



Appendix A U-NII: Emission Bandwidth

**1 Result Table for 26dB Emission Bandwidth**

| Test Mode | Test Channel | Frequency [MHz] | Antenna Port | 26dB Emission Bandwidth [MHz] | Verdict |
|-----------|--------------|-----------------|--------------|-------------------------------|---------|
| 11A20 | 36 | 5180 | ANT 1 | 22.58 | PASS |
| | 48 | 5240 | ANT 1 | 23.04 | PASS |
| | 52 | 5260 | ANT 1 | 23.28 | PASS |
| | 64 | 5320 | ANT 1 | 23.24 | PASS |
| | 100 | 5500 | ANT 1 | 24.6 | PASS |
| | 140 | 5700 | ANT 1 | 25.84 | PASS |
| 11N20 | 36 | 5180 | ANT 1 | 23.82 | PASS |
| | 48 | 5240 | ANT 1 | 23.94 | PASS |
| | 52 | 5260 | ANT 1 | 23.84 | PASS |
| | 64 | 5320 | ANT 1 | 23.92 | PASS |
| | 100 | 5500 | ANT 1 | 23.1 | PASS |
| | 140 | 5700 | ANT 1 | 23.12 | PASS |
| 11N40 | 38 | 5190 | ANT 1 | 44.36 | PASS |
| | 46 | 5230 | ANT 1 | 43.6 | PASS |
| | 54 | 5270 | ANT 1 | 44.2 | PASS |
| | 62 | 5310 | ANT 1 | 44.08 | PASS |
| | 102 | 5510 | ANT 1 | 45.24 | PASS |
| | 134 | 5670 | ANT 1 | 44.42 | PASS |



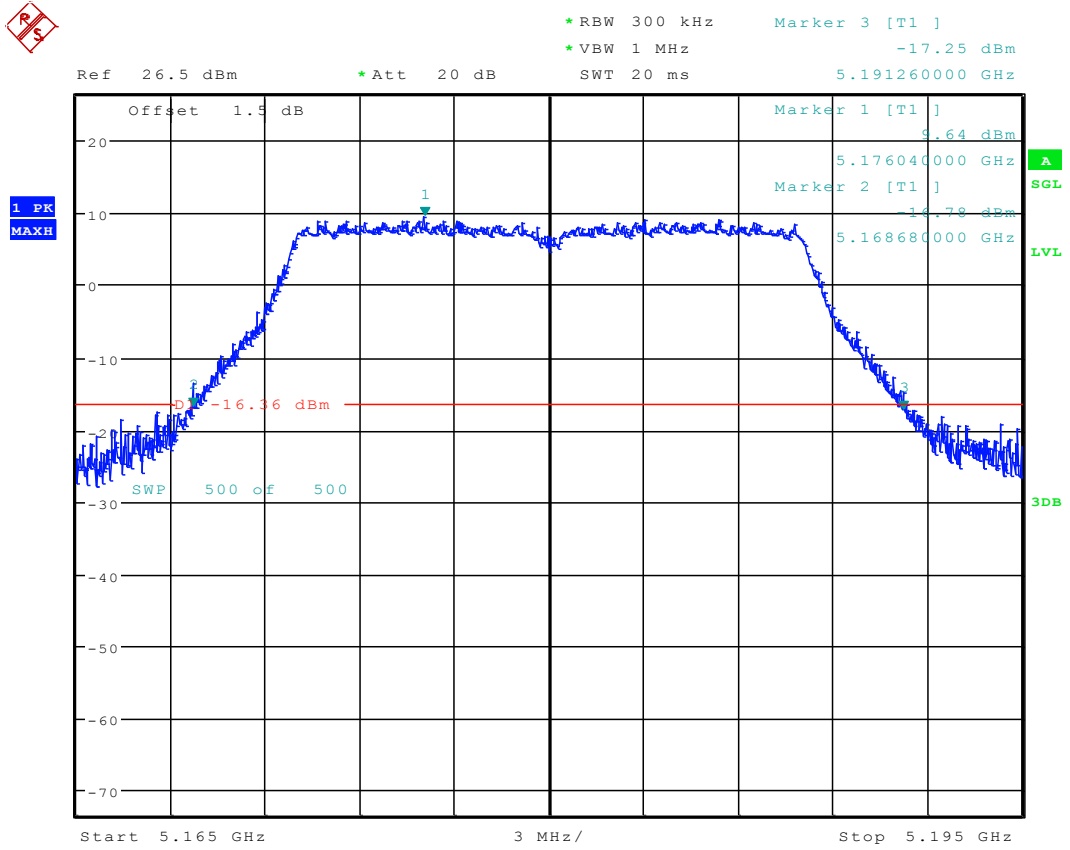
2 Result Table for 6dB Emission Bandwidth

| Test Mode | Test Channel | Frequency [MHz] | ANT | 6dB Emission Bandwidth [MHz] | Verdict |
|-----------|--------------|-----------------|-------|------------------------------|---------|
| 11A20 | 149 | 5745 | ANT 1 | 16.4 | PASS |
| | 165 | 5825 | ANT 1 | 16.38 | PASS |
| 11N20 | 149 | 5745 | ANT 1 | 17.62 | PASS |
| | 165 | 5825 | ANT 1 | 17.62 | PASS |
| 11N40 | 151 | 5755 | ANT 1 | 35.38 | PASS |
| | 159 | 5795 | ANT 1 | 35.18 | PASS |



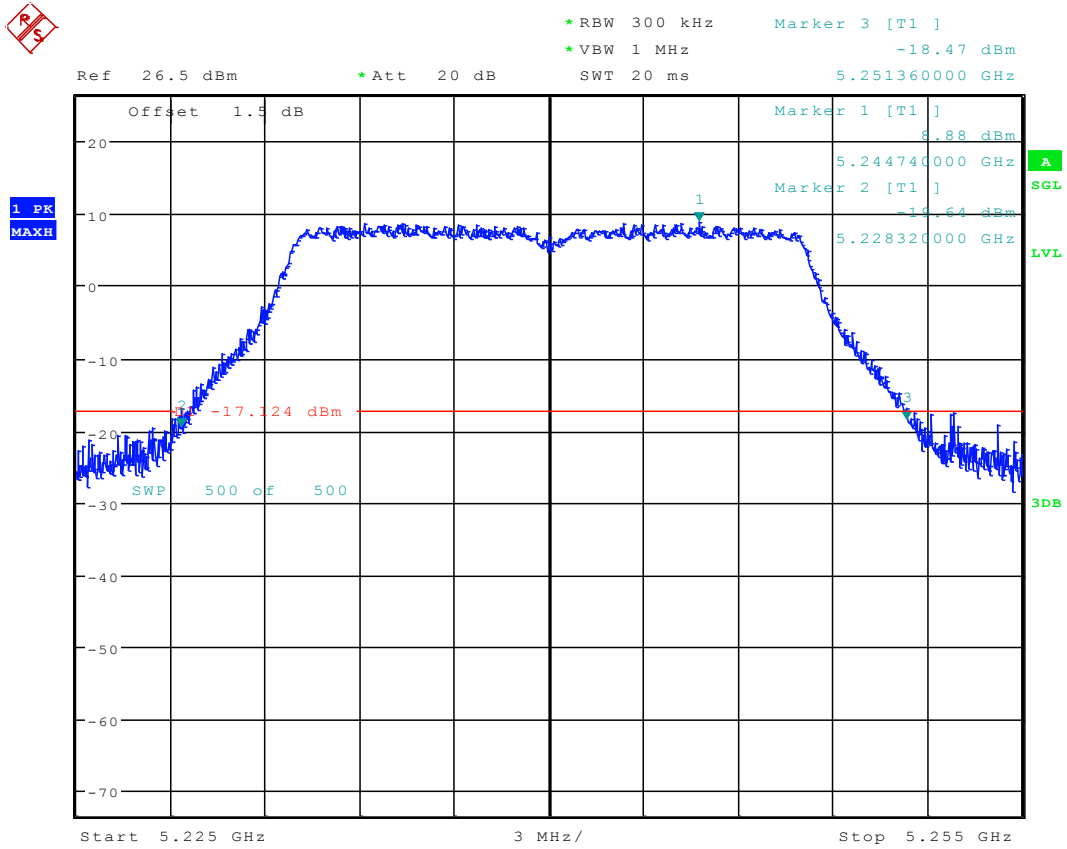
3 Test Plot for 26dB Emission Bandwidth

3.1 11A20_36 ANT 1



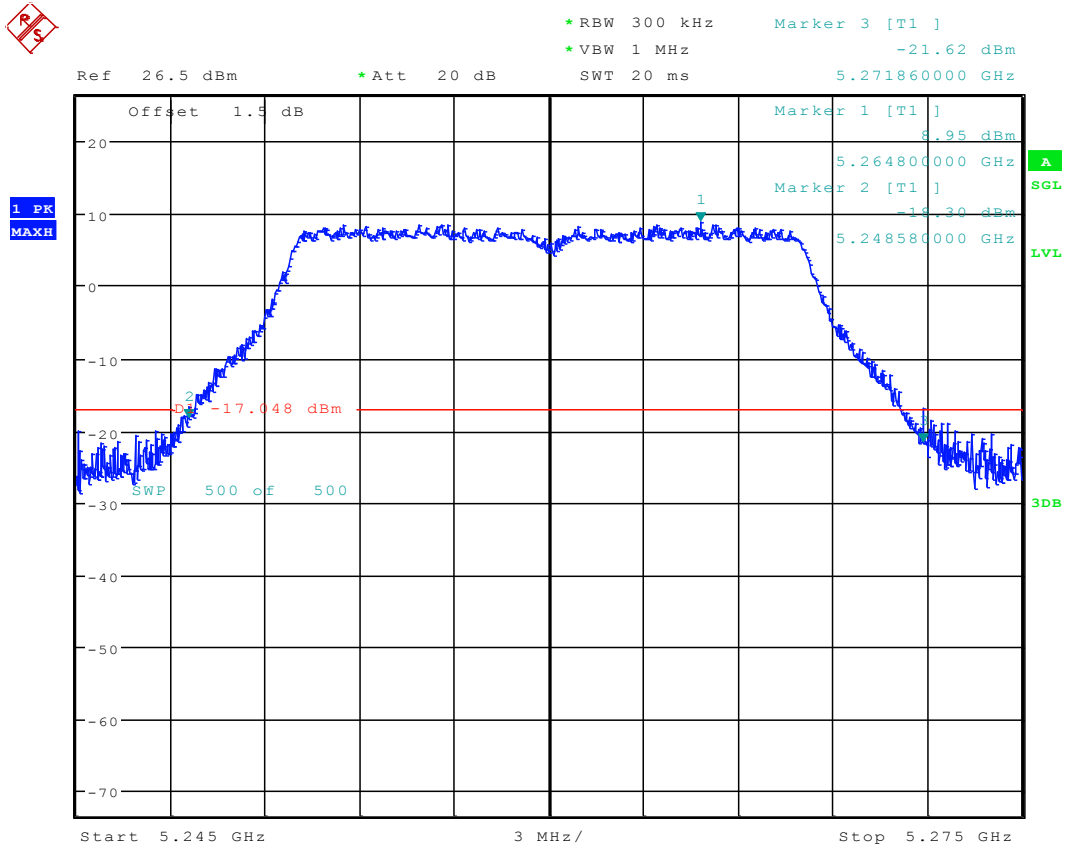
Date: 14.MAY.2017 12:56:59

3.2 11A20_48 ANT 1



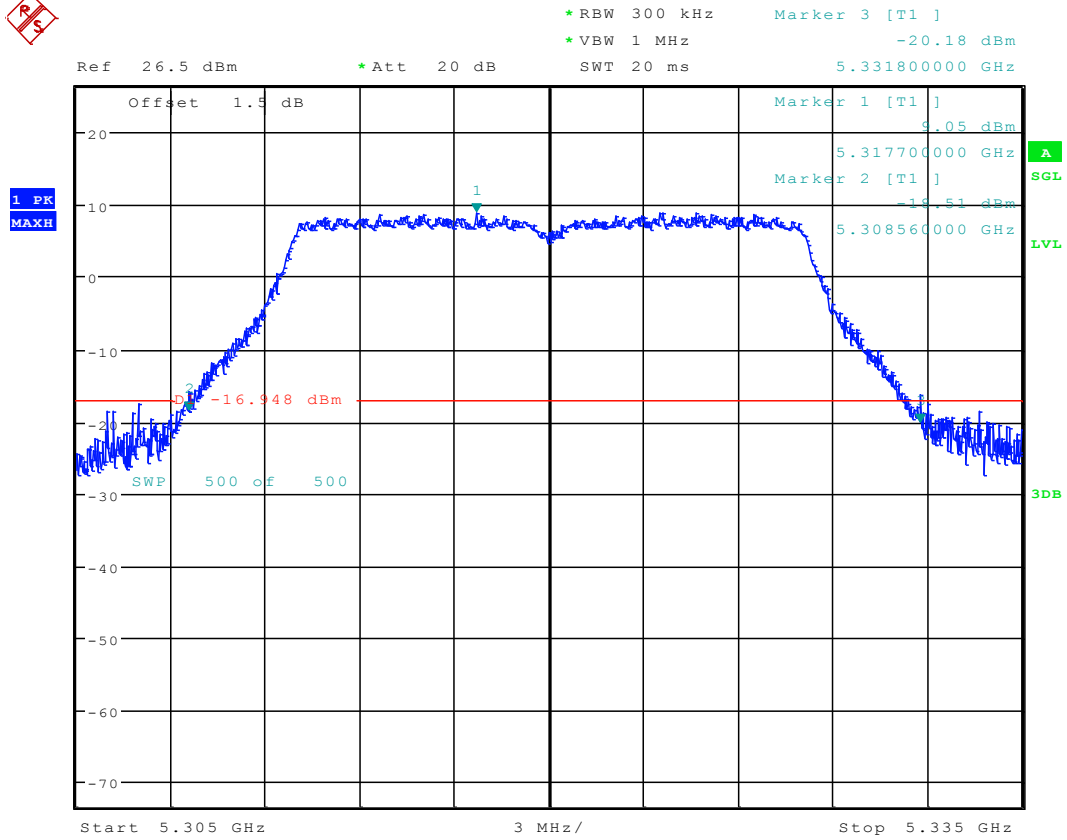
Date: 14.MAY.2017 13:04:31

3.3 11A20_52 ANT 1



Date: 14.MAY.2017 13:10:04

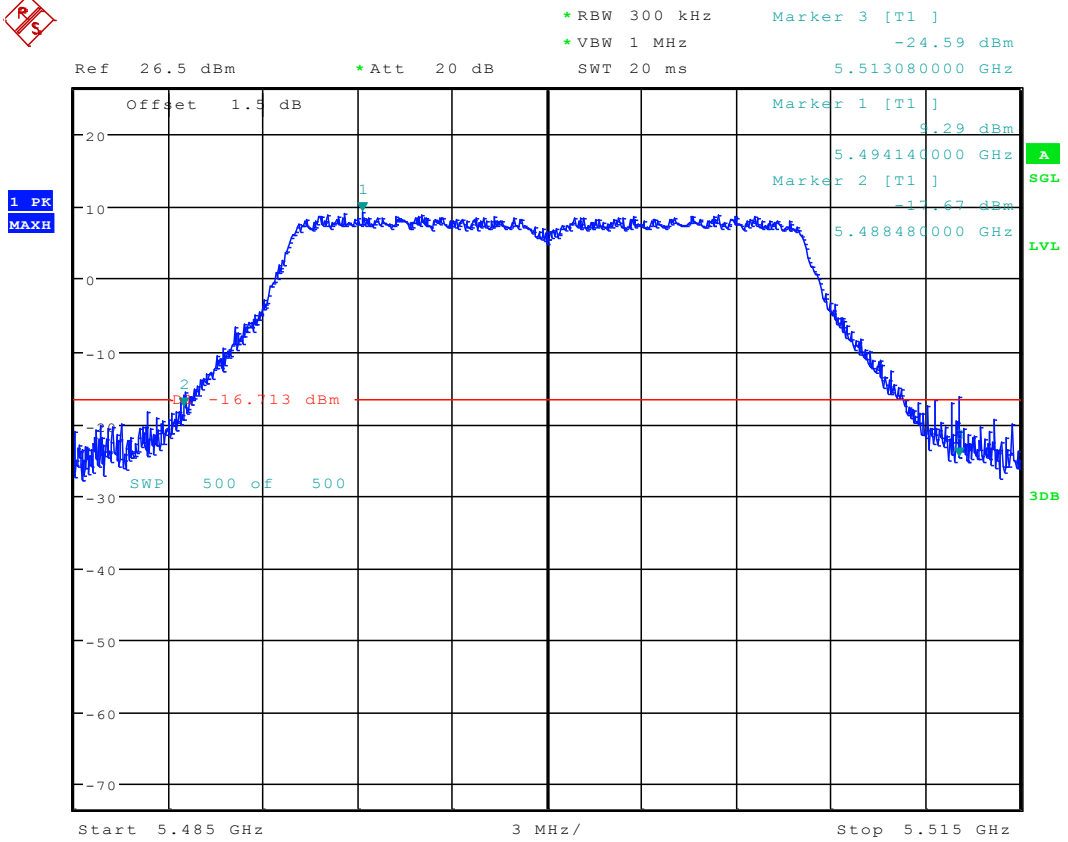
3.4 11A20_64 ANT 1



Date: 14.MAY.2017 13:15:58



3.5 11A20_100 ANT 1

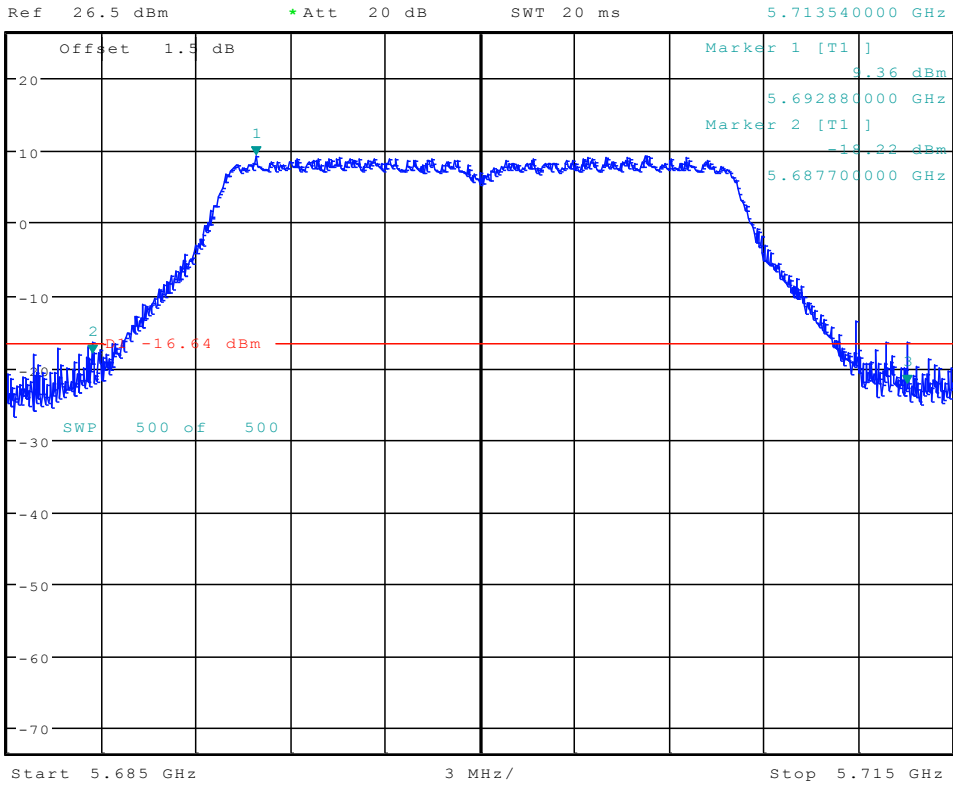


Date: 14.MAY.2017 13:21:55

3.6 11A20_140 ANT 1



*RBW 300 kHz Marker 3 [T1]
 *VBW 1 MHz -22.28 dBm
 SWT 20 ms 5.713540000 GHz

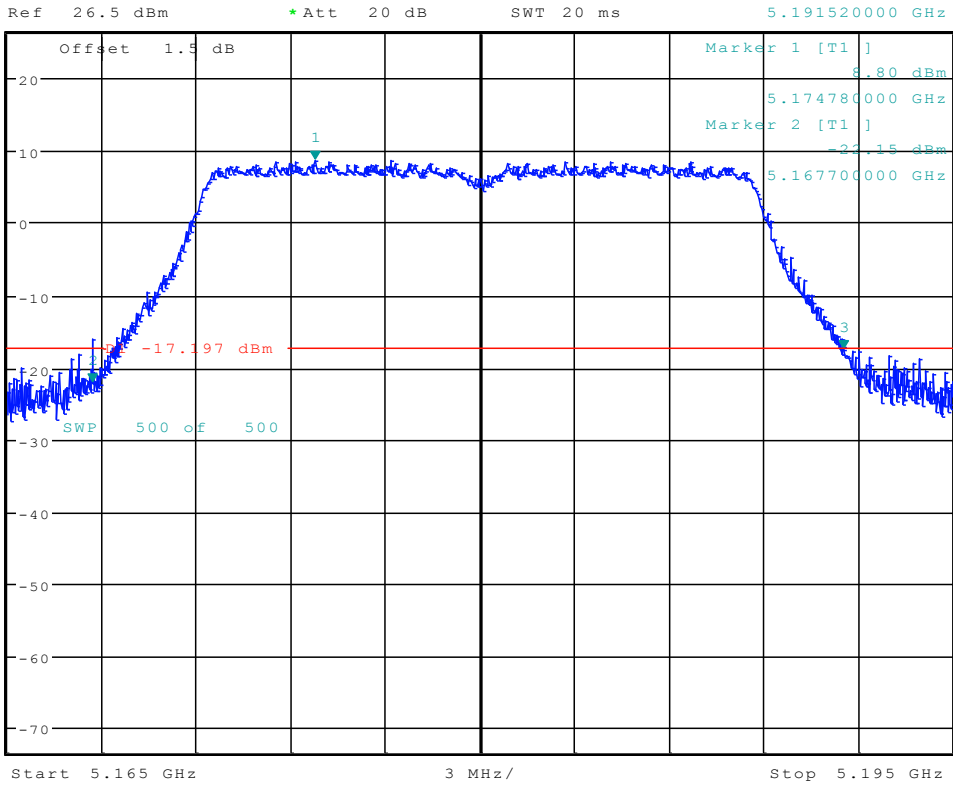


Date: 14.MAY.2017 13:27:19

3.7 11N20_36 ANT 1



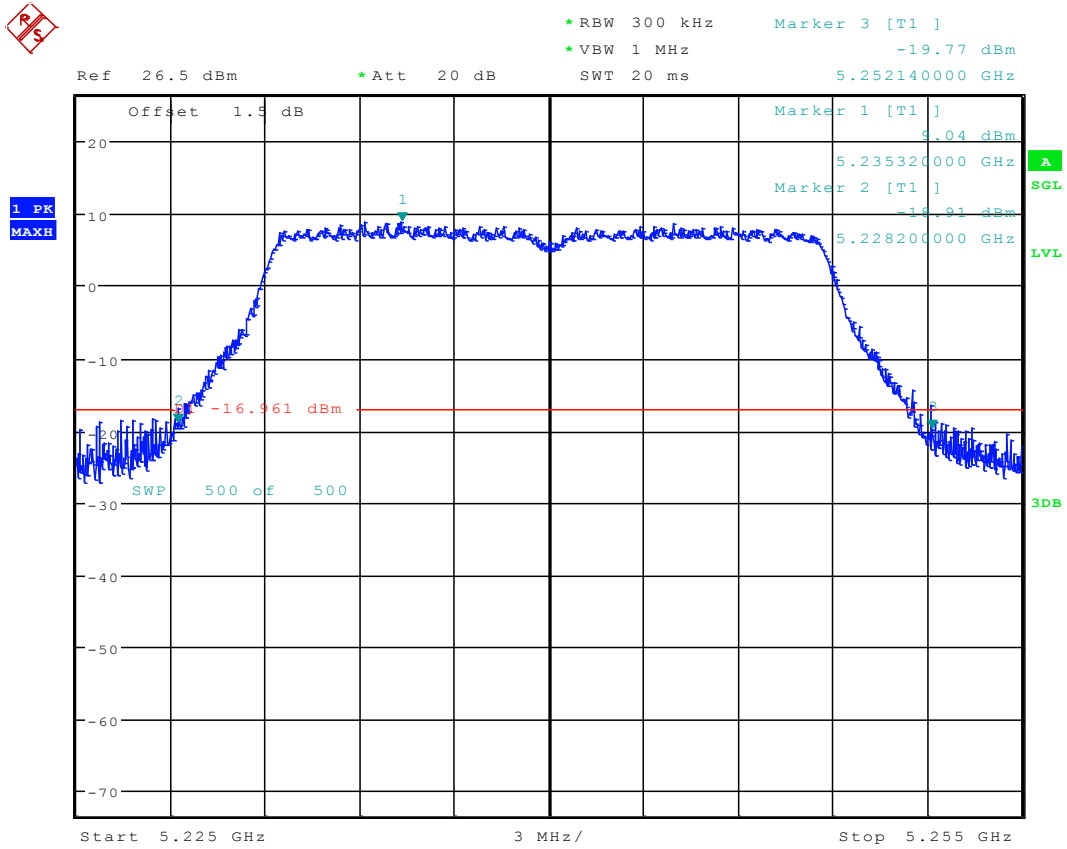
*RBW 300 kHz Marker 3 [T1]
 *VBW 1 MHz -17.50 dBm
 SWT 20 ms 5.191520000 GHz



Date: 14.MAY.2017 13:46:53

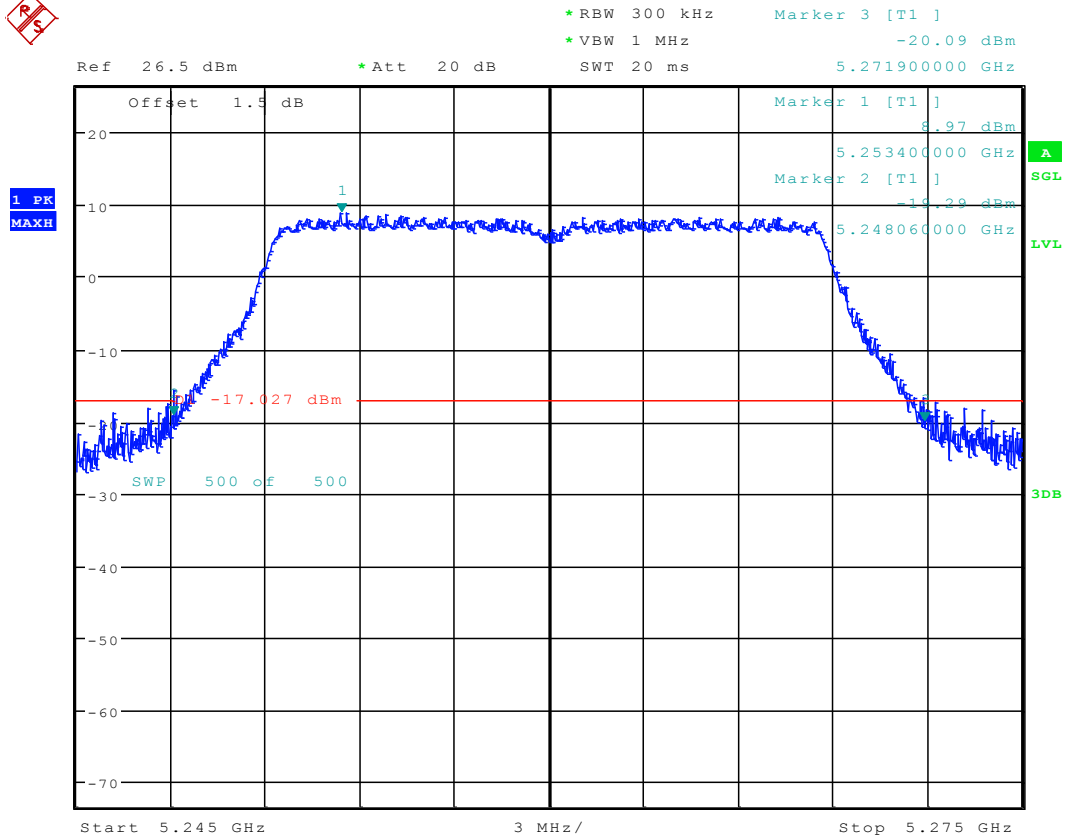


3.8 11N20_48 ANT 1



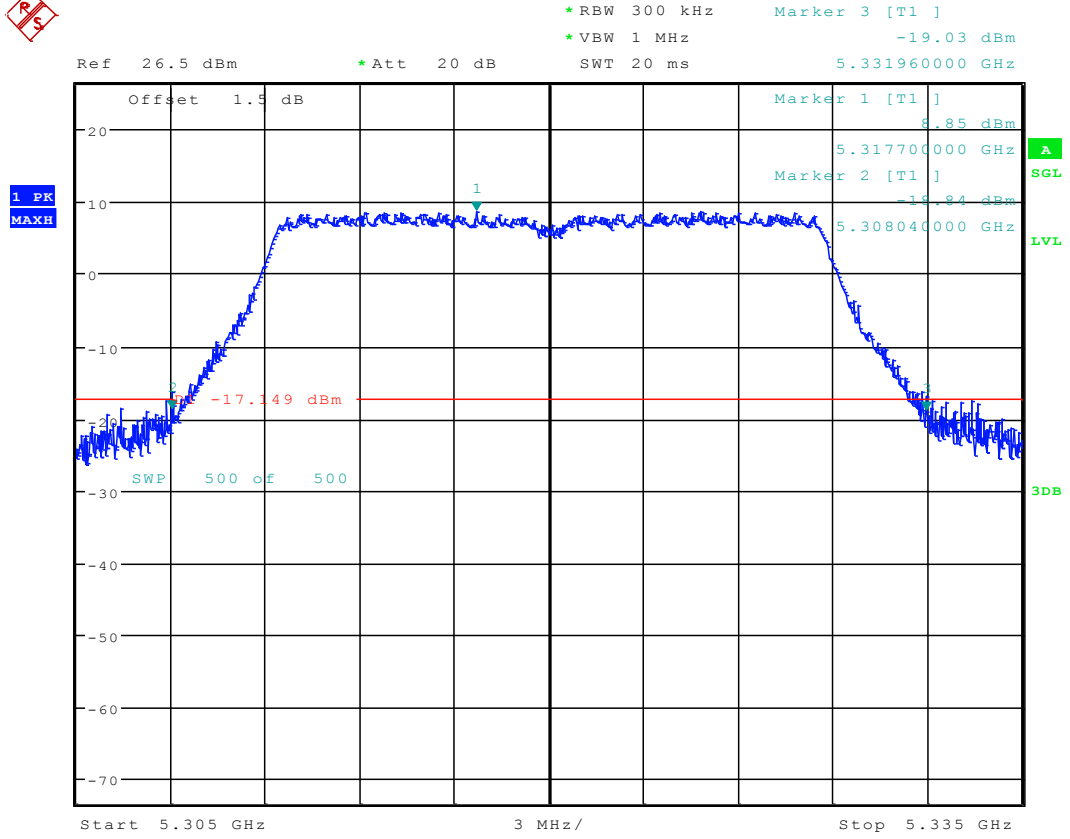
Date: 14.MAY.2017 13:51:53

3.9 11N20_52 ANT 1



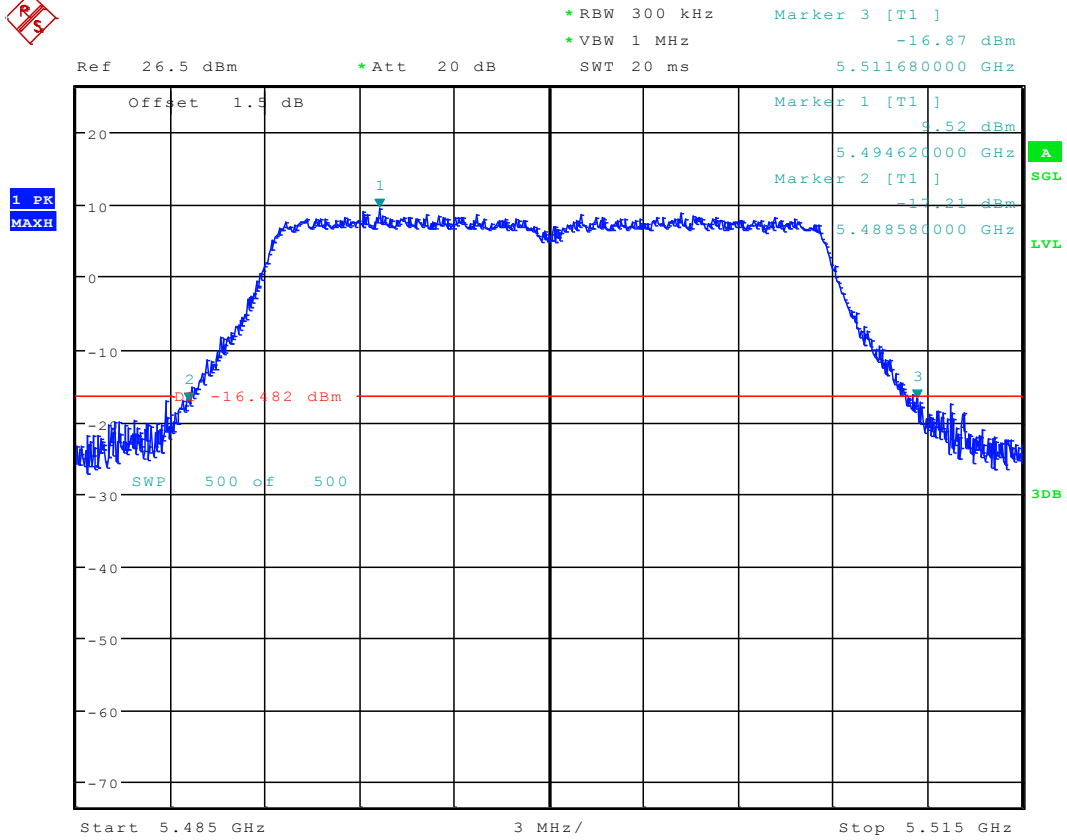
Date: 14.MAY.2017 14:22:18

3.10 11N20_64 ANT 1



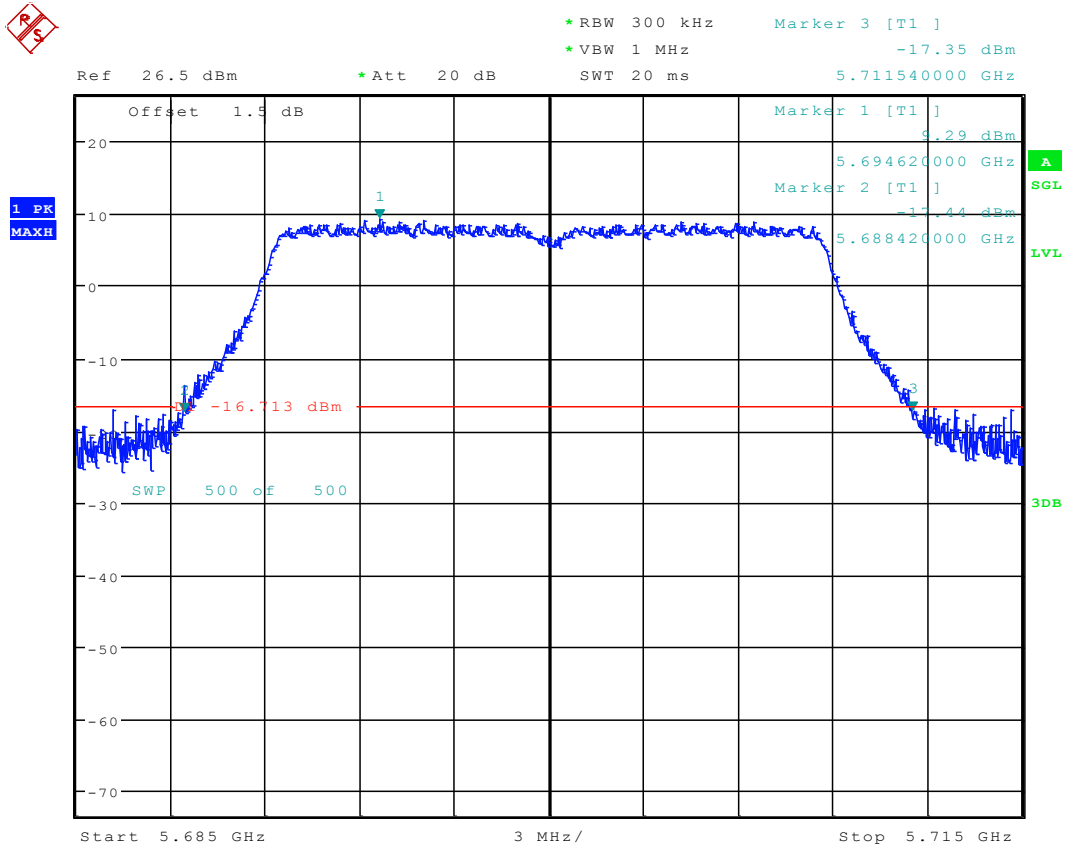
Date: 14.MAY.2017 14:27:11

3.11 11N20_100 ANT 1



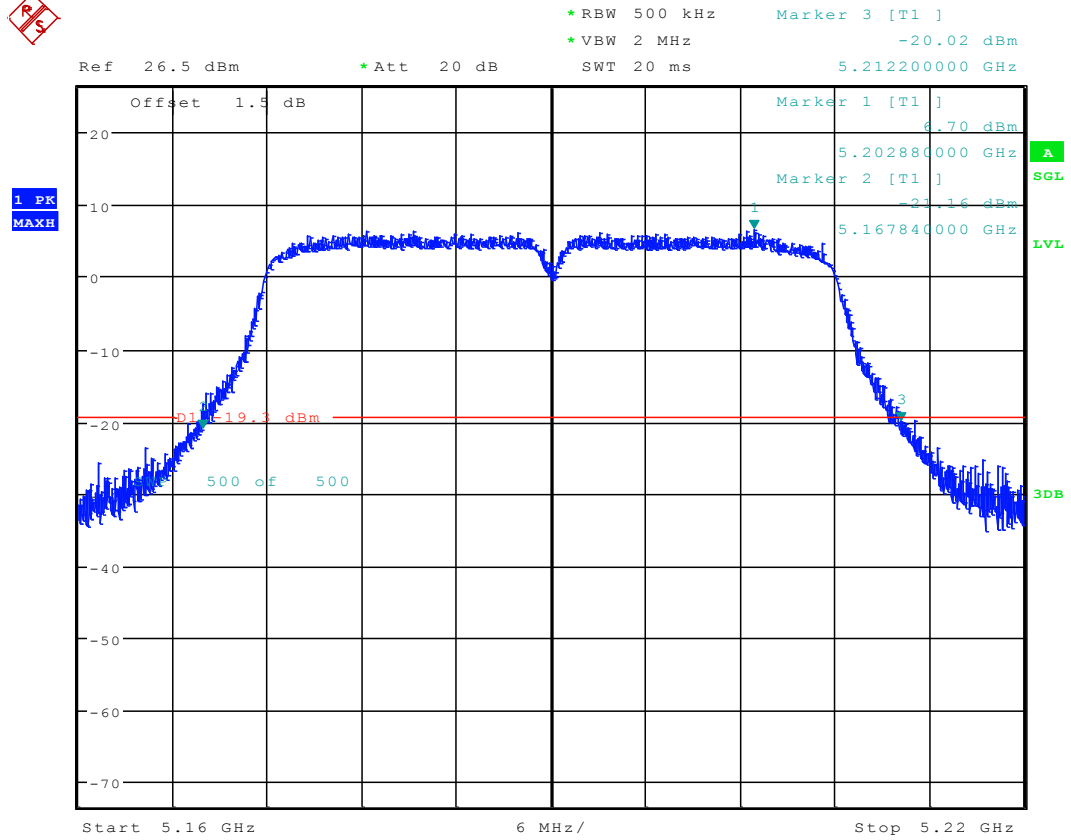
Date: 14.MAY.2017 14:32:17

3.12 11N20_140 ANT 1



Date: 14.MAY.2017 14:37:29

3.13 11N40_38 ANT 1

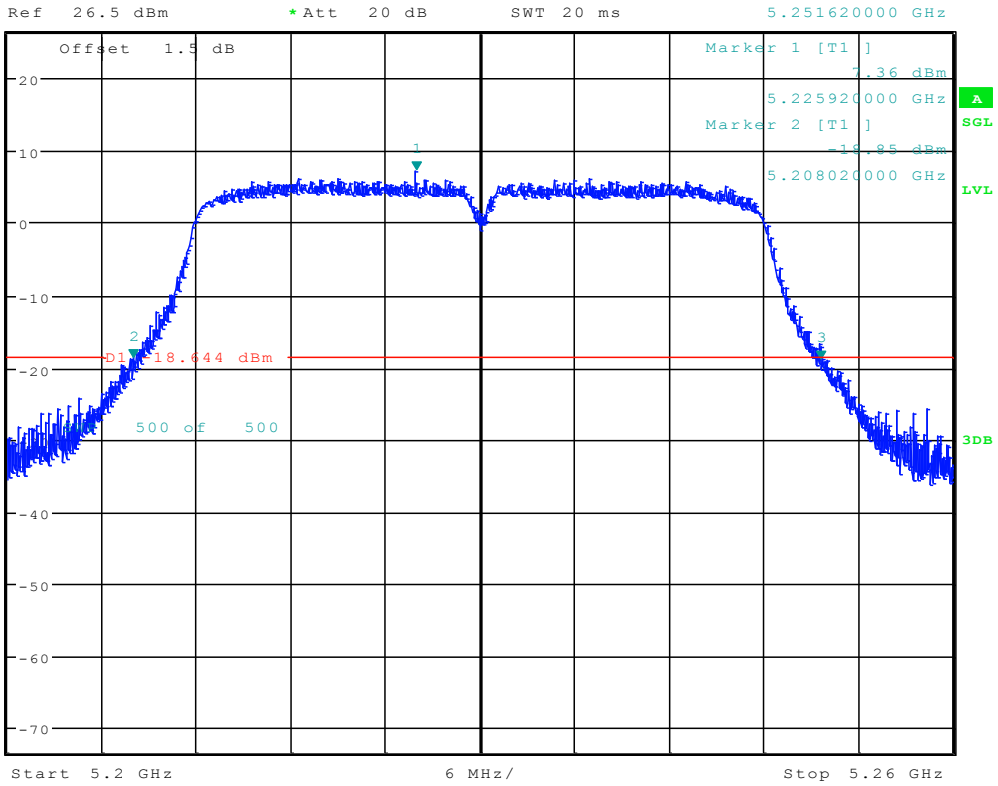


Date: 14.MAY.2017 15:51:54

3.14 11N40_46 ANT 1

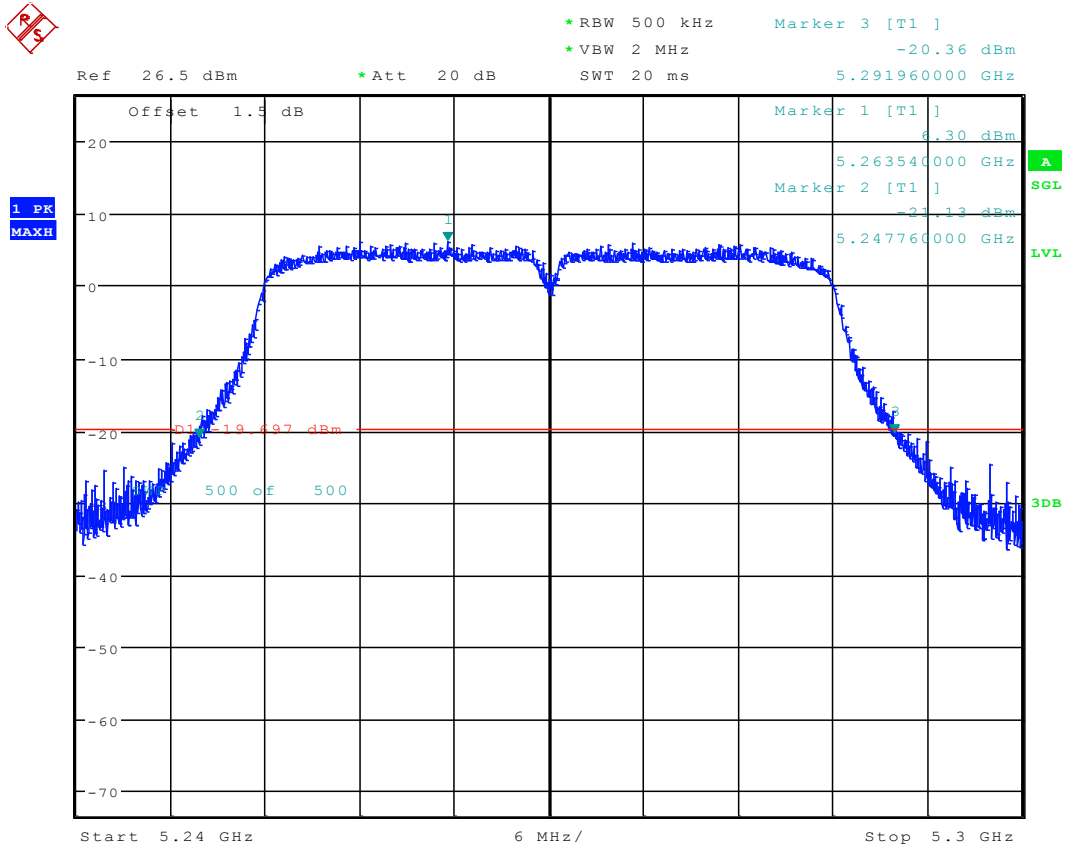


*RBW 500 kHz Marker 3 [T1]
 *VBW 2 MHz -18.89 dBm
 SWT 20 ms 5.251620000 GHz



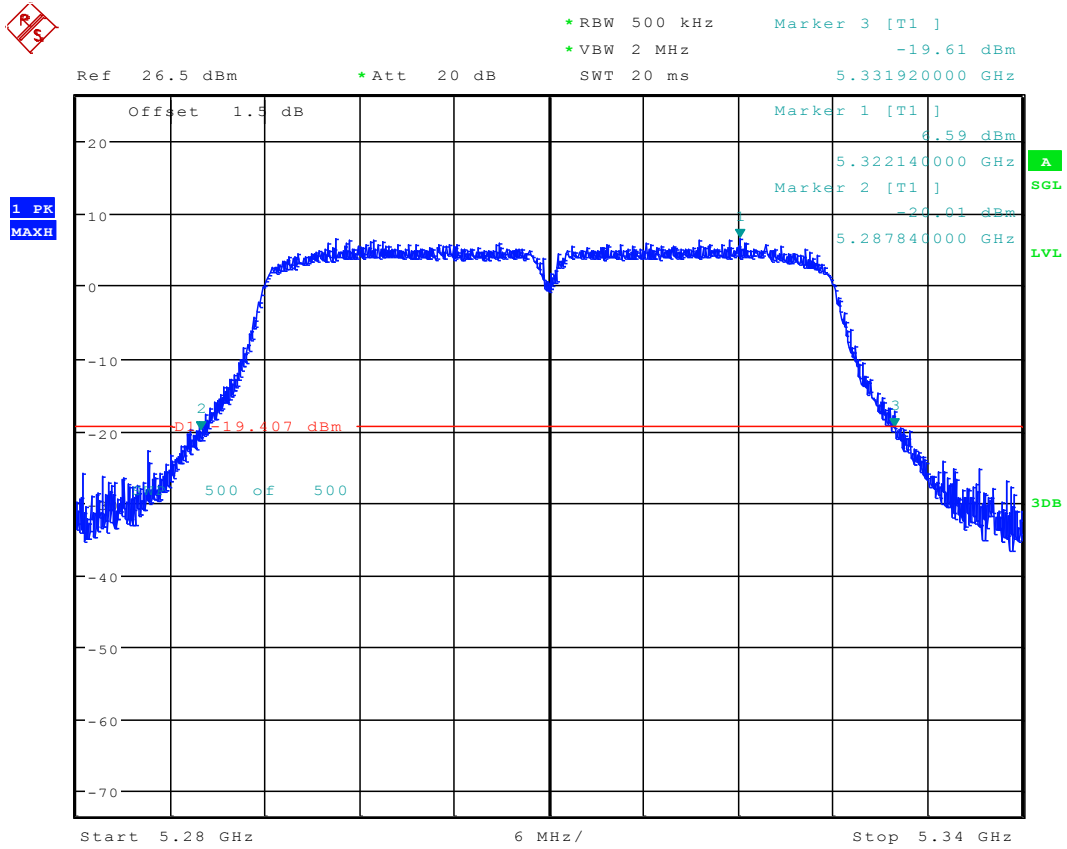
Date: 14.MAY.2017 15:57:00

3.15 11N40_54 ANT 1



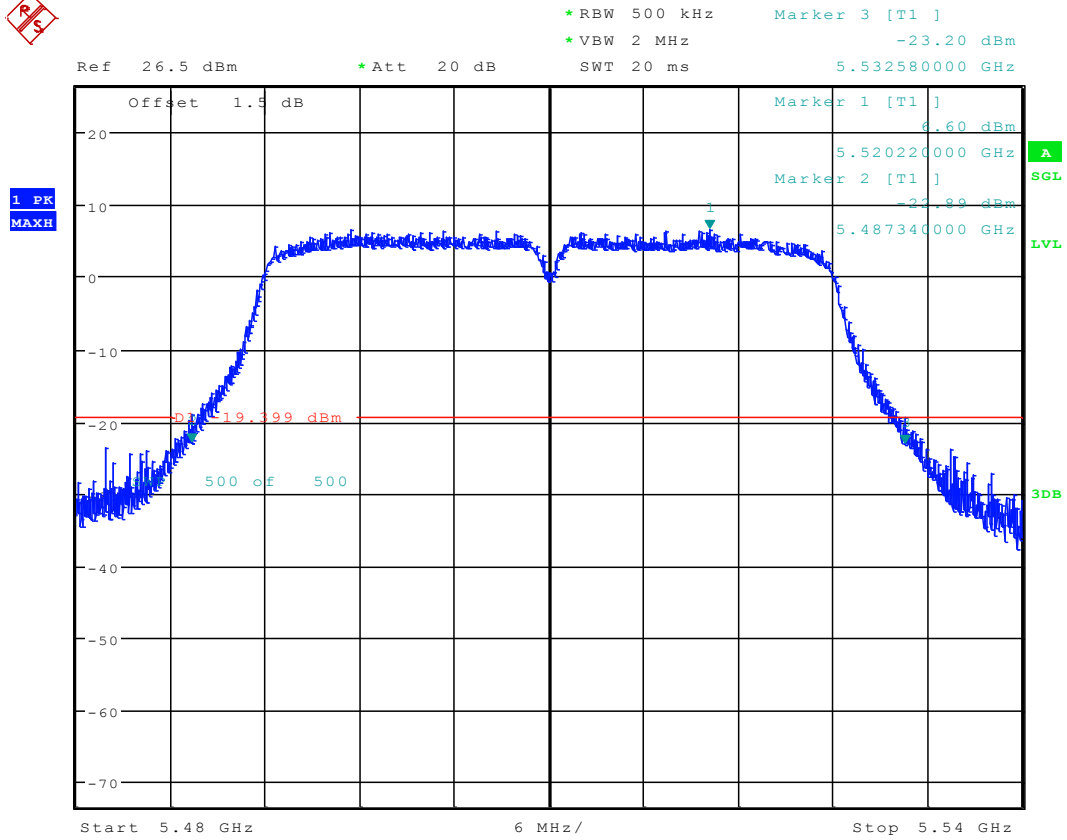
Date: 14.MAY.2017 16:02:05

3.16 11N40_62 ANT 1



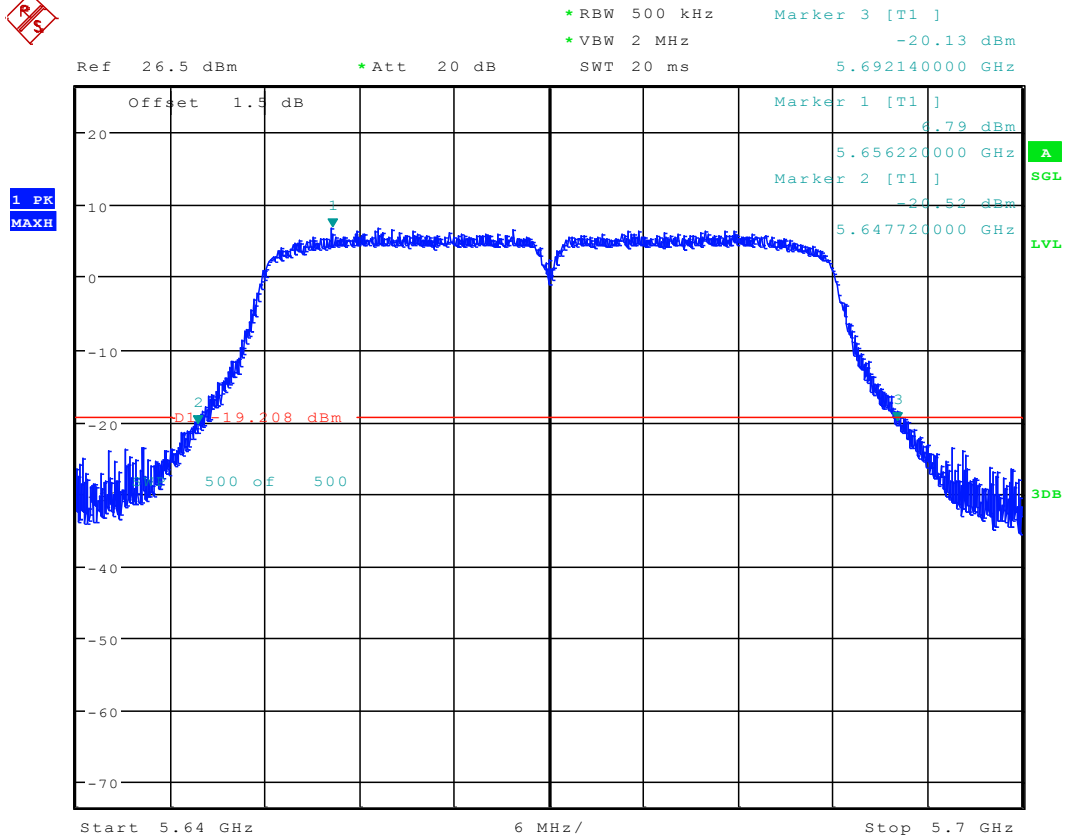
Date: 14.MAY.2017 16:07:37

3.17 11N40_102 ANT 1



Date: 14.MAY.2017 16:13:11

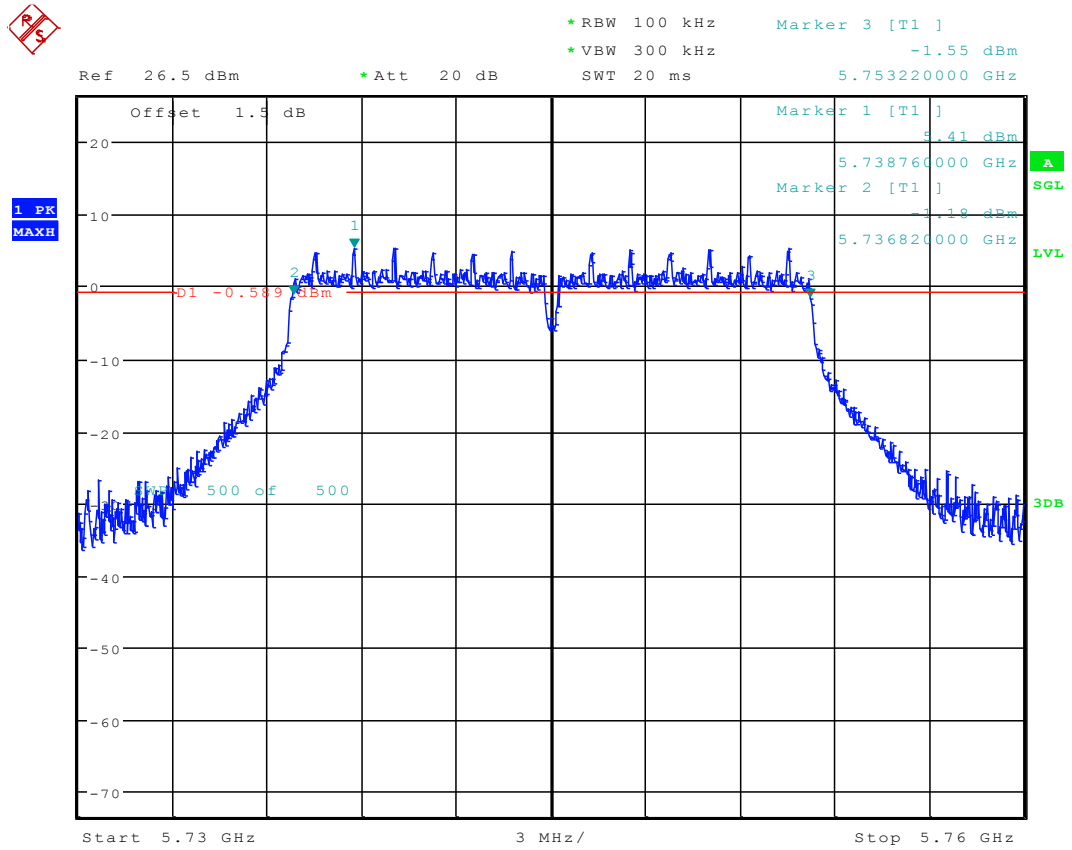
3.18 11N40_134 ANT 1



Date: 14.MAY.2017 16:20:43

4 Test Plot for 6dB Emission Bandwidth

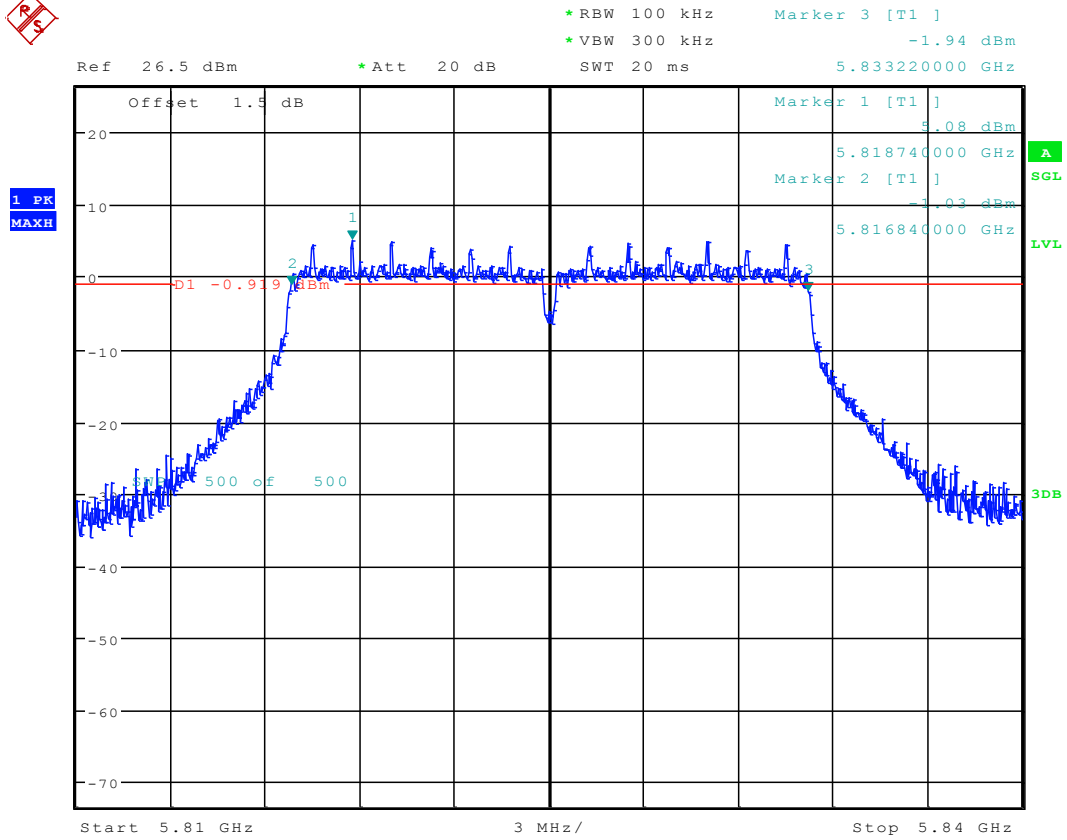
4.1 11A20_149 ANT 1



Date: 14.MAY.2017 13:32:42

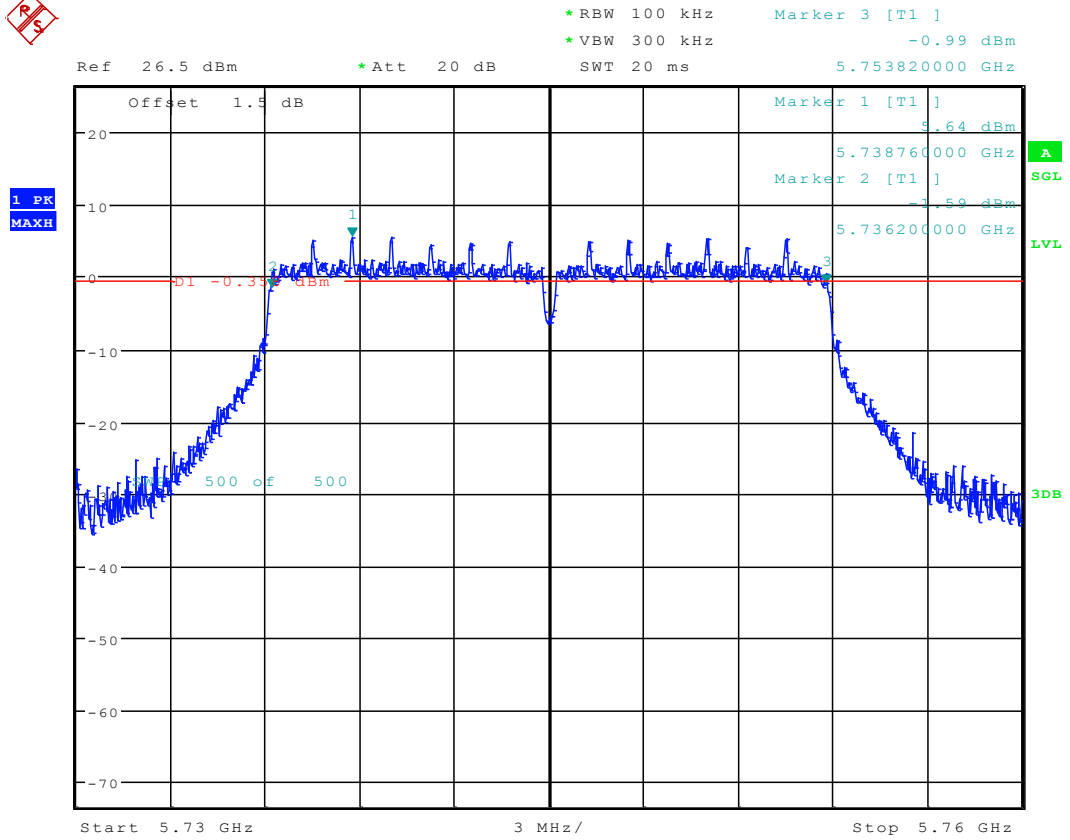


4.2 11A20_165 ANT 1



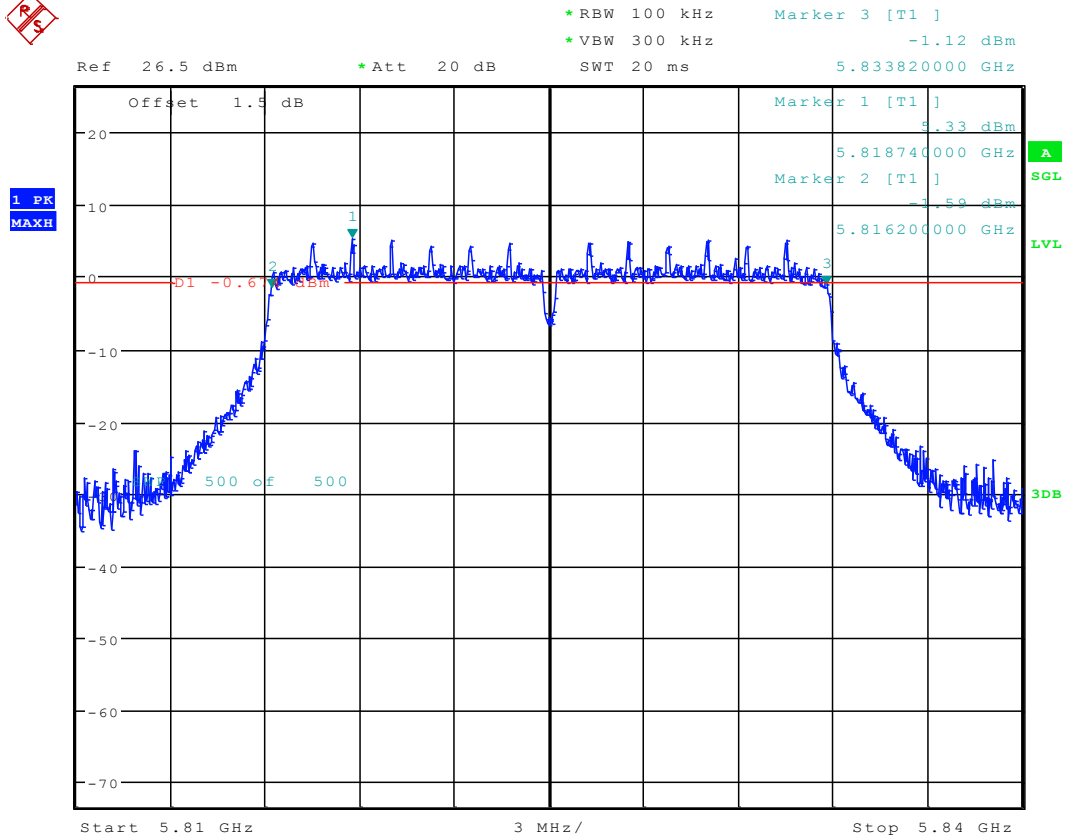
Date: 14.MAY.2017 13:38:44

4.3 11N20_149 ANT 1



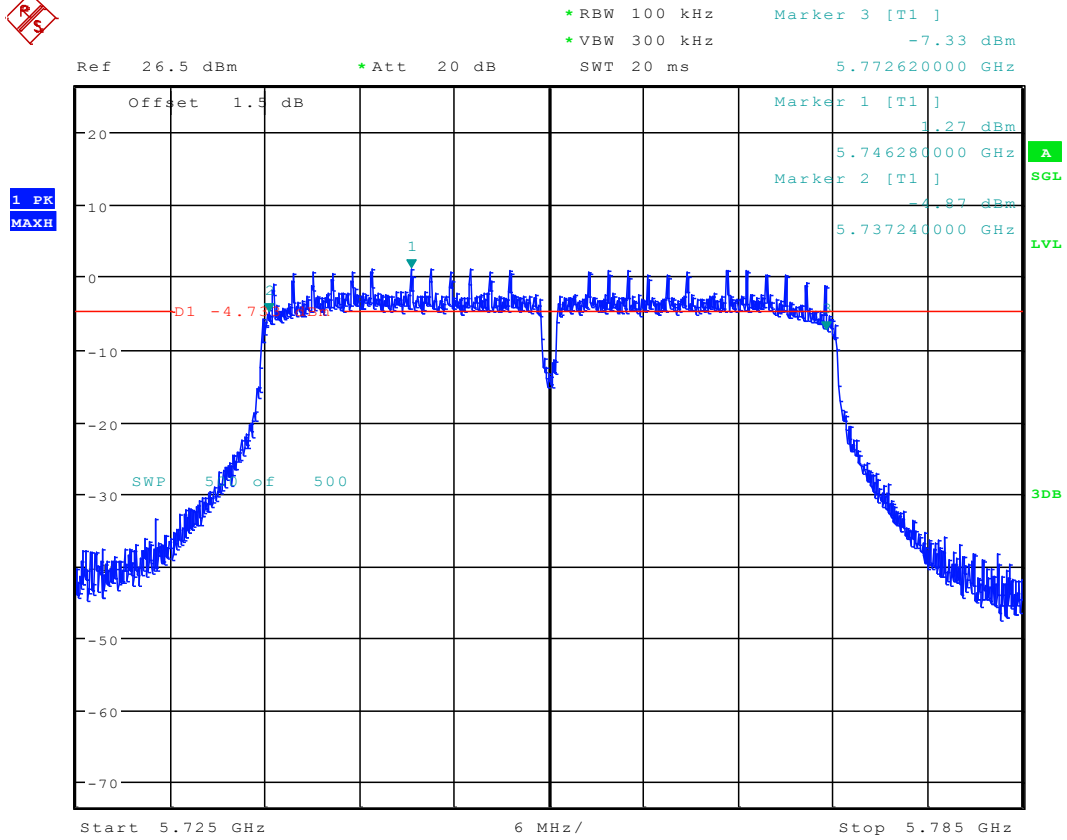
Date: 14.MAY.2017 14:42:50

4.4 11N20_165 ANT 1



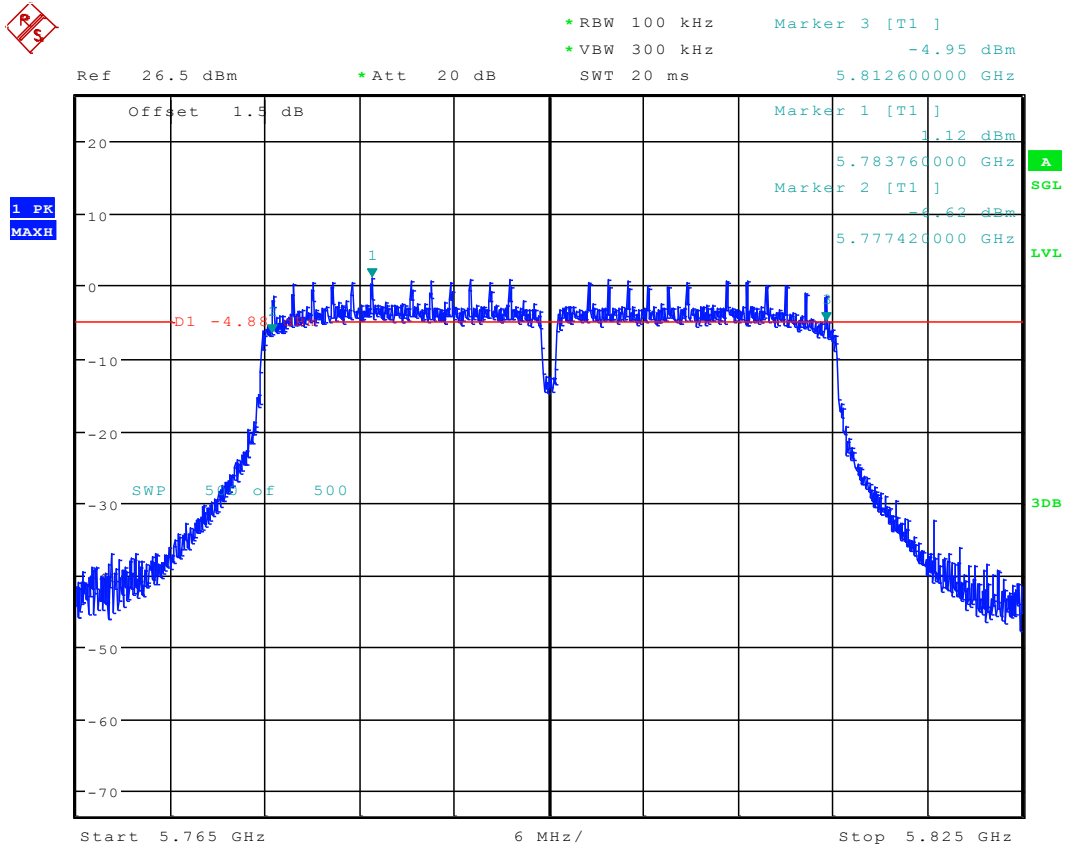
Date: 14.MAY.2017 14:48:48

4.5 11N40_151 ANT 1



Date: 14.MAY.2017 16:25:59

4.6 11N40_159 ANT 1



Date: 14.MAY.2017 16:32:07



Appendix B Occupied Bandwidth (OBW)

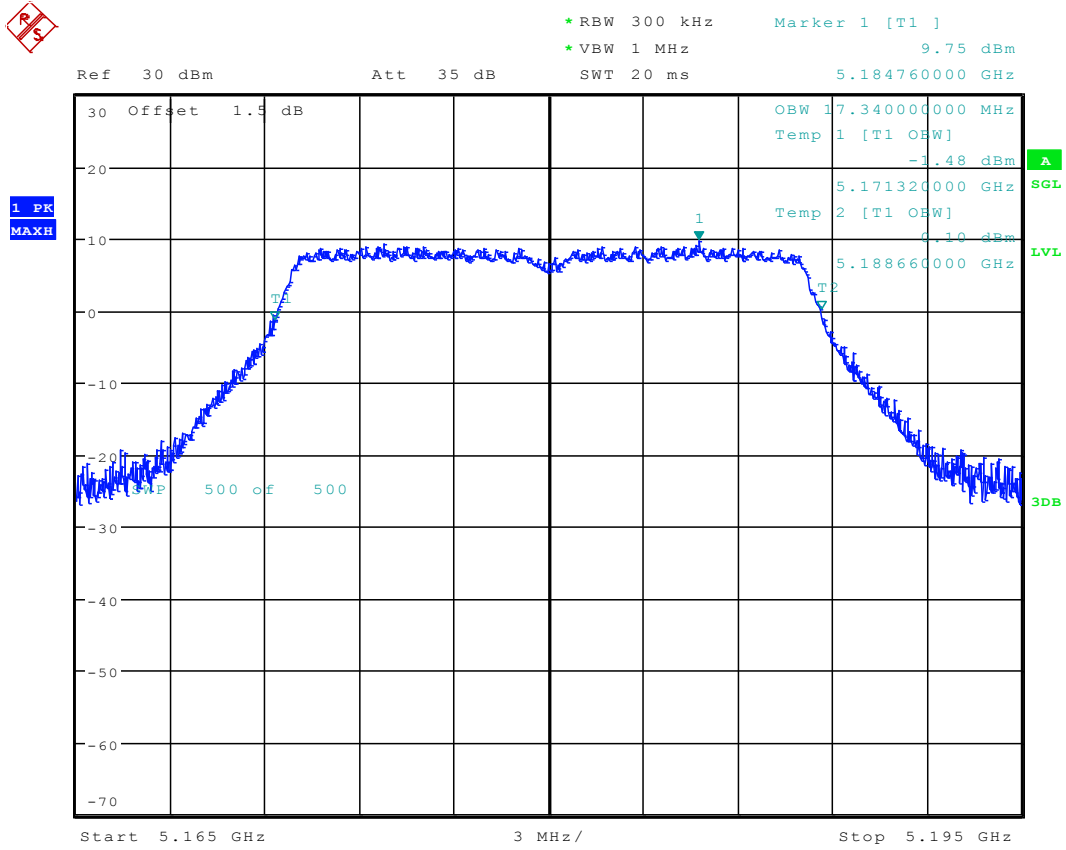


5 Result Table

| Test Mode | Test Channel | Frequency [MHz] | Antenna Port | Occupied Bandwidth [MHz] | Verdict |
|-----------|--------------|-----------------|--------------|--------------------------|---------|
| 11A20 | 36 | 5180 | ANT 1 | 17.34 | PASS |
| | 48 | 5240 | ANT 1 | 17.38 | PASS |
| | 52 | 5260 | ANT 1 | 17.34 | PASS |
| | 64 | 5320 | ANT 1 | 17.38 | PASS |
| | 100 | 5500 | ANT 1 | 17.36 | PASS |
| | 140 | 5700 | ANT 1 | 17.4 | PASS |
| | 149 | 5745 | ANT 1 | 17.38 | PASS |
| | 165 | 5825 | ANT 1 | 17.36 | PASS |
| 11N20 | 36 | 5180 | ANT 1 | 18.3 | PASS |
| | 48 | 5240 | ANT 1 | 18.3 | PASS |
| | 52 | 5260 | ANT 1 | 18.28 | PASS |
| | 64 | 5320 | ANT 1 | 18.32 | PASS |
| | 100 | 5500 | ANT 1 | 18.3 | PASS |
| | 140 | 5700 | ANT 1 | 18.32 | PASS |
| | 149 | 5745 | ANT 1 | 18.32 | PASS |
| | 165 | 5825 | ANT 1 | 18.32 | PASS |
| 11N40 | 38 | 5190 | ANT 1 | 36.36 | PASS |
| | 46 | 5230 | ANT 1 | 36.42 | PASS |
| | 54 | 5270 | ANT 1 | 36.42 | PASS |
| | 62 | 5310 | ANT 1 | 36.4 | PASS |
| | 102 | 5510 | ANT 1 | 36.42 | PASS |
| | 134 | 5670 | ANT 1 | 36.38 | PASS |
| | 151 | 5755 | ANT 1 | 36.42 | PASS |
| | 159 | 5795 | ANT 1 | 36.42 | PASS |

6 Test Plot

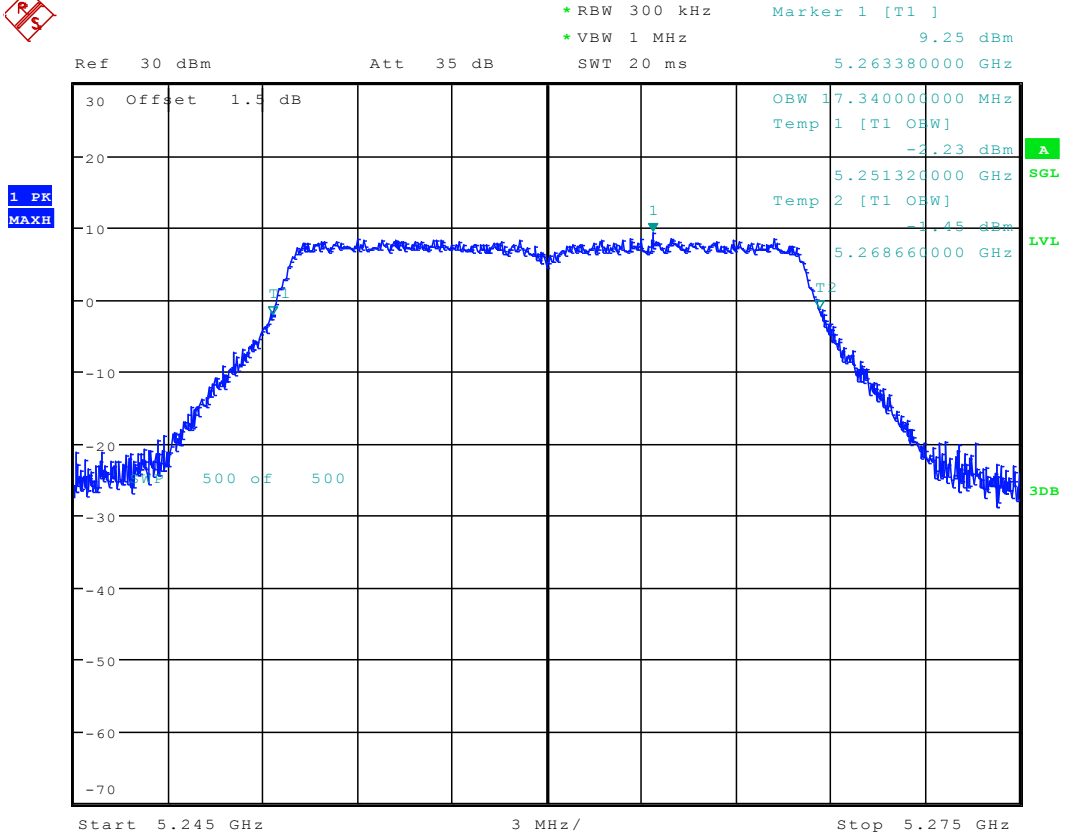
6.1 11A20_36 ANT 1



Date: 14.MAY.2017 12:57:46

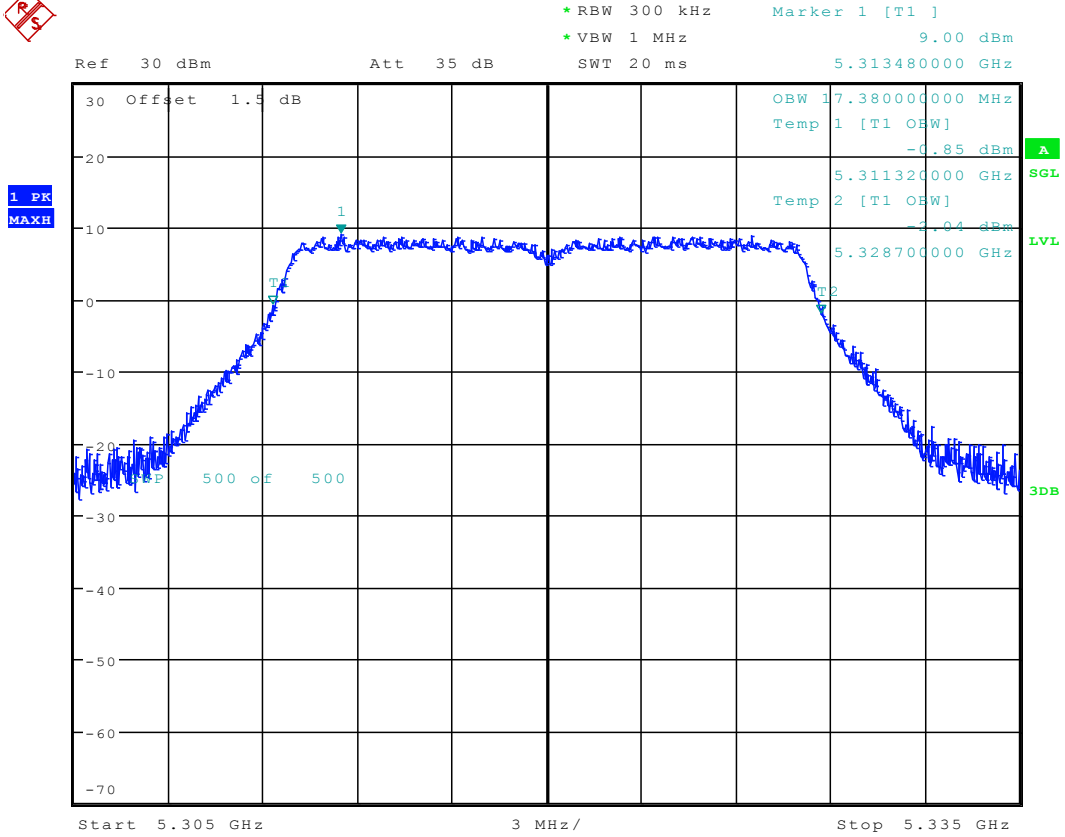


6.3 11A20_52 ANT 1



Date: 14.MAY.2017 13:10:50

6.4 11A20_64 ANT 1



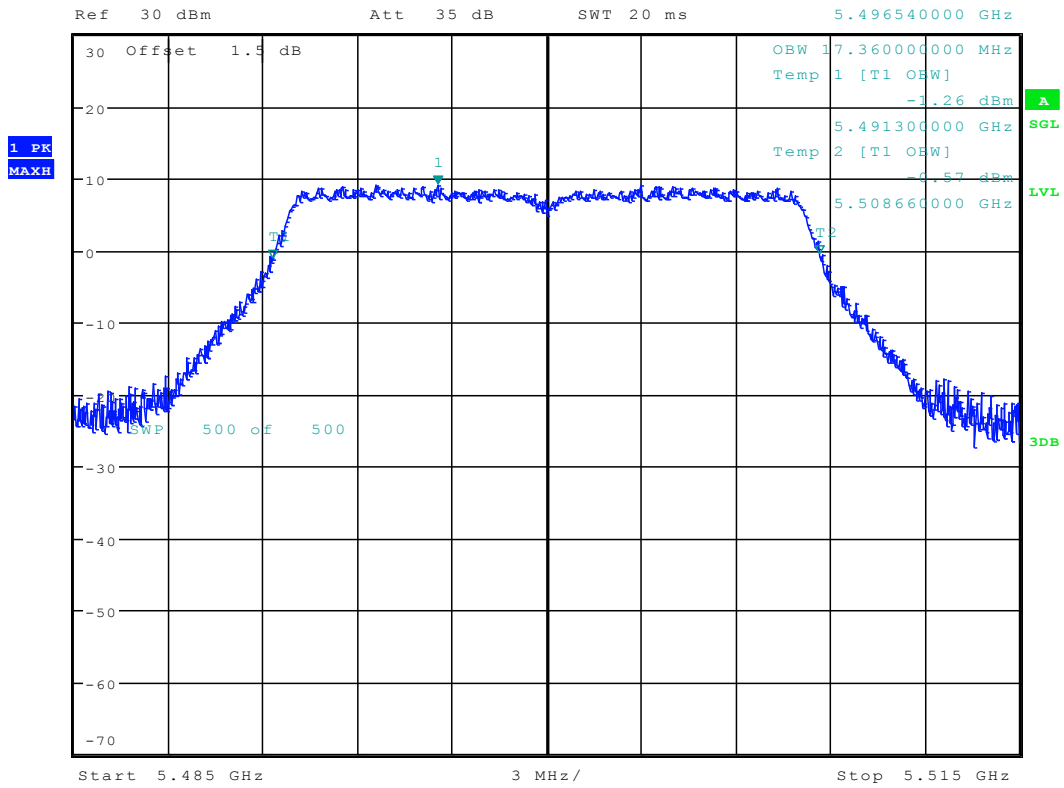
Date: 14.MAY.2017 13:16:42



6.5 11A20_100 ANT 1

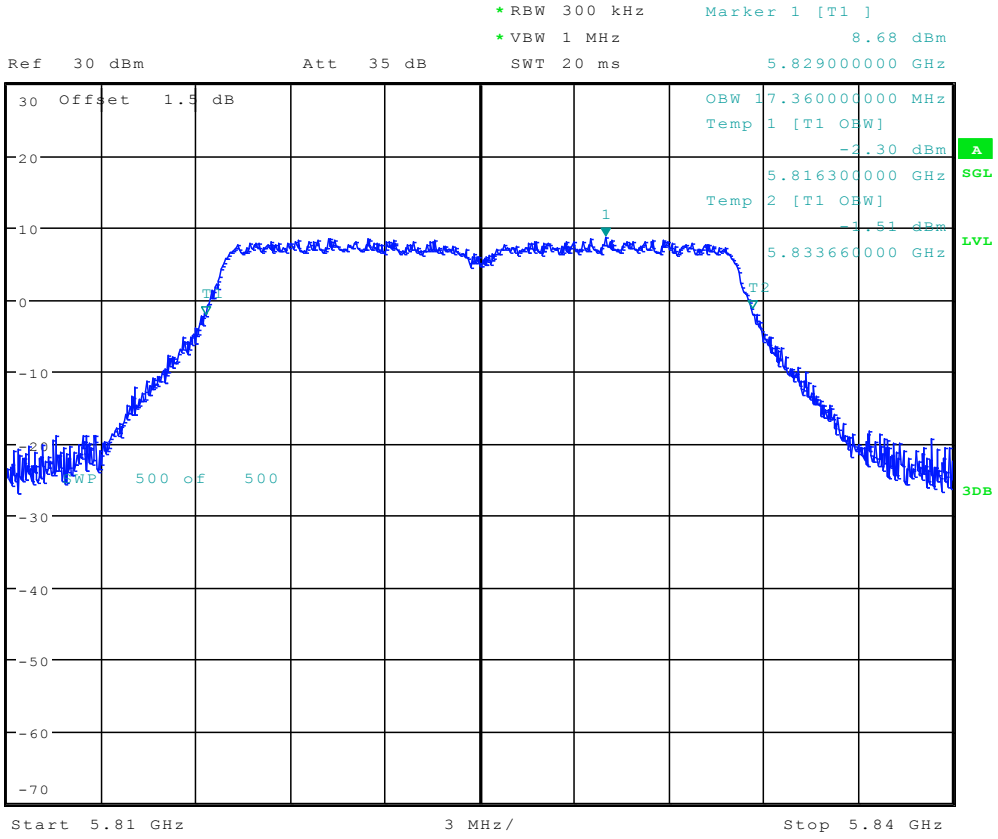


*RBW 300 kHz Marker 1 [T1]
*VBW 1 MHz 9.13 dBm
SWT 20 ms 5.496540000 GHz



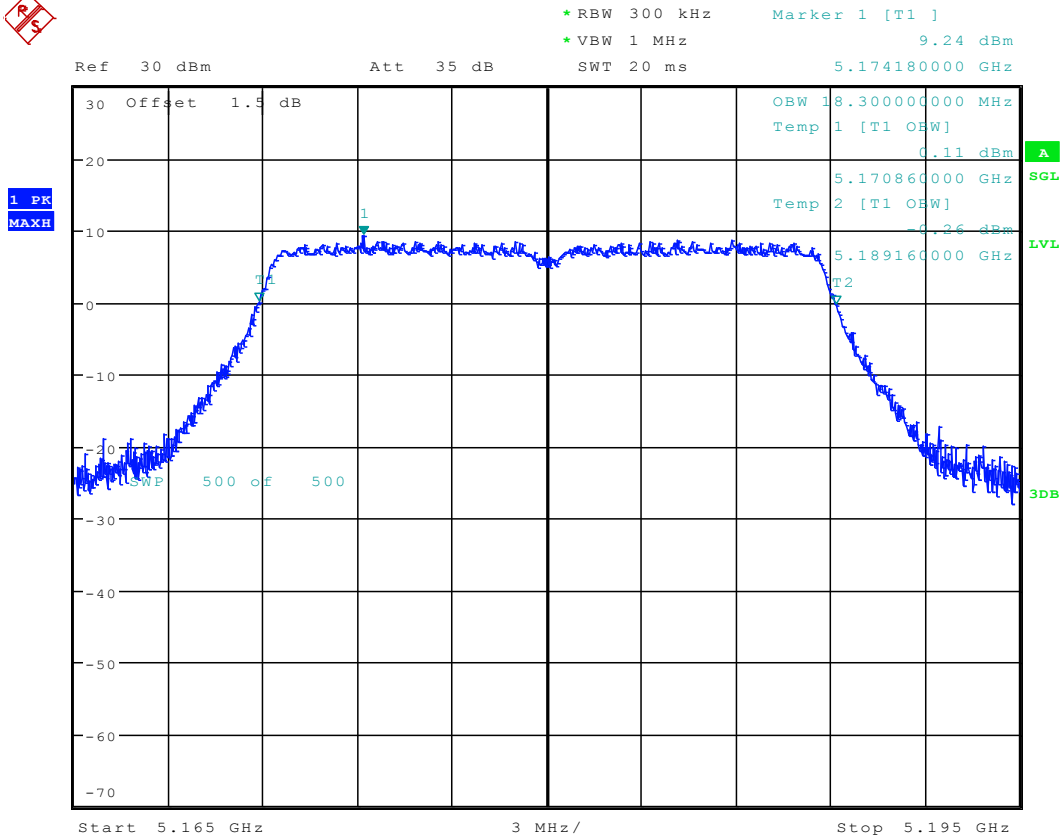
Date: 14.MAY.2017 13:22:40

6.8 11A20_165 ANT 1



Date: 14.MAY.2017 13:39:33

6.9 11N20_36 ANT 1



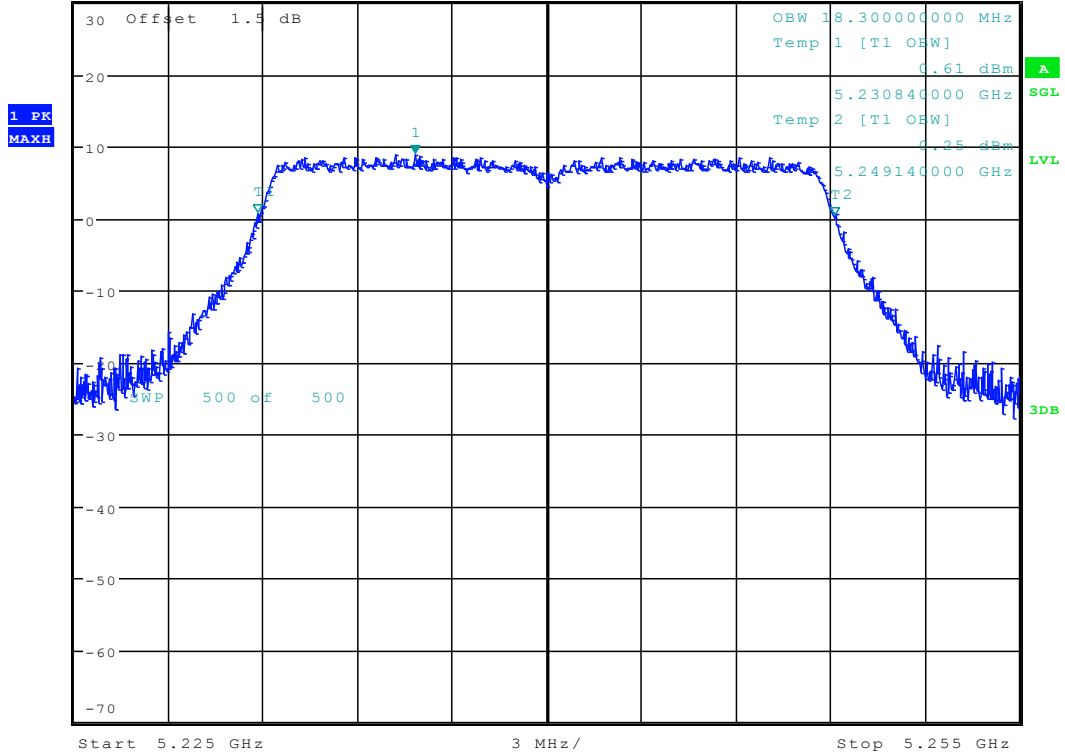
Date: 14.MAY.2017 13:47:40



6.10 11N20_48 ANT 1



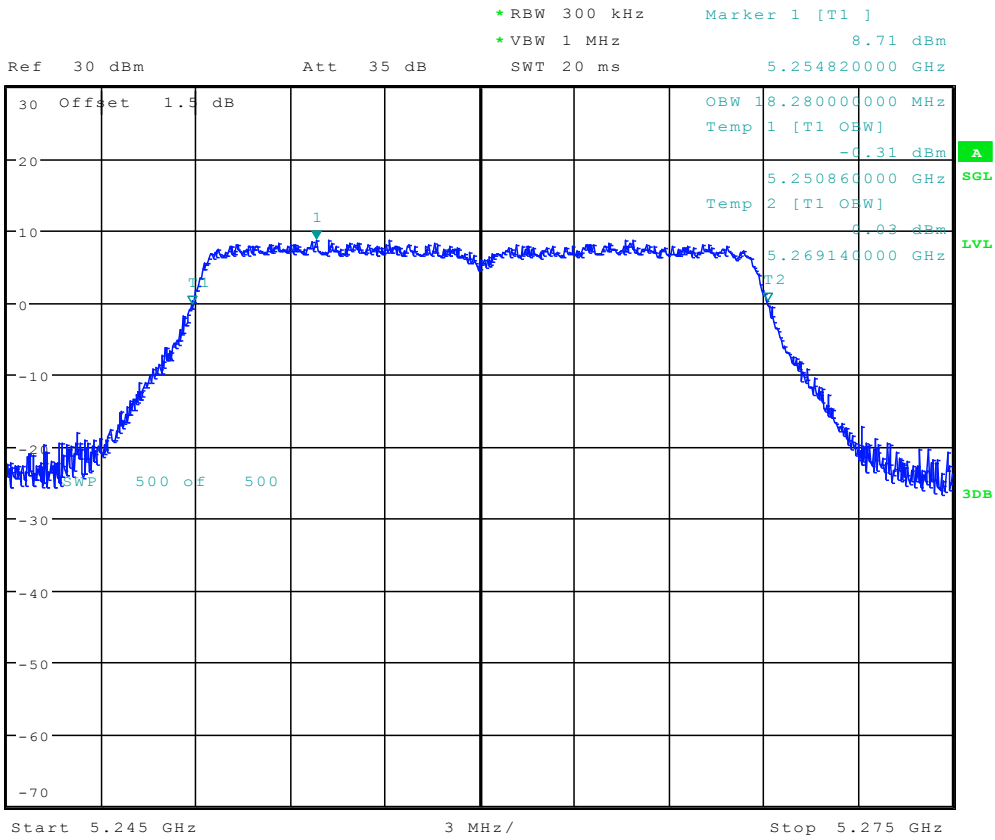
*RBW 300 kHz Marker 1 [T1]
 *VBW 1 MHz 8.84 dBm
 Ref 30 dBm Att 35 dB SWT 20 ms 5.235820000 GHz



Date: 14.MAY.2017 13:52:41

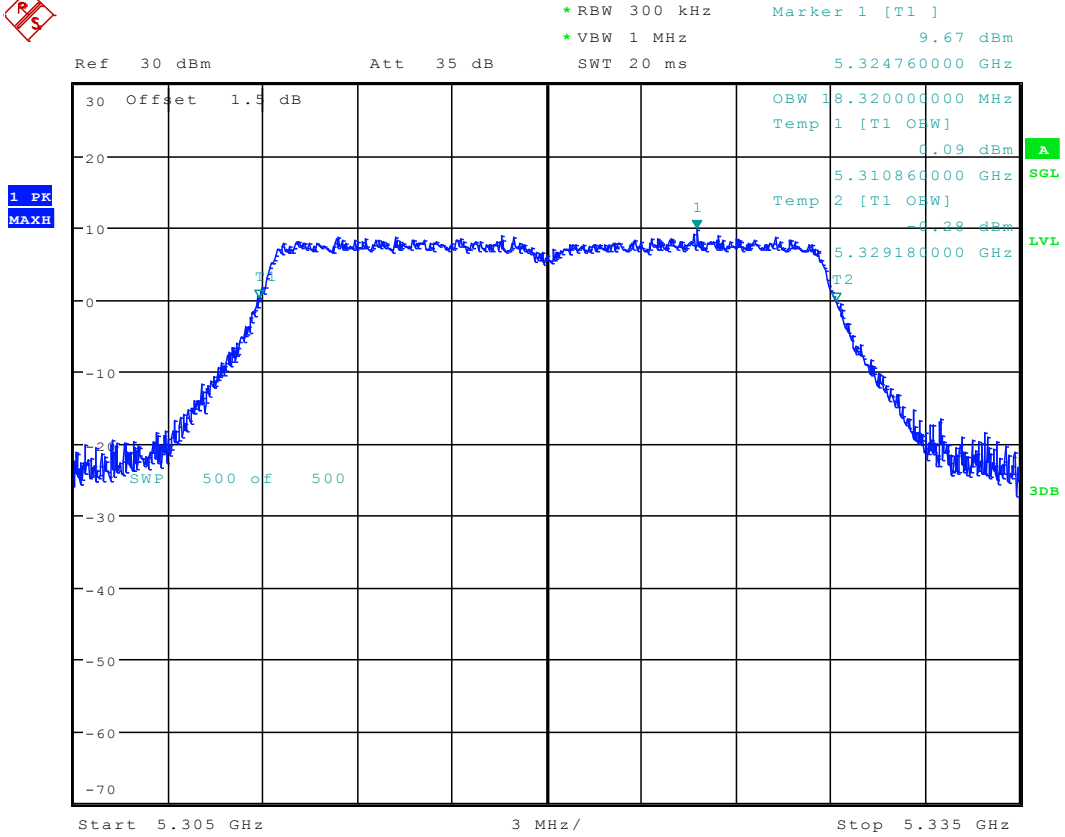


6.11 11N20_52 ANT 1



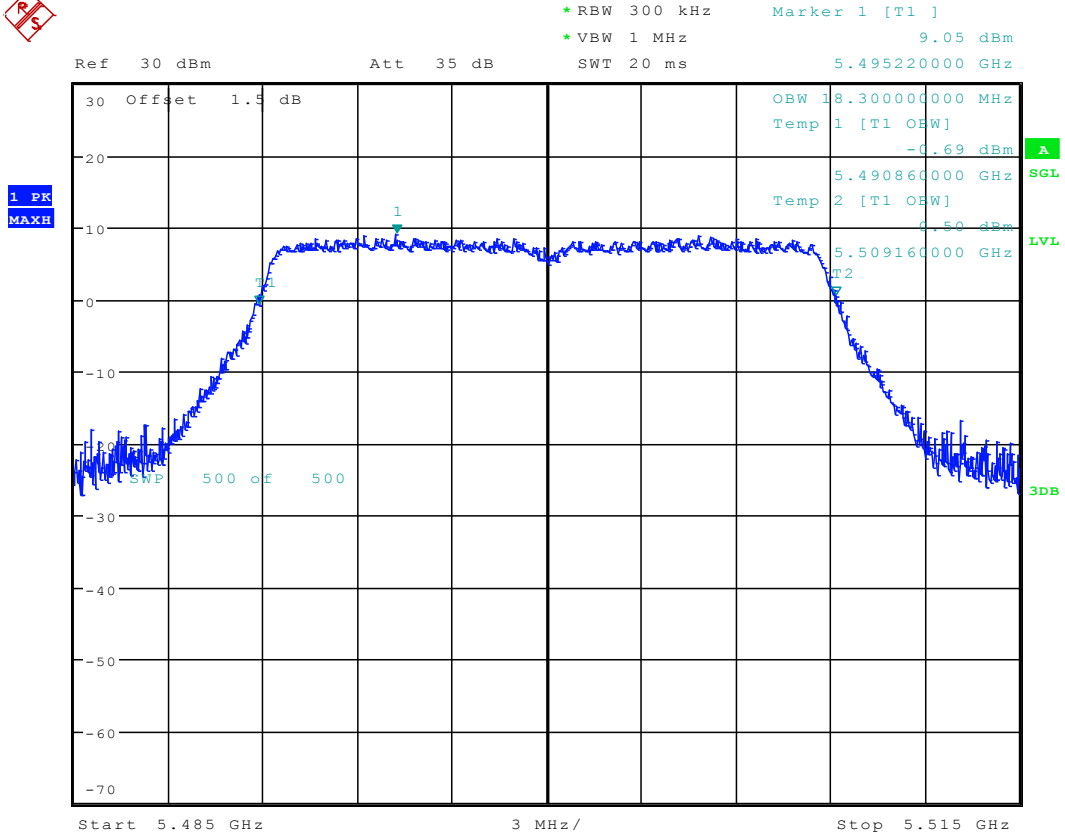
Date: 14.MAY.2017 14:23:05

6.12 11N20_64 ANT 1



Date: 14.MAY.2017 14:27:56

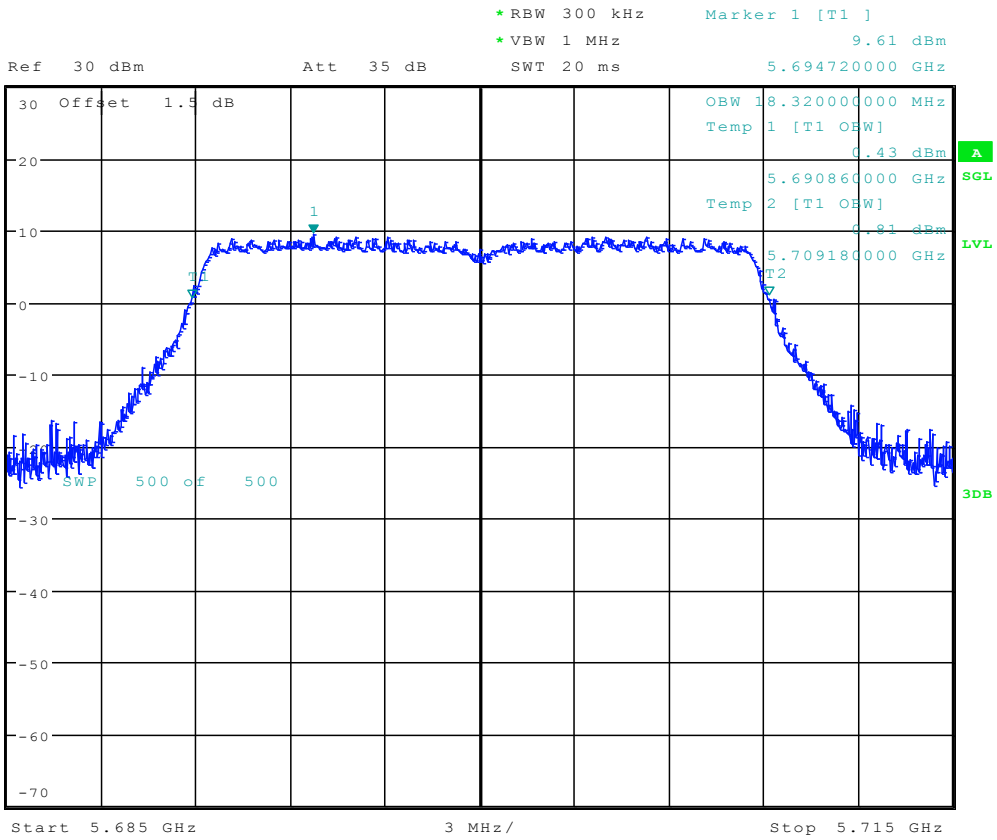
6.13 11N20_100 ANT 1



Date: 14.MAY.2017 14:33:03



6.14 11N20_140 ANT 1



Date: 14.MAY.2017 14:38:14



6.15 11N20_149 ANT 1



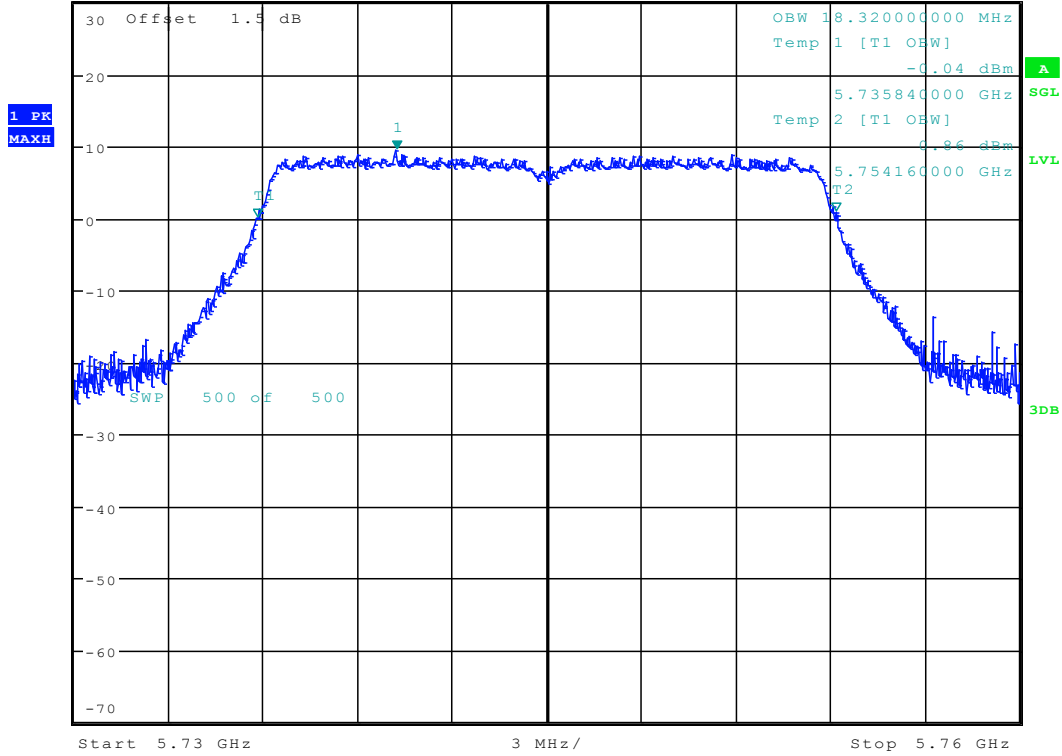
*RBW 300 kHz Marker 1 [T1]
*VBW 1 MHz 9.54 dBm
SWT 20 ms 5.740220000 GHz

Ref 30 dBm

Att 35 dB

SWT 20 ms

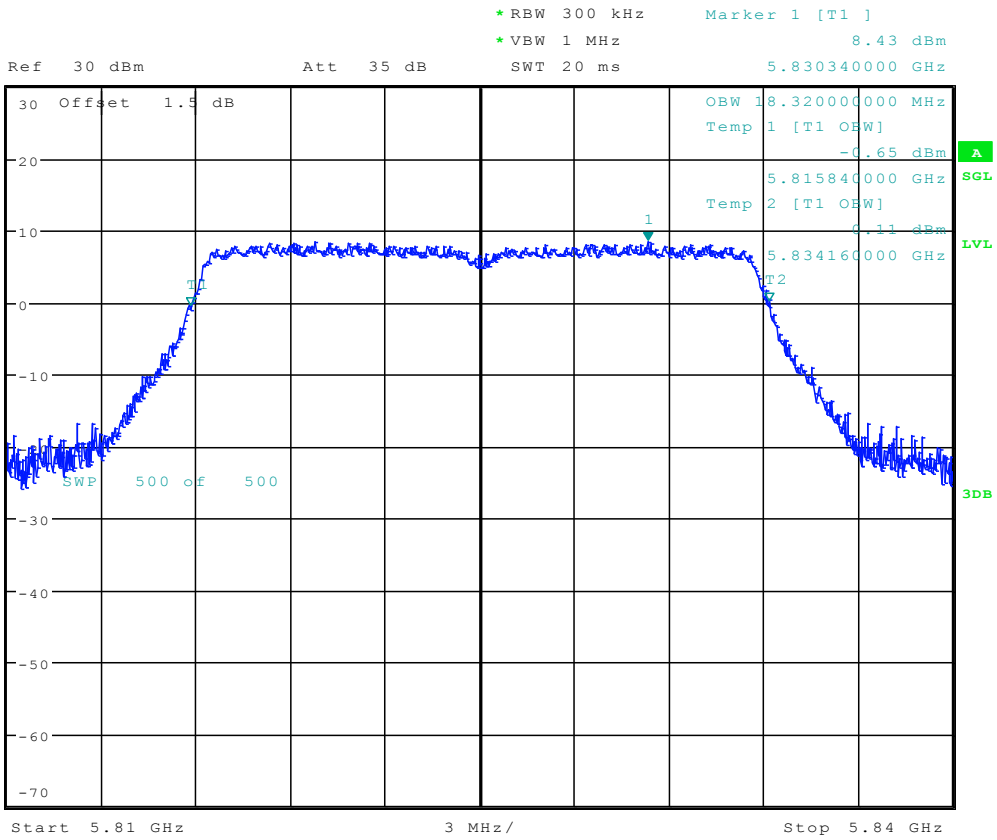
5.740220000 GHz



Date: 14.MAY.2017 14:43:36



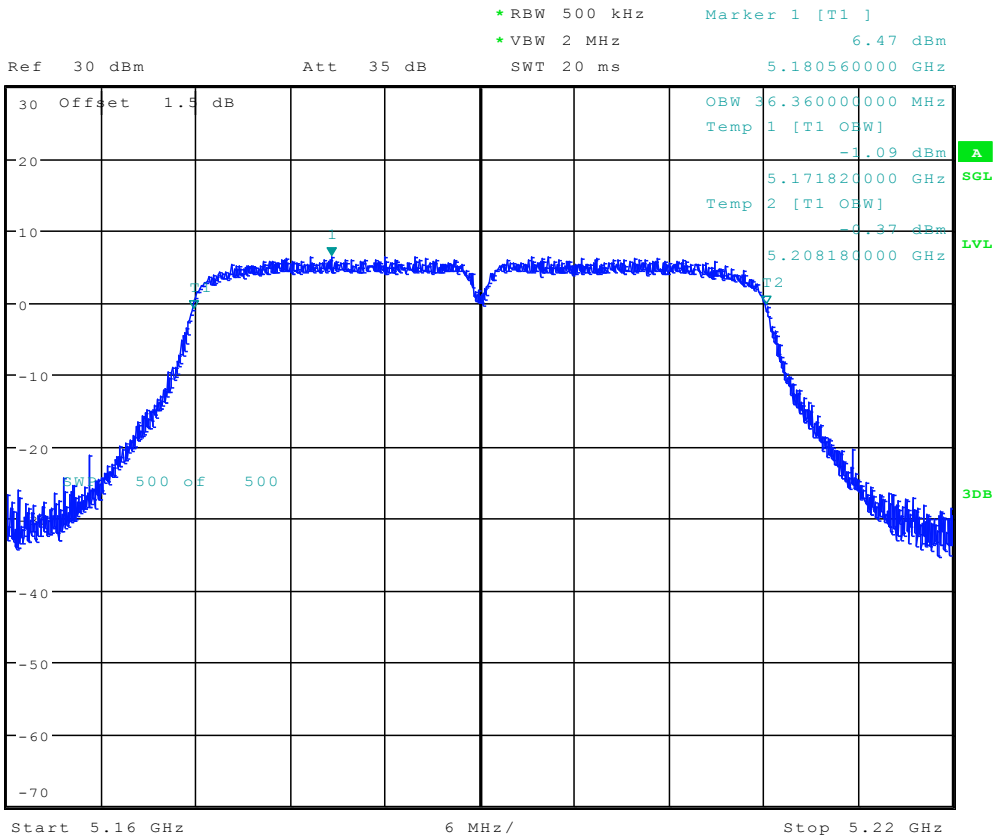
6.16 11N20_165 ANT 1



Date: 14.MAY.2017 14:49:35

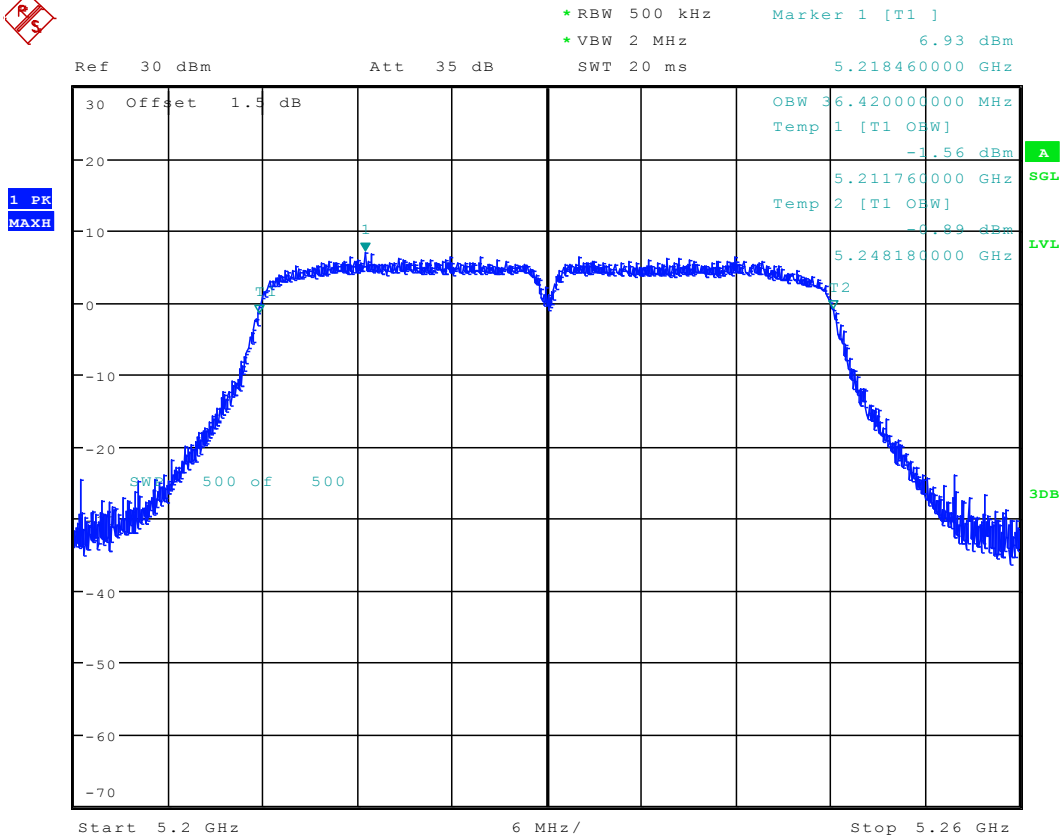


6.17 11N40_38 ANT 1



Date: 14.MAY.2017 15:52:43

6.18 11N40_46 ANT 1

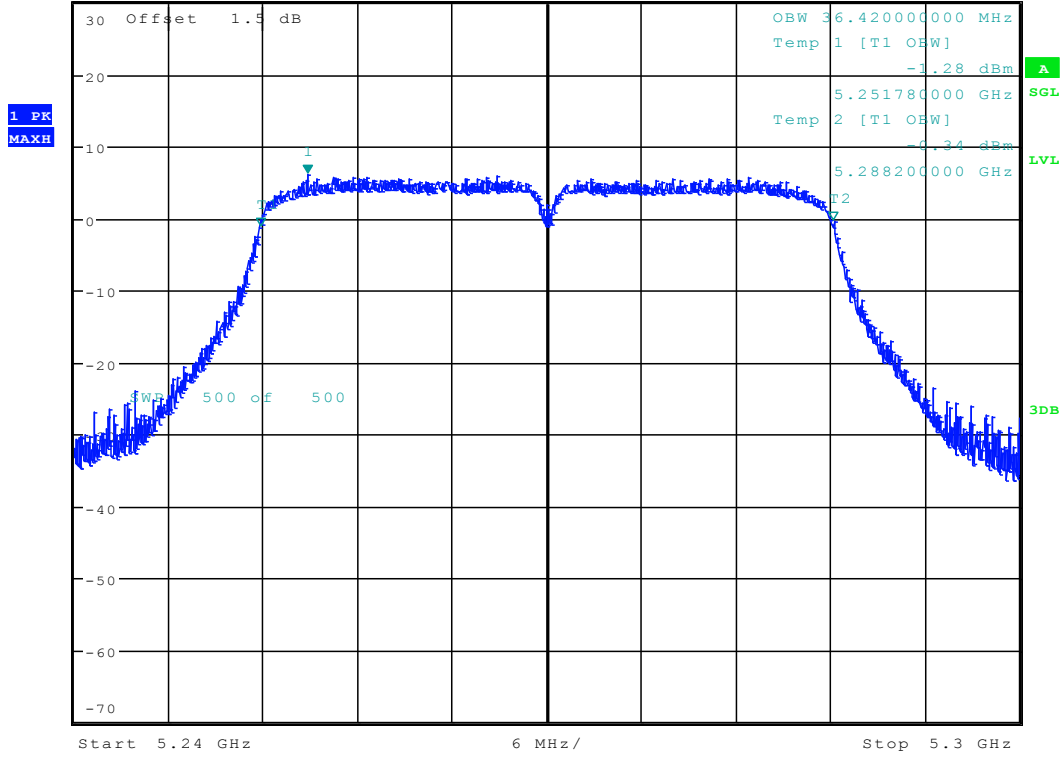


Date: 14.MAY.2017 15:57:51

6.19 11N40_54 ANT 1



*RBW 500 kHz Marker 1 [T1]
 *VBW 2 MHz 6.13 dBm
 Ref 30 dBm Att 35 dB SWT 20 ms 5.254820000 GHz



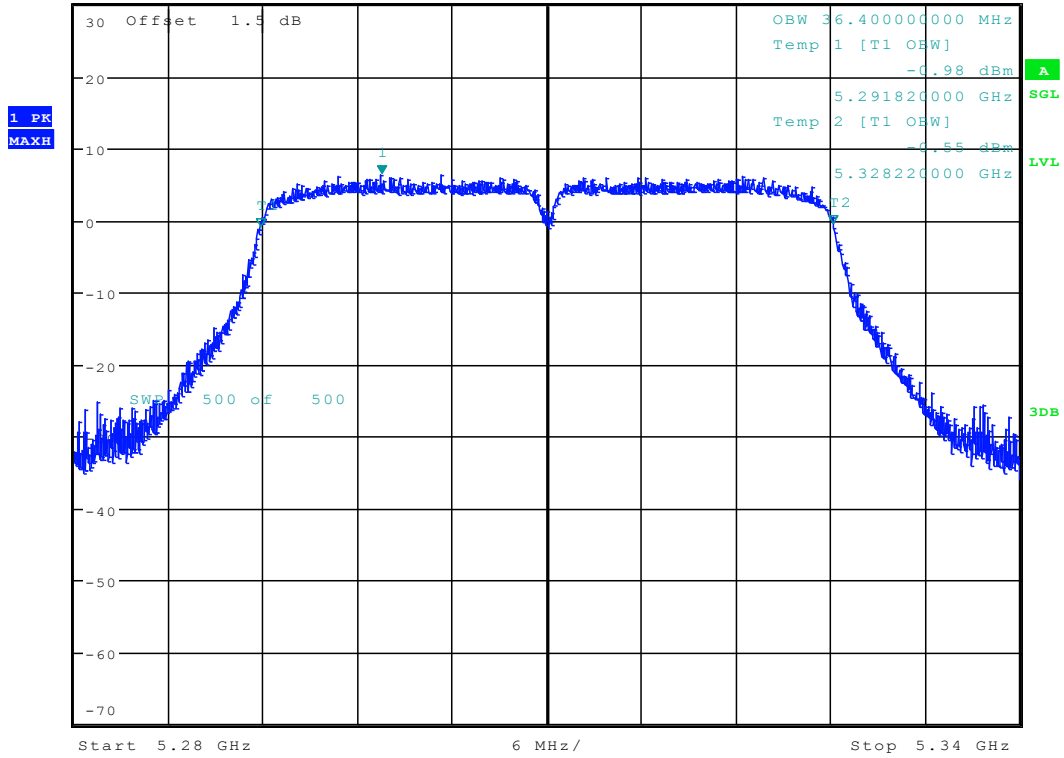
Date: 14.MAY.2017 16:02:54



6.20 11N40_62 ANT 1



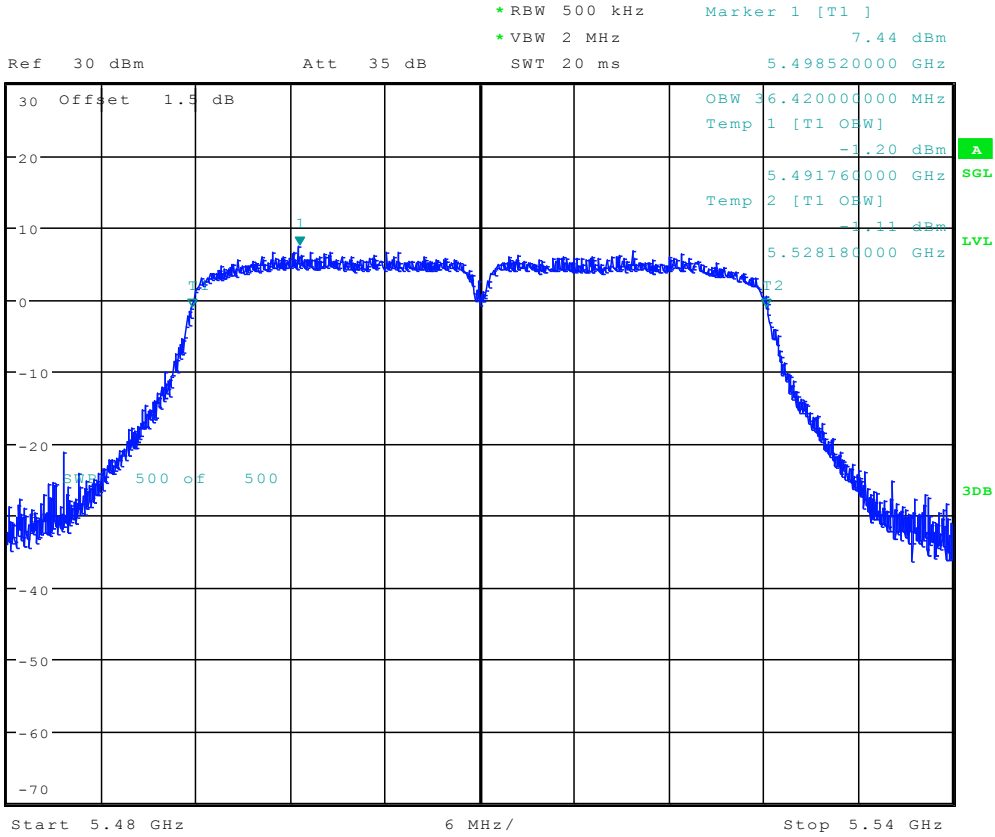
*RBW 500 kHz Marker 1 [T1]
 *VBW 2 MHz 6.32 dBm
 Ref 30 dBm Att 35 dB SWT 20 ms 5.299480000 GHz



Date: 14.MAY.2017 16:08:26



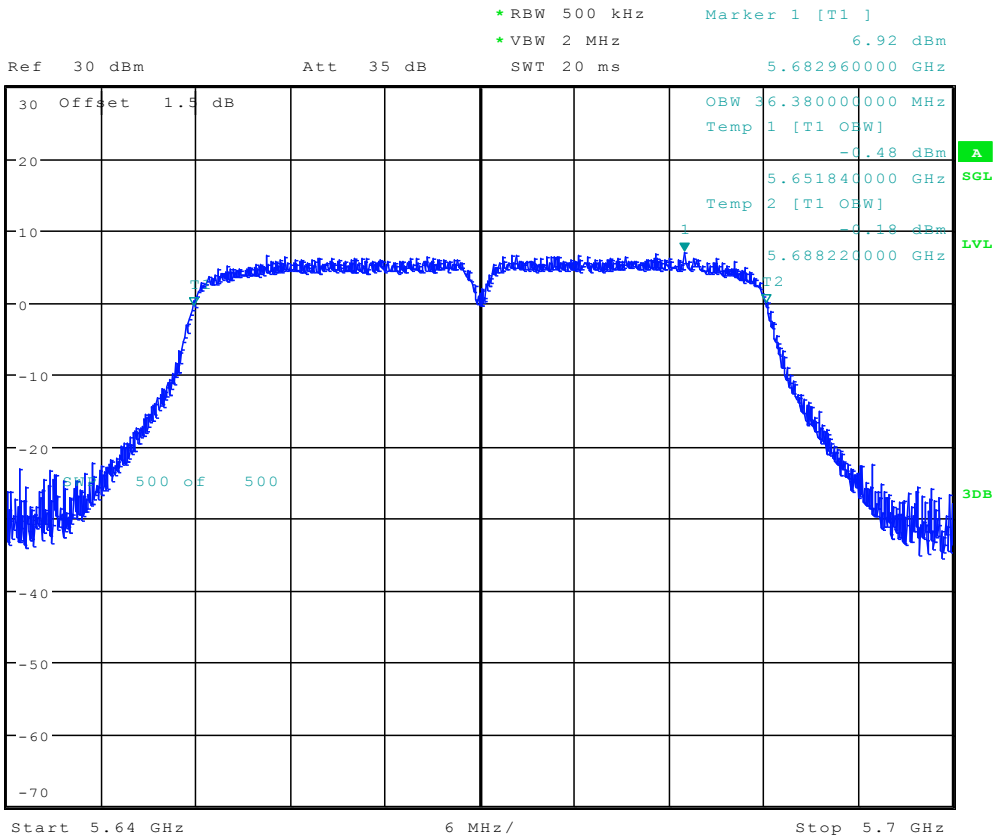
6.21 11N40_102 ANT 1



Date: 14.MAY.2017 16:14:00



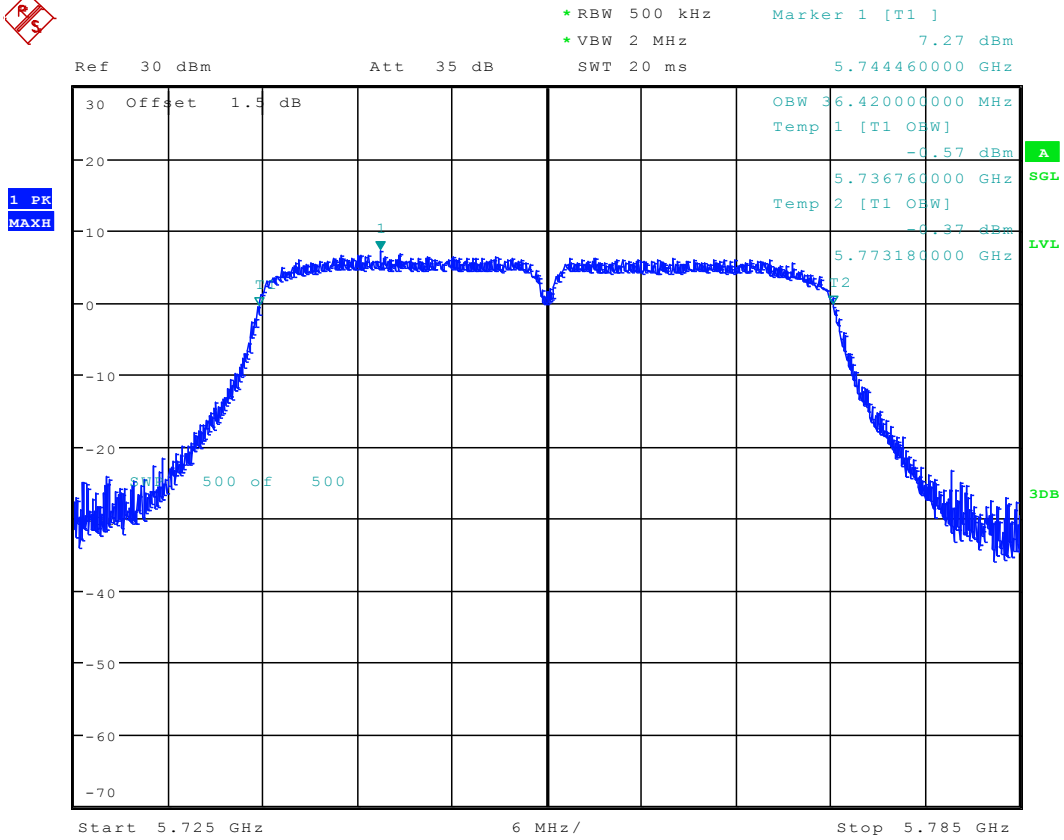
6.22 11N40_134 ANT 1



Date: 14.MAY.2017 16:21:32

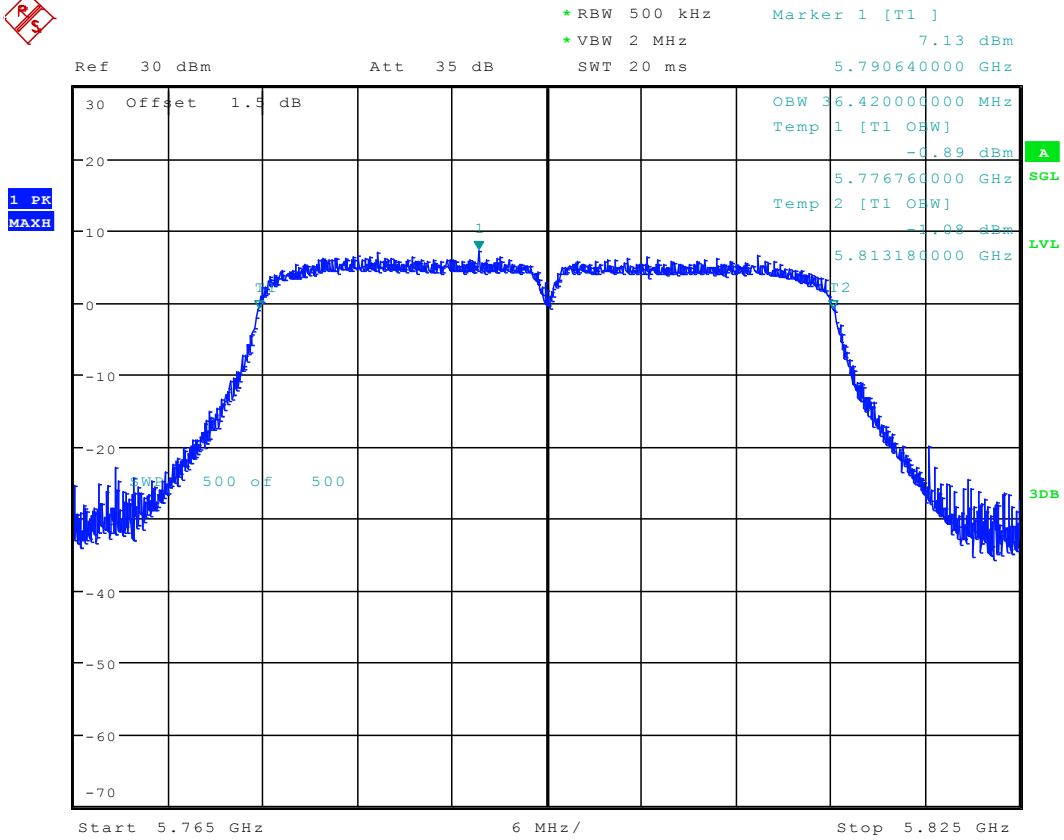


6.23 11N40_151 ANT 1



Date: 14.MAY.2017 16:26:51

6.24 11N40_159 ANT 1



Date: 14.MAY.2017 16:32:59



Appendix C: Duty Cycle

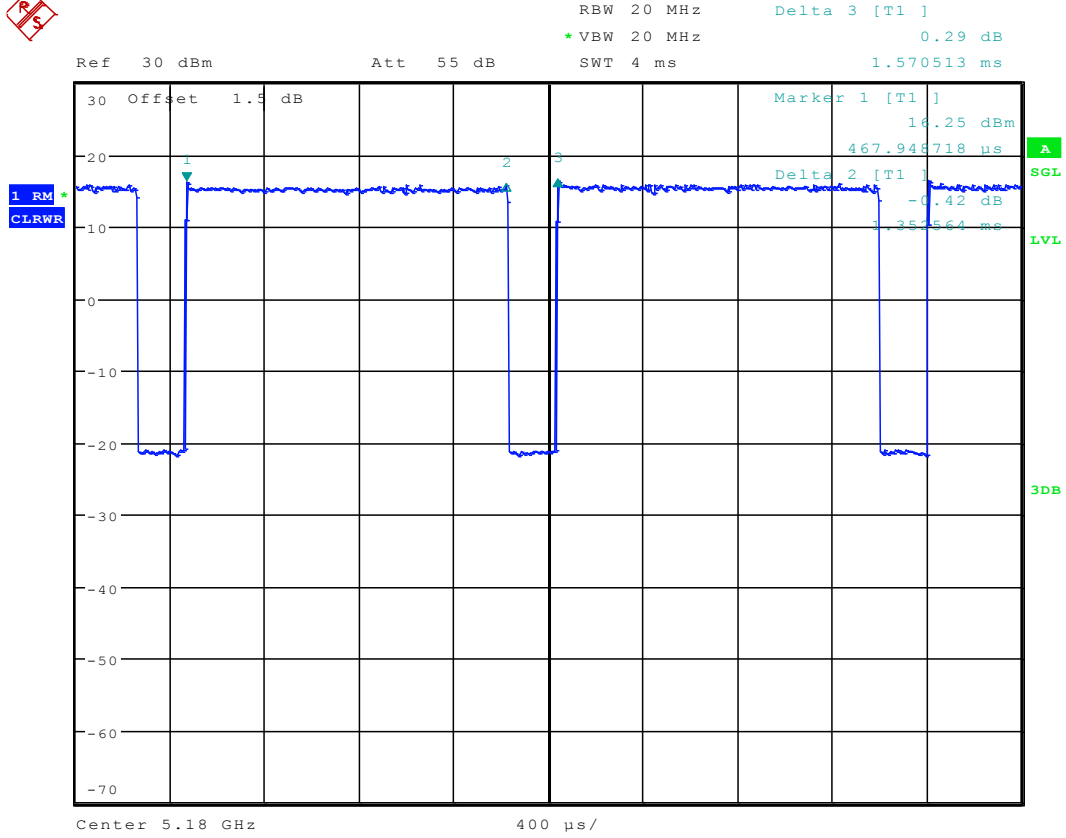
7 Part I - Test Results

| Test Mode | Antenna Port | Duty cycle [%] |
|-----------|--------------|----------------|
| 11A20 | ANT 1 | 86.1 |
| 11N20 | ANT 1 | 85.4 |
| 11N40 | ANT 1 | 75.6 |



8 Test Plot

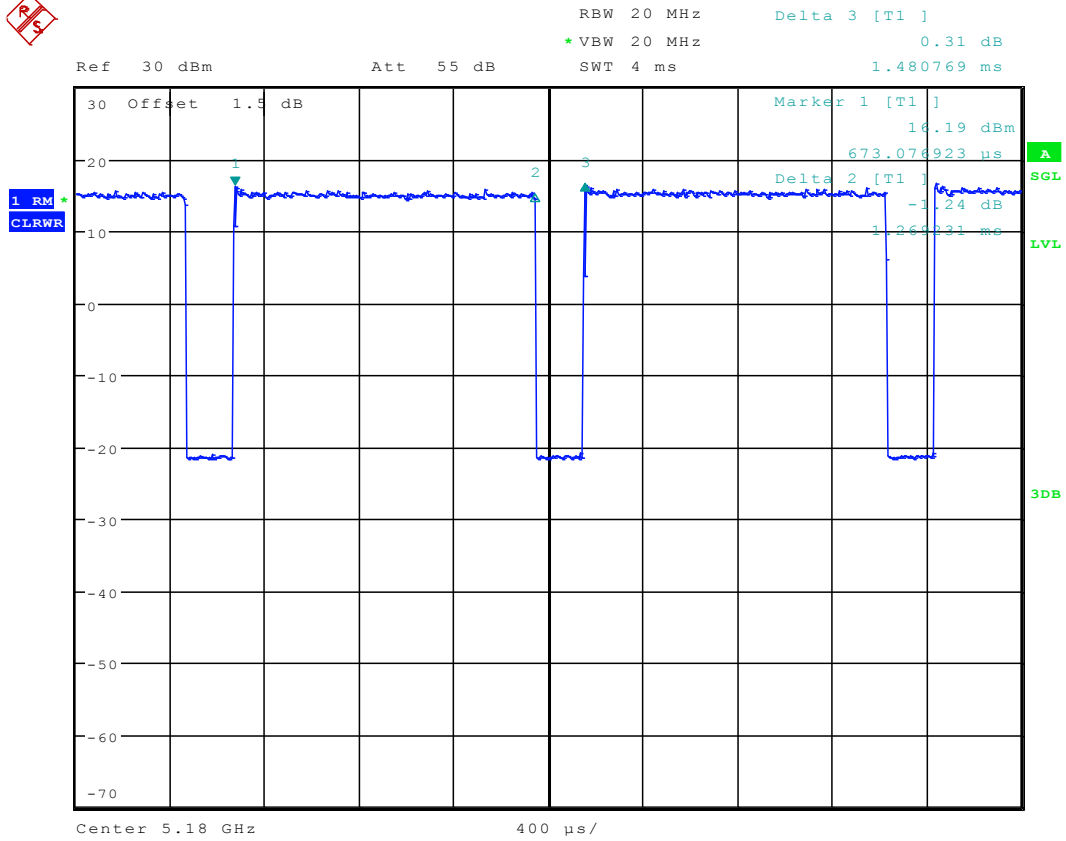
8.1 11A20



Date: 14.MAY.2017 16:51:11



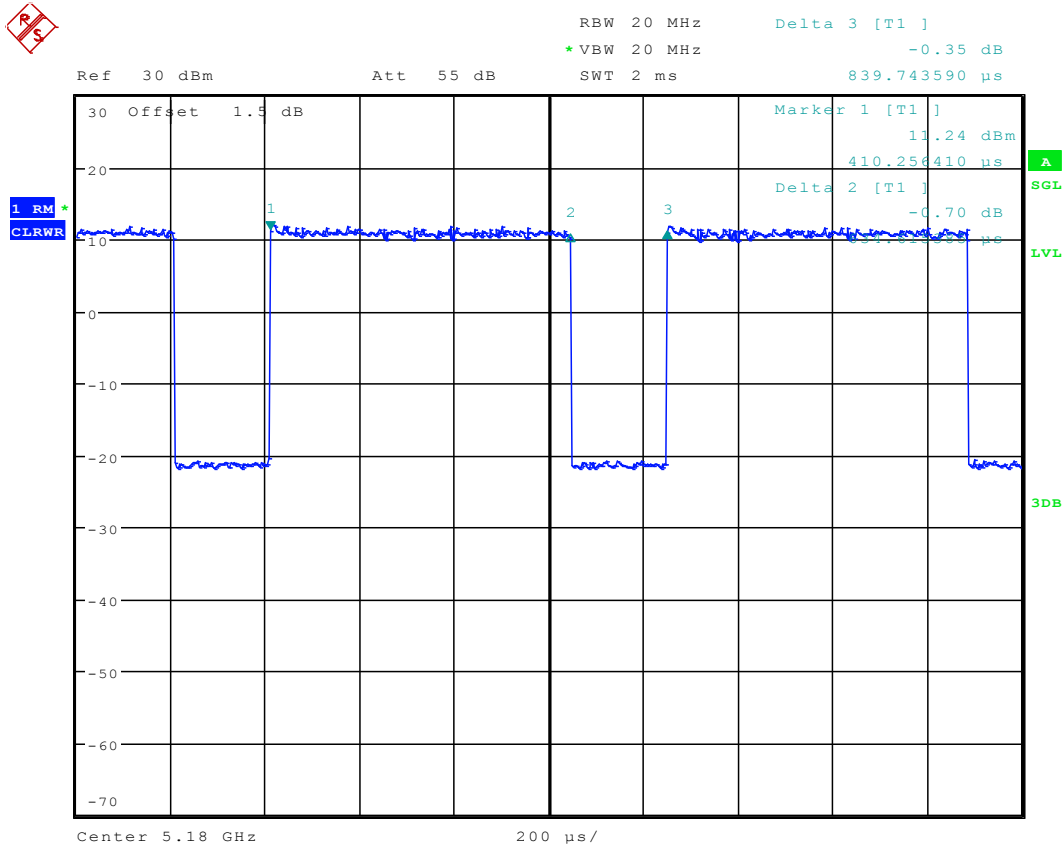
8.2 11n20



Date: 14.MAY.2017 16:47:58



8.3 11n40



Date: 14.MAY.2017 16:53:12



Appendix D: Maximum Conducted Output Power



9 Result Table

| Test Mode | Test Channel | Frequency [MHz] | Antenna Port | Meas. Level (Cond.) [dBm] | Verdict |
|-----------|--------------|-----------------|--------------|---------------------------|---------|
| 11A20 | 36 | 5180 | ANT 1 | 15.95 | PASS |
| | 48 | 5240 | ANT 1 | 15.77 | PASS |
| | 52 | 5260 | ANT 1 | 15.52 | PASS |
| | 64 | 5320 | ANT 1 | 15.77 | PASS |
| | 100 | 5500 | ANT 1 | 15.97 | PASS |
| | 140 | 5700 | ANT 1 | 16.1 | PASS |
| | 149 | 5745 | ANT 1 | 15.92 | PASS |
| | 165 | 5825 | ANT 1 | 15.31 | PASS |
| 11N20 | 36 | 5180 | ANT 1 | 15.83 | PASS |
| | 48 | 5240 | ANT 1 | 15.83 | PASS |
| | 52 | 5260 | ANT 1 | 15.71 | PASS |
| | 64 | 5320 | ANT 1 | 15.9 | PASS |
| | 100 | 5500 | ANT 1 | 15.88 | PASS |
| | 140 | 5700 | ANT 1 | 16.14 | PASS |
| | 149 | 5745 | ANT 1 | 15.99 | PASS |
| | 165 | 5825 | ANT 1 | 15.51 | PASS |
| 11N40 | 38 | 5190 | ANT 1 | 13.83 | PASS |
| | 46 | 5230 | ANT 1 | 13.67 | PASS |
| | 54 | 5270 | ANT 1 | 13.3 | PASS |
| | 62 | 5310 | ANT 1 | 13.46 | PASS |
| | 102 | 5510 | ANT 1 | 13.67 | PASS |
| | 134 | 5670 | ANT 1 | 13.83 | PASS |
| | 151 | 5755 | ANT 1 | 13.92 | PASS |
| | 159 | 5795 | ANT 1 | 13.69 | PASS |



Appendix E: Peak Power Spectral Density Level

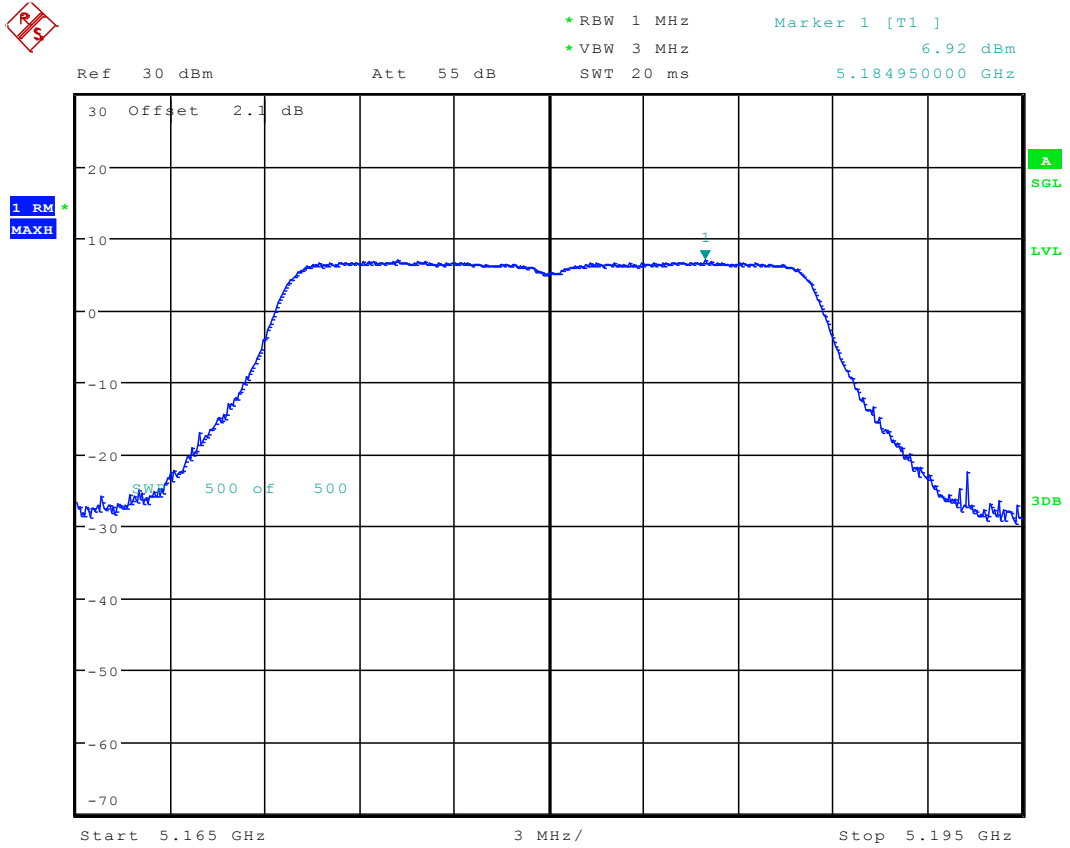
**10 Result Table**

| Test Mode | Test Channel | Frequency [MHz] | Antenna Port | Meas. Level (Cond.) [dBm] | Verdict |
|-----------|--------------|-----------------|--------------|---------------------------|---------|
| 11A20 | 36 | 5180 | ANT 1 | 6.92 | PASS |
| | 48 | 5240 | ANT 1 | 6.82 | PASS |
| | 52 | 5260 | ANT 1 | 6.4 | PASS |
| | 64 | 5320 | ANT 1 | 6.89 | PASS |
| | 100 | 5500 | ANT 1 | 7.06 | PASS |
| | 140 | 5700 | ANT 1 | 7.11 | PASS |
| | 149 | 5745 | ANT 1 | 7.01 | PASS |
| | 165 | 5825 | ANT 1 | 6.44 | PASS |
| 11N20 | 36 | 5180 | ANT 1 | 6.6 | PASS |
| | 48 | 5240 | ANT 1 | 6.74 | PASS |
| | 52 | 5260 | ANT 1 | 6.5 | PASS |
| | 64 | 5320 | ANT 1 | 6.69 | PASS |
| | 100 | 5500 | ANT 1 | 7.21 | PASS |
| | 140 | 5700 | ANT 1 | 6.9 | PASS |
| | 149 | 5745 | ANT 1 | 6.91 | PASS |
| | 165 | 5825 | ANT 1 | 6.51 | PASS |
| 11N40 | 38 | 5190 | ANT 1 | 2.75 | PASS |
| | 46 | 5230 | ANT 1 | 2.66 | PASS |
| | 54 | 5270 | ANT 1 | 2.46 | PASS |
| | 62 | 5310 | ANT 1 | 2.51 | PASS |
| | 102 | 5510 | ANT 1 | 2.78 | PASS |
| | 134 | 5670 | ANT 1 | 3.06 | PASS |
| | 151 | 5755 | ANT 1 | 3.06 | PASS |
| | 159 | 5795 | ANT 1 | 2.88 | PASS |



11 Test Plot

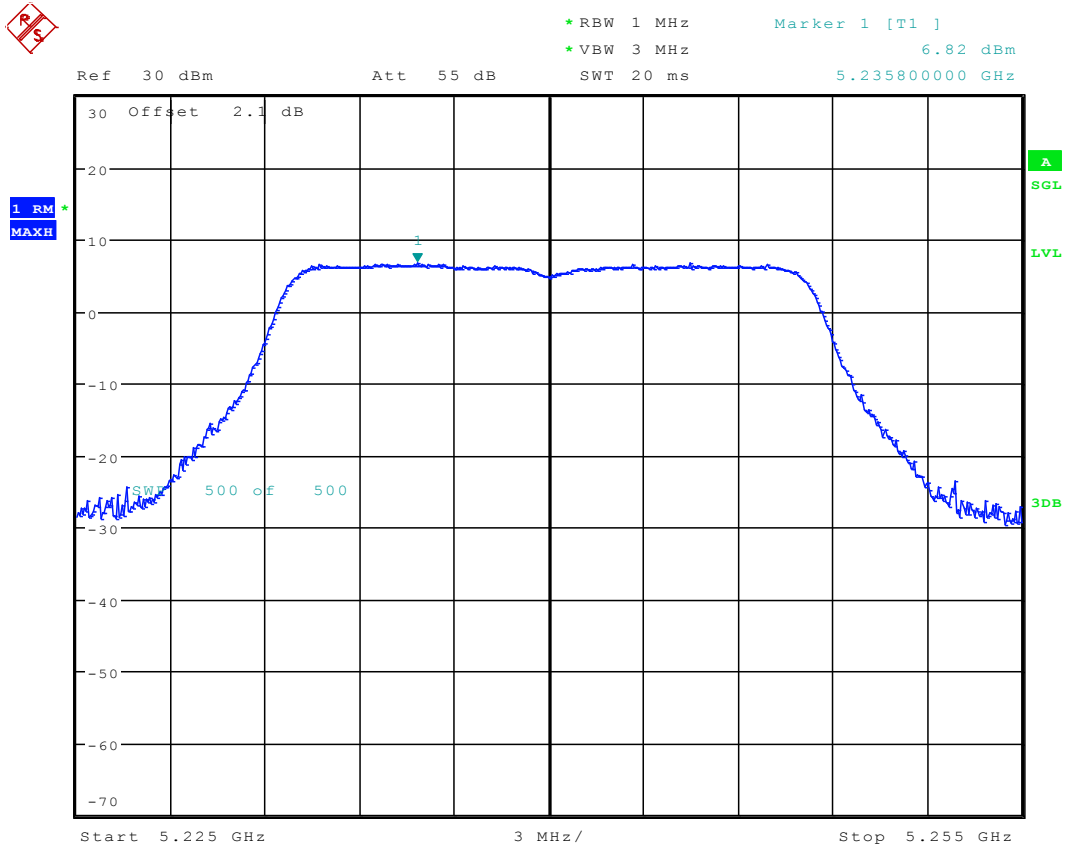
11.1 11A20_36 ANT 1



Date: 14.MAY.2017 12:58:39



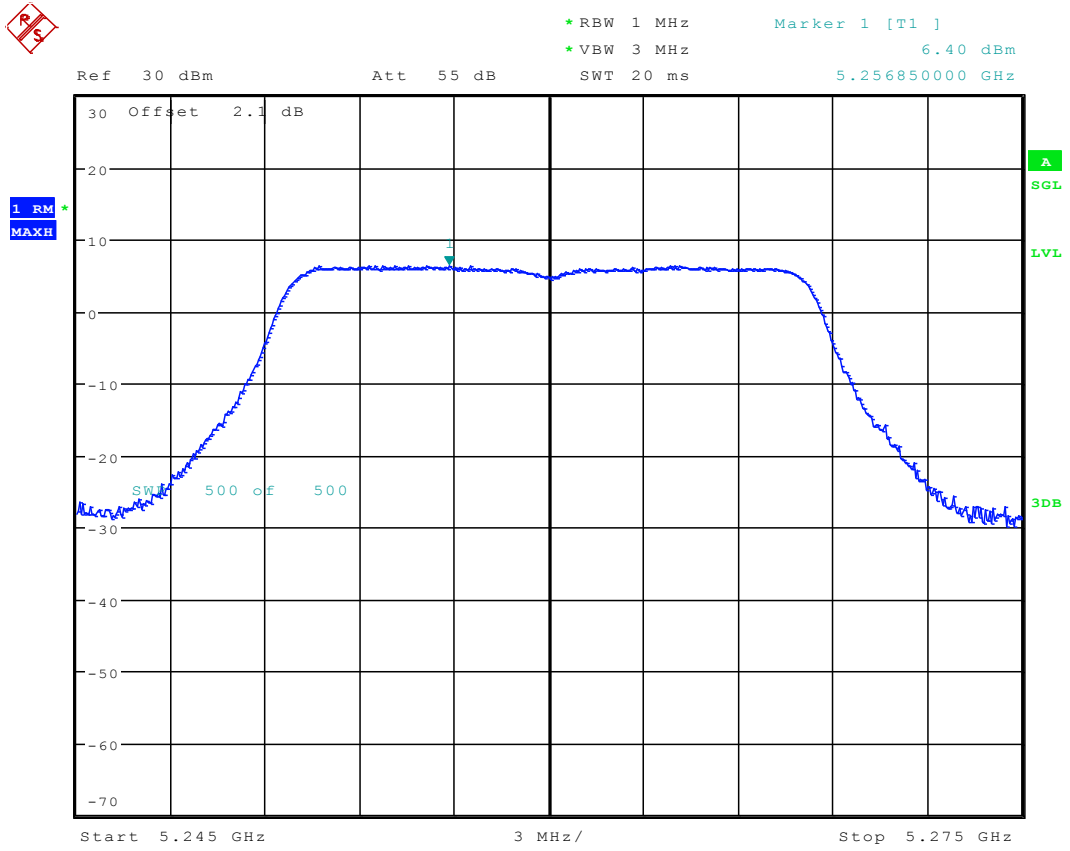
11.2 11A20_48 ANT 1



Date: 14.MAY.2017 13:06:12



11.3 11A20_52 ANT 1



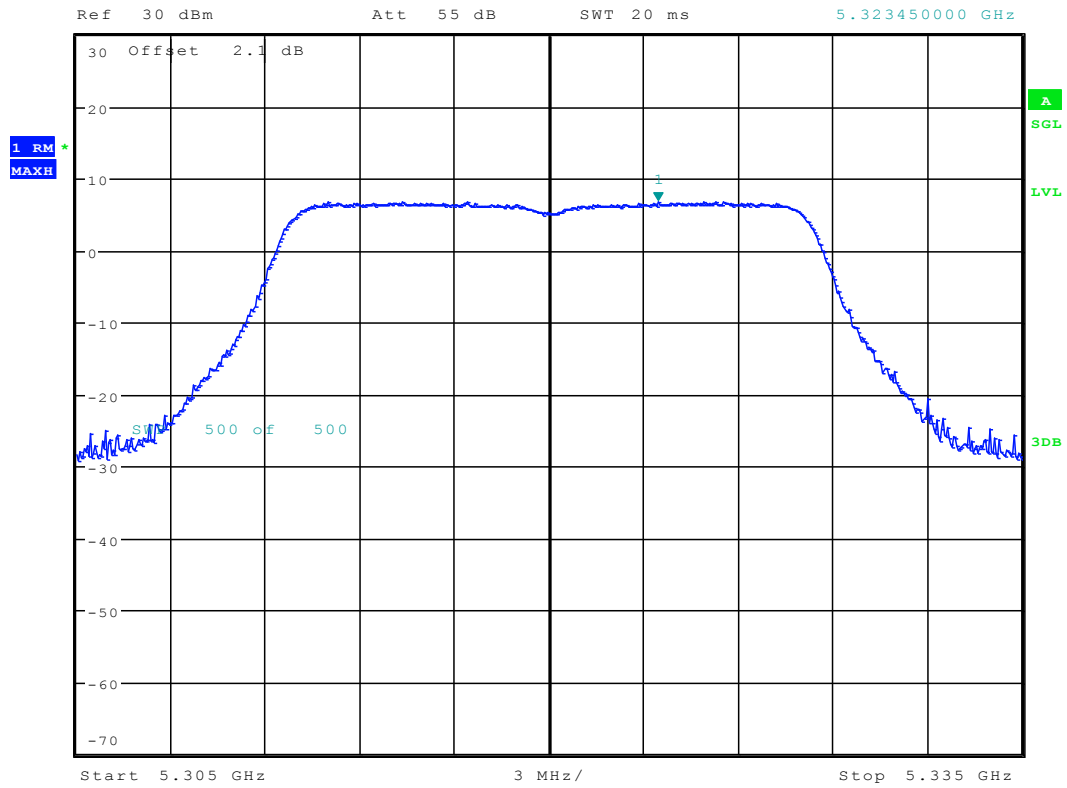
Date: 14.MAY.2017 13:11:43



11.4 11A20_64 ANT 1

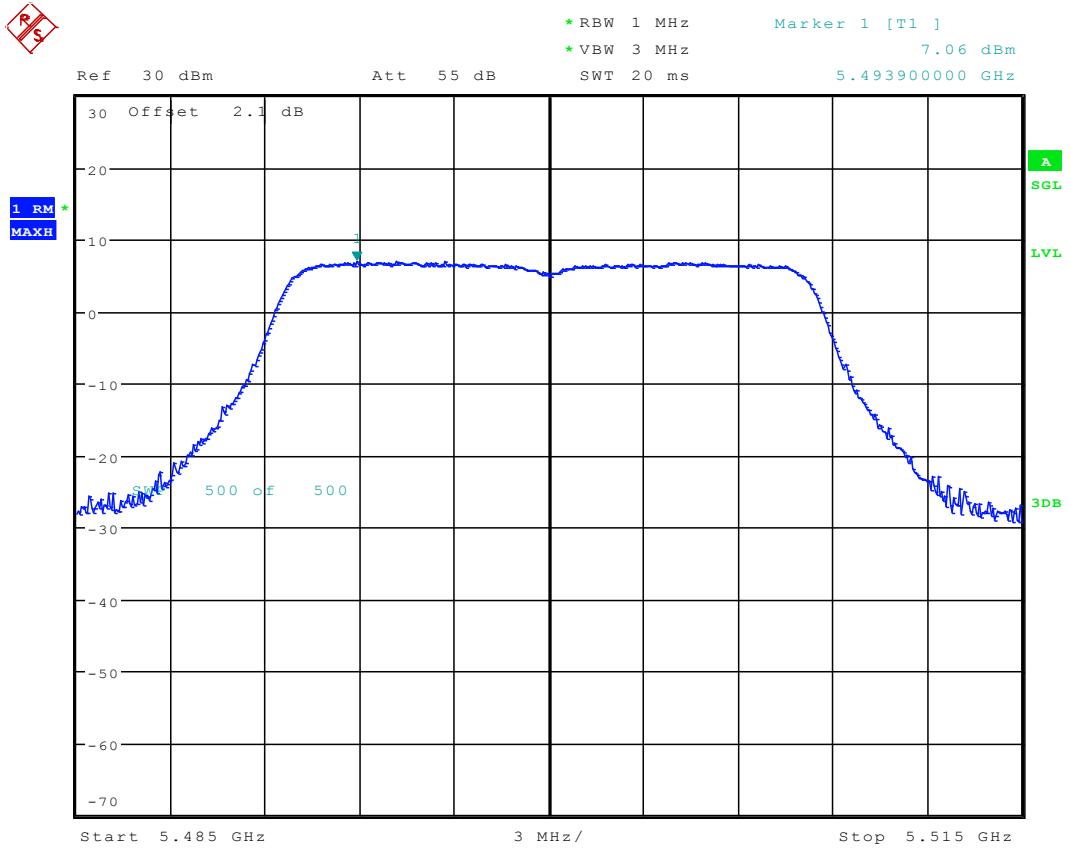


*RBW 1 MHz Marker 1 [T1]
*VBW 3 MHz 6.89 dBm
SWT 20 ms 5.323450000 GHz



Date: 14.MAY.2017 13:17:33

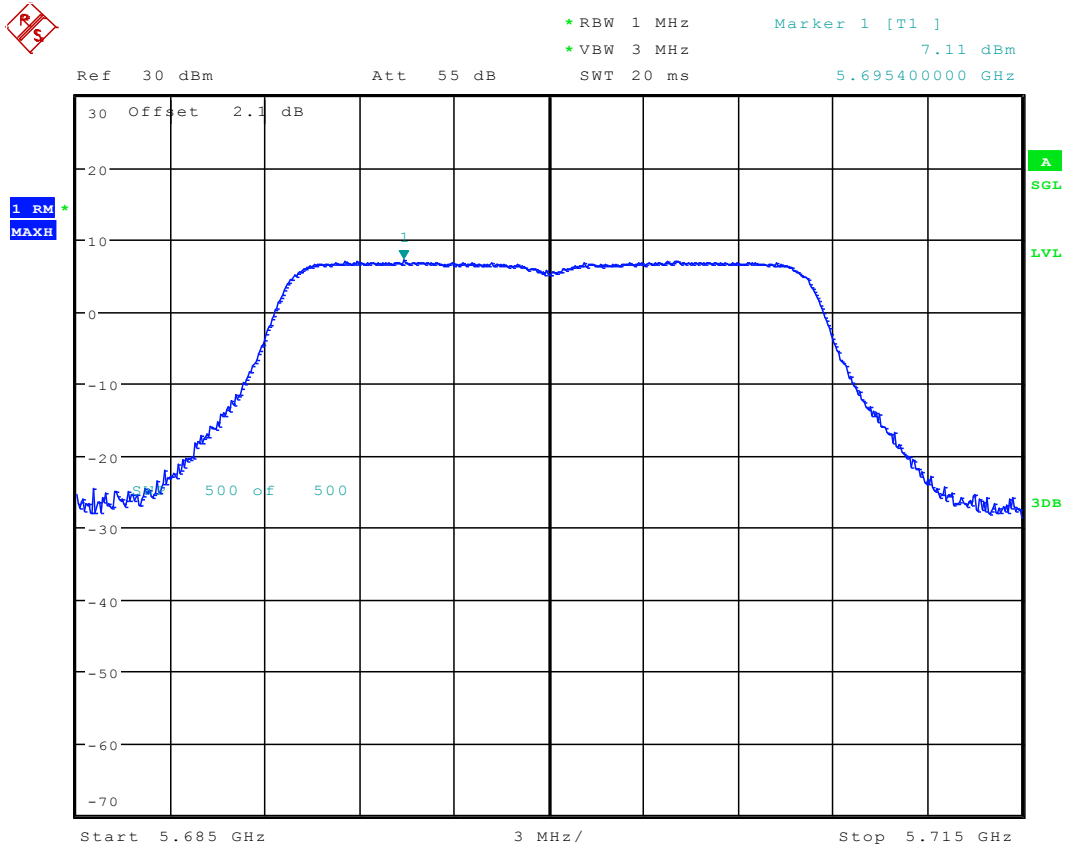
11.5 11A20_100 ANT 1



Date: 14.MAY.2017 13:23:34



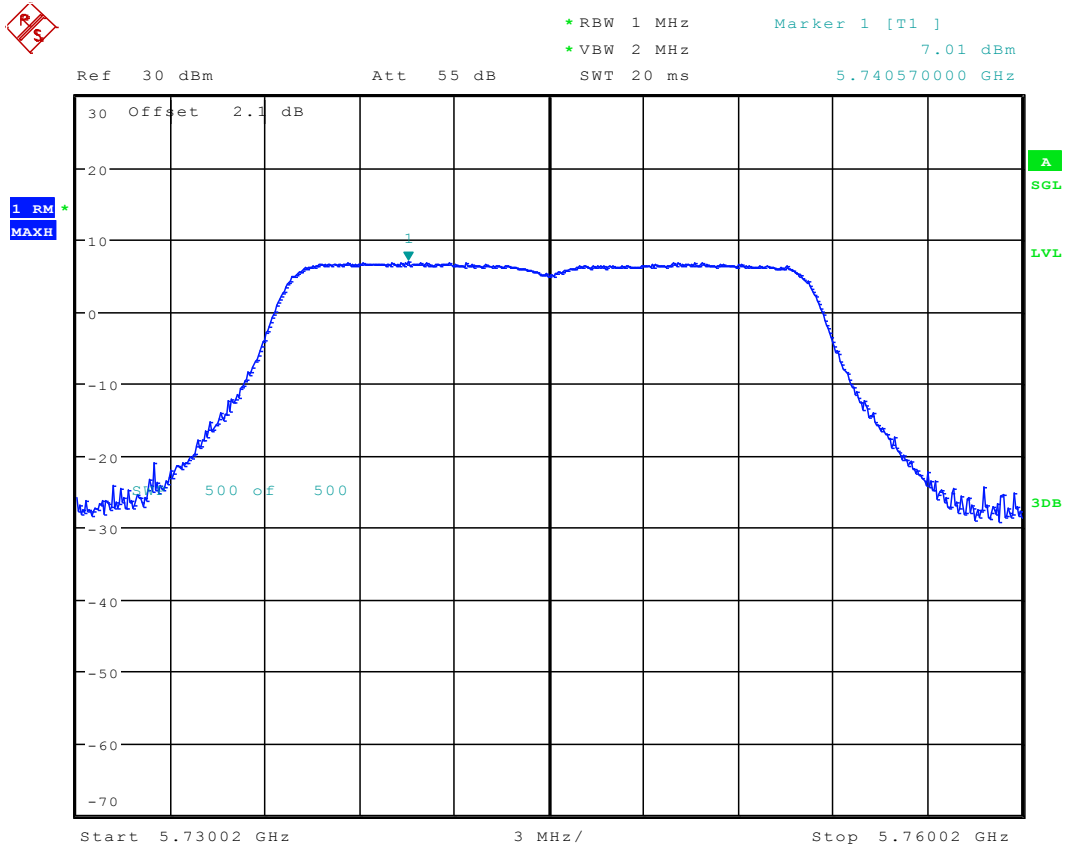
11.6 11A20_140 ANT 1



Date: 14.MAY.2017 13:28:54



11.7 11A20_149 ANT 1



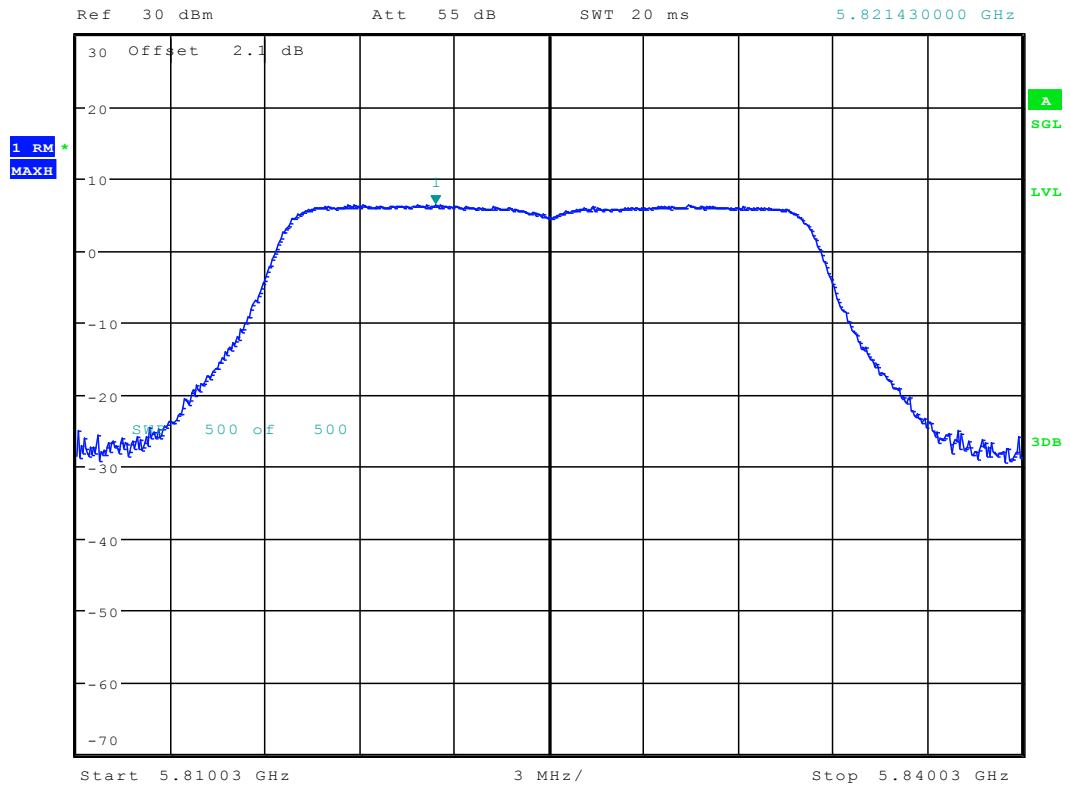
Date: 14.MAY.2017 13:34:57



11.8 11A20_165 ANT 1



*RBW 1 MHz Marker 1 [T1]
*VBW 2 MHz 6.44 dBm
SWT 20 ms 5.821430000 GHz



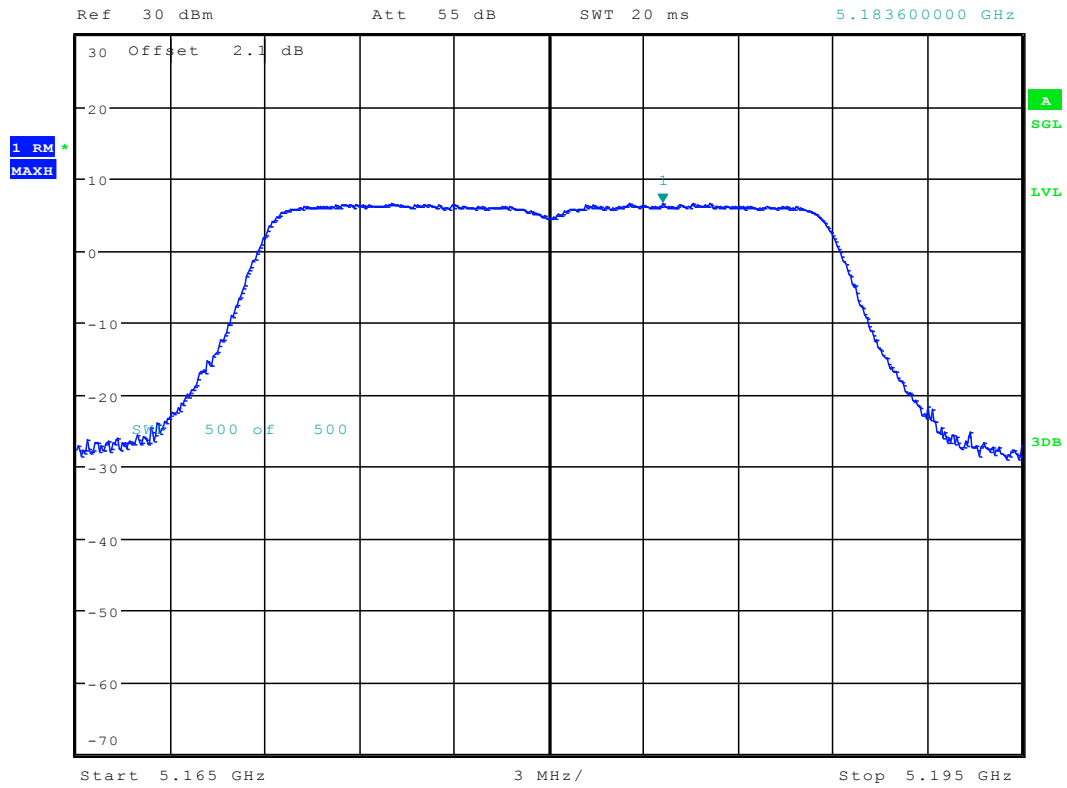
Date: 14.MAY.2017 13:41:01



11.9 11N20_36 ANT 1



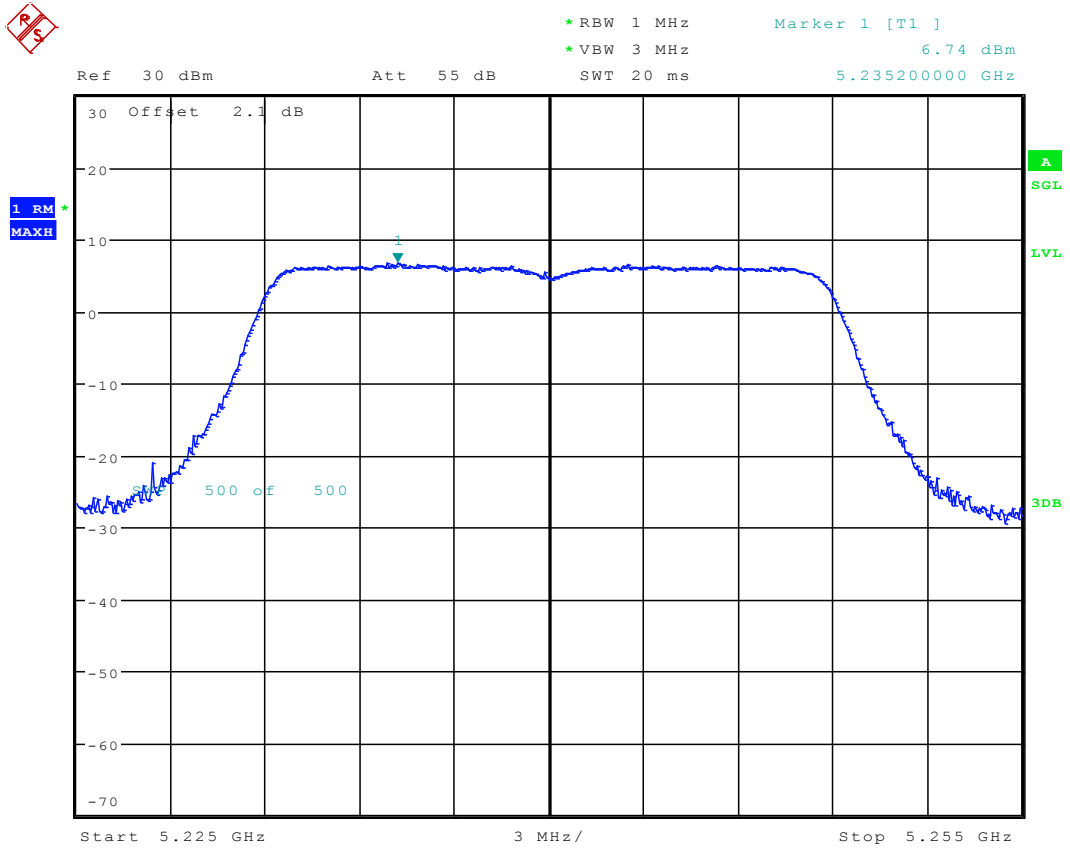
*RBW 1 MHz Marker 1 [T1]
*VBW 3 MHz 6.60 dBm
SWT 20 ms 5.183600000 GHz



Date: 14.MAY.2017 13:48:33



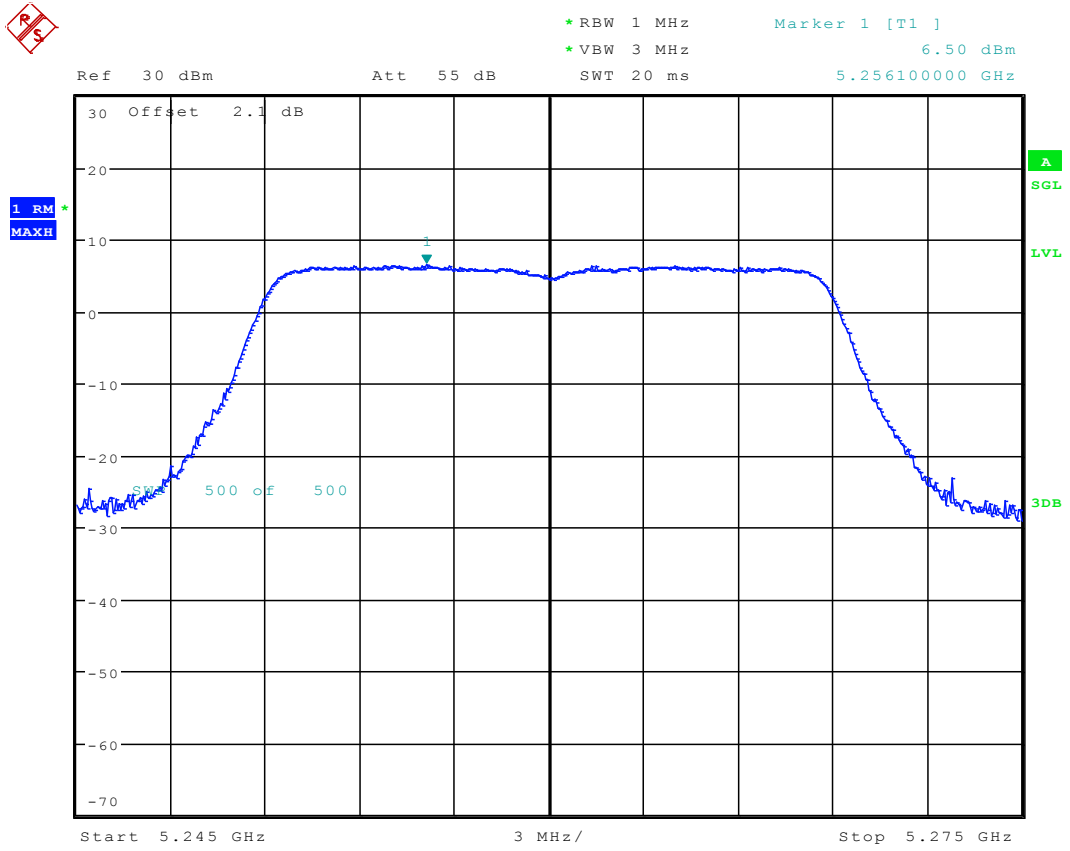
11.10 11N20_48 ANT 1



Date: 14.MAY.2017 13:53:35



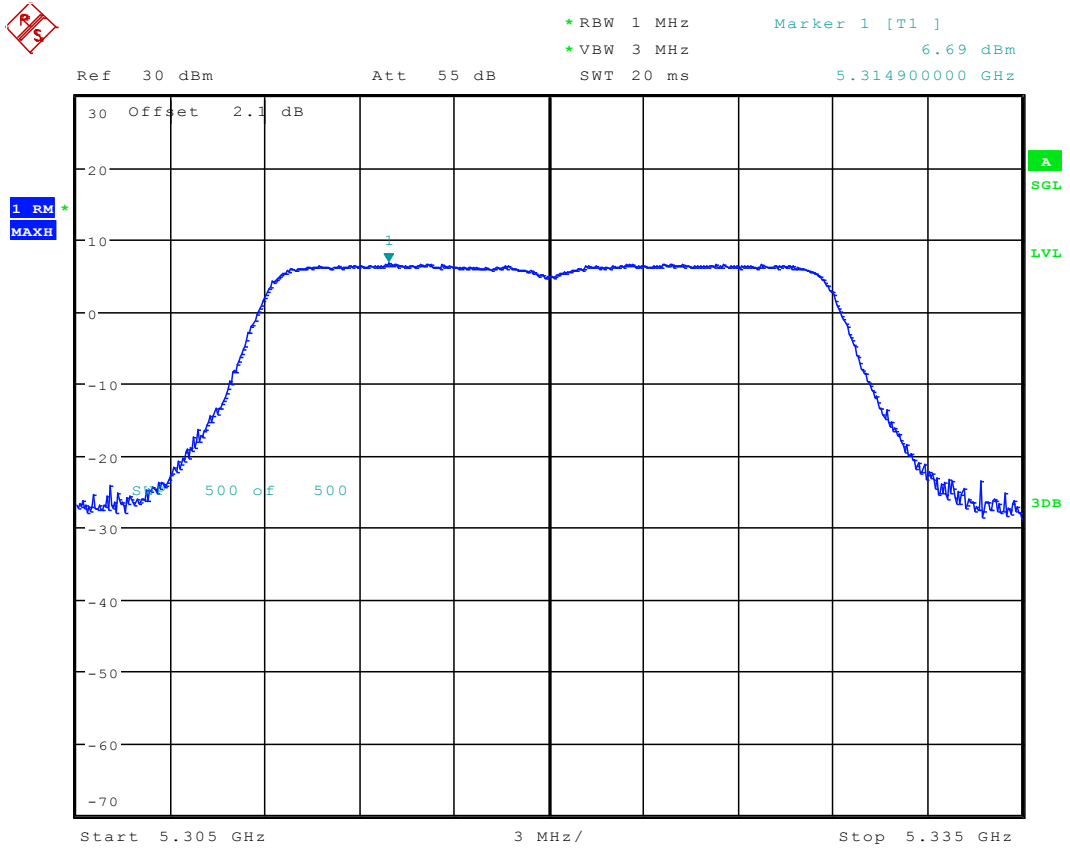
11.11 11N20_52 ANT 1



Date: 14.MAY.2017 14:23:58



11.12 11N20_64 ANT 1

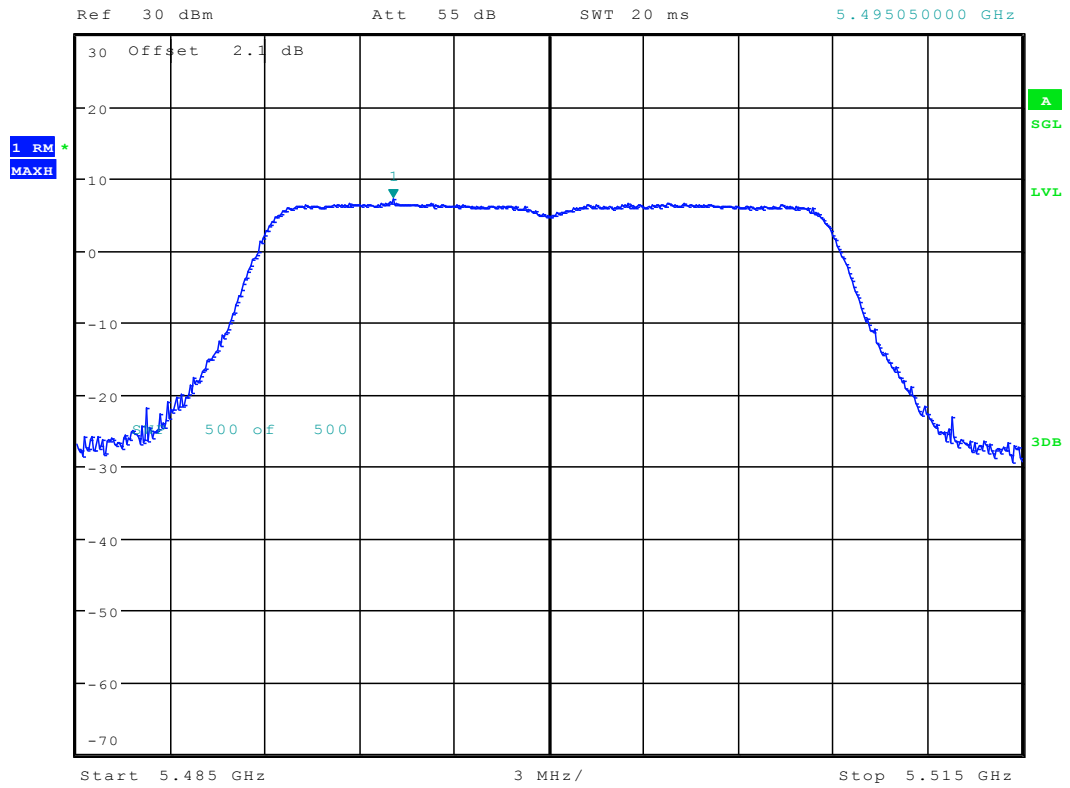


Date: 14.MAY.2017 14:28:46

11.13 11N20_100 ANT 1



*RBW 1 MHz Marker 1 [T1]
*VBW 3 MHz 7.21 dBm
SWT 20 ms 5.495050000 GHz



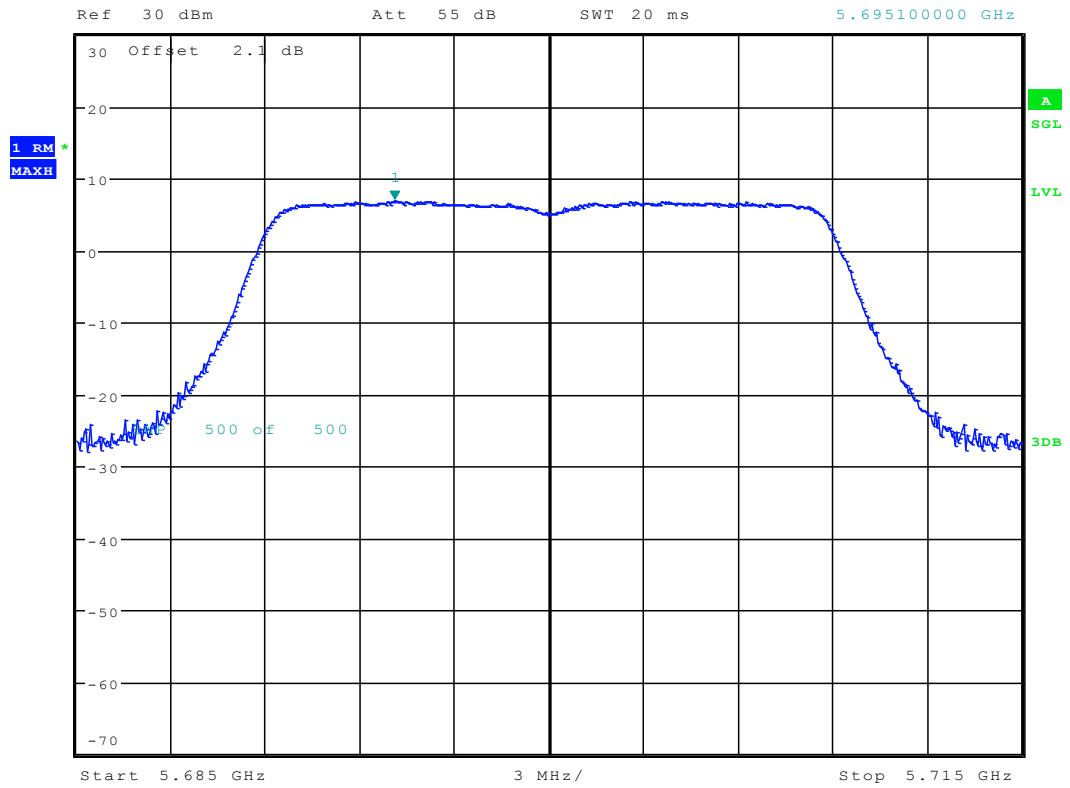
Date: 14.MAY.2017 14:33:56



11.14 11N20_140 ANT 1



*RBW 1 MHz Marker 1 [T1]
*VBW 3 MHz 6.90 dBm
SWT 20 ms 5.695100000 GHz



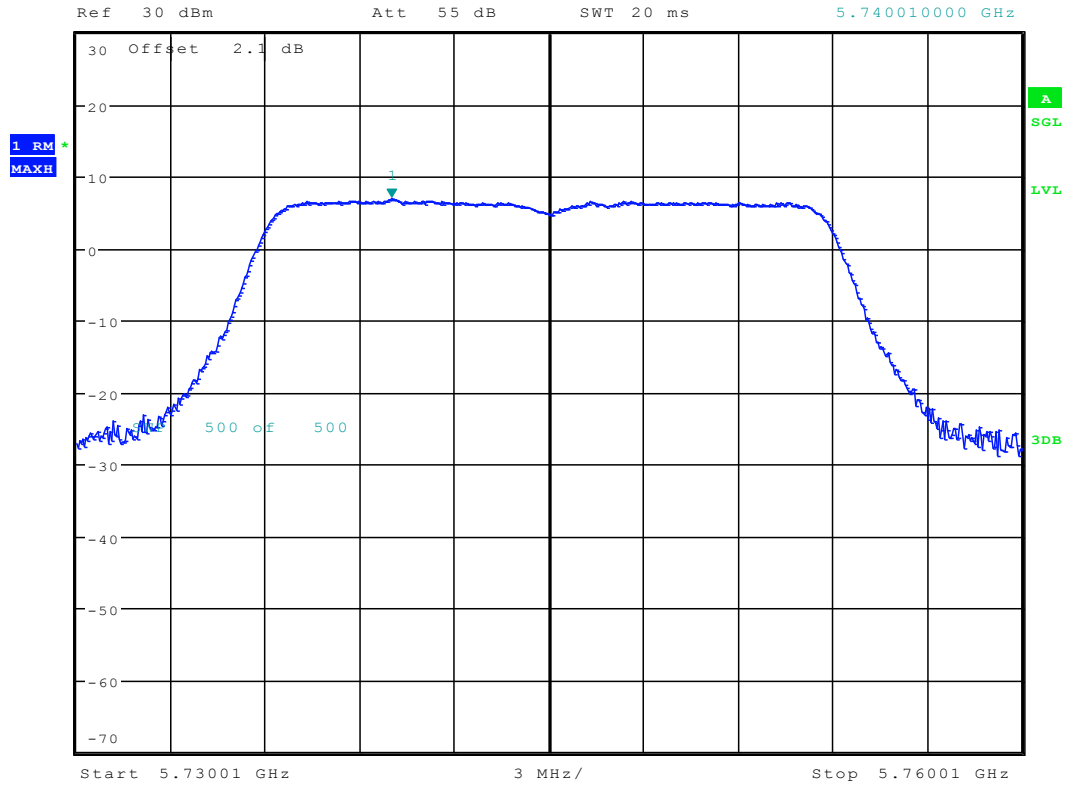
Date: 14.MAY.2017 14:39:05



11.15 11N20_149 ANT 1



*RBW 1 MHz Marker 1 [T1]
*VBW 2 MHz 6.91 dBm
SWT 20 ms 5.740010000 GHz



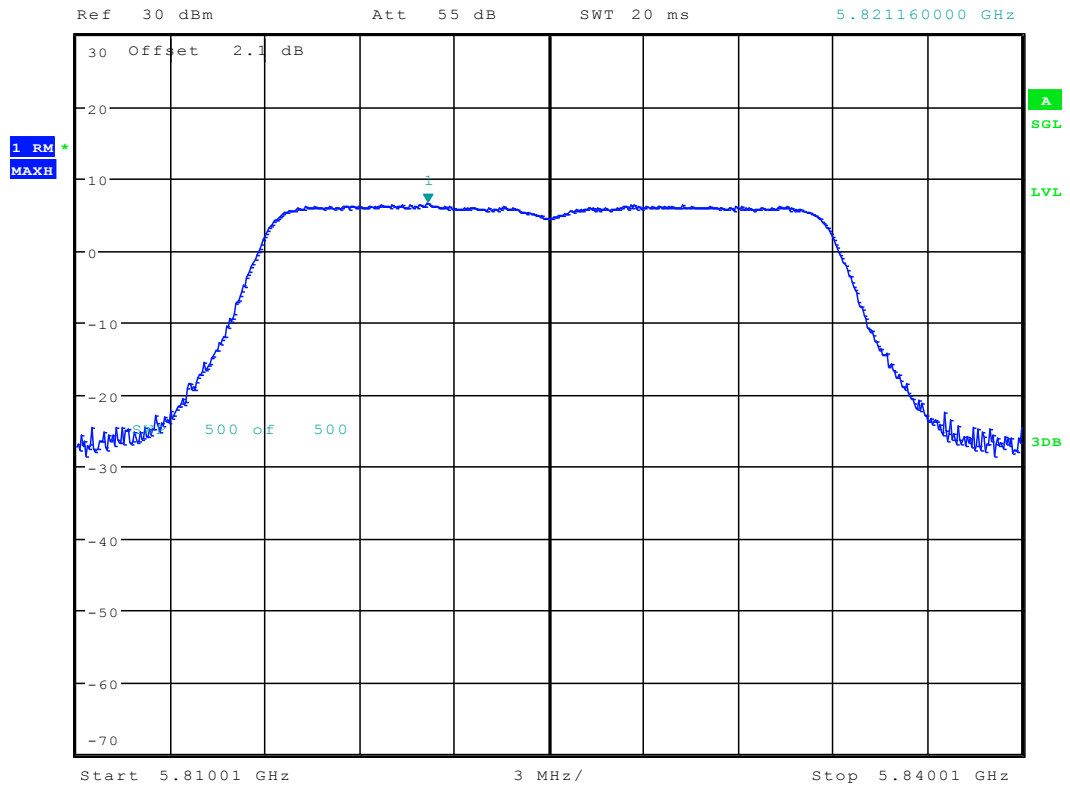
Date: 14.MAY.2017 14:45:05



11.16 11N20_165 ANT 1



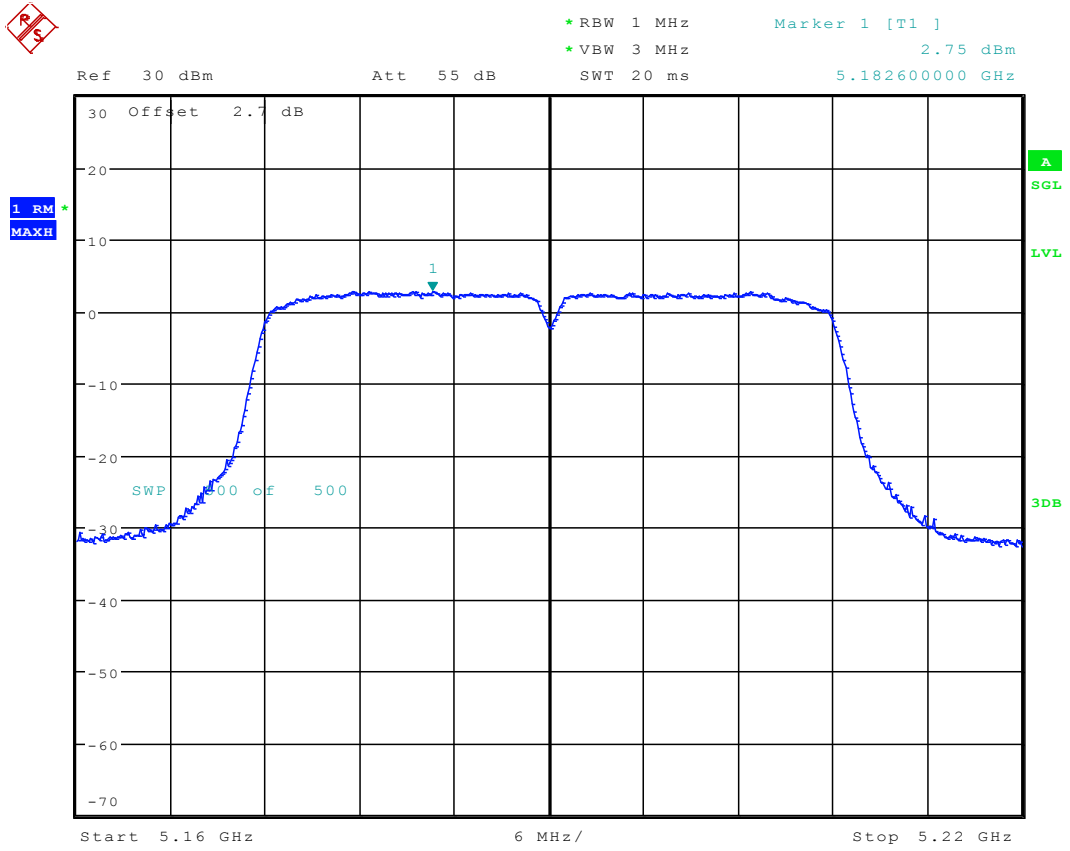
*RBW 1 MHz Marker 1 [T1]
*VBW 2 MHz 6.51 dBm
SWT 20 ms 5.821160000 GHz



Date: 14.MAY.2017 14:51:03



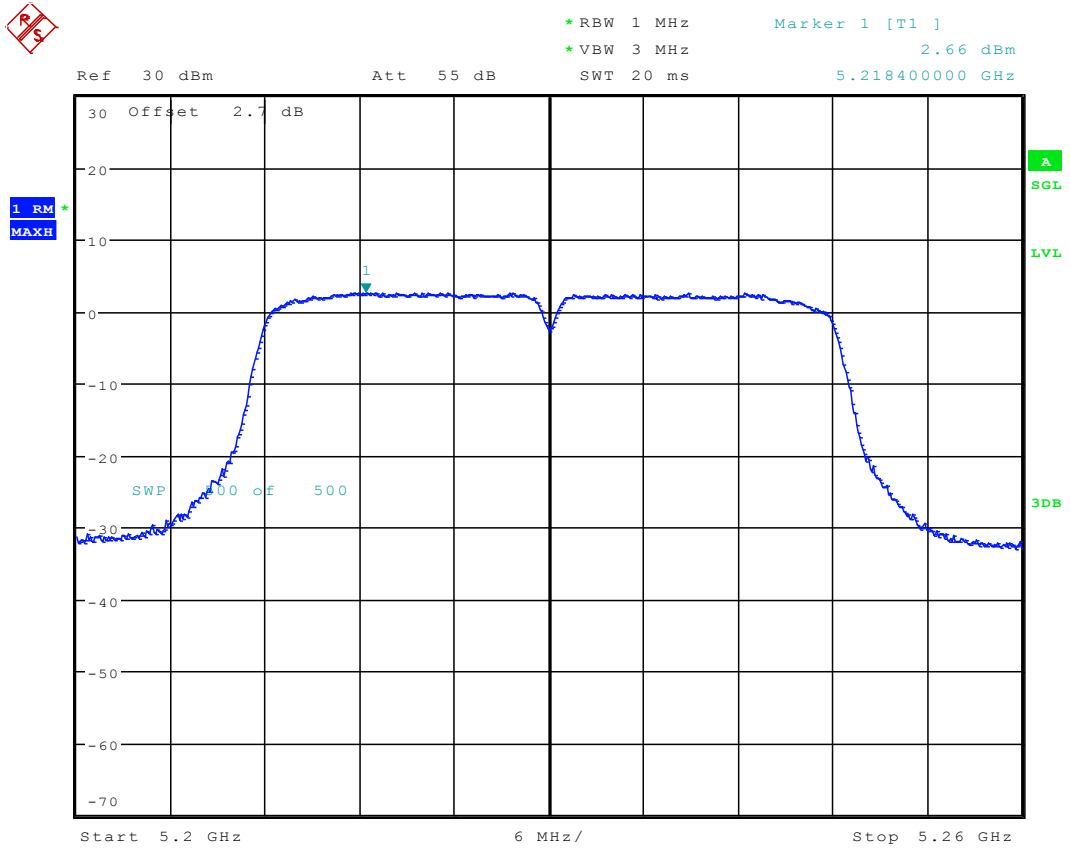
11.17 11N40_38 ANT 1



Date: 14.MAY.2017 15:53:28



11.18 11N40_46 ANT 1



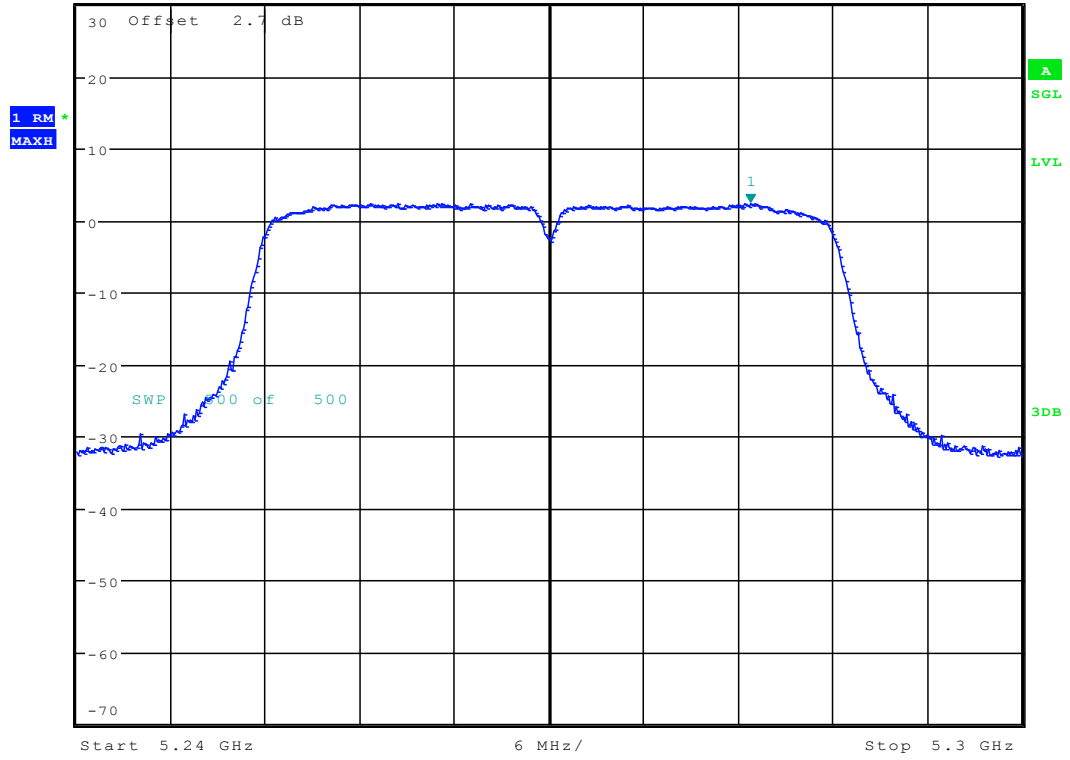
Date: 14.MAY.2017 15:58:37



11.19 11N40_54 ANT 1



*RBW 1 MHz Marker 1 [T1]
 *VBW 3 MHz 2.46 dBm
 Ref 30 dBm Att 55 dB SWT 20 ms 5.282800000 GHz



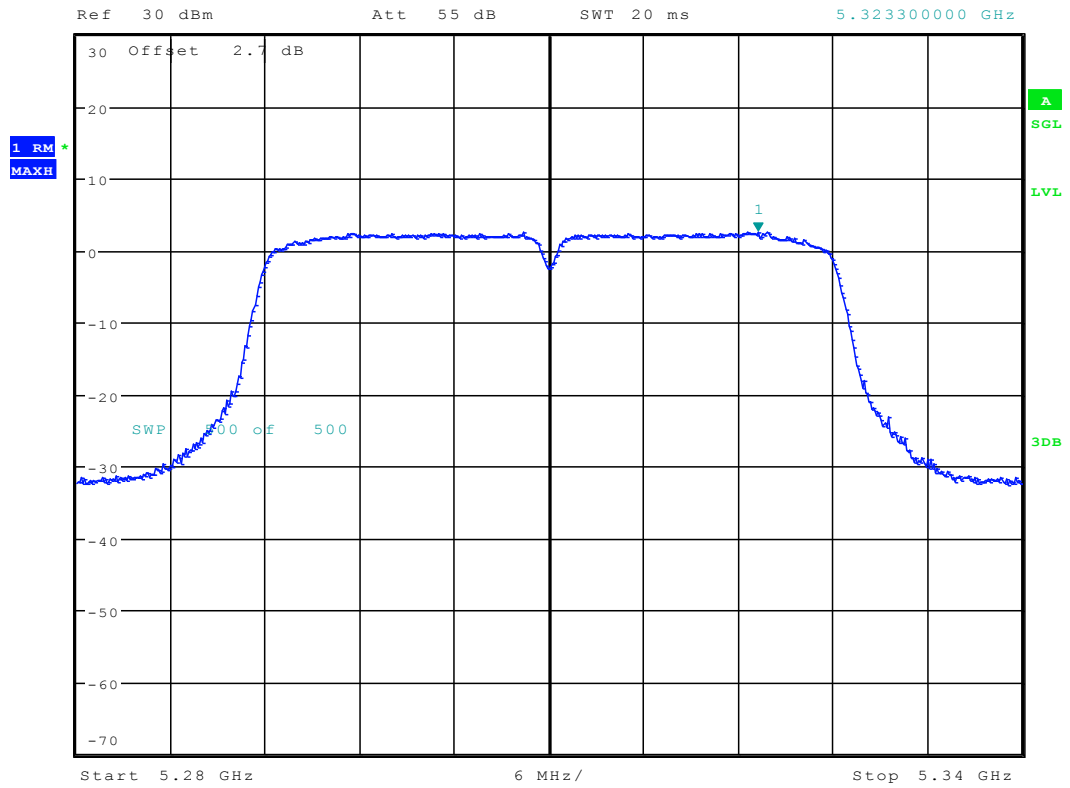
Date: 14.MAY.2017 16:03:38



11.20 11N40_62 ANT 1



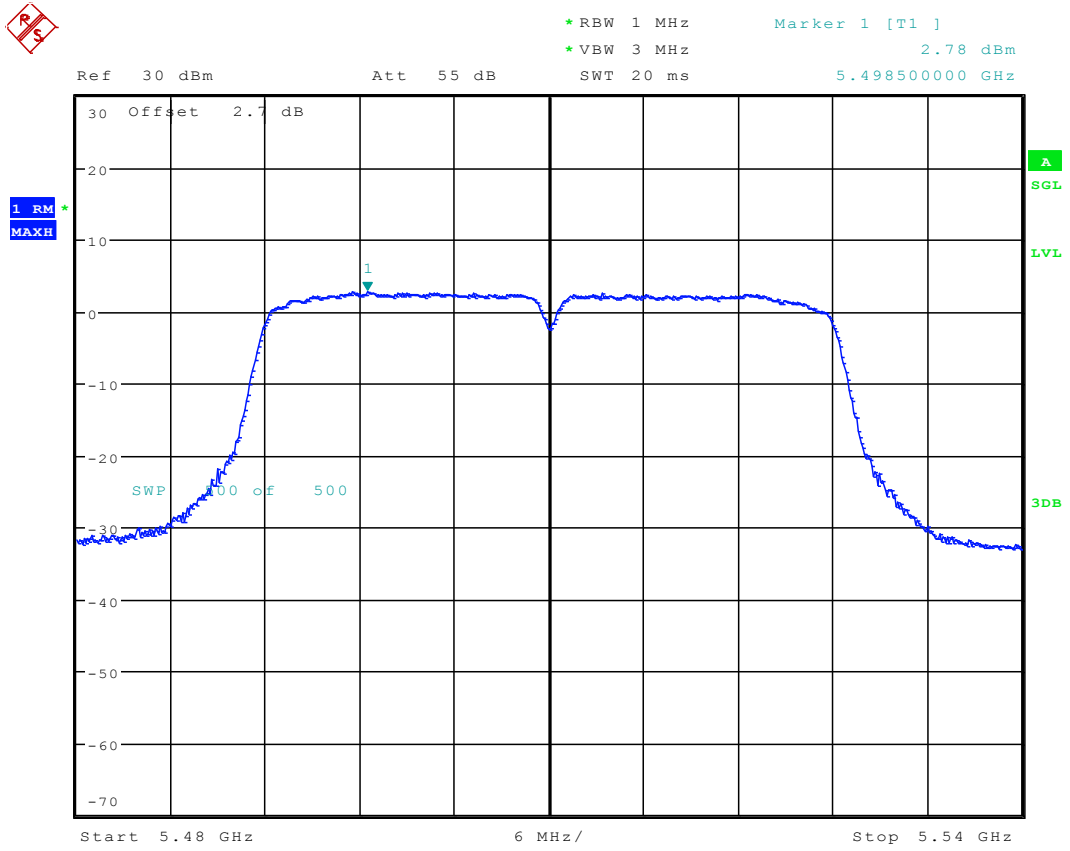
*RBW 1 MHz Marker 1 [T1]
 *VBW 3 MHz 2.51 dBm
 SWT 20 ms 5.323300000 GHz



Date: 14.MAY.2017 16:09:10



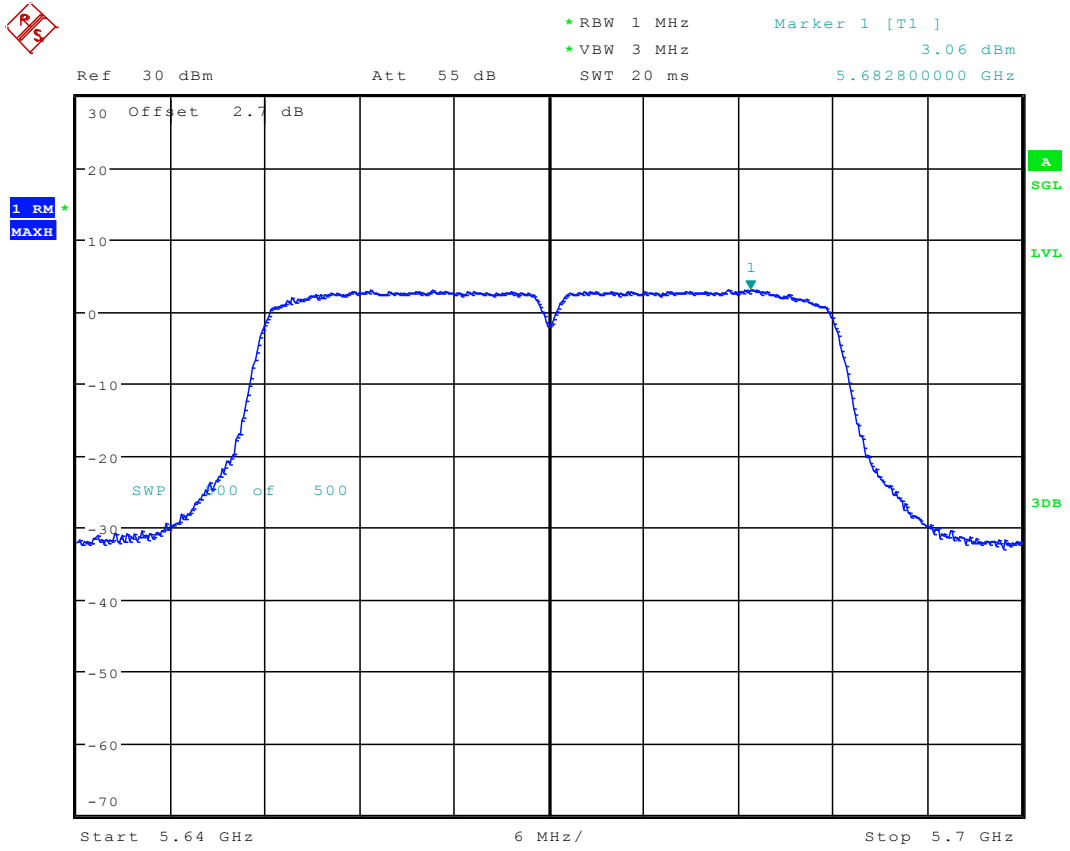
11.21 11N40_102 ANT 1



Date: 14.MAY.2017 16:14:44



11.22 11N40_134 ANT 1



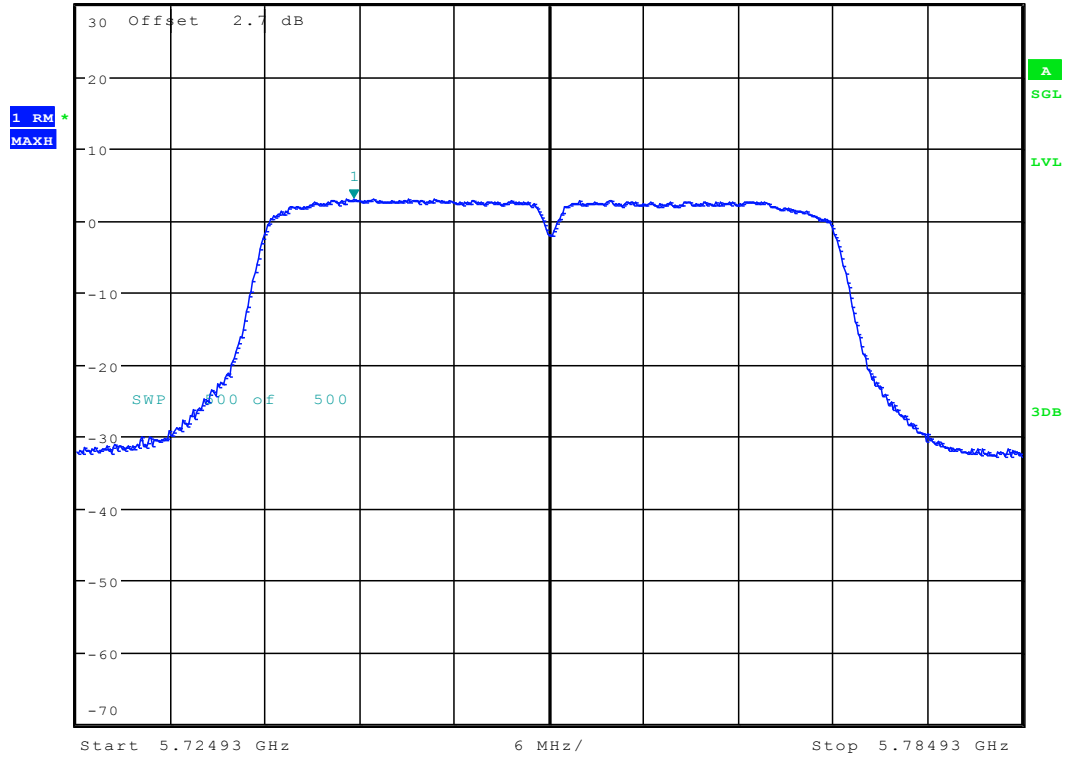
Date: 14.MAY.2017 16:22:16



11.23 11N40_151 ANT 1



*RBW 1 MHz Marker 1 [T1]
 *VBW 2 MHz 3.06 dBm
 Ref 30 dBm Att 55 dB SWT 20 ms 5.742530000 GHz



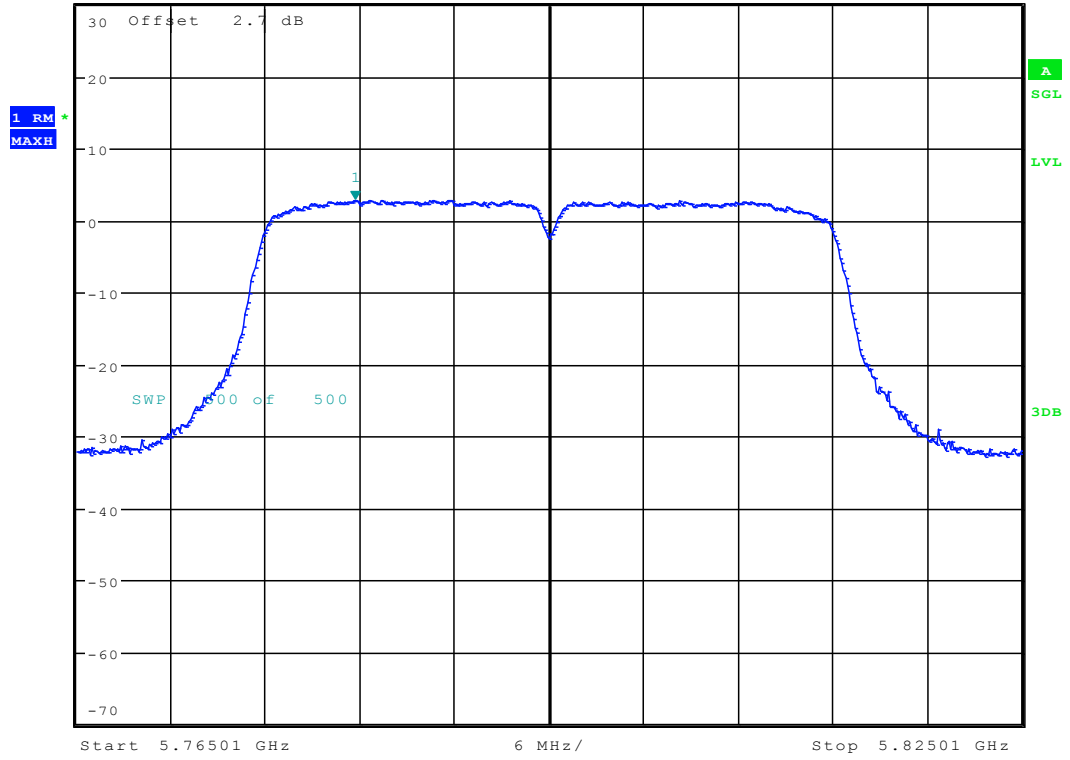
Date: 14.MAY.2017 16:28:09



11.24 11N40_159 ANT 1



*RBW 1 MHz Marker 1 [T1]
 *VBW 2 MHz 2.88 dBm
 Ref 30 dBm Att 55 dB SWT 20 ms 5.782710000 GHz



Date: 14.MAY.2017 16:34:17



Appendix F: Frequencies Stability

Frequency Error vs. Voltage:

| Test Conditions | Measured Frequency (MHz) |
|----------------------------|----------------------------|
| | 5180 |
| V nom(V) | 5180.0083 |
| V max(V) | 5180.0116 |
| V min(V) | 5180.0023 |
| Max. Deviation Frequency | 0.0116 |
| Max. Frequency Error (ppm) | 2.24 |

Frequency Error vs. Temperature:

| Test Conditions (°C) | Measured Frequency (MHz) |
|----------------------------|----------------------------|
| | 5180 |
| -5 | 5180.0067 |
| 5 | 5180.0091 |
| 15 | 5180.0093 |
| 25 | 5180.0088 |
| 35 | 5180.0059 |
| 45 | 5180.001 |
| 50 | 5180.0016 |
| Max. Deviation Frequency | 0.0093 |
| Max. Frequency Error (ppm) | 1.80 |



Frequency Error vs. Voltage:

| Test Conditions | Measured Frequency (MHz) |
|----------------------------|----------------------------|
| | 5825 |
| V nom(V) | 5825.0024 |
| V max(V) | 5825.0081 |
| V min(V) | 5825.0100 |
| Max. Deviation Frequency | 0.01 |
| Max. Frequency Error (ppm) | 1.72 |

Frequency Error vs. Temperature:

| Test Conditions (°C) | Measured Frequency (MHz) |
|----------------------------|----------------------------|
| | 5825 |
| -5 | 5825.0054 |
| 5 | 5825.0026 |
| 15 | 5825.0055 |
| 25 | 5825.0098 |
| 35 | 5825.0044 |
| 45 | 5825.006 |
| 50 | 5825.0048 |
| Max. Deviation Frequency | 0.0098 |
| Max. Frequency Error (ppm) | 1.68 |

END