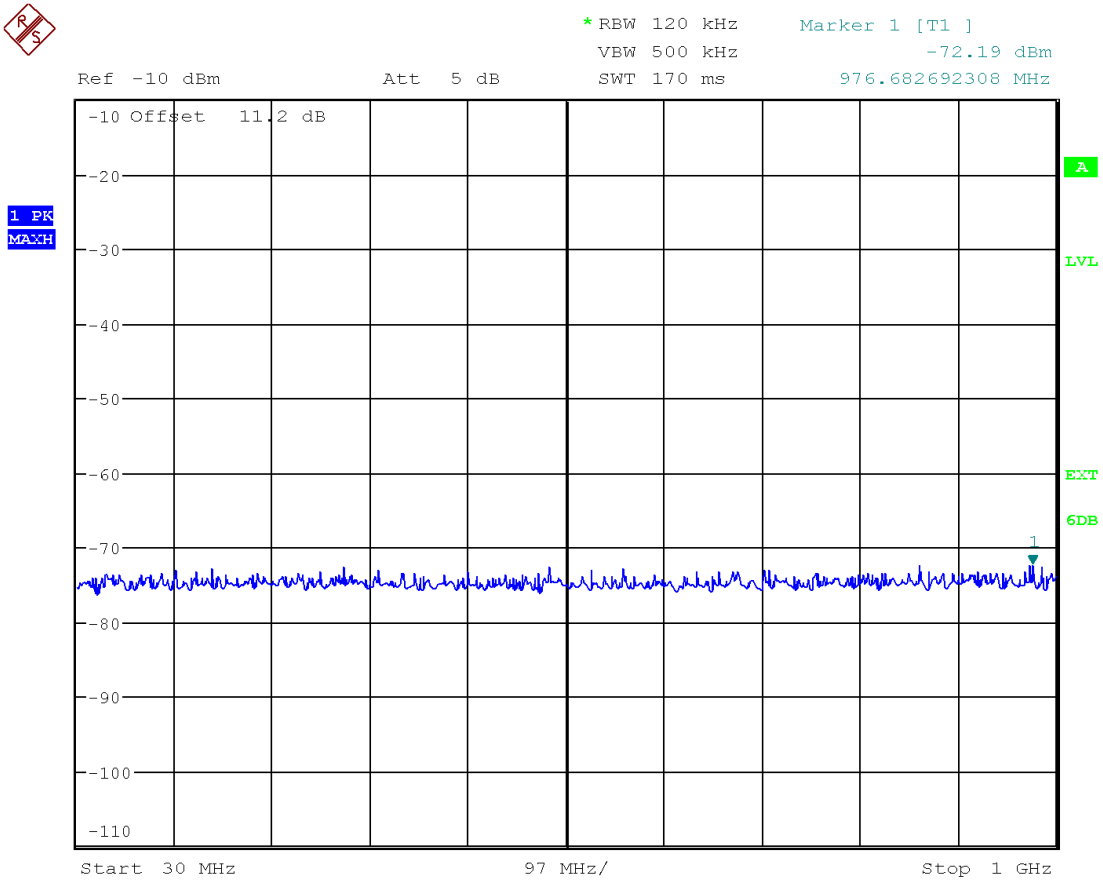
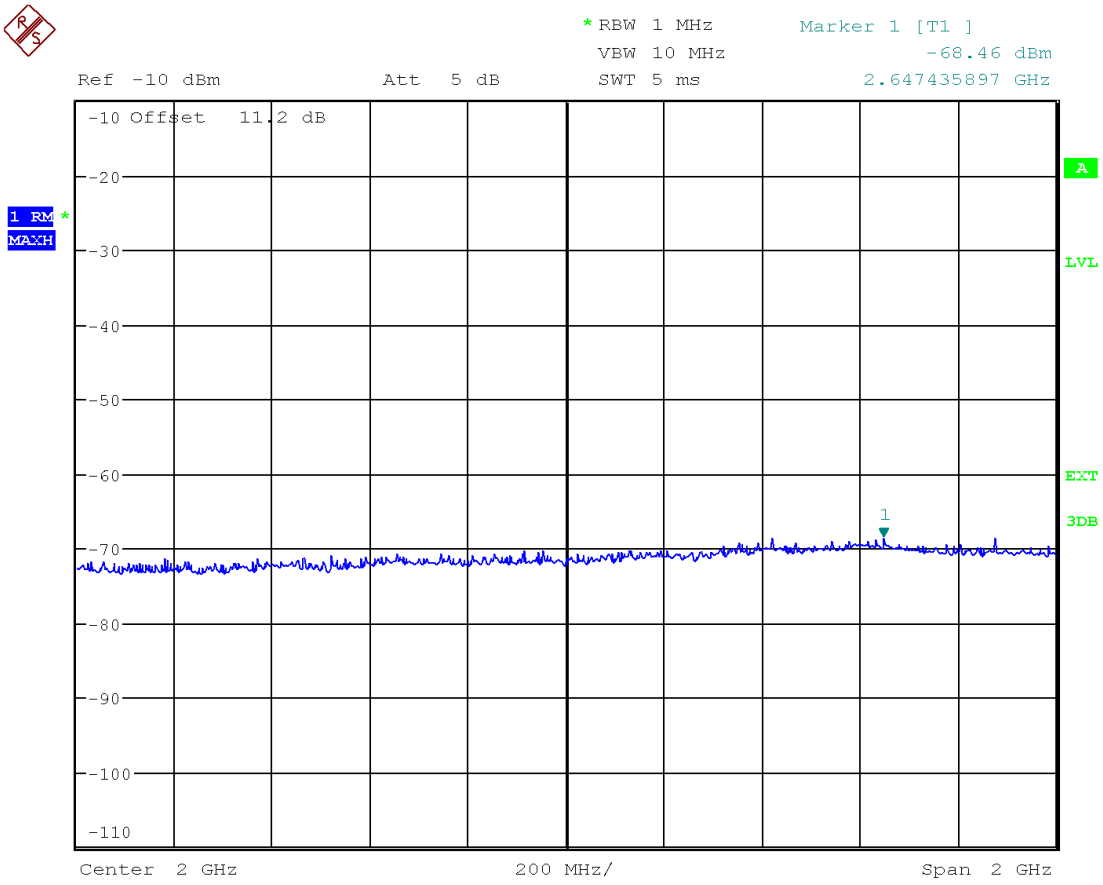
## 2.2 1U_TM1_M




Date: 6.MAR.2014 17:02:11

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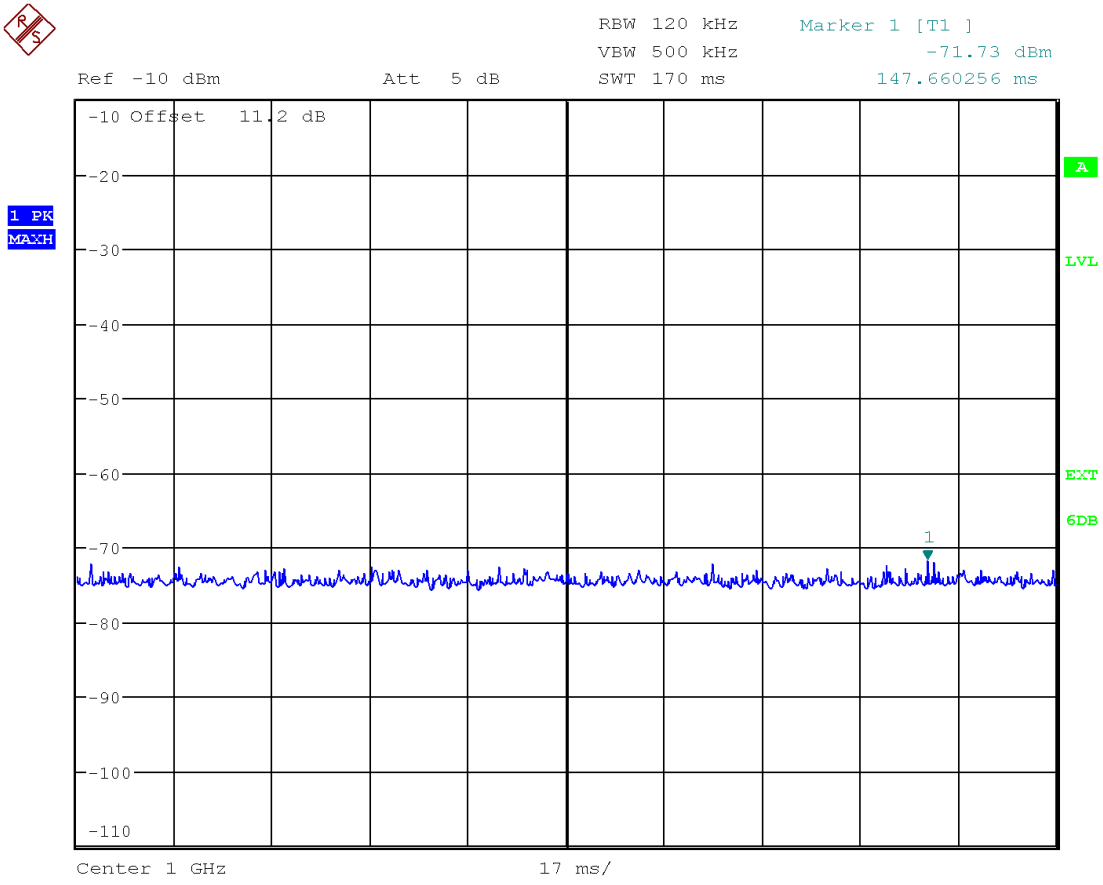
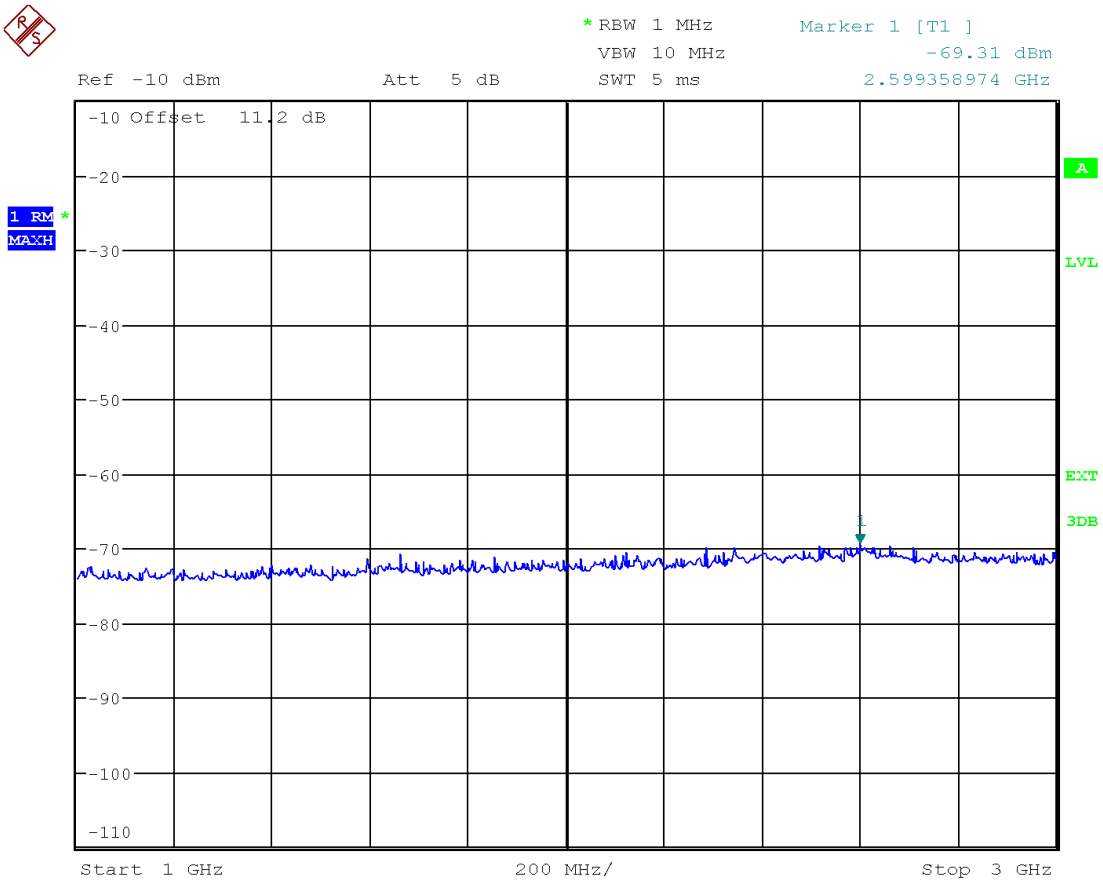
## 2.3 1U_TM1_T




Date: 6.MAR.2014 16:59:06




Date: 6.MAR.2014 16:59:34