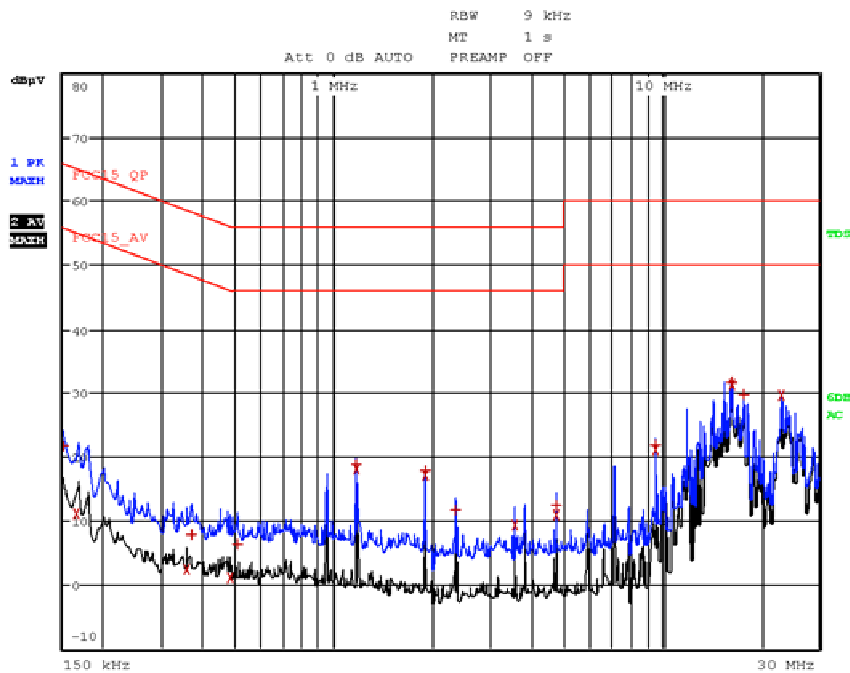# Appendix 1

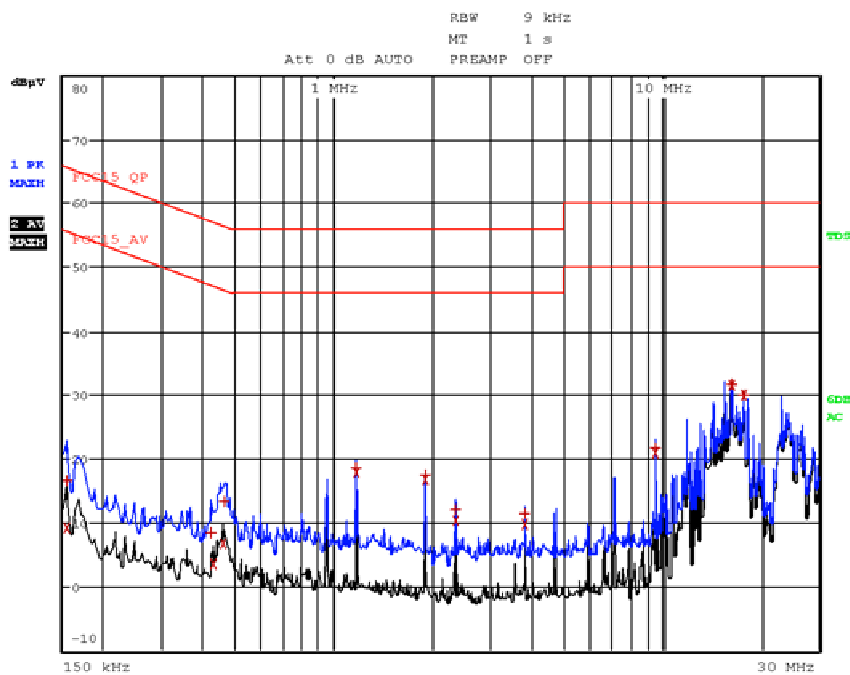# Test Results

## AC Mains Conducted Emission

Mode: WIFI ON, BLE ON, Ethernet ON; Line: L1
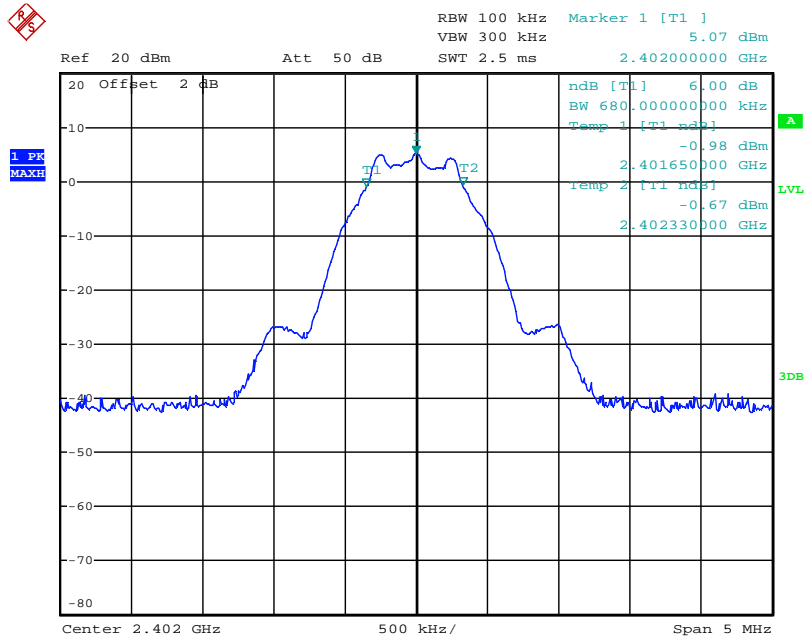


Mode: WIFI ON, BLE ON, Ethernet ON; Line: N
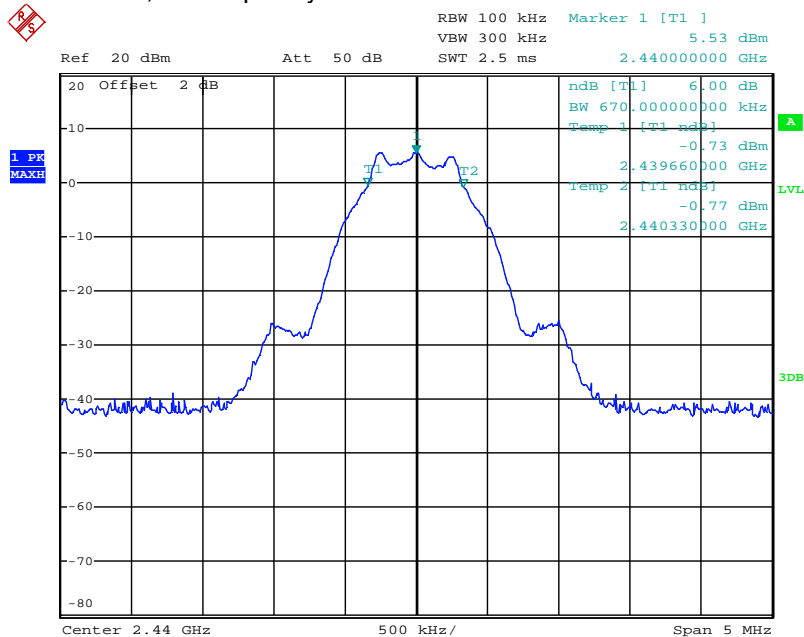
TÜVRheinland®

# 6 dB Bandwidth Measurement

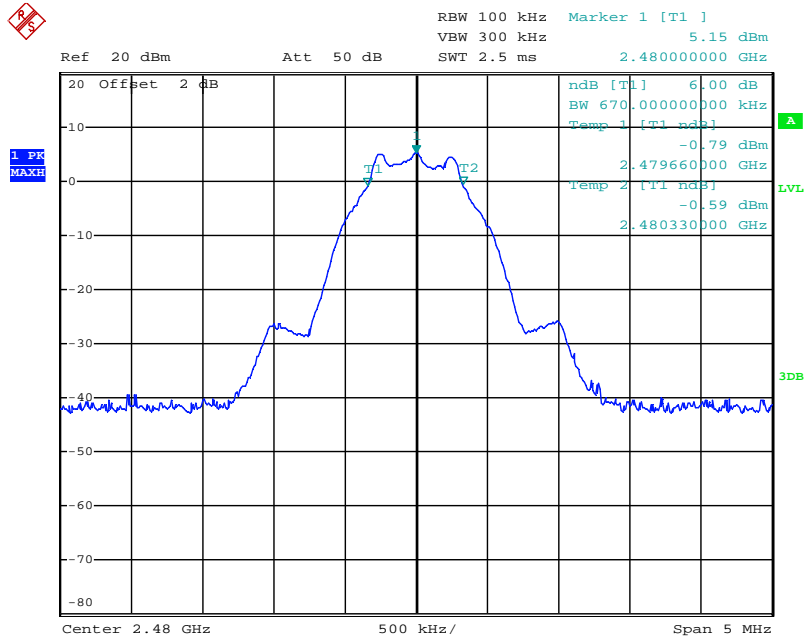Mode: BLE, TX frequency: 2402MHz



Date: 29.OCT.2018  00:25:35

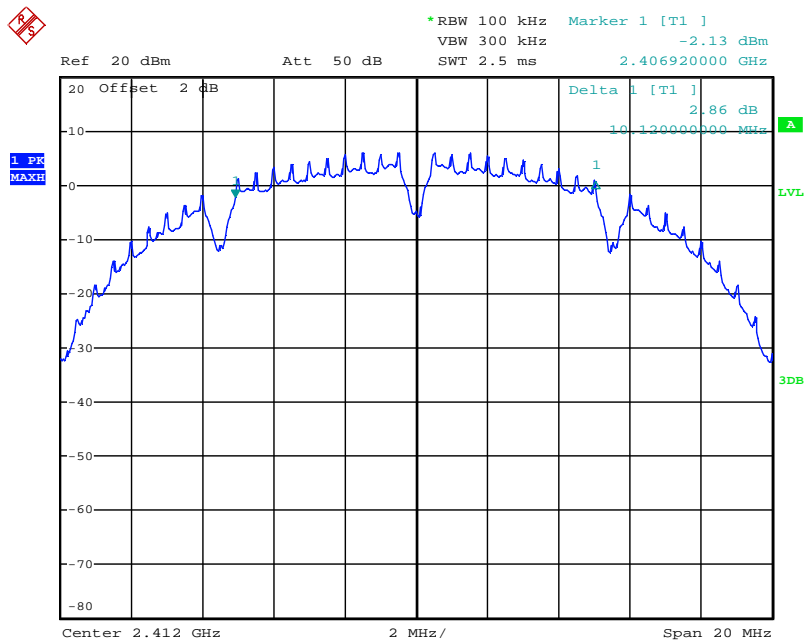Mode: BLE , TX frequency: 2440MHz



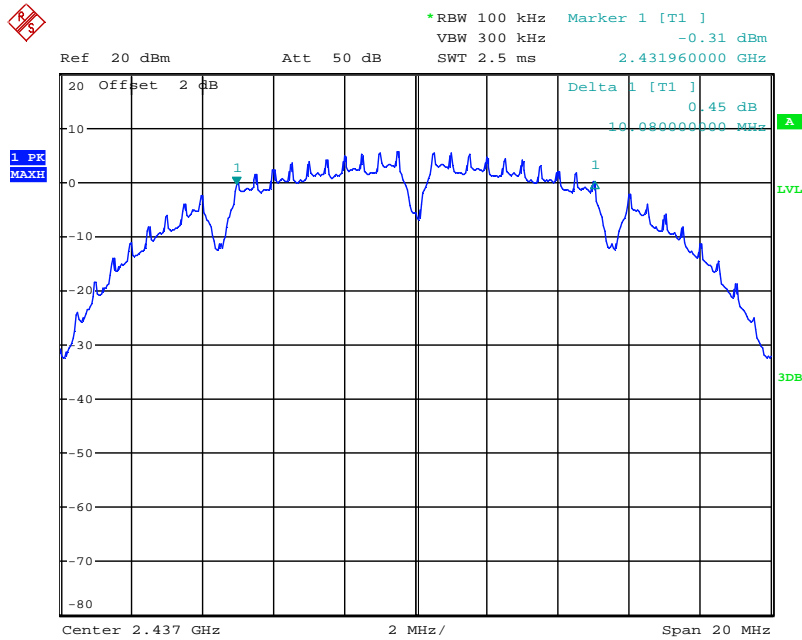Date: 29.OCT.2018  00:26:45

Mode: BLE , TX frequency: 2480MHz



Date: 29.OCT.2018  00:27:29

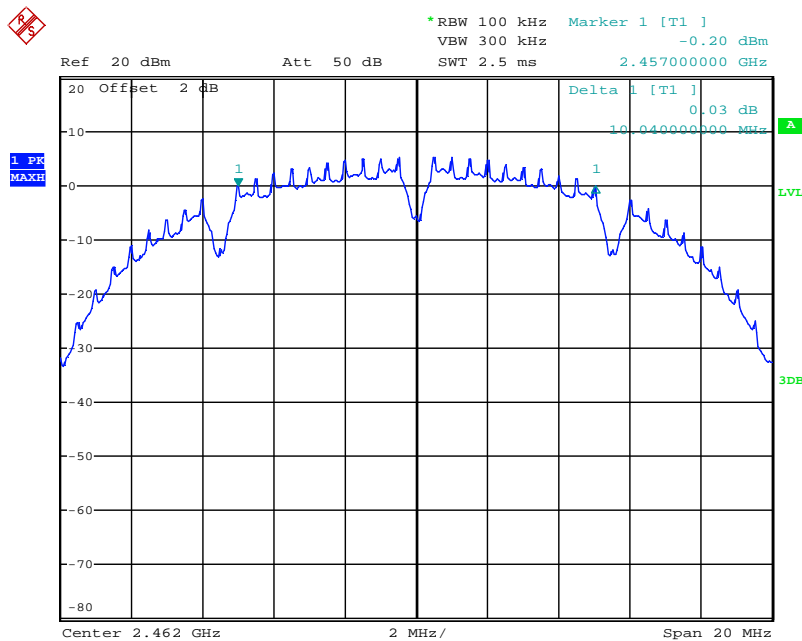Mode: 802.11b, TX frequency: 2412MHz



Date: 29.OCT.2018  00:49:08

TÜVRheinland®

Mode: 802.11b, TX frequency: 2437MHz



Date: 29.OCT.2018  00:50:35

Mode: 802.11b, TX frequency: 2462MHz



Date: 29.OCT.2018  00:51:55

TÜVRheinland®

Mode: 802.11g, TX frequency: 2412MHz



Date: 29.OCT.2018  00:53:53

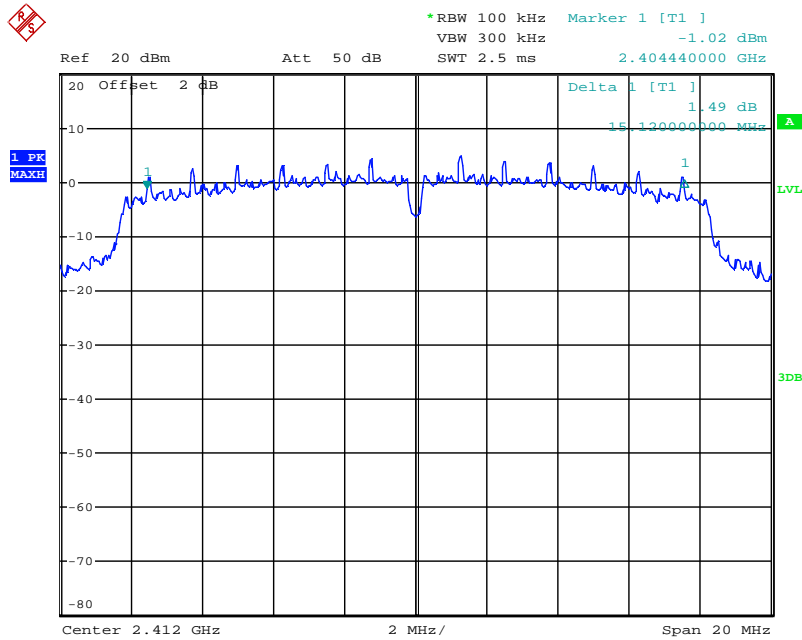Mode: 802.11g, TX frequency: 2437MHz



Date: 29.OCT.2018  00:54:42

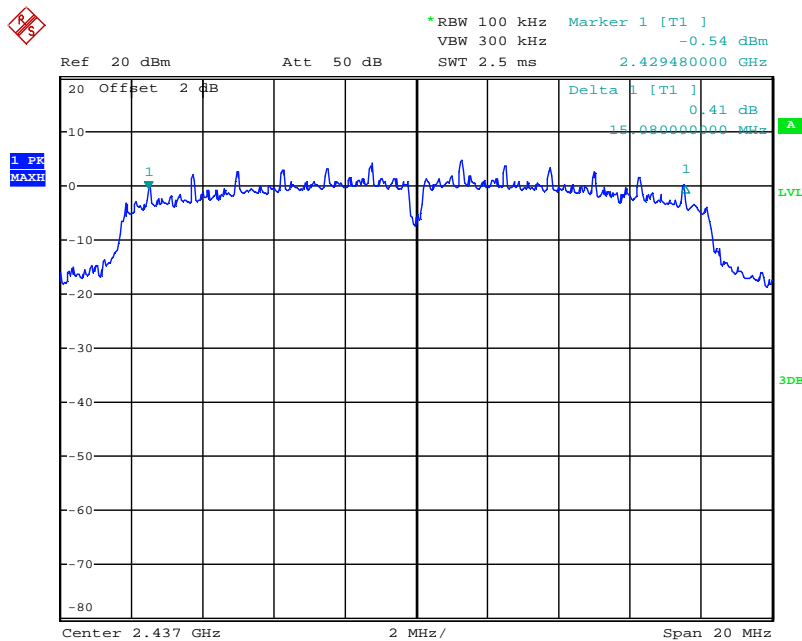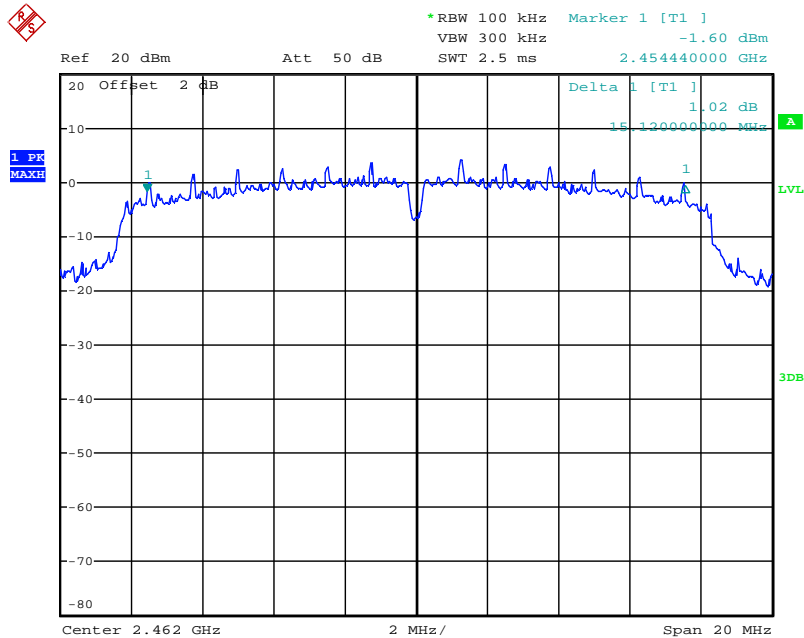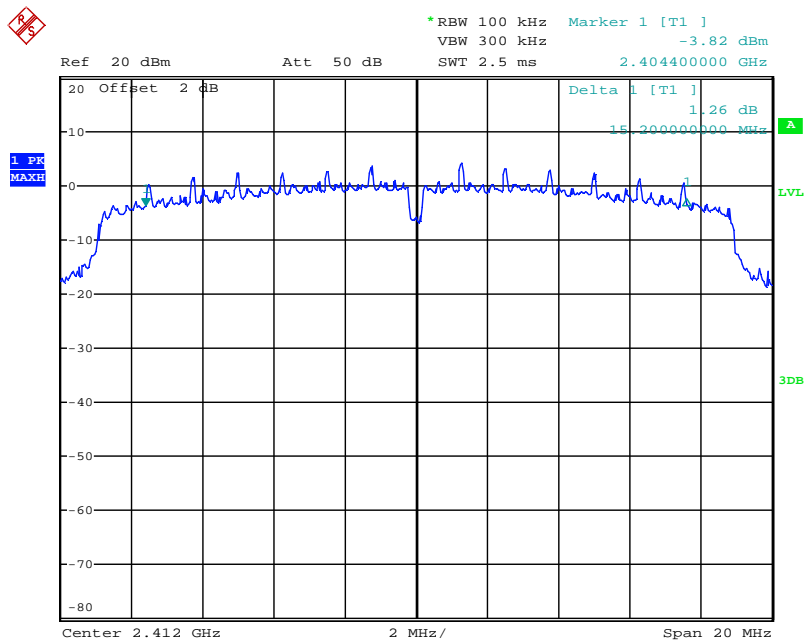Mode: 802.11g, TX frequency: 2462MHz



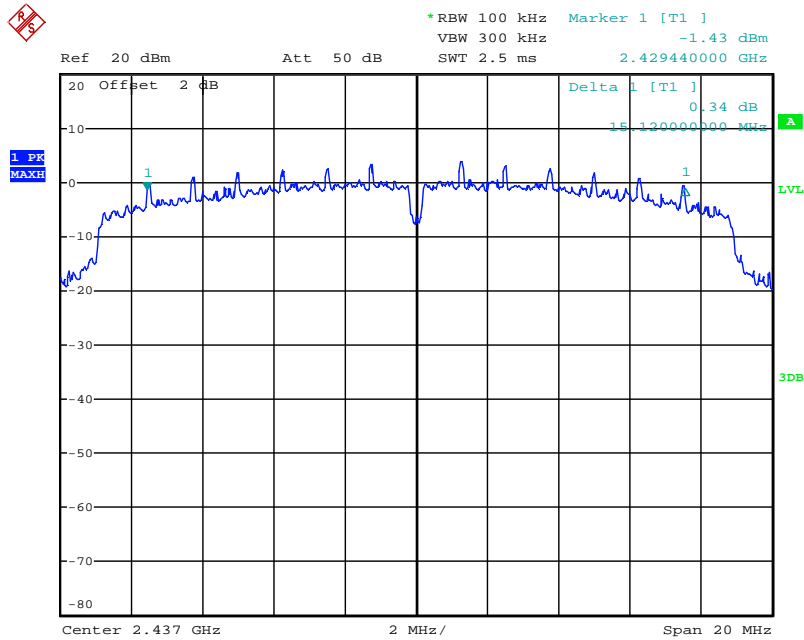Date: 29.OCT.2018   00:55:52

Mode: 802.11n, TX frequency: 2412MHz



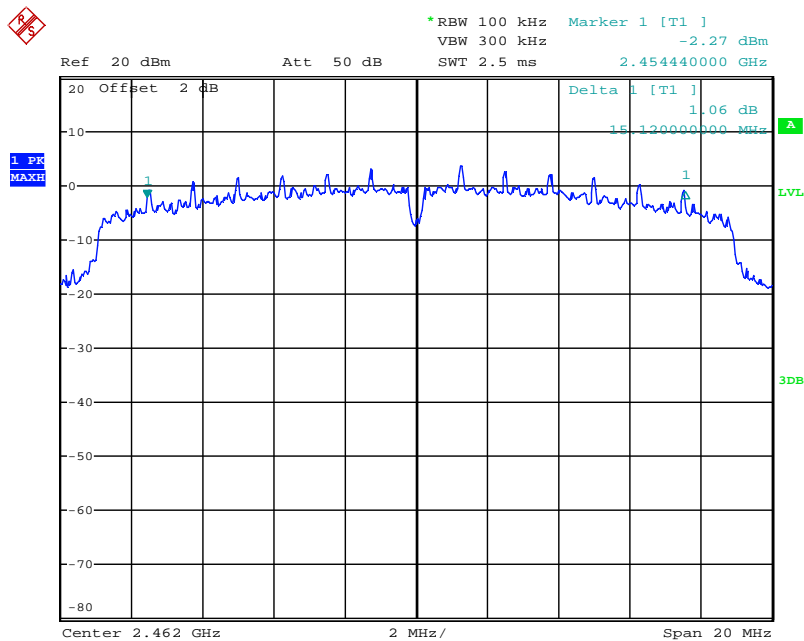Date: 29.OCT.2018   00:57:27

Mode: 802.11n, TX frequency: 2437MHz



Date: 29.OCT.2018   00:58:32

Mode: 802.11n, TX frequency: 2462MHz



Date: 29.OCT.2018   01:00:05

## Maximum Peak Conducted Output power

Mode: BLE, TX frequency: 2402MHz



Date: 29.OCT.2018  00:29:51

Mode: BLE, TX frequency: 2440MHz



Date: 29.OCT.2018  00:29:11

Mode: BLE, TX frequency: 2480MHz
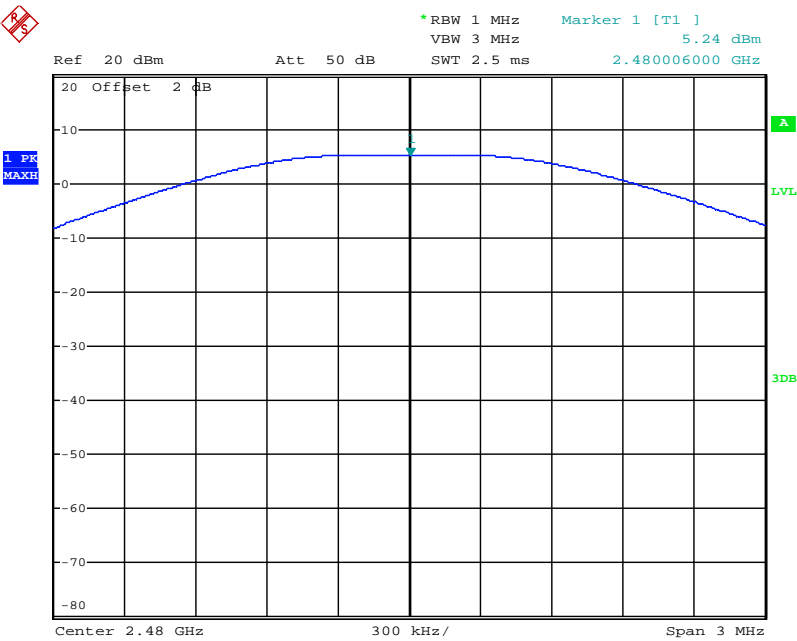


Date: 29.OCT.2018  00:28:33

# Power Spectral Density

Mode: BLE, TX frequency: 2402MHz
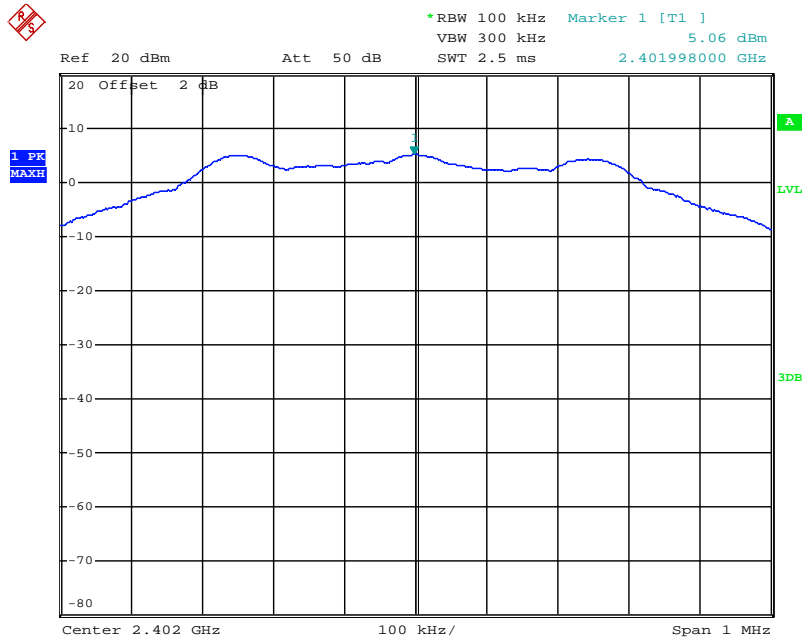


Date: 29.OCT.2018  00:32:49

Mode: BLE, TX frequency: 2440MHz
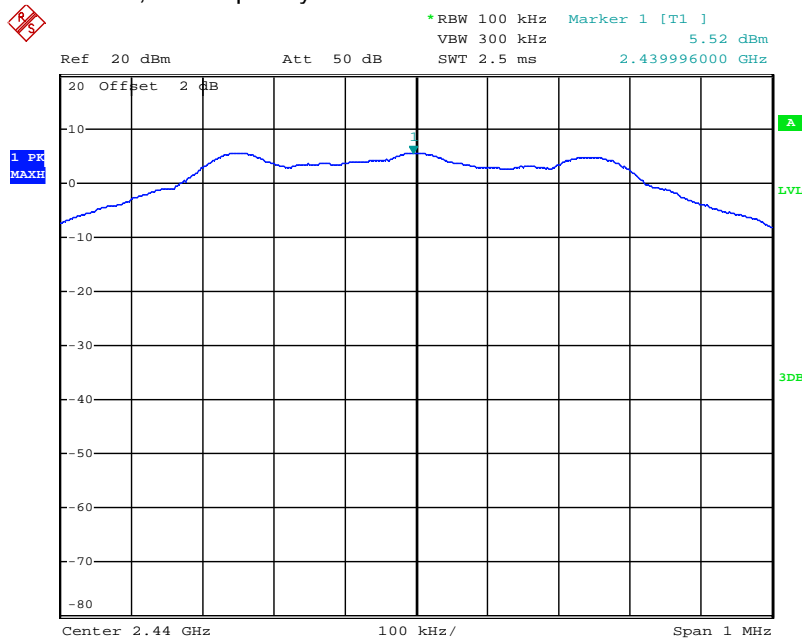


Date: 29.OCT.2018  00:33:21

TÜVRheinland®

Mode: BLE, TX frequency: 2480MHz
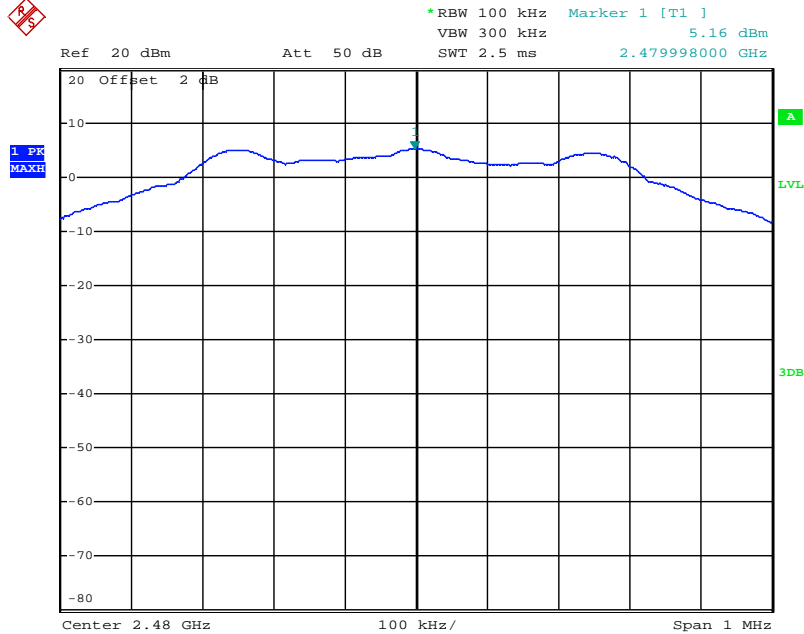


Date: 29.OCT.2018  00:34:11

Mode: 802.11b, TX frequency: 2412MHz



Date: 29.OCT.2018  01:03:44

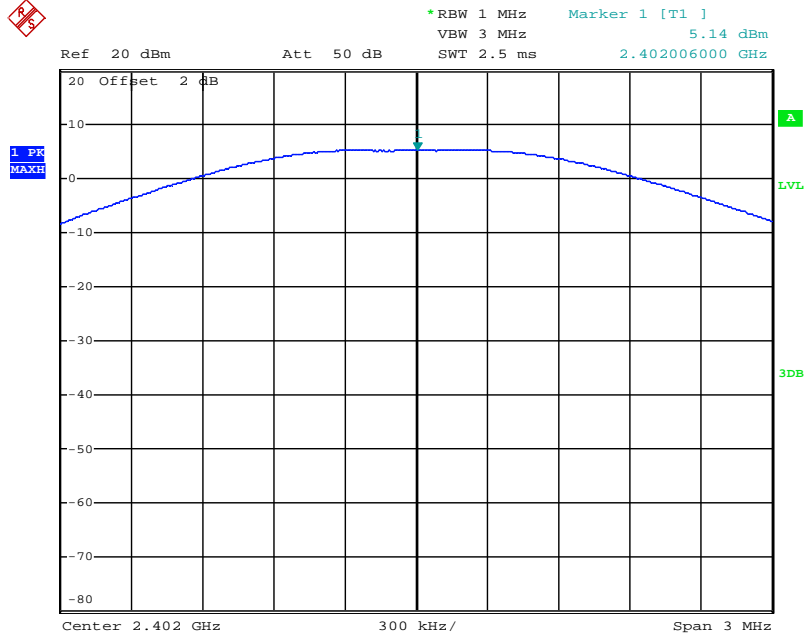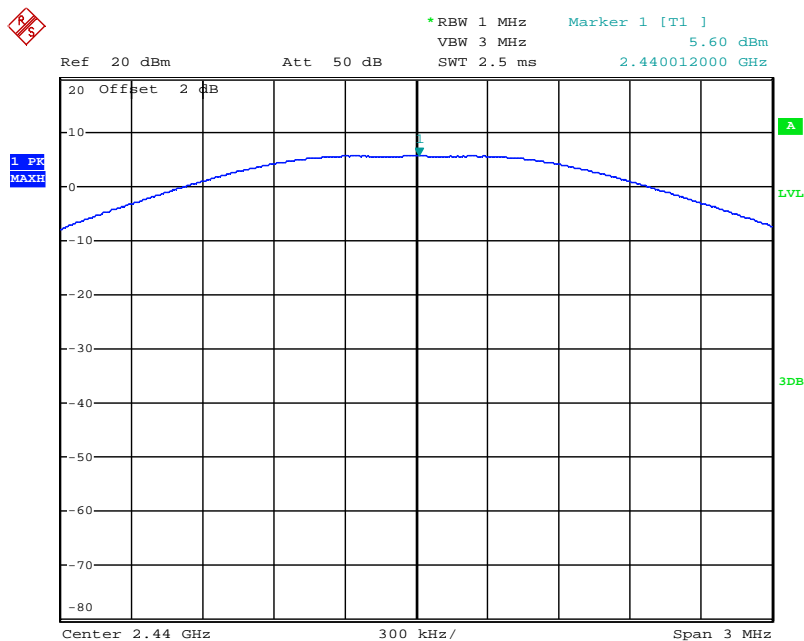Mode: 802.11b, TX frequency: 2437MHz



Date: 29.OCT.2018  01:04:50

Mode: 802.11b, TX frequency: 2462MHz



Date: 29.OCT.2018  01:05:32

Mode: 802.11g, TX frequency: 2412MHz



Date: 29.OCT.2018  01:07:04

Mode: 802.11g, TX frequency: 2437MHz
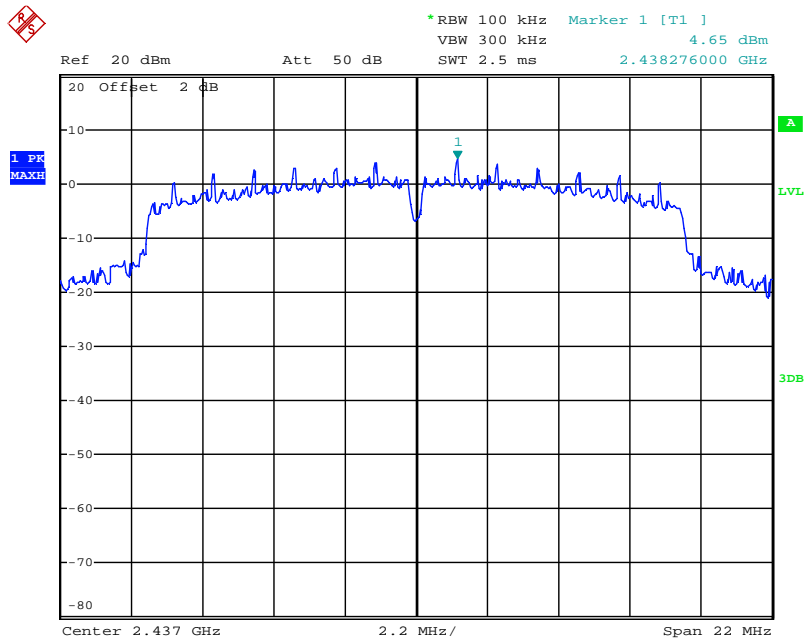


Date: 29.OCT.2018  01:07:55

TÜVRheinland®

Mode: 802.11g, TX frequency: 2462MHz
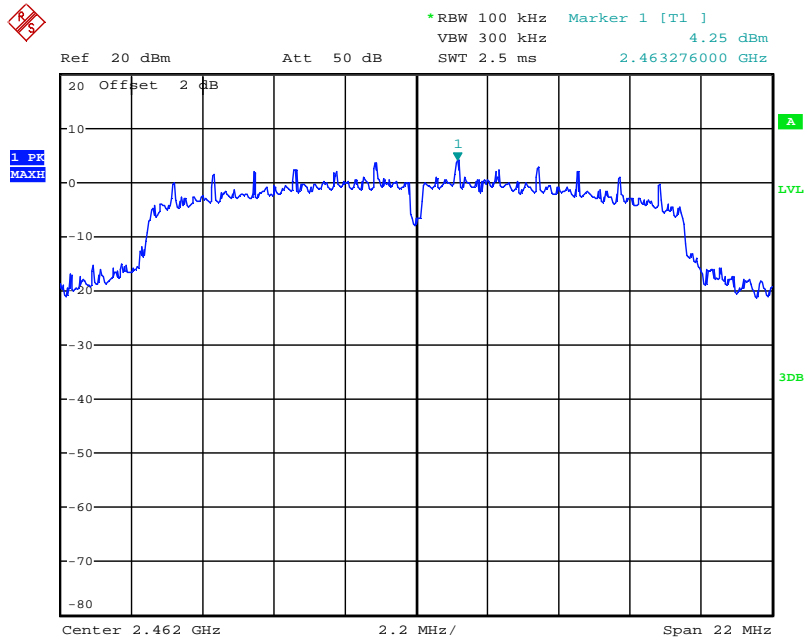


Date: 29.OCT.2018  01:08:35

Mode: 802.11n, TX frequency: 2412MHz
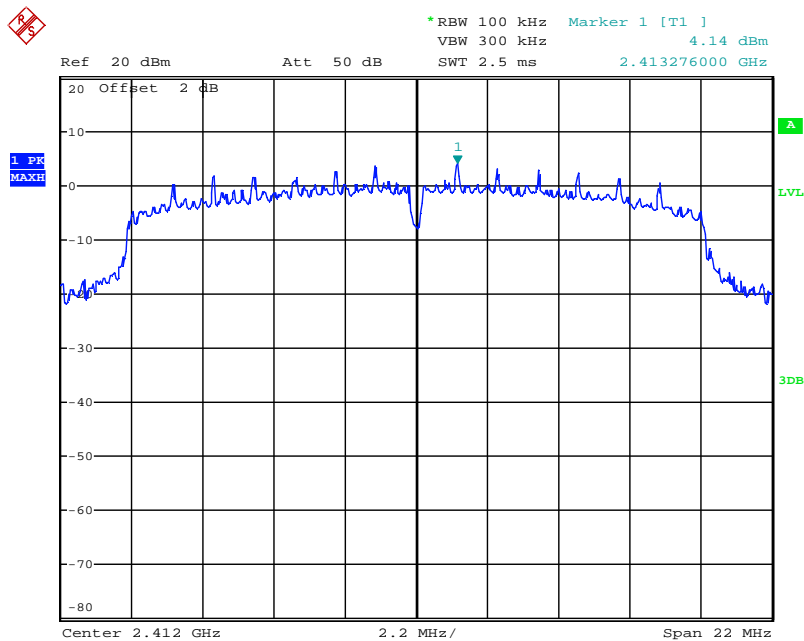


Date: 29.OCT.2018  01:02:51

Mode: 802.11n, TX frequency: 2437MHz
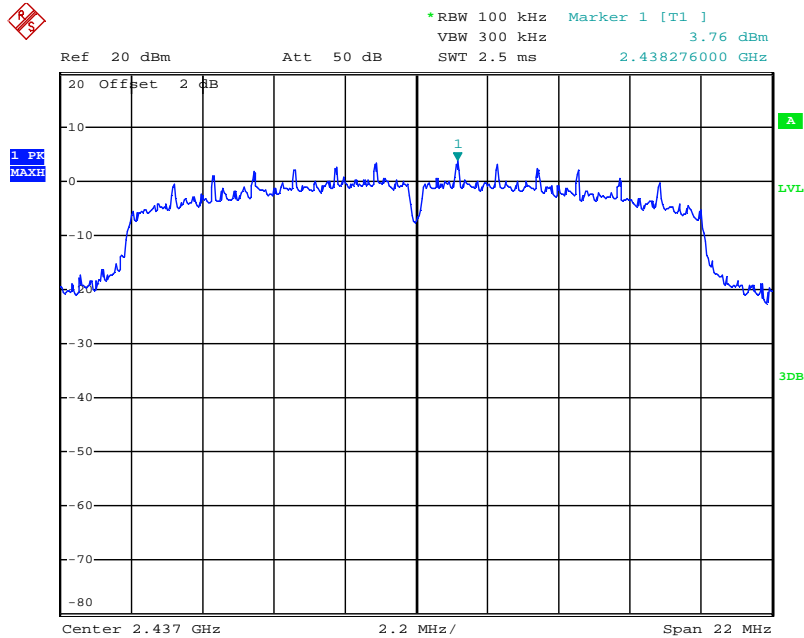


Date: 29.OCT.2018  01:02:14

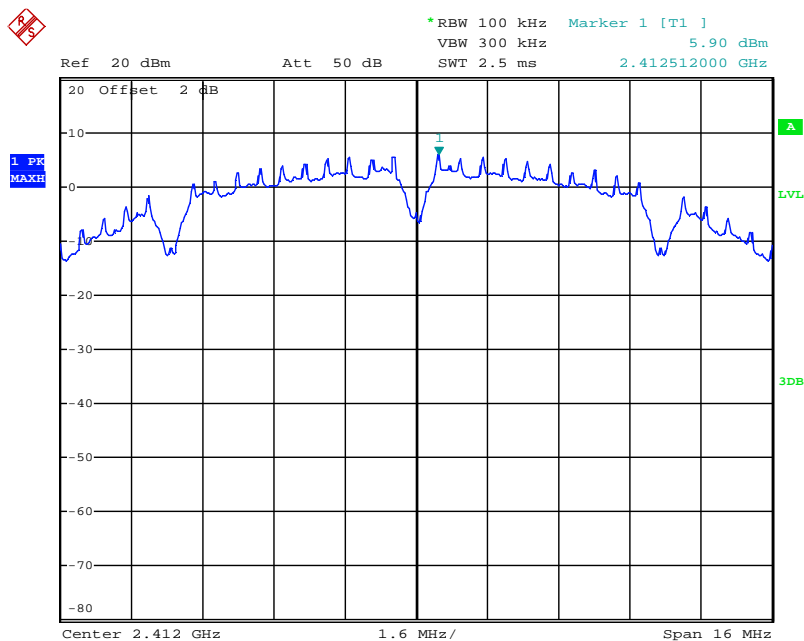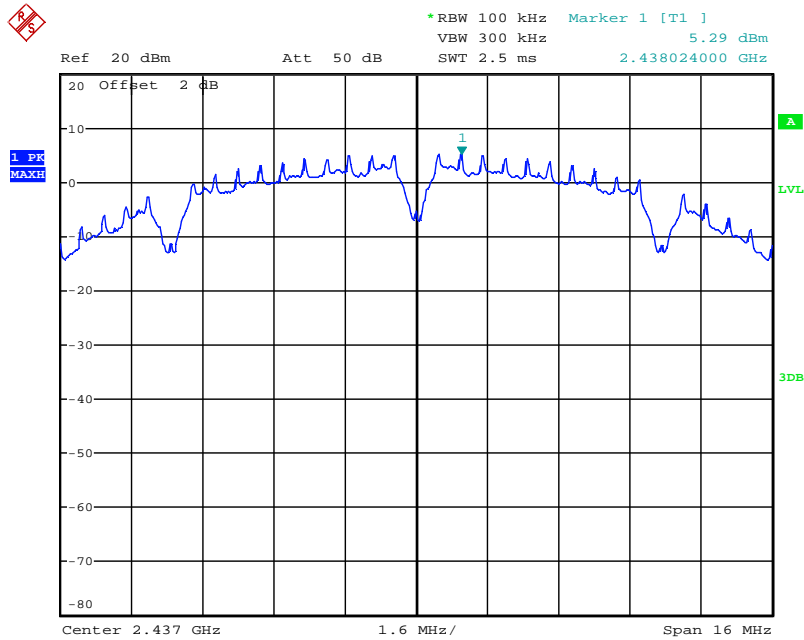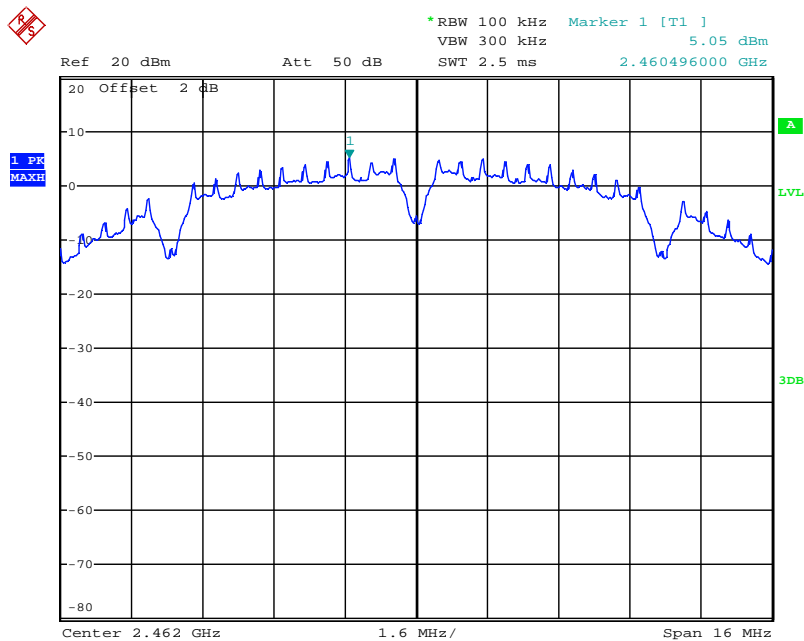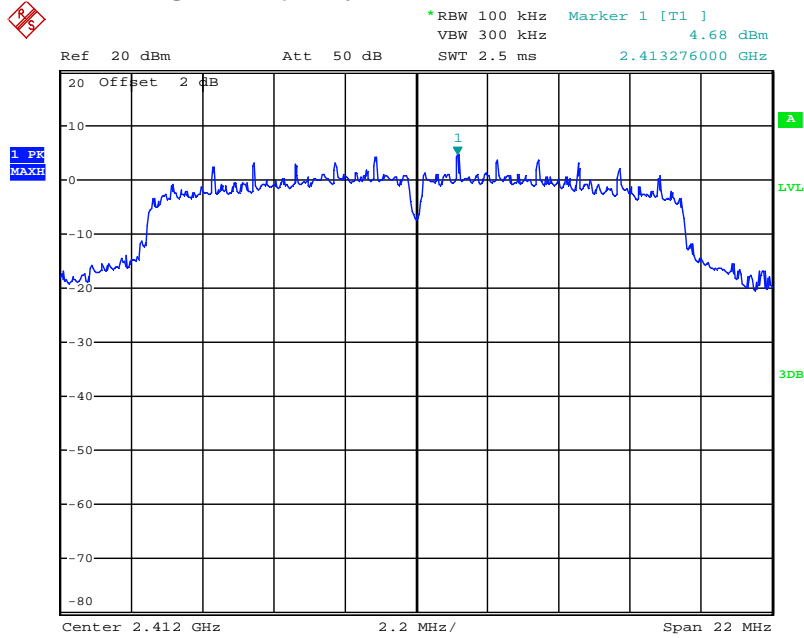Mode: 802.11n, TX frequency: 2462MHz
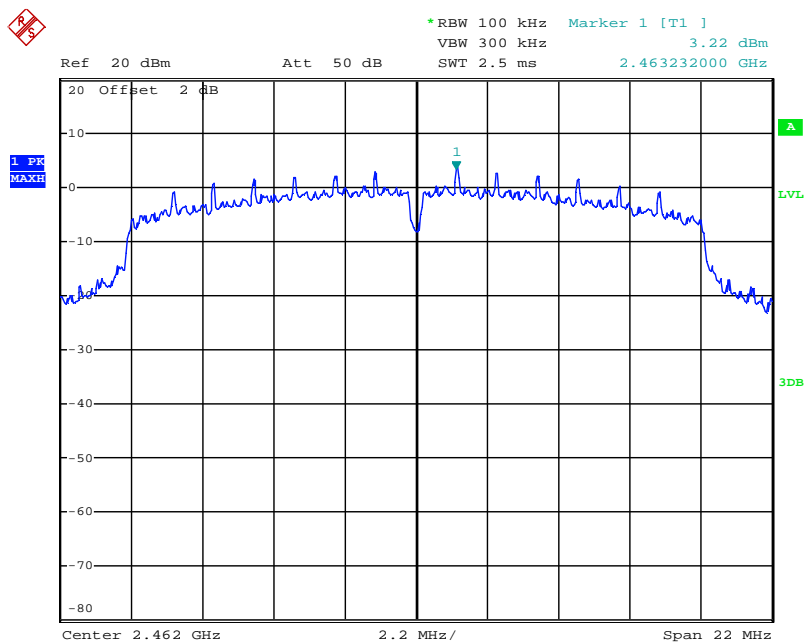


Date: 29.OCT.2018  01:01:26

TÜVRheinland®

# **Spurious Conducted Emissions**

Mode: BLE, TX frequency: 2402MHz
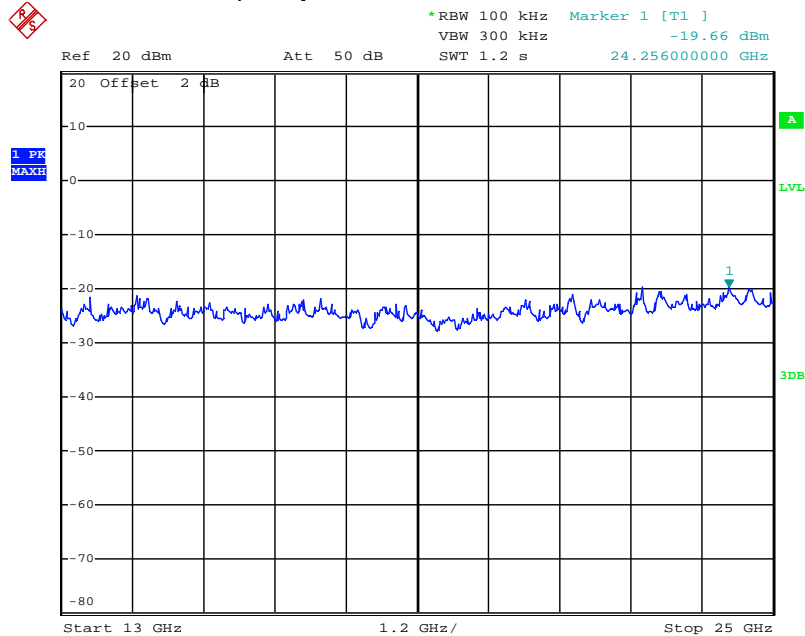


Date: 29.OCT.2018  00:42:06
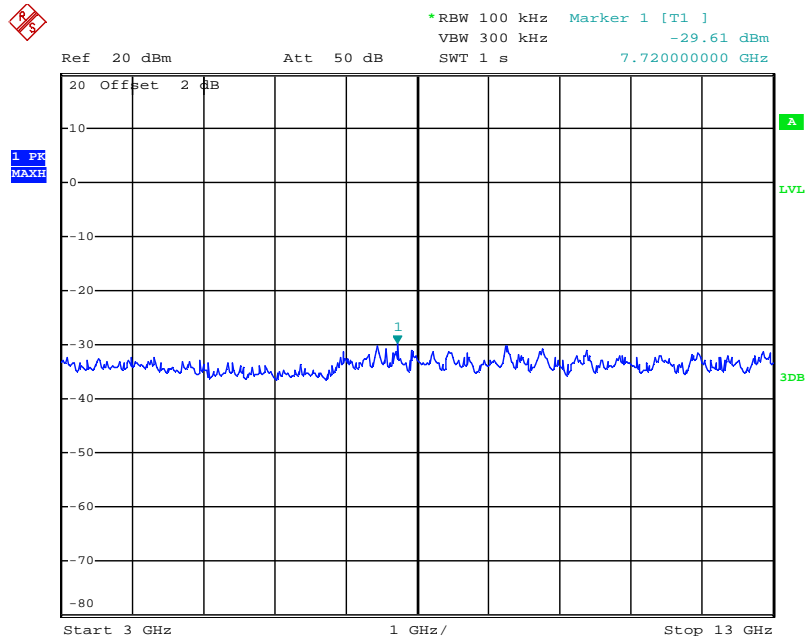


Date: 29.OCT.2018  00:41:39

TÜVRheinland®
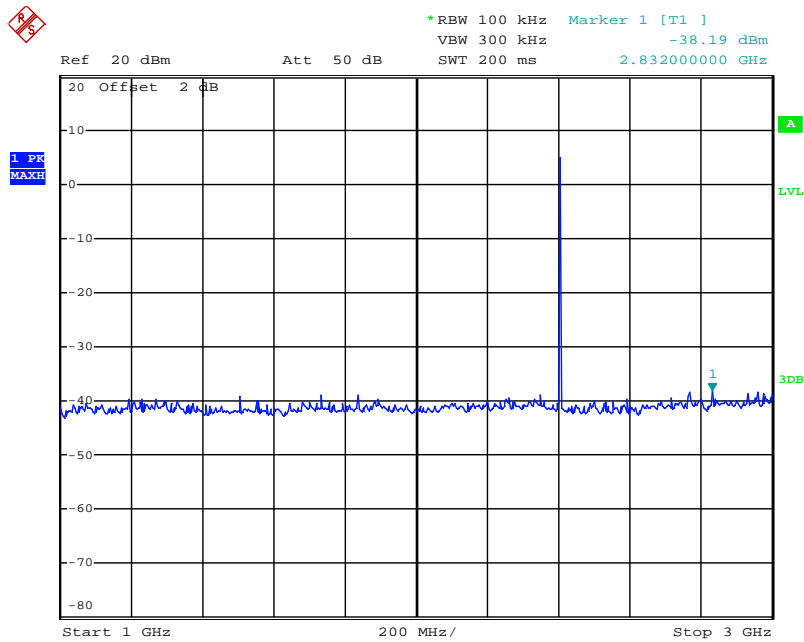


Date: 29.OCT.2018  00:41:06
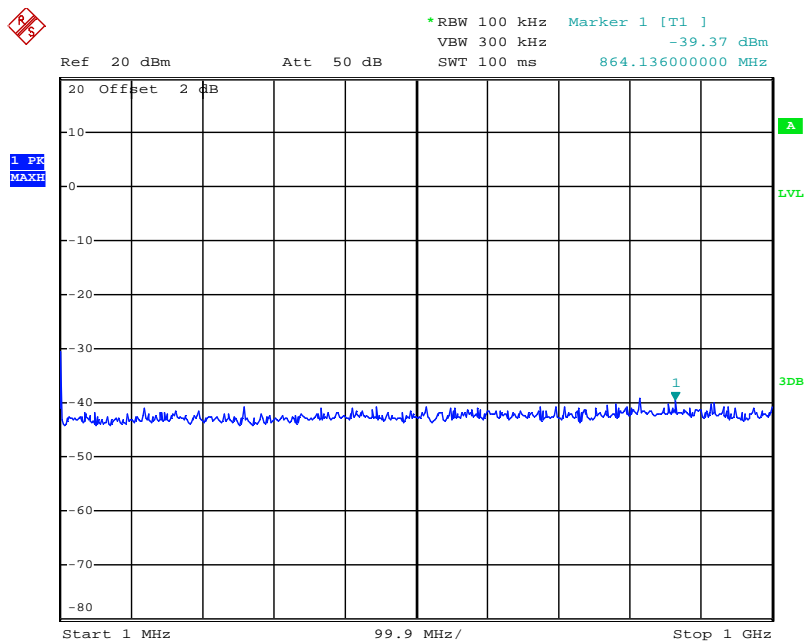


Date: 29.OCT.2018  00:39:46

TÜVRheinland®
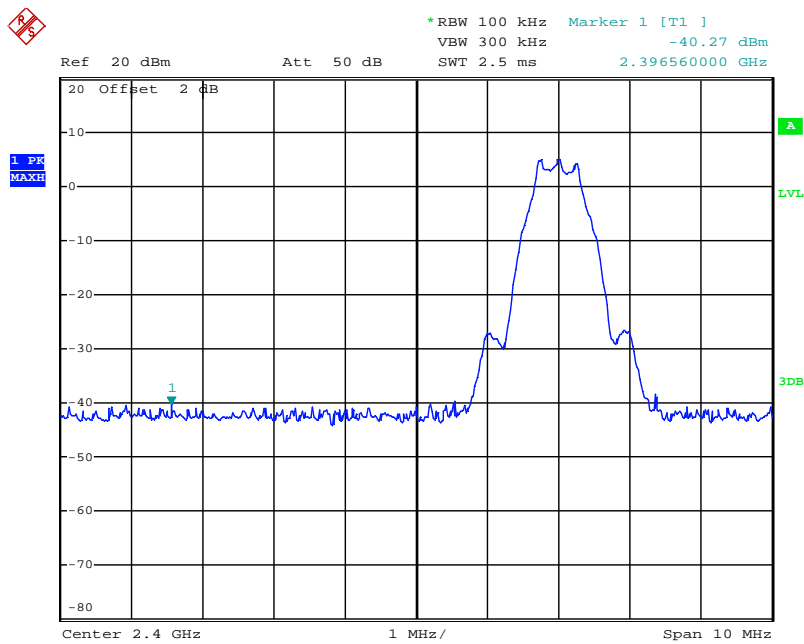


Date: 29.OCT.2018   00:42:37

Mode: BLE, TX frequency: 2440MHz
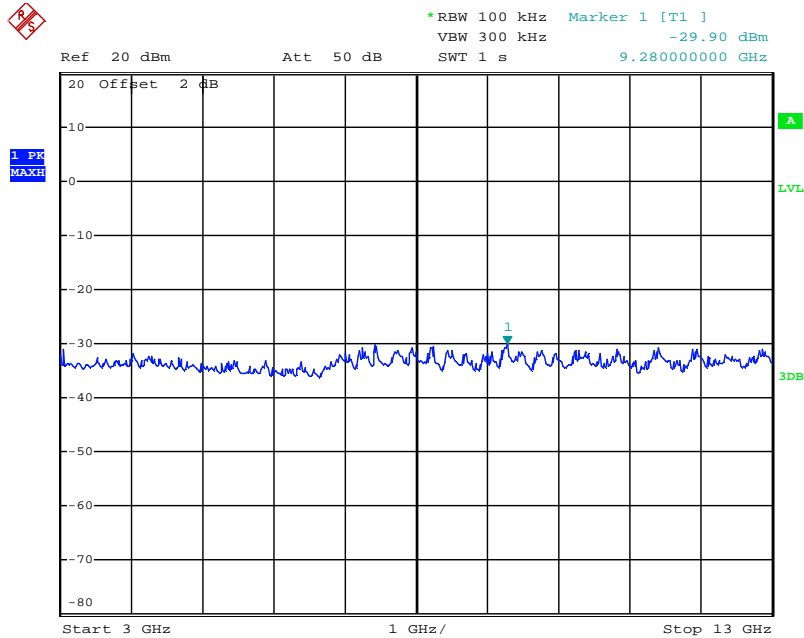


Date: 29.OCT.2018  00:44:43
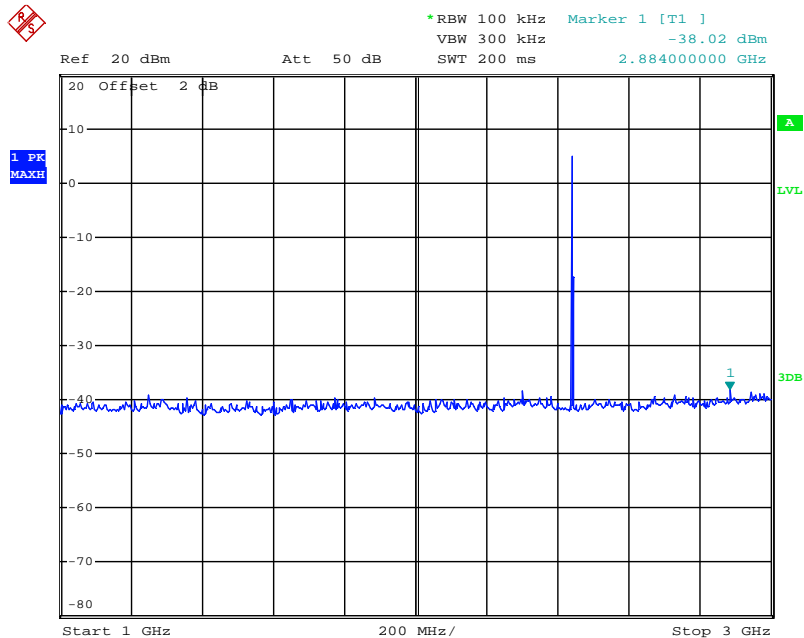


Date: 29.OCT.2018  00:43:59

TÜVRheinland®
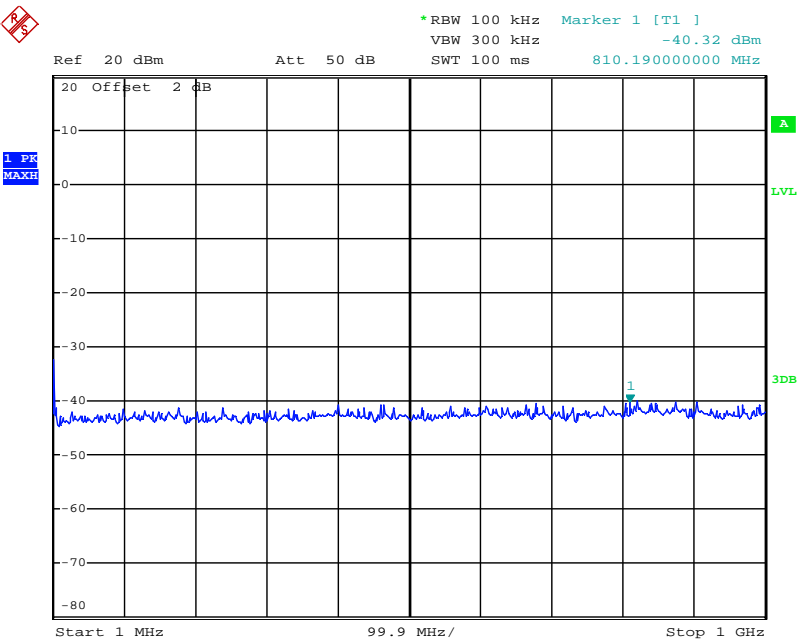


Date: 29.OCT.2018  00:43:16
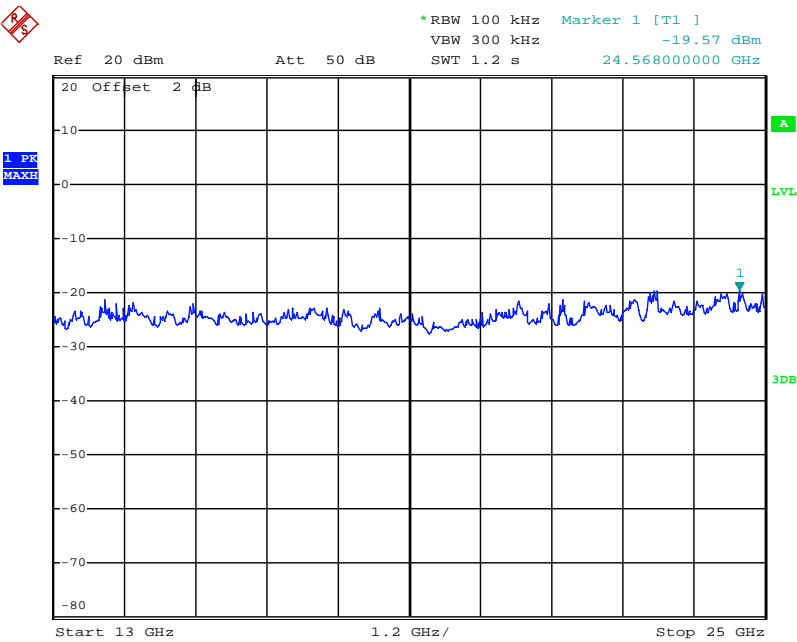


Date: 29.OCT.2018  00:45:08

Mode: BLE, TX frequency: 2480MHz
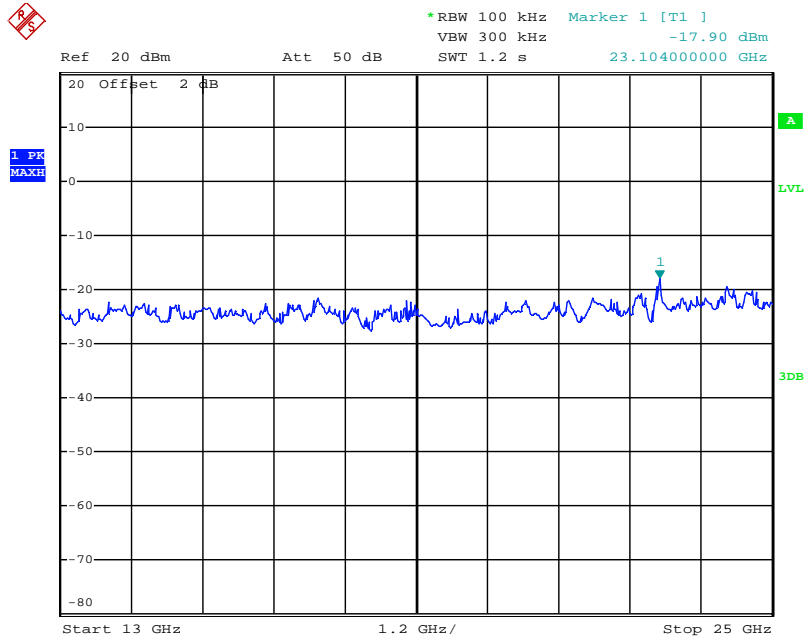


Date: 29.OCT.2018  00:37:27
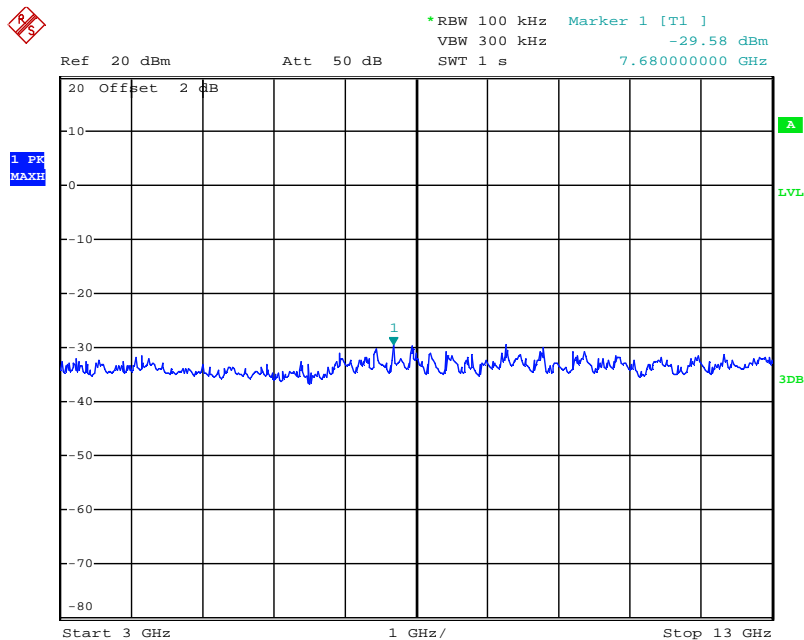


Date: 29.OCT.2018  00:37:05
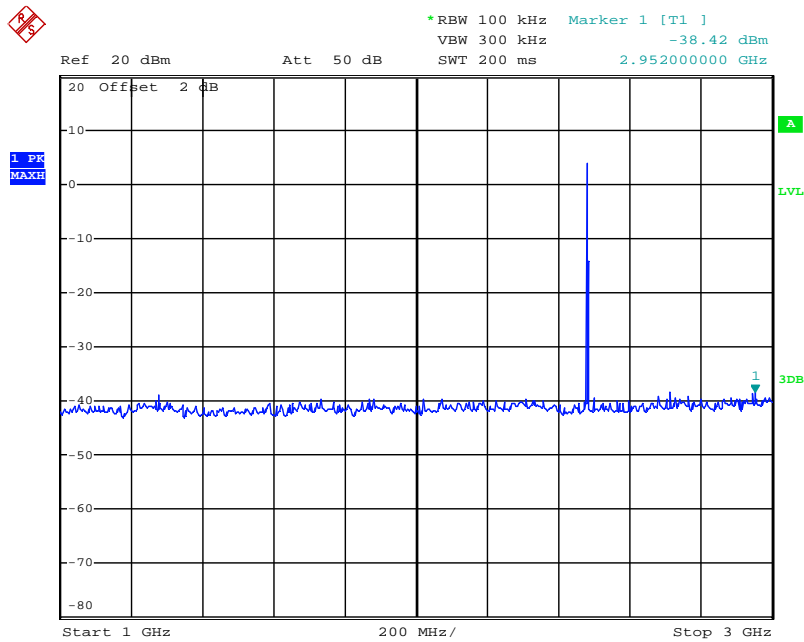
Date: 29.OCT.2018  00:36:17



Date: 29.OCT.2018  00:35:31

```
                                *RBW 100 kHz   Marker 1 [T1 ]
                                 VBW 300 kHz              -40.48 dBm
    Ref  20 dBm        Att  50 dB   SWT 2.5 ms      2.486040000 GHz
```
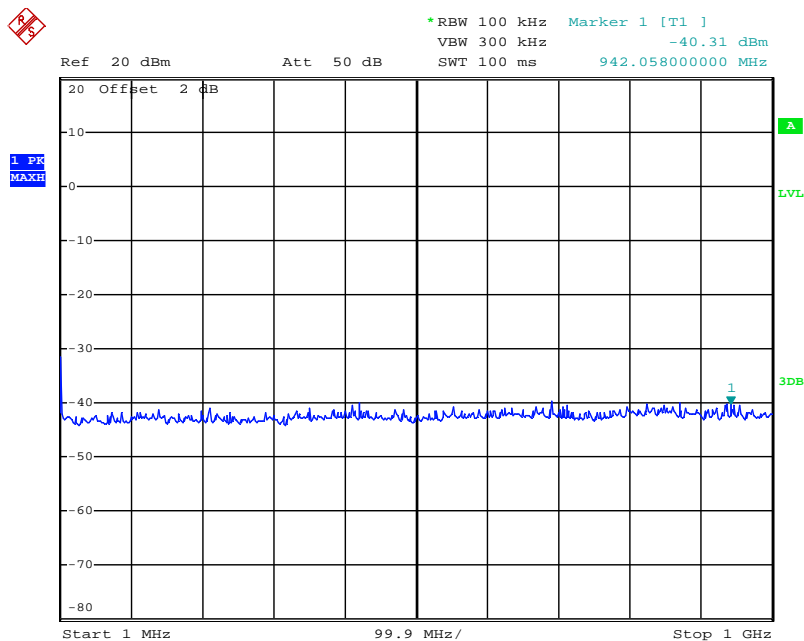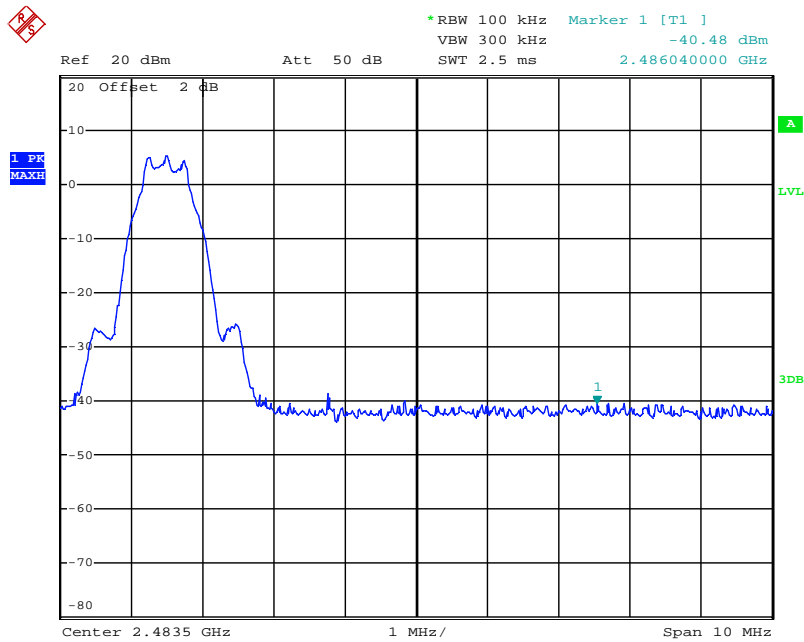
Date: 29.OCT.2018  00:38:46

Mode: 802.11b, TX frequency: 2412MHz
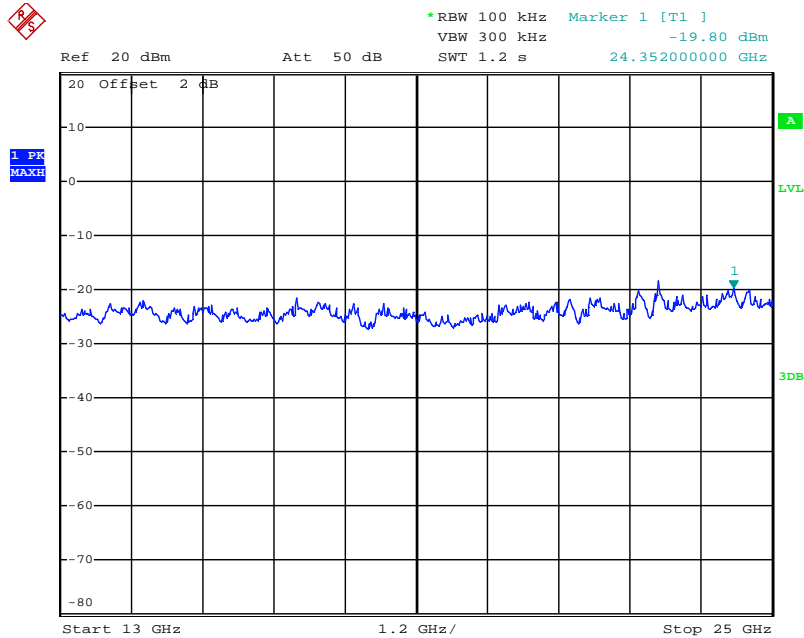


Date: 29.OCT.2018  01:11:24



Date: 29.OCT.2018  01:10:56

TÜVRheinland®
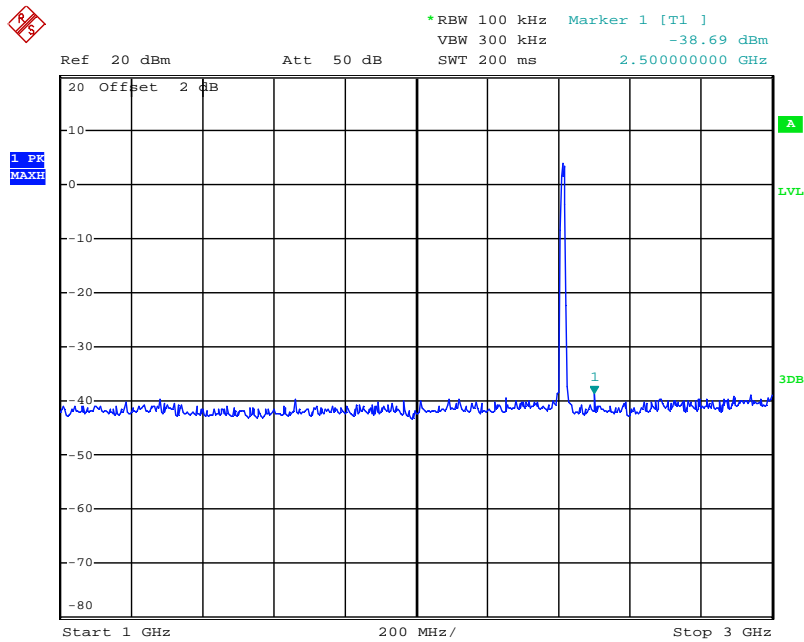


Date: 29.OCT.2018  01:10:21



Date: 29.OCT.2018  01:09:51

TÜVRheinland®



| | |
|---|---|
| *RBW 100 kHz | Marker 1 [T1 ] |
| VBW 300 kHz | -36.26 dBm |
| Ref 20 dBm    Att 50 dB    SWT 5 ms | 2.397000000 GHz |

20 Offset 2 dB

1 PK
MAXH

A

LVL

3DB

Center 2.4 GHz          5 MHz/          Span 50 MHz
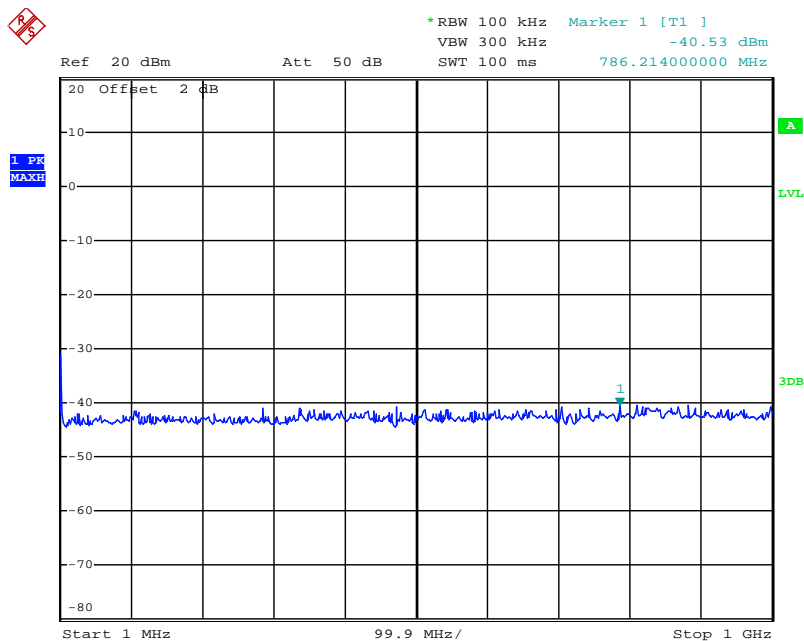
Date: 29.OCT.2018  01:11:59

Mode: 802.11b, TX frequency: 2437MHz
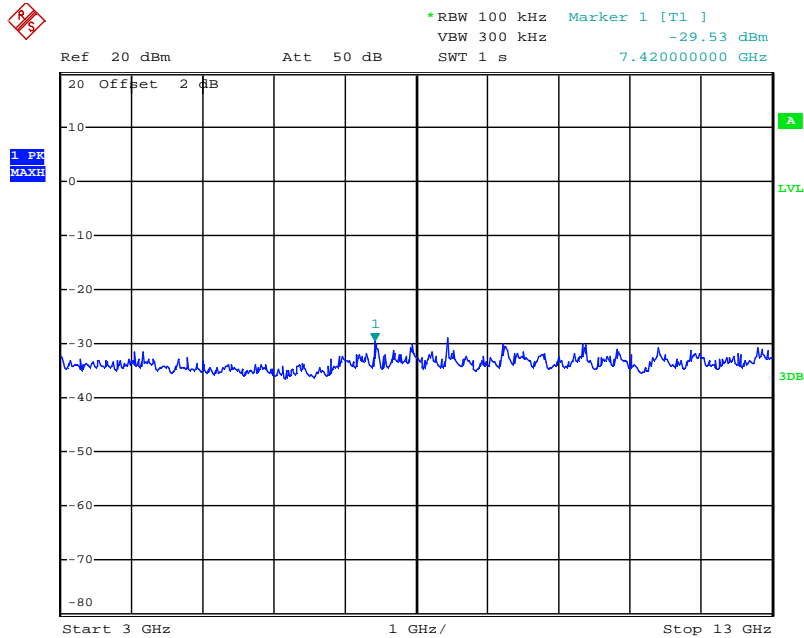


Date: 29.OCT.2018  01:14:34



Date: 29.OCT.2018  01:14:02

TÜVRheinland®

```
                              *RBW 100 kHz    Marker 1 [T1 ]
                               VBW 300 kHz              -40.27 dBm
      Ref  20 dBm      Att  50 dB   SWT 100 ms     838.162000000 MHz
```



Date: 29.OCT.2018  01:12:38

```
                              *RBW 100 kHz    Marker 1 [T1 ]
                               VBW 300 kHz              -19.22 dBm
      Ref  20 dBm      Att  50 dB   SWT 1.2 s      24.304000000 GHz
```
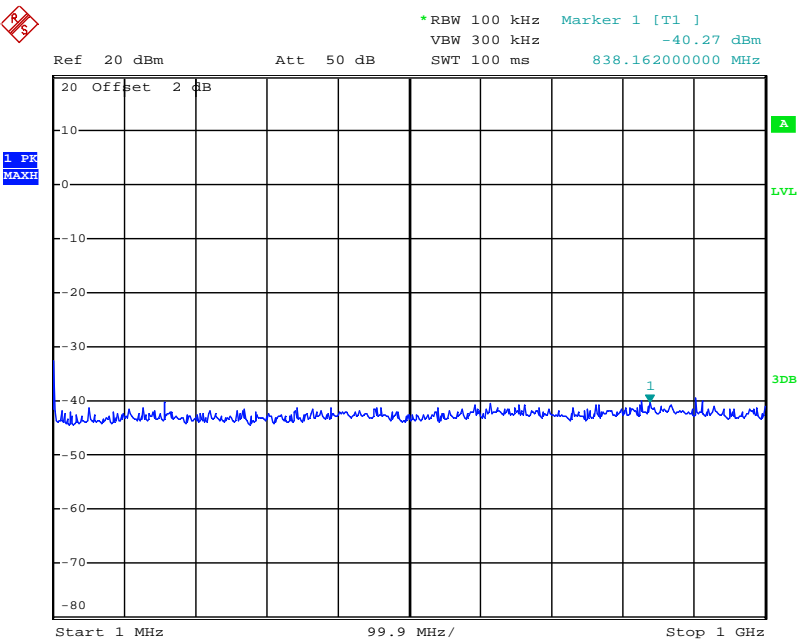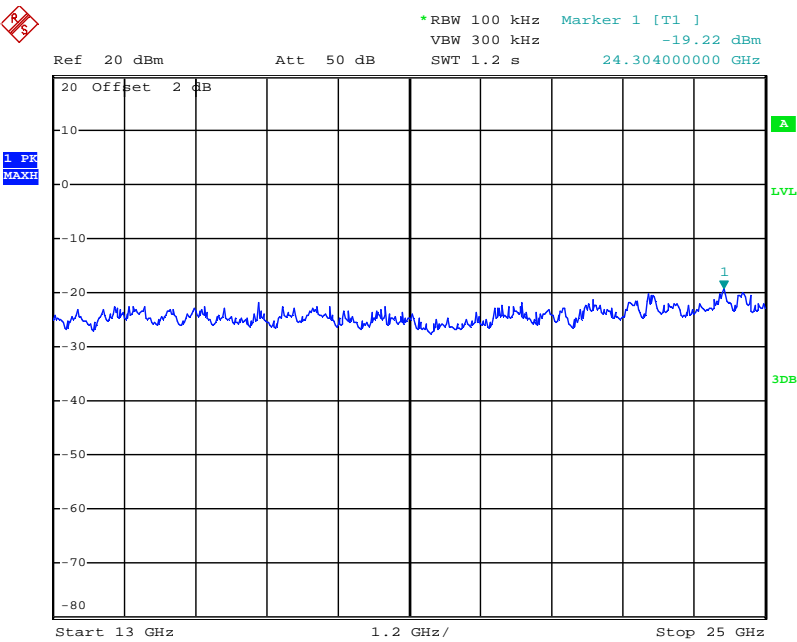


Date: 29.OCT.2018  01:14:57

Mode: 802.11b, TX frequency: 2462MHz
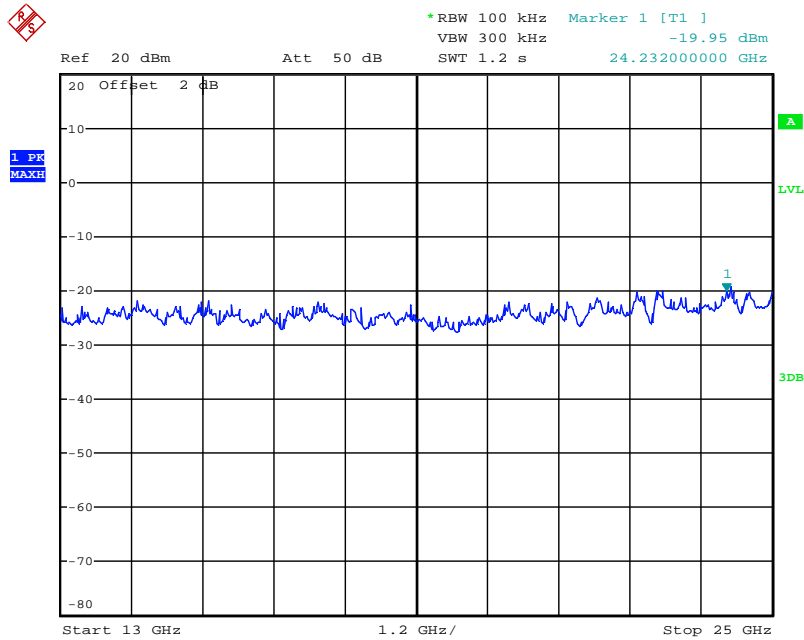


Date: 29.OCT.2018  01:15:34



Date: 29.OCT.2018  01:16:55

TÜVRheinland®



```
                              * RBW 100 kHz   Marker 1 [T1 ]
                                VBW 300 kHz              -39.05 dBm
   Ref  20 dBm        Att  50 dB   SWT 200 ms     2.904000000 GHz

   20 Offset  2 dB                                          A

1 PK
MAXH                                                        LVL


                                                 1         3DB


   Start 1 GHz          200 MHz/            Stop 3 GHz
```

Date: 29.OCT.2018  01:16:31



```
                              * RBW 100 kHz   Marker 1 [T1 ]
                                VBW 300 kHz              -40.50 dBm
   Ref  20 dBm        Att  50 dB   SWT 100 ms    634.366000000 MHz

   20 Offset  2 dB                                          A

1 PK
MAXH                                                        LVL



                                                           3DB
                                      1

   Start 1 MHz          99.9 MHz/           Stop 1 GHz
```

Date: 29.OCT.2018  01:16:01

TÜVRheinland®



```
                                    *RBW 100 kHz   Marker 1 [T1 ]
                                     VBW 300 kHz              -40.41 dBm
      Ref  20 dBm          Att  50 dB  SWT 10 ms      2.485700000 GHz
```
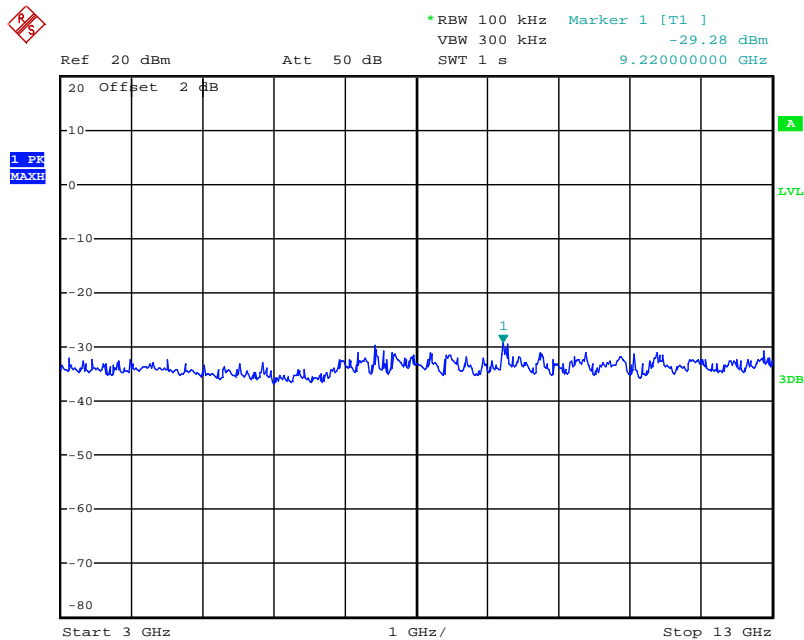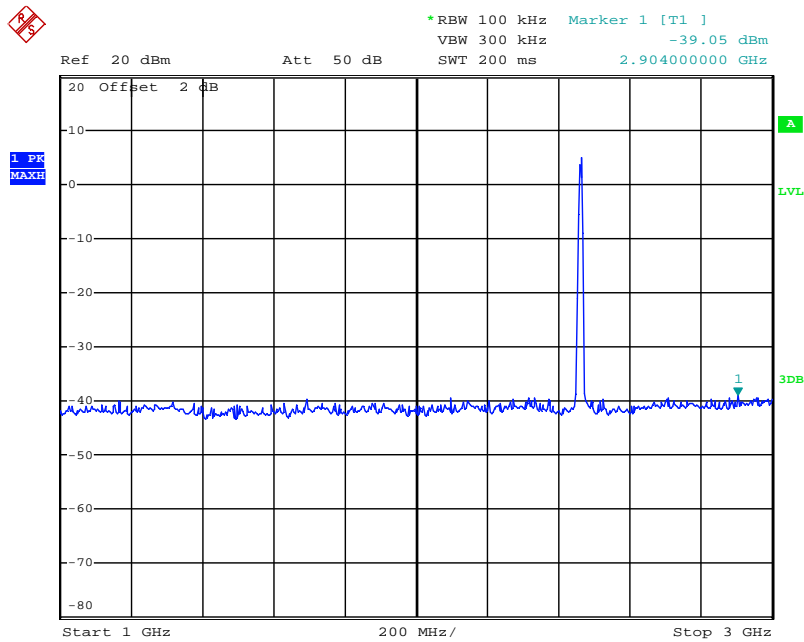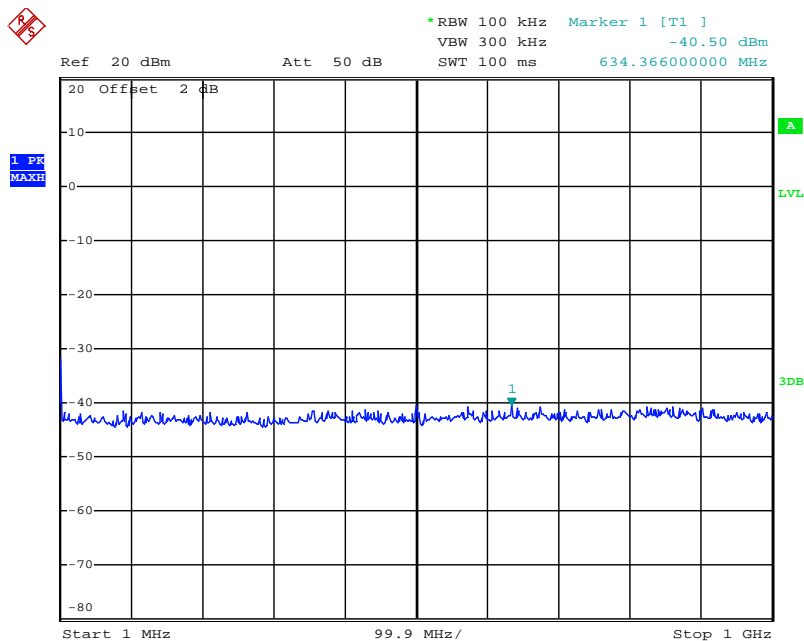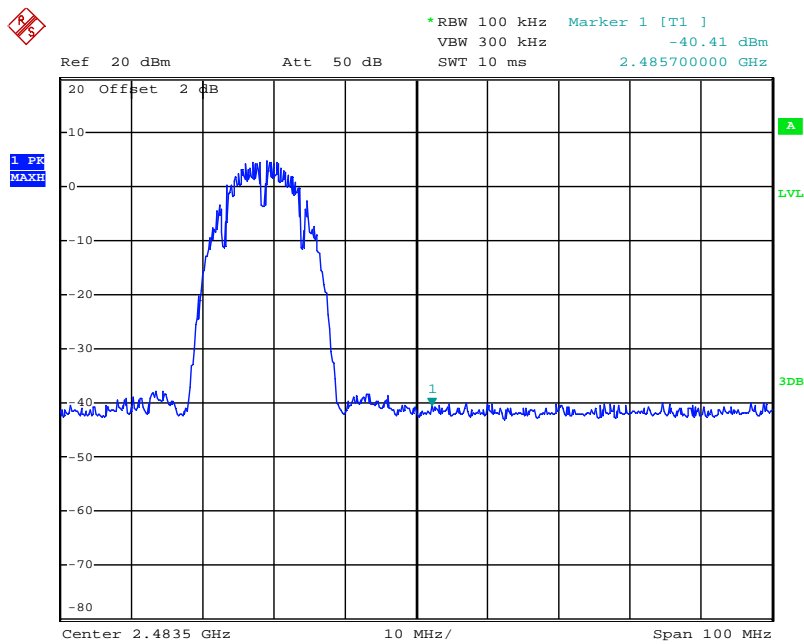
Date: 29.OCT.2018  01:17:27

TÜVRheinland®
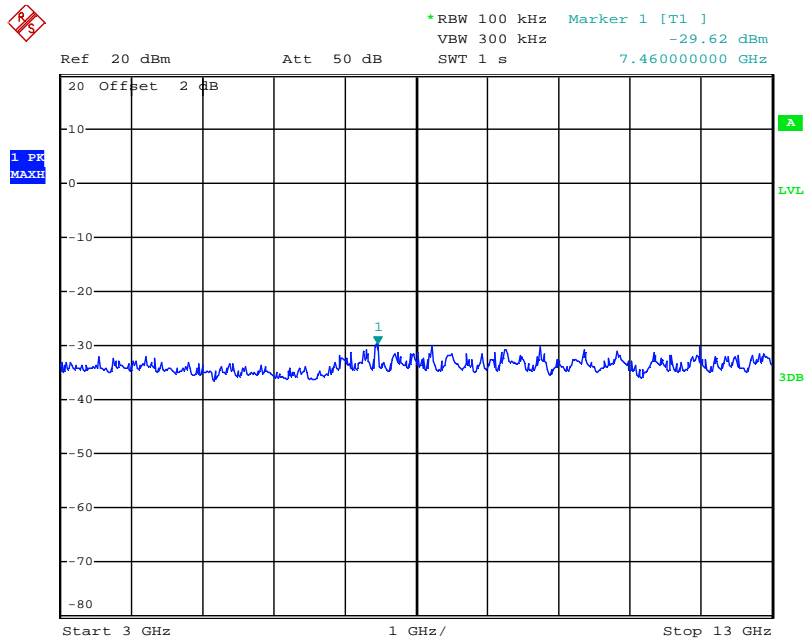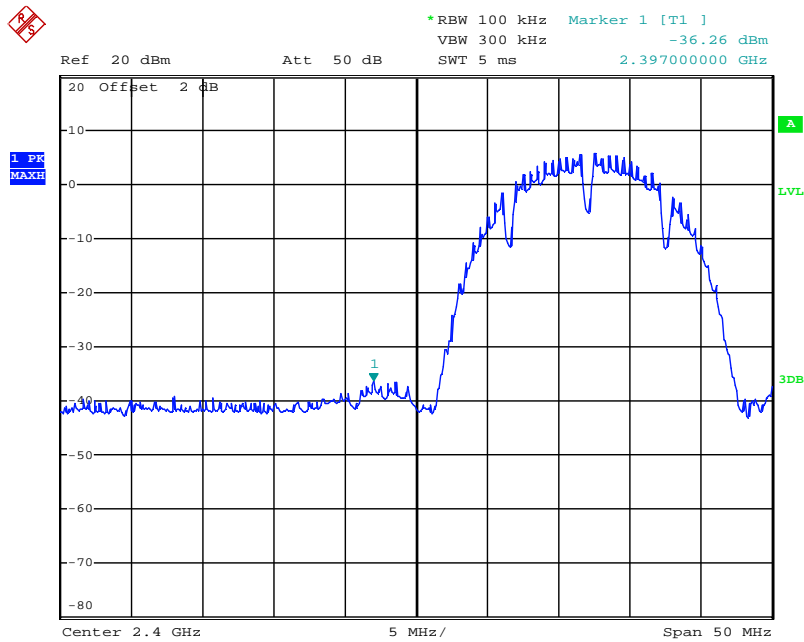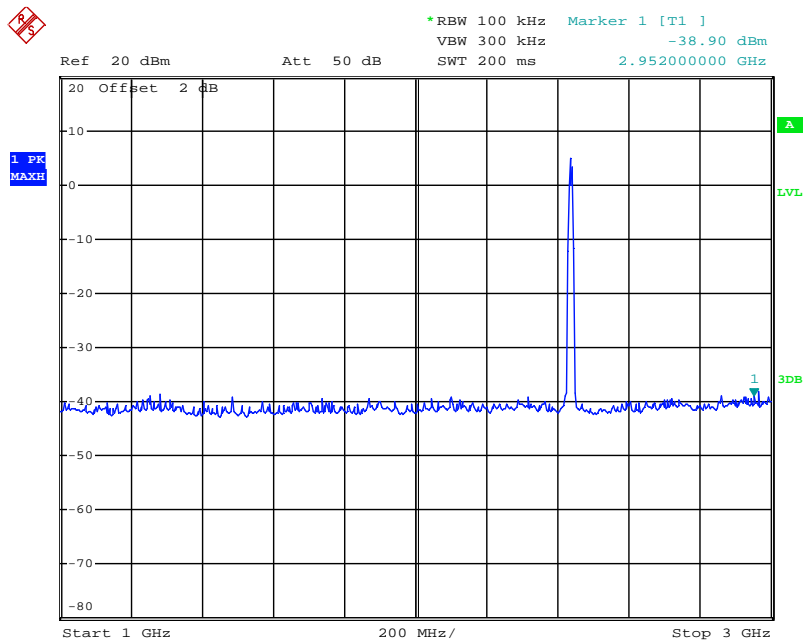
Mode: 802.11g, TX frequency: 2412MHz
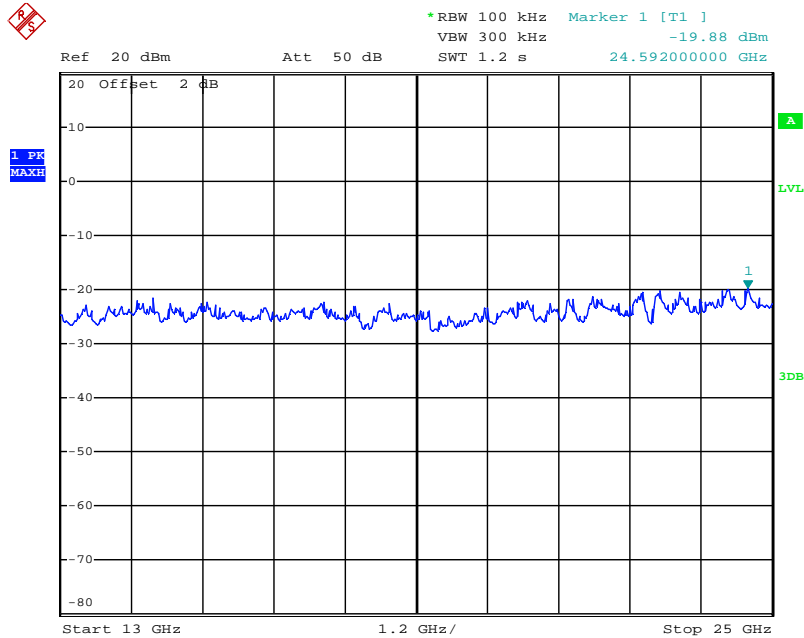


Date: 29.OCT.2018  01:24:14



Date: 29.OCT.2018  01:23:44

TÜVRheinland®



Date: 29.OCT.2018  01:23:21



Date: 29.OCT.2018  01:21:57

TÜVRheinland®



```
                                        *RBW 100 kHz   Marker 1 [T1 ]
                                         VBW 300 kHz           -17.44 dBm
        Ref  20 dBm          Att  50 dB  SWT 10 ms        2.398800000 GHz
        20 Offset   2 dB                                              A
      -10                                                            LVL
        0
      -10
      -20
      -30                                                            3DB
      -40
      -50
      -60
      -70
      -80
        Center 2.4 GHz          10 MHz/            Span 100 MHz
```
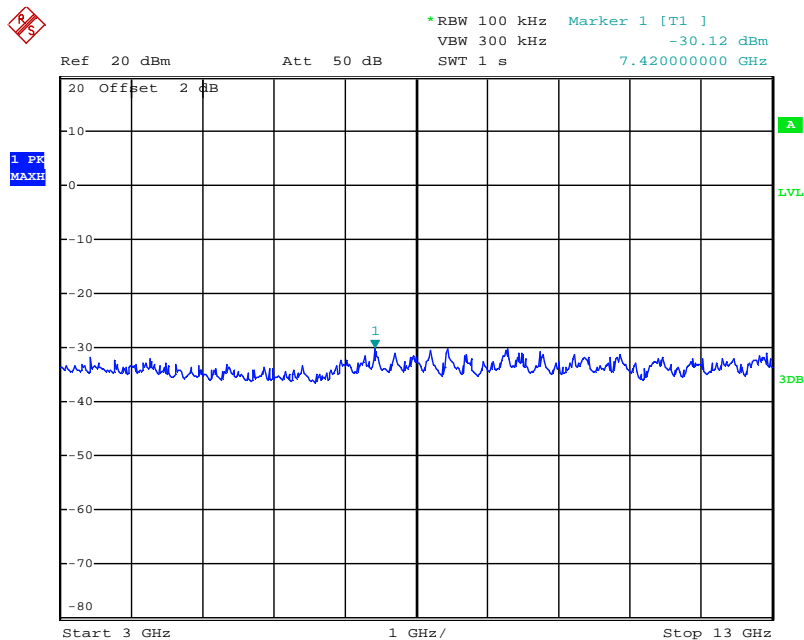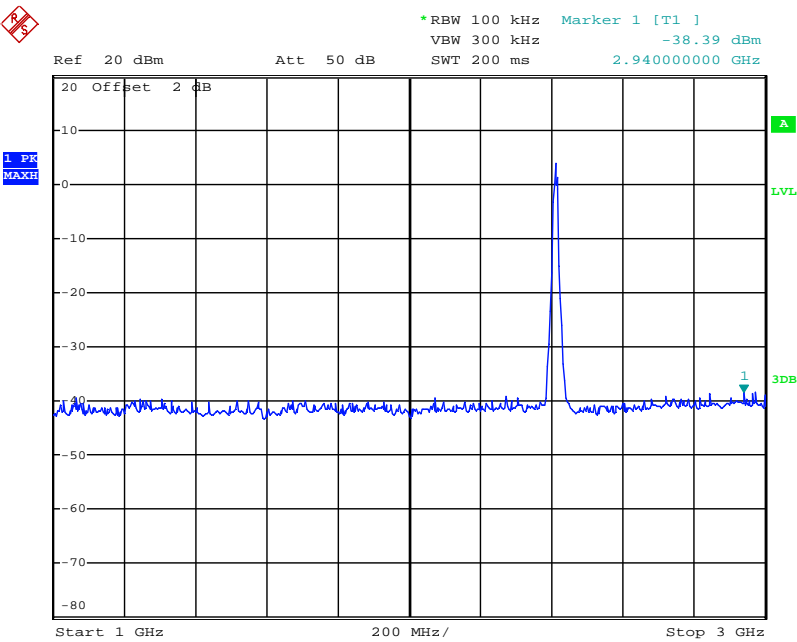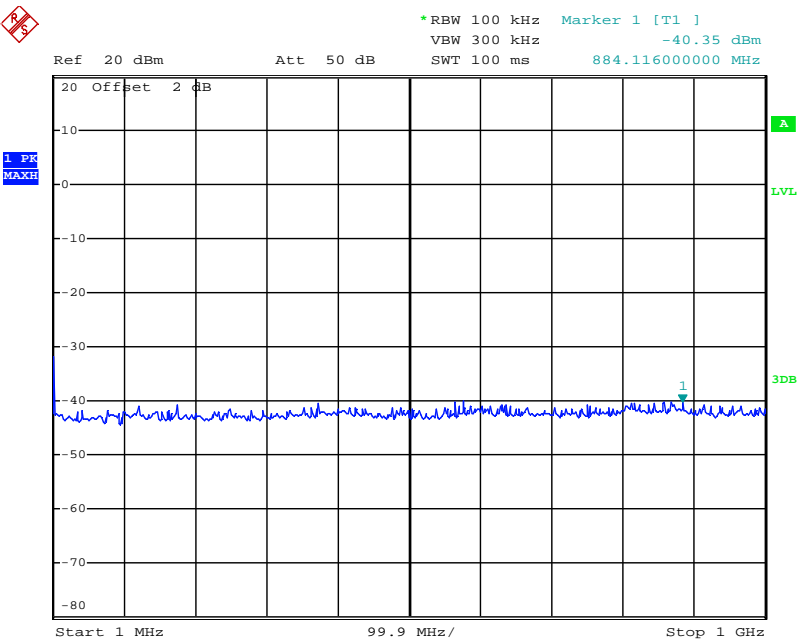
Date: 29.OCT.2018  01:25:34

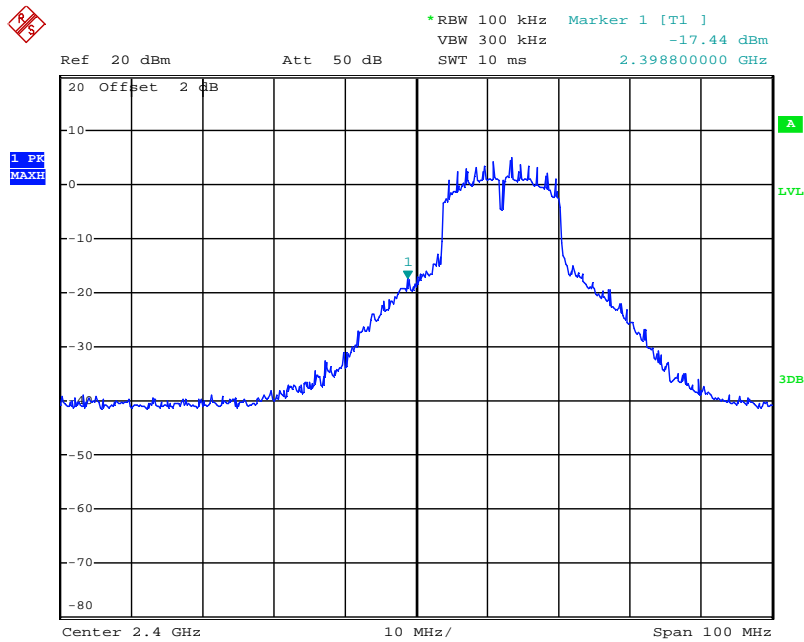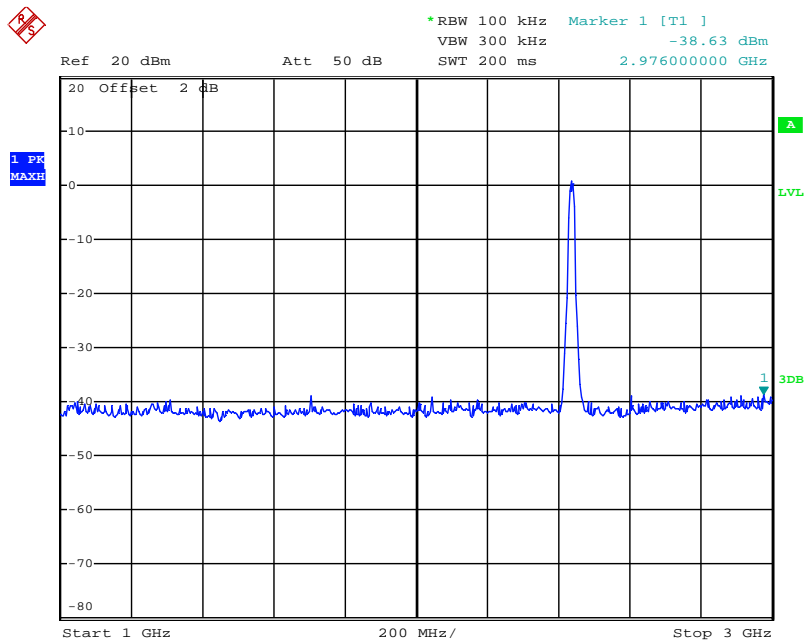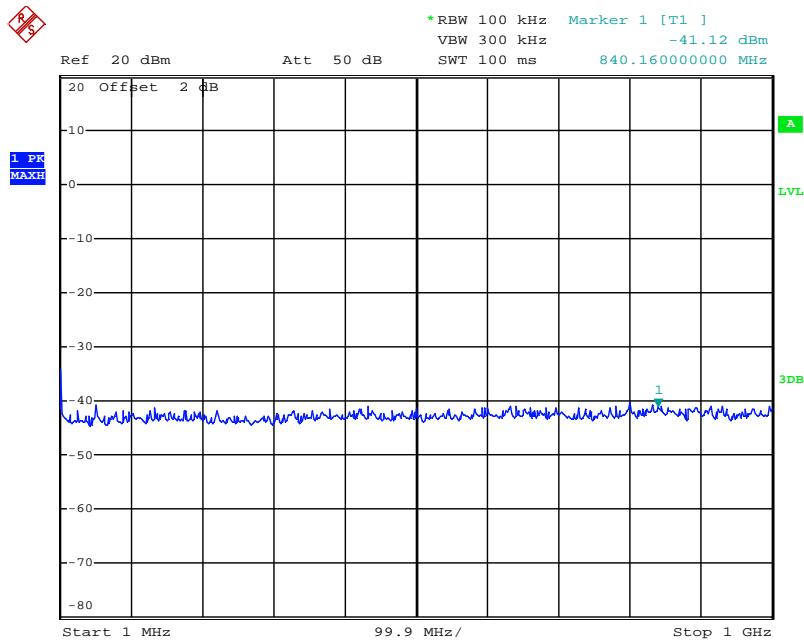Mode: 802.11g, TX frequency: 2437MHz
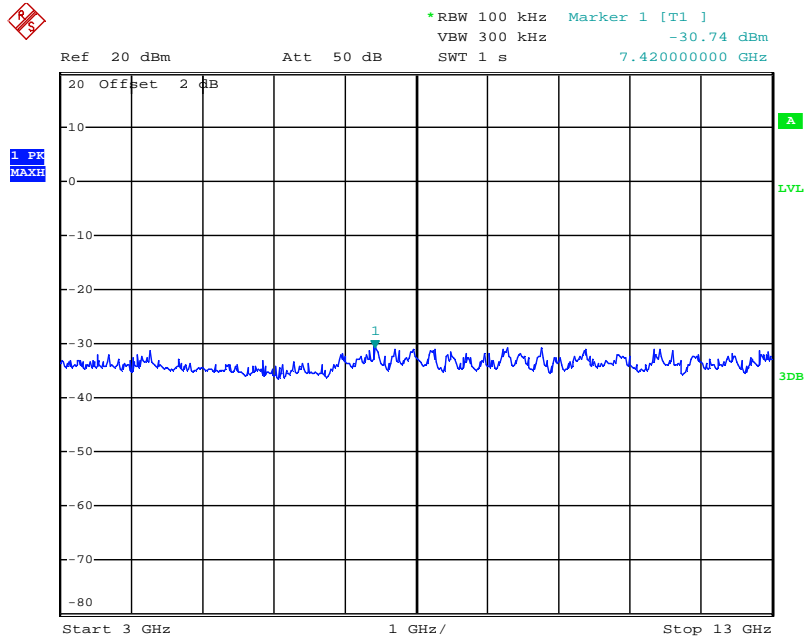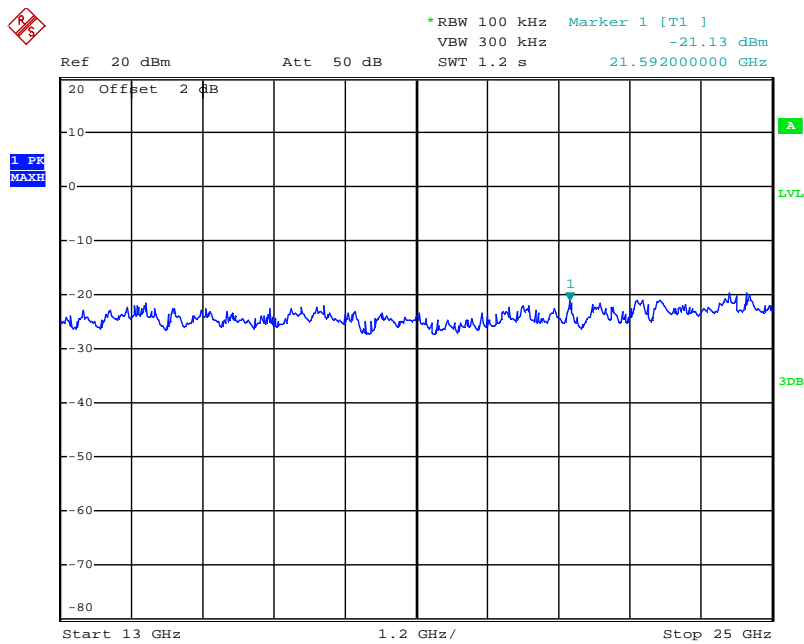


Date: 29.OCT.2018  01:36:11



Date: 29.OCT.2018  01:35:47

TÜVRheinland®



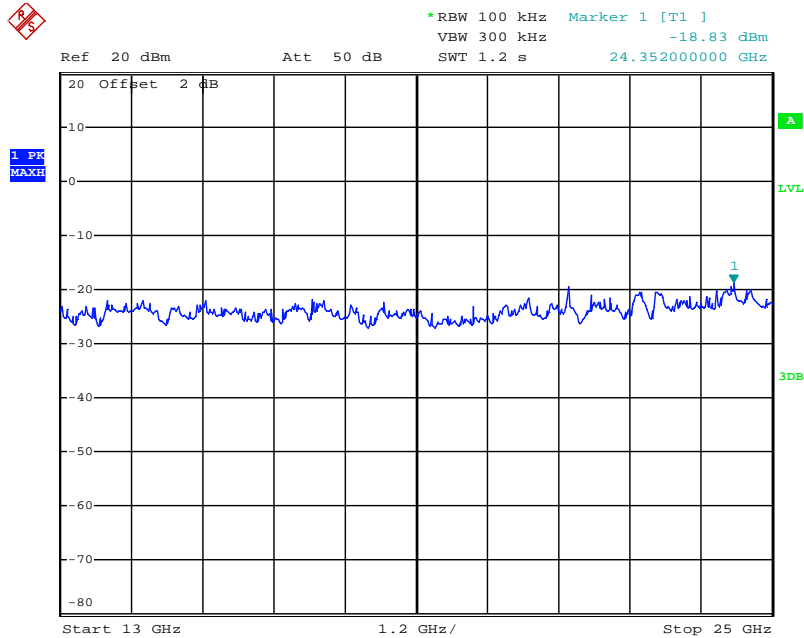Date: 29.OCT.2018  01:34:48



Date: 29.OCT.2018  01:33:59

TÜVRheinland®

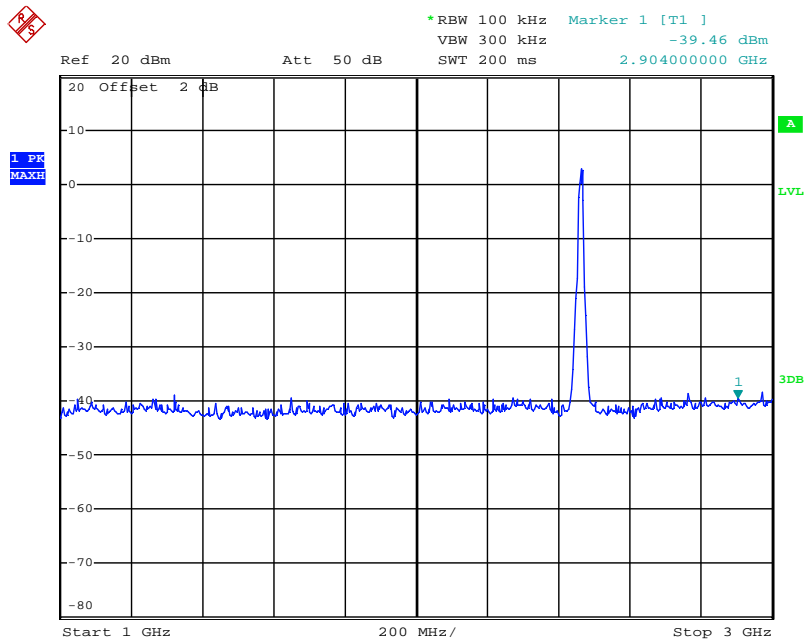Mode: 802.11g, TX frequency: 2462MHz



Date: 29.OCT.2018  01:20:54
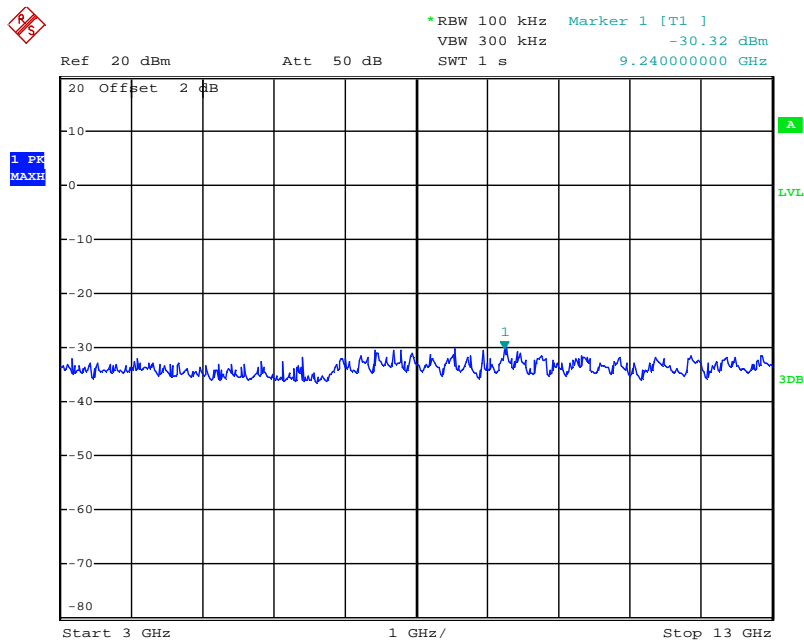


Date: 29.OCT.2018  01:20:27

TÜVRheinland®



Date: 29.OCT.2018  01:20:02



Date: 29.OCT.2018  01:19:16

TÜVRheinland®

```
                                        *RBW 100 kHz    Marker 1 [T1 ]
                                         VBW 300 kHz            -33.48 dBm
        Ref  20 dBm           Att  50 dB SWT 10 ms      2.483700000 GHz
```



```
Center 2.4835 GHz          10 MHz/              Span 100 MHz
```

Date: 29.OCT.2018  01:18:41

Mode: 802.11n, TX frequency: 2412MHz



Date: 29.OCT.2018  01:32:40



Date: 29.OCT.2018  01:32:16

Date: 29.OCT.2018  01:31:53



Date: 29.OCT.2018  01:31:23

TÜVRheinland®



Date: 29.OCT.2018  01:29:21

Mode: 802.11n, TX frequency: 2437MHz



Date: 29.OCT.2018  01:37:25



Date: 29.OCT.2018  01:38:18

TÜVRheinland®



Date: 29.OCT.2018  01:37:54



Date: 29.OCT.2018  01:38:39
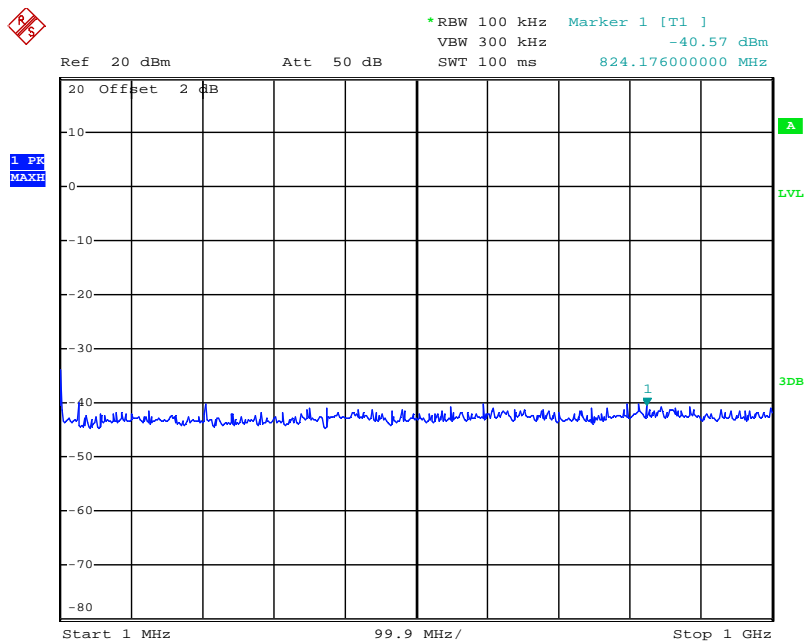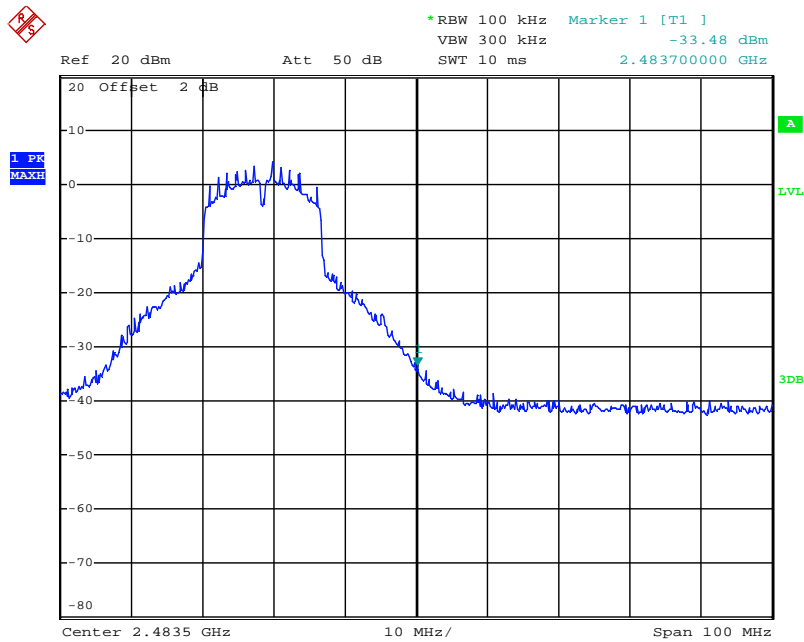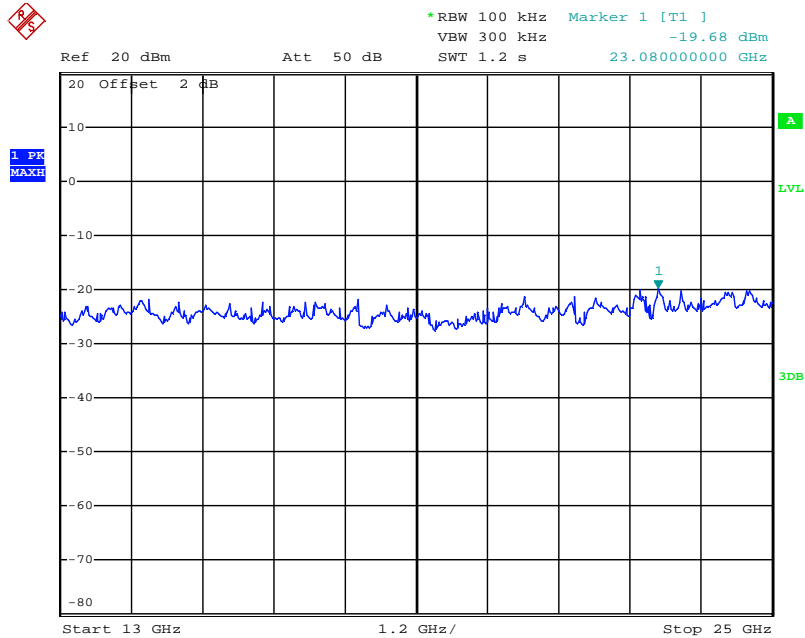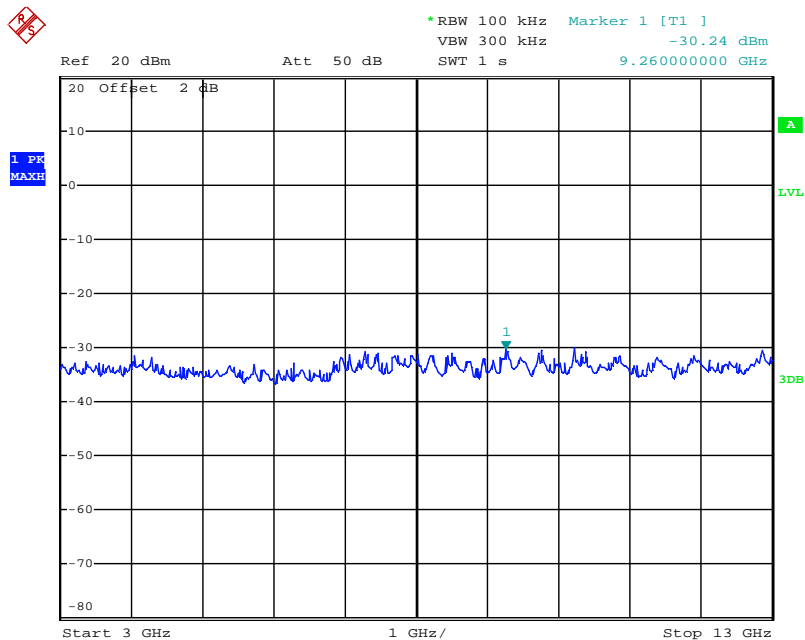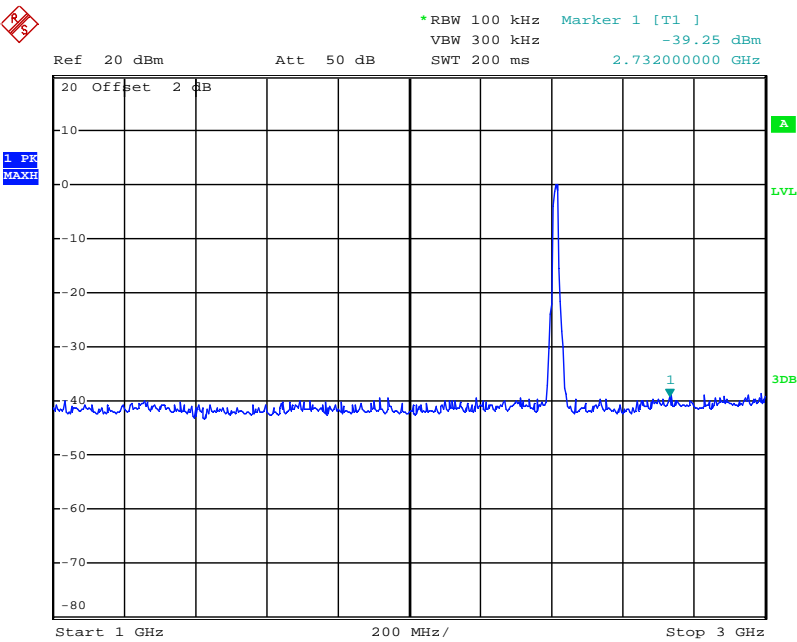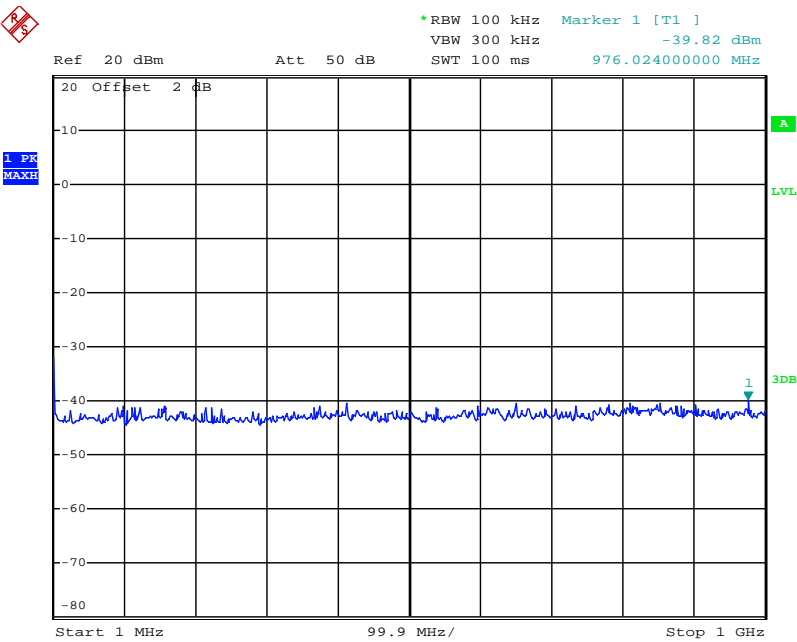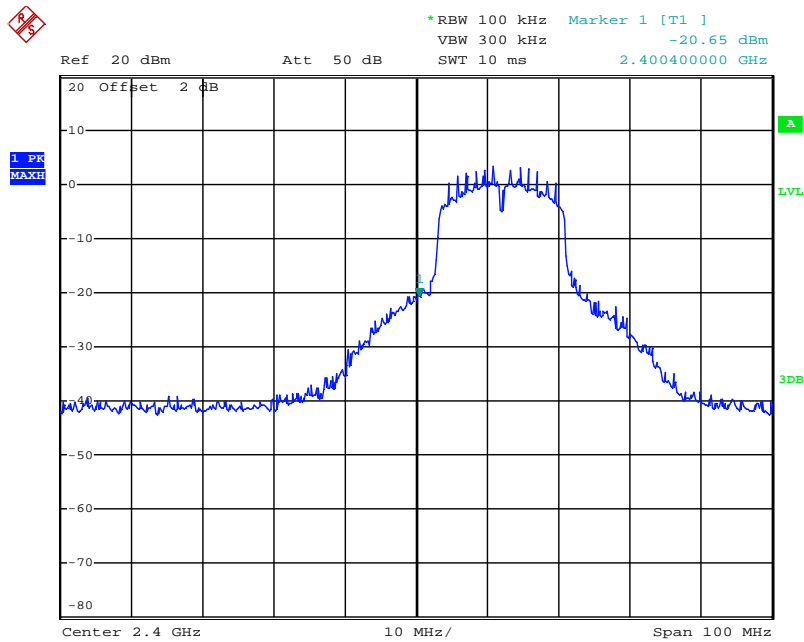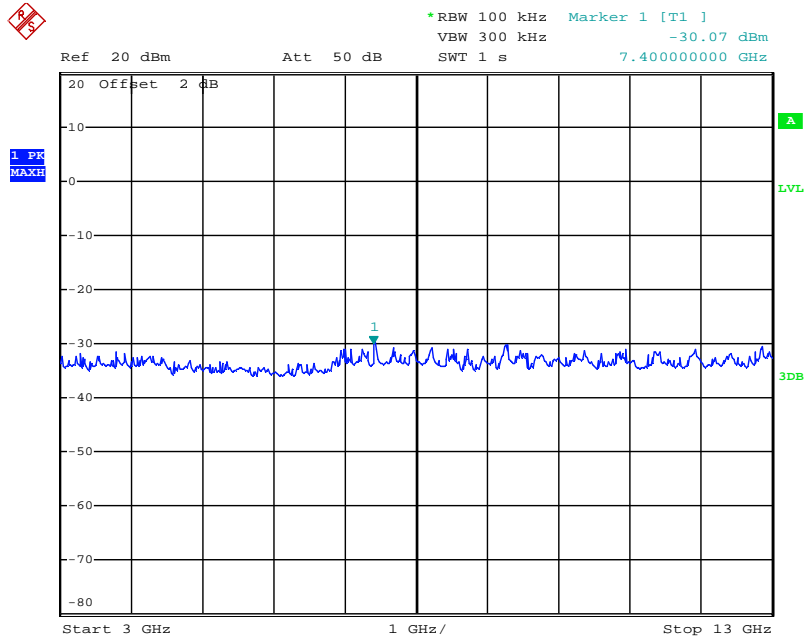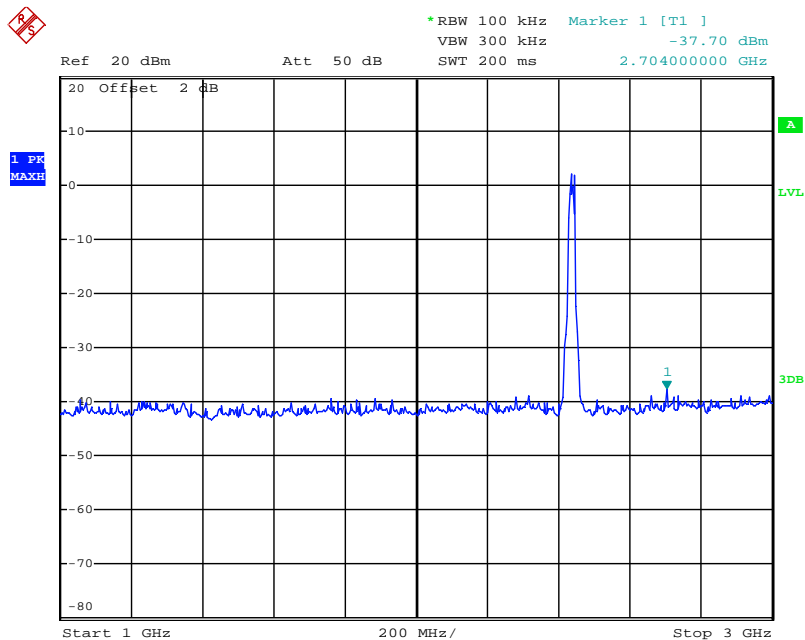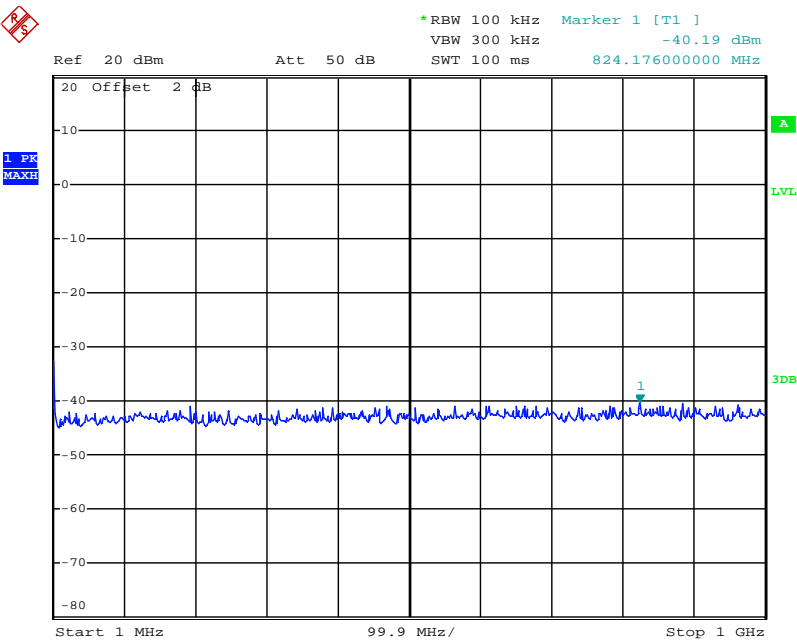
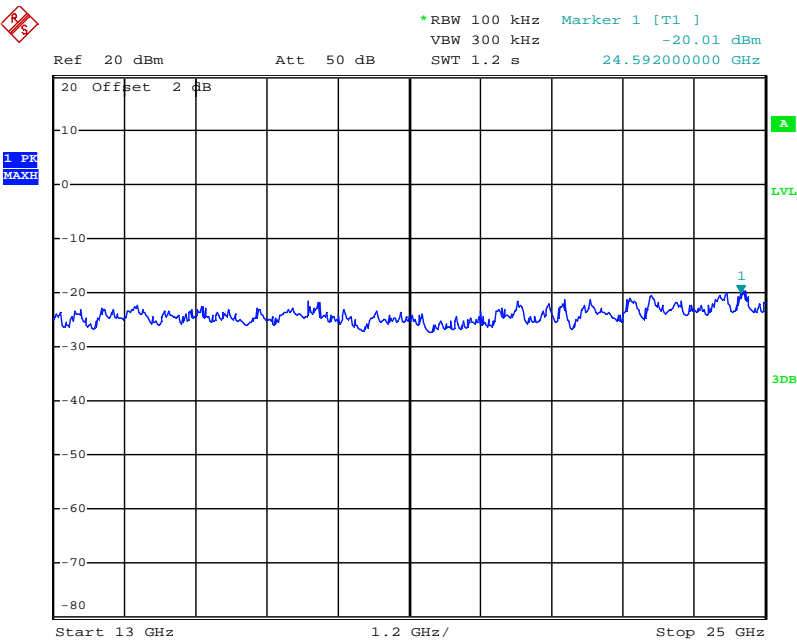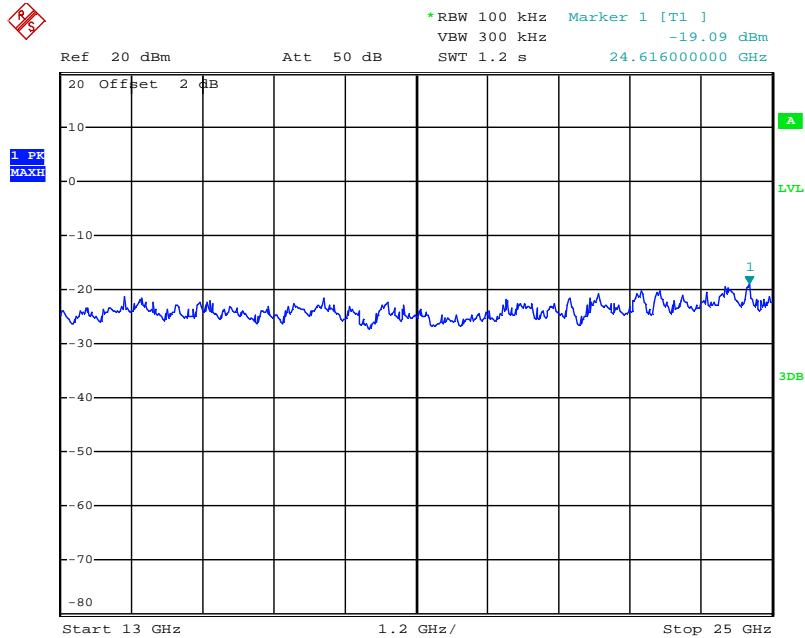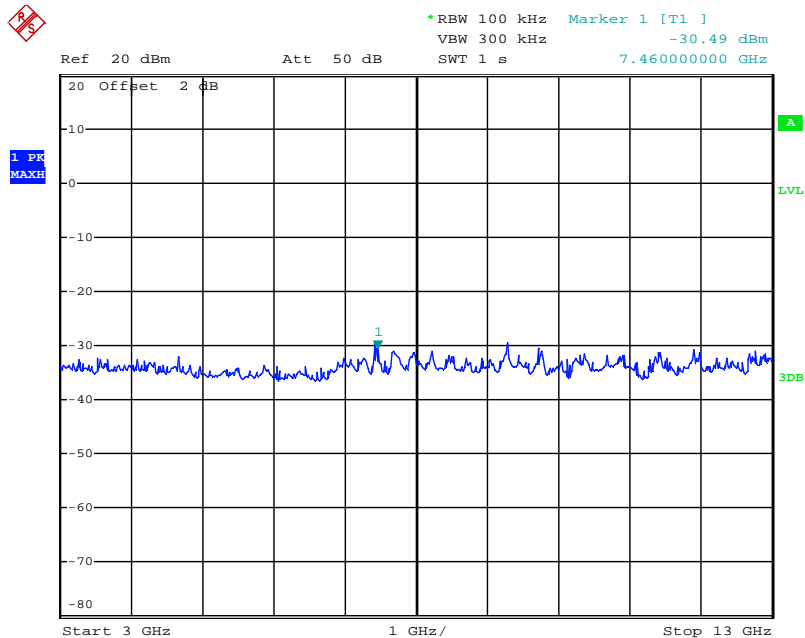Mode: 802.11n, TX frequency: 2462MHz



Date: 29.OCT.2018  01:41:53



Date: 29.OCT.2018  01:41:21

TÜVRheinland®

Marker 1 [T1]

*RBW 100 kHz
VBW 300 kHz          -39.47 dBm
Ref 20 dBm        Att 50 dB    SWT 200 ms     2.968000000 GHz

20 Offset 2 dB

A

1 PK
MAXH

LVL

3DB

Start 1 GHz            200 MHz/            Stop 3 GHz

Date: 29.OCT.2018  01:40:56

Marker 1 [T1]

*RBW 100 kHz
VBW 300 kHz          -39.89 dBm
Ref 20 dBm        Att 50 dB    SWT 100 ms     912.088000000 MHz

20 Offset 2 dB

A

1 PK
MAXH

LVL

3DB

Start 1 MHz            99.9 MHz/            Stop 1 GHz

Date: 29.OCT.2018  01:40:25

TÜVRheinland®



```
                              *RBW  100 kHz    Marker 1 [T1 ]
                               VBW  300 kHz           -33.10 dBm
   Ref  20 dBm      Att  50 dB SWT  10 ms     2.483900000 GHz
```

Date: 29.OCT.2018  01:39:53