Appendix 1

Test Results

Disturbance Voltage on AC Mains
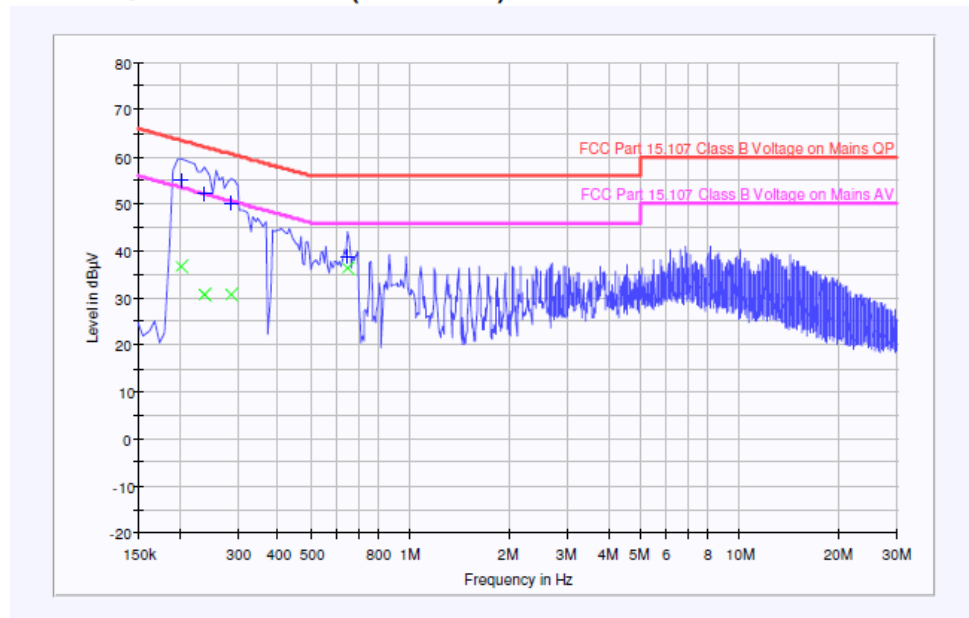
TUV Rheinland Hong Kong Ltd. - EMC Laboratory

Continuous Disturbance

Test Information

Client / EUT:	Witron BT Handset
Model no./ Sample no.	MM01BT
Test Standards	FCC Part 15
Operating Conditions:	Charging + Music play mode
Operator Name:	Mun
Test Voltage/ Frequency:	120V 60Hz
Description	L1

Conducted Emission   (FCC-P.15) - Class B

Result Table_Single

Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)
0.204000	55.0	36.8
0.240000	52.1	30.6
0.288000	50.2	30.7
0.648000	38.7	36.3

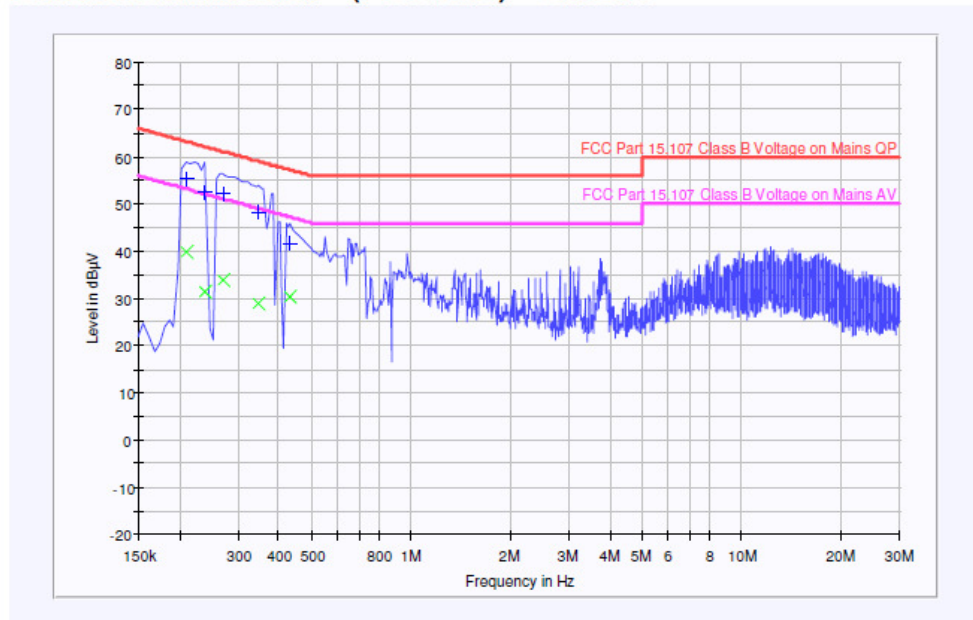17/08/2012   11:40:34

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Continuous Disturbance

Test Information

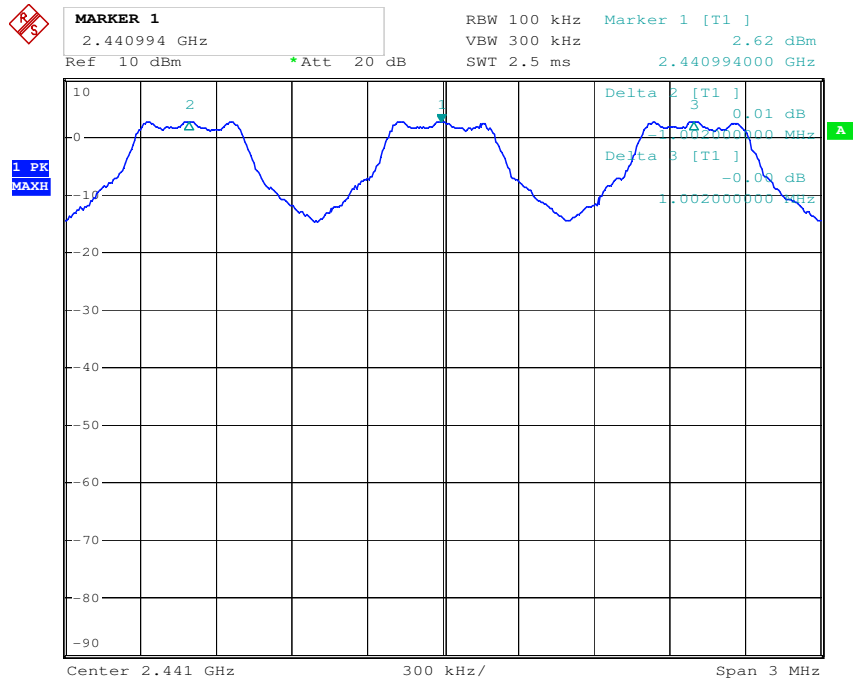|	
Client / EUT:	Witron BT Handset
Model no./ Sample no.	MM01BT
Test Standards	FCC Part 15
Operating Conditions:	Charging + Music play mode
Operator Name:	Mun
Test Voltage/ Frequency:	120V 60Hz
Description	N

Conducted Emission   (FCC-P.15) - Class B

Result Table_Single

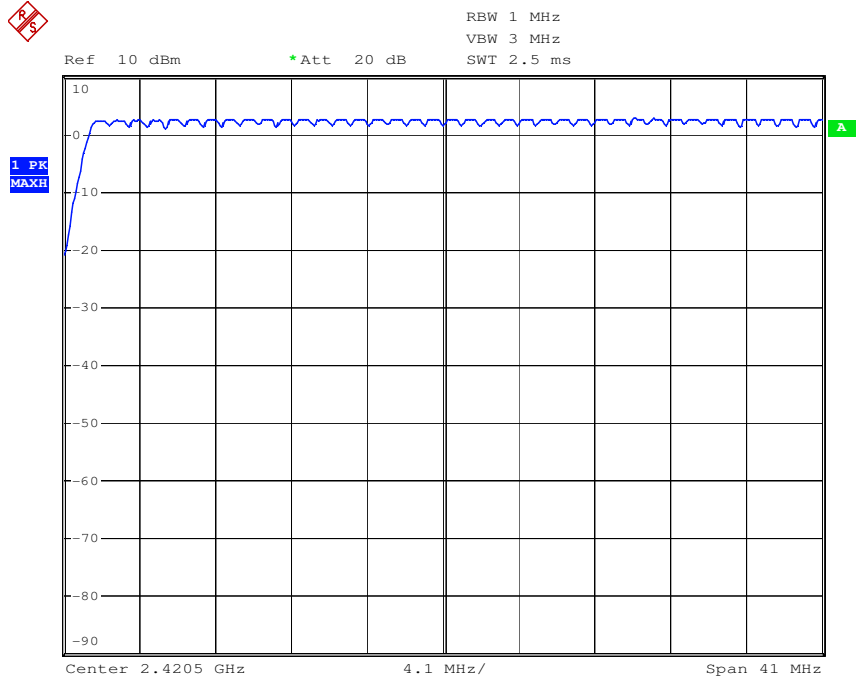| Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)
0.210000	55.5	39.9
0.240000	52.7	31.5
0.270000	52.2	34.0
0.348000	48.3	28.8
0.432000	41.8	30.2

17/08/2012   11:49:50
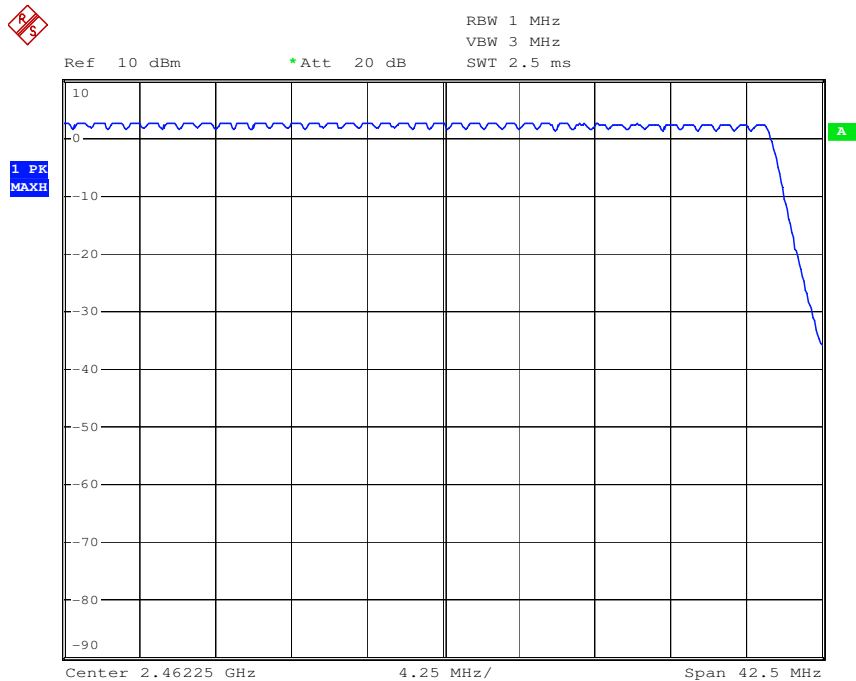
Carrier Frequency Separation

Date: 16.AUG.2012 10:13:17

Number of hopping channels

RBW 1 MHz
VBW 3 MHz
Ref 10 dBm   *Att 20 dB   SWT 2.5 ms

1 PK
MAXH

A

Center 2.4205 GHz   4.1 MHz/   Span 41 MHz

Date: 16.AUG.2012 10:14:48

RBW 1 MHz
VBW 3 MHz
Ref 10 dBm   *Att 20 dB   SWT 2.5 ms

1 PK
MAXH

A

Center 2.46225 GHz   4.25 MHz/   Span 42.5 MHz

Date: 16.AUG.2012 10:15:56

Dwell Time

SWEEP TIME		RBW 1 MHz
31.6 s		VBW 3 MHz
Ref 10 dBm	*Att 20 dB	SWT 31.6 s

Center 2.441 GHz   3.16 s/

Date: 16.AUG.2012 10:18:43

MARKER 1		RBW 1 MHz	Marker 1 [T1]
-4 µs		VBW 3 MHz	2.33 dBm
Ref 10 dBm	*Att 30 dB	SWT 4 ms	-4.000000 µs

Delta 2 [T1]
0.21 dB
2.912000 ms

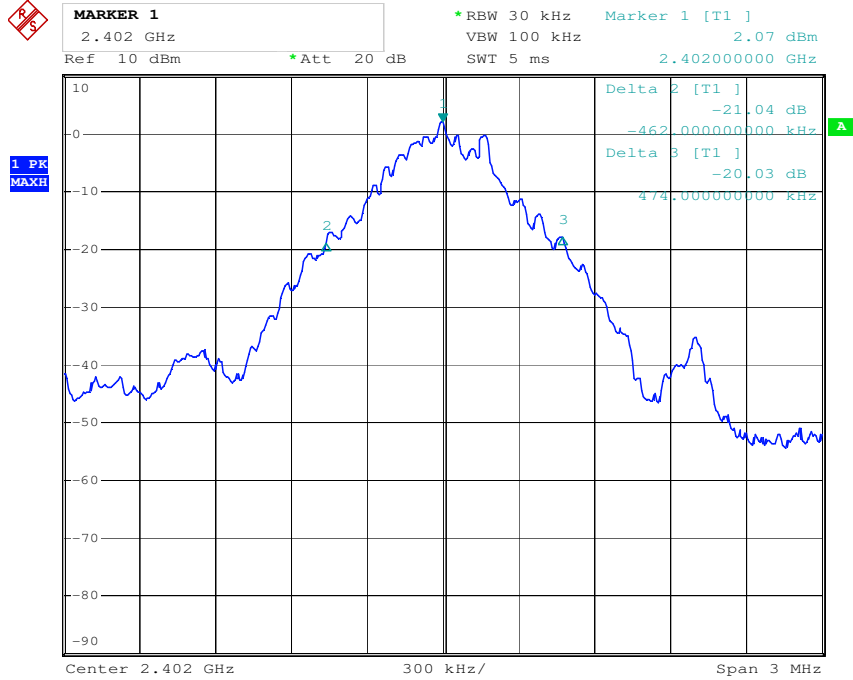Center 2.441 GHz   400 µs/
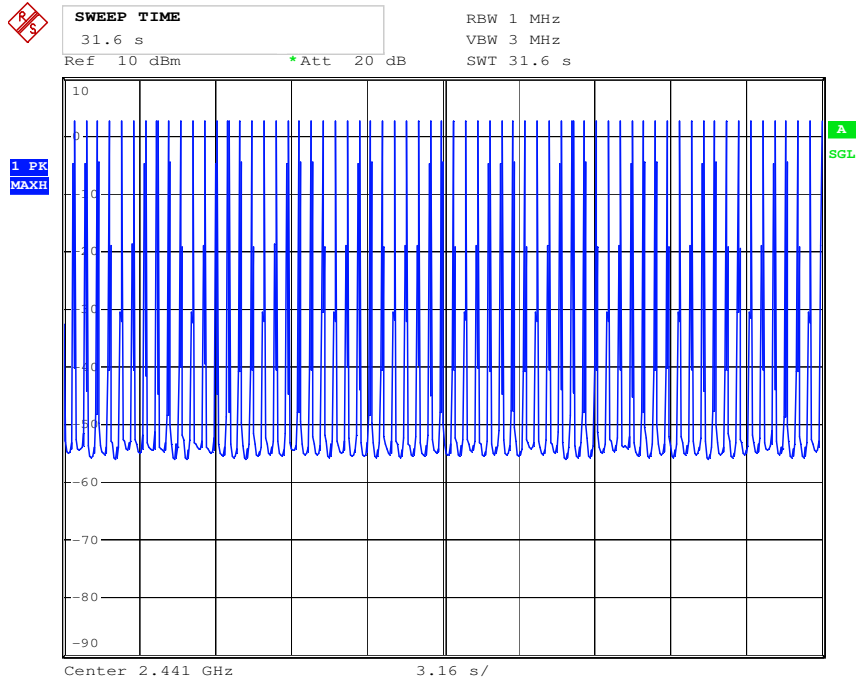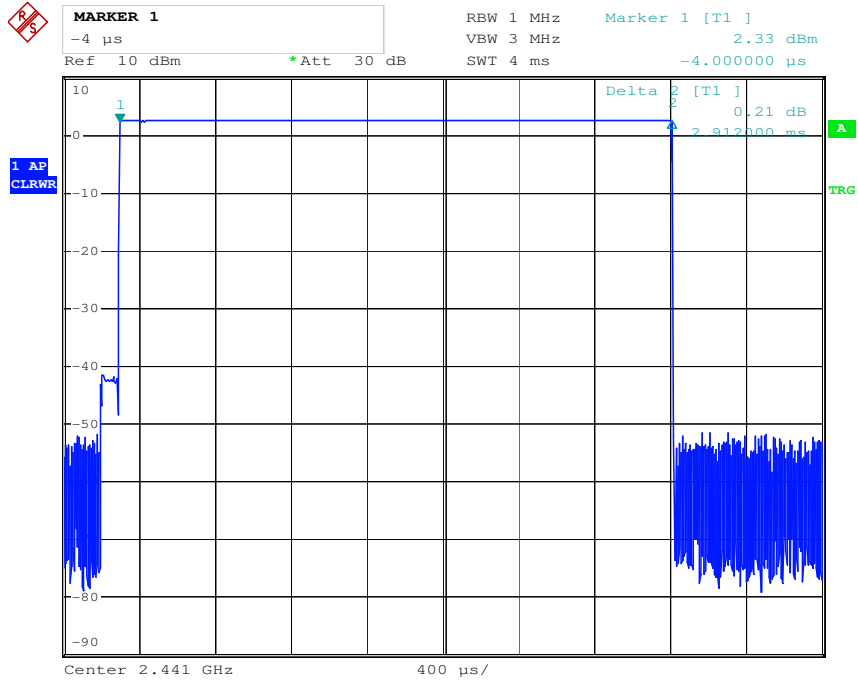
Date: 16.AUG.2012 10:19:46

20dB Bandwidth
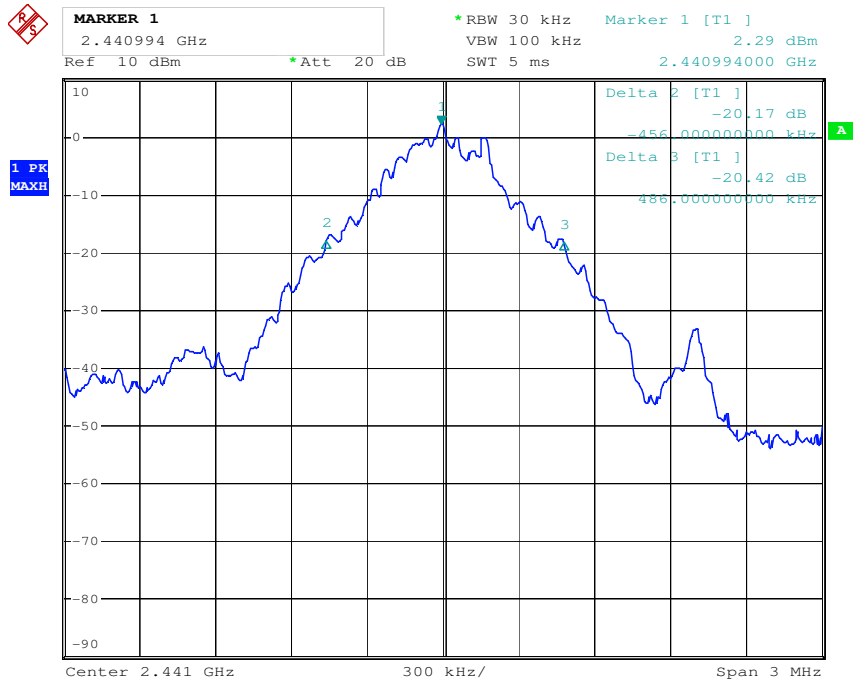
Modulation: GFSK
Tx frequency: 2402MHz

Date: 16.AUG.2012 10:21:29

Modulation: GFSK
Tx frequency: 2441MHz

Date: 16.AUG.2012 10:22:31

Modulation: GFSK
Tx frequency: 2480MHz
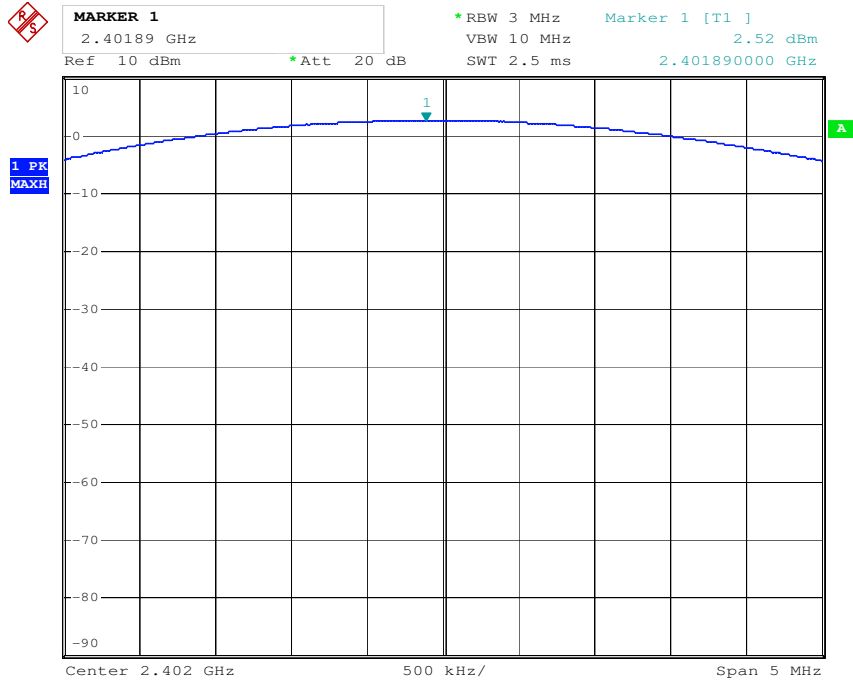
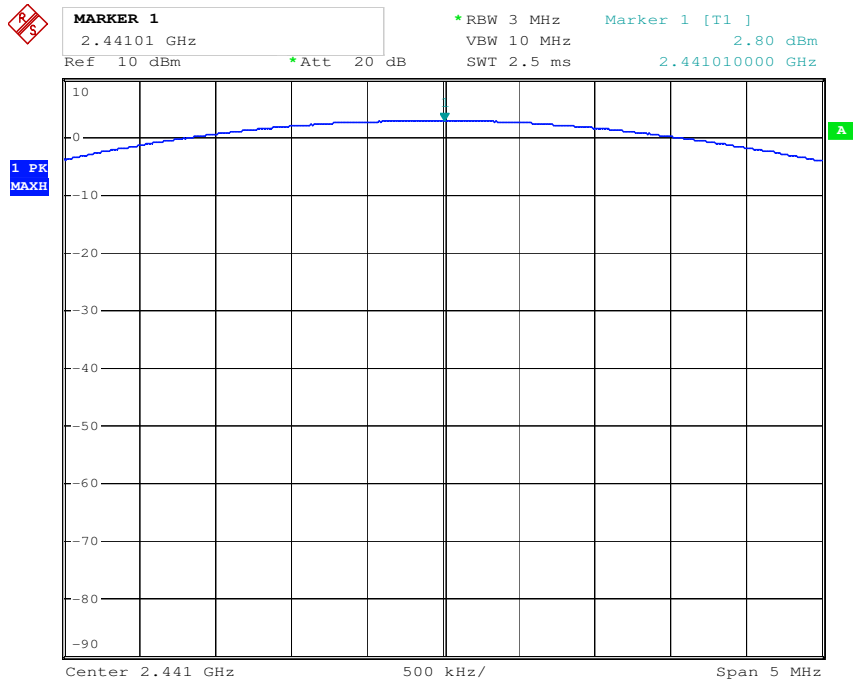| MARKER 1 | | *RBW 30 kHz | Marker 1 [T1] |
| 2.479994 GHz | | VBW 100 kHz | 1.98 dBm |
| Ref 10 dBm | *Att 20 dB | SWT 5 ms | 2.479994000 GHz |

Center 2.48 GHz   300 kHz/   Span 3 MHz
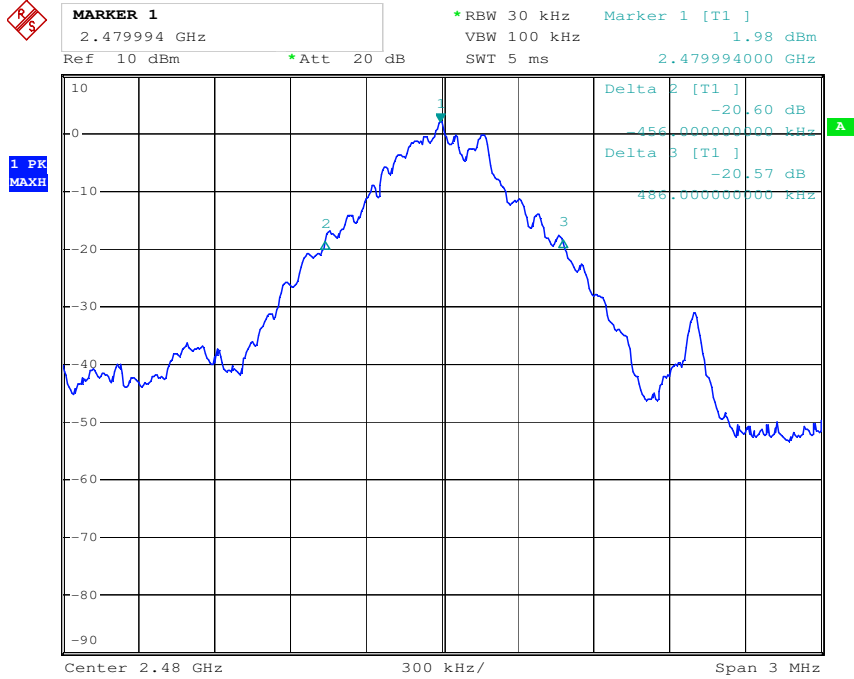
Date: 16.AUG.2012 10:24:04

Peak Output Power

Modulation: GFSK
Tx frequency: 2402MHz


```
MARKER 1                        *RBW 3 MHz    Marker 1 [T1 ]
2.40189 GHz                      VBW 10 MHz              2.52 dBm
Ref  10 dBm        *Att  20 dB   SWT 2.5 ms    2.401890000 GHz
```

Center 2.402 GHz   500 kHz/   Span 5 MHz

Date: 16.AUG.2012 10:24:56

Modulation: GFSK
Tx frequency: 2441MHz


```
MARKER 1                        *RBW 3 MHz    Marker 1 [T1 ]
2.44101 GHz                      VBW 10 MHz              2.80 dBm
Ref  10 dBm        *Att  20 dB   SWT 2.5 ms    2.441010000 GHz
```

Center 2.441 GHz   500 kHz/   Span 5 MHz

Date: 16.AUG.2012 10:25:31

Modulation: GFSK

Tx frequency: 2480MHz

MARKER 1		*RBW 3 MHz	Marker 1 [T1]
2.47993 GHz		VBW 10 MHz	2.46 dBm
Ref 10 dBm	*Att 20 dB	SWT 2.5 ms	2.479930000 GHz

Center 2.48 GHz   500 kHz/   Span 5 MHz
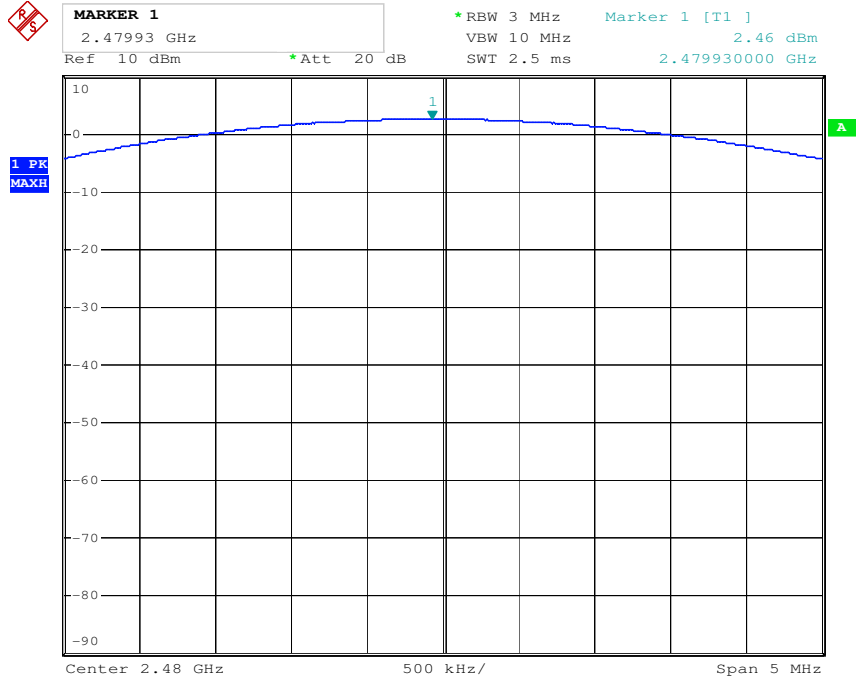
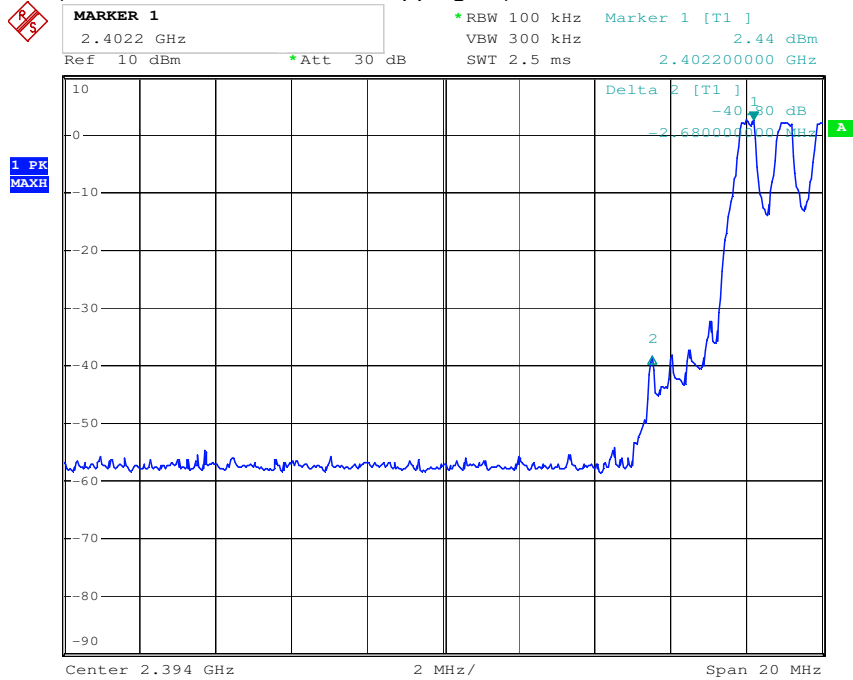Date: 16.AUG.2012 10:26:00

Band Edge Compliance

Tx frequency: 2402MHz (conducted measurement; hopping on)

MARKER 1			*RBW 100 kHz	Marker 1 [T1]
2.4022 GHz			VBW 300 kHz	2.44 dBm
Ref 10 dBm		*Att 30 dB	SWT 2.5 ms	2.402200000 GHz

Date: 16.AUG.2012 10:33:30

Tx frequency: 2480MHz (conducted measurement; hopping on)
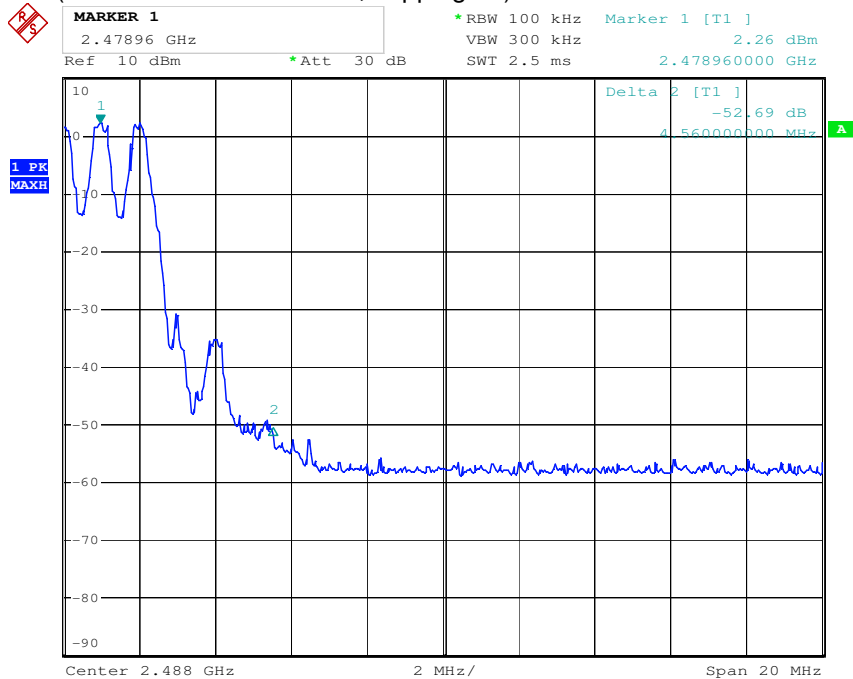
MARKER 1			*RBW 100 kHz	Marker 1 [T1]
2.47896 GHz			VBW 300 kHz	2.26 dBm
Ref 10 dBm		*Att 30 dB	SWT 2.5 ms	2.478960000 GHz

Date: 16.AUG.2012 10:37:26

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Tx frequency: 2402MHz (conducted measurement; hopping off)

MARKER 1		*RBW 100 kHz	Marker 1 [T1]
2.402 GHz		VBW 300 kHz	2.44 dBm
Ref 10 dBm	*Att 30 dB	SWT 2.5 ms	2.402000000 GHz
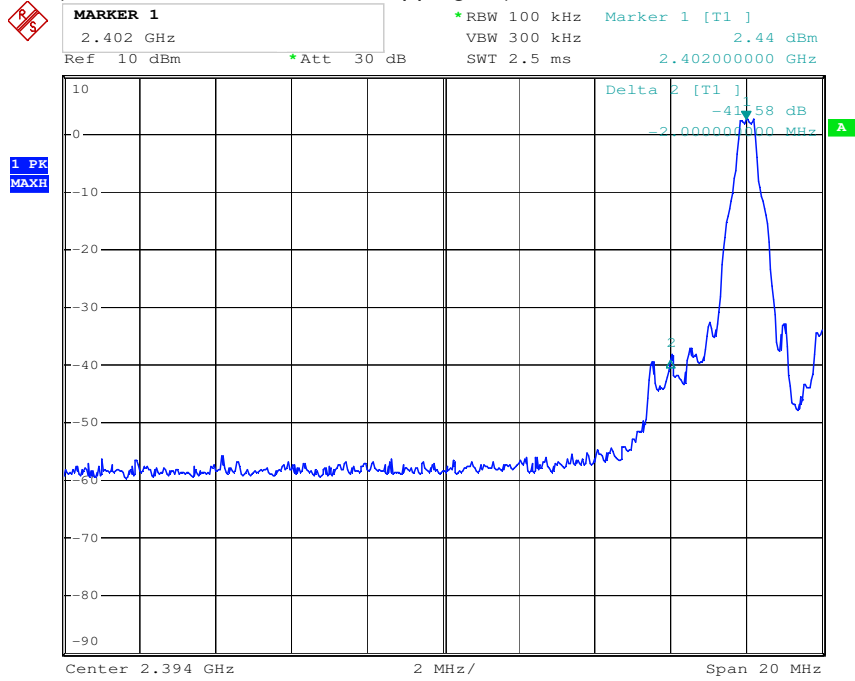
Date: 16.AUG.2012 10:27:42

Tx frequency: 2480MHz (conducted measurement; hopping off)

MARKER 1		*RBW 100 kHz	Marker 1 [T1]
2.48016 GHz		VBW 300 kHz	2.37 dBm
Ref 10 dBm	*Att 30 dB	SWT 2.5 ms	2.480160000 GHz
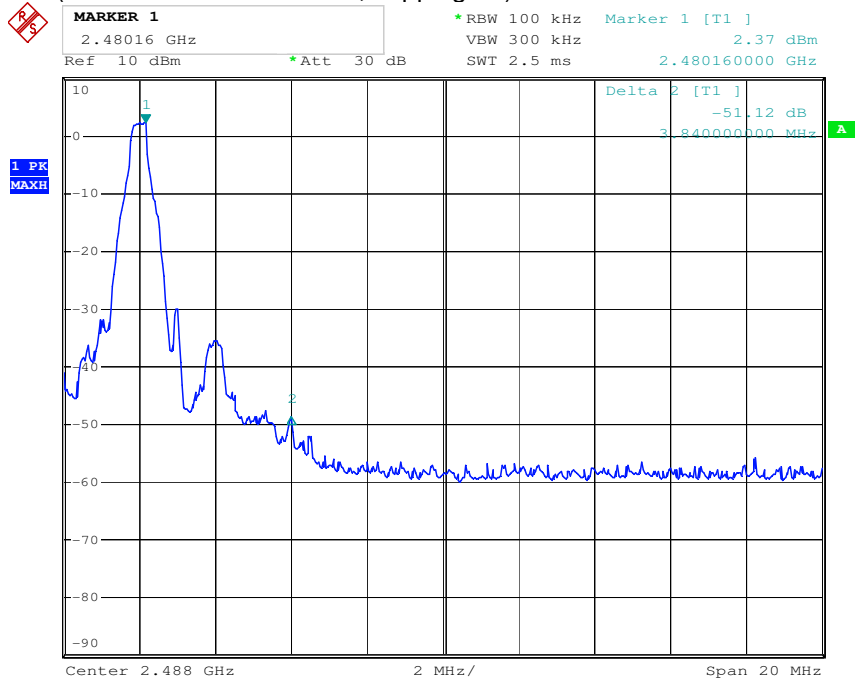
Date: 16.AUG.2012 10:38:21

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Tx frequency: 2402MHz (radiated measurement)

```
                                    * RBW  1 MHz      Marker 1 [T1 ]
                                    * VBW  1 MHz           41.32 dBµV/m
         Ref   107 dBµV/m    * Att   0 dB   * SWT  60 s    2.313717949 GHz

        -100

1 PK
MAXH     -90

        -80                                                         TDS

        -70                                                         PS

        -60

        -50                                                         3DB
                                                                    AC
          1

        -30

        -20

        -10

    Start  2.31 GHz              8 MHz/              Stop  2.39 GHz
```
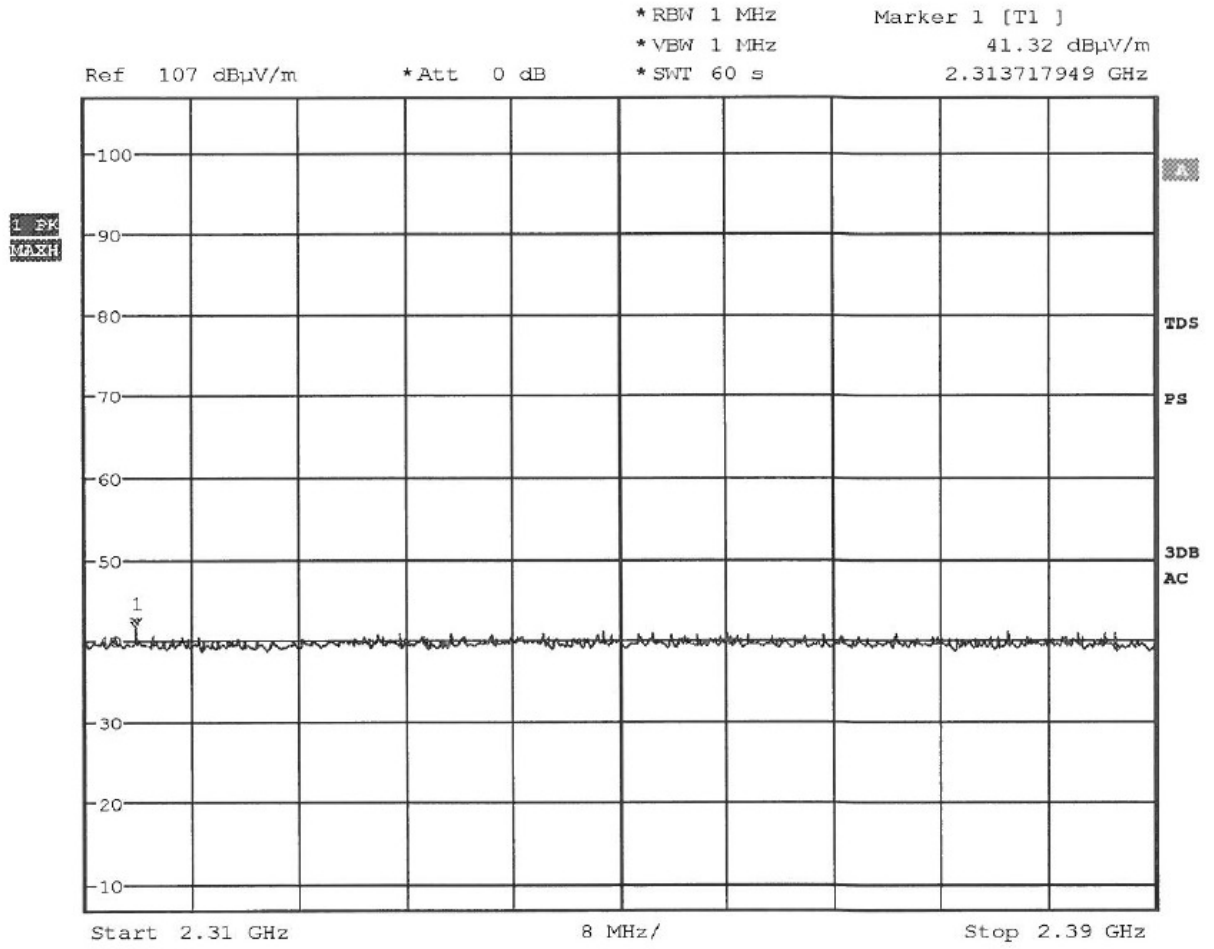
WITRON/ BT HANDSET/ MM01BT/ 00120802041-001/ 2402MHz/ VERT.

Date: 9.AUG.2012 17:19:09

Vertical Polarization

Ref 107 dBμV/m	*Att 0 dB
*RBW 1 MHz	Marker 1 [T1]
*VBW 10 Hz	27.56 dBμV/m
SWT 6.4 s	2.341794872 GHz

Start 2.31 GHz   8 MHz/   Stop 2.39 GHz
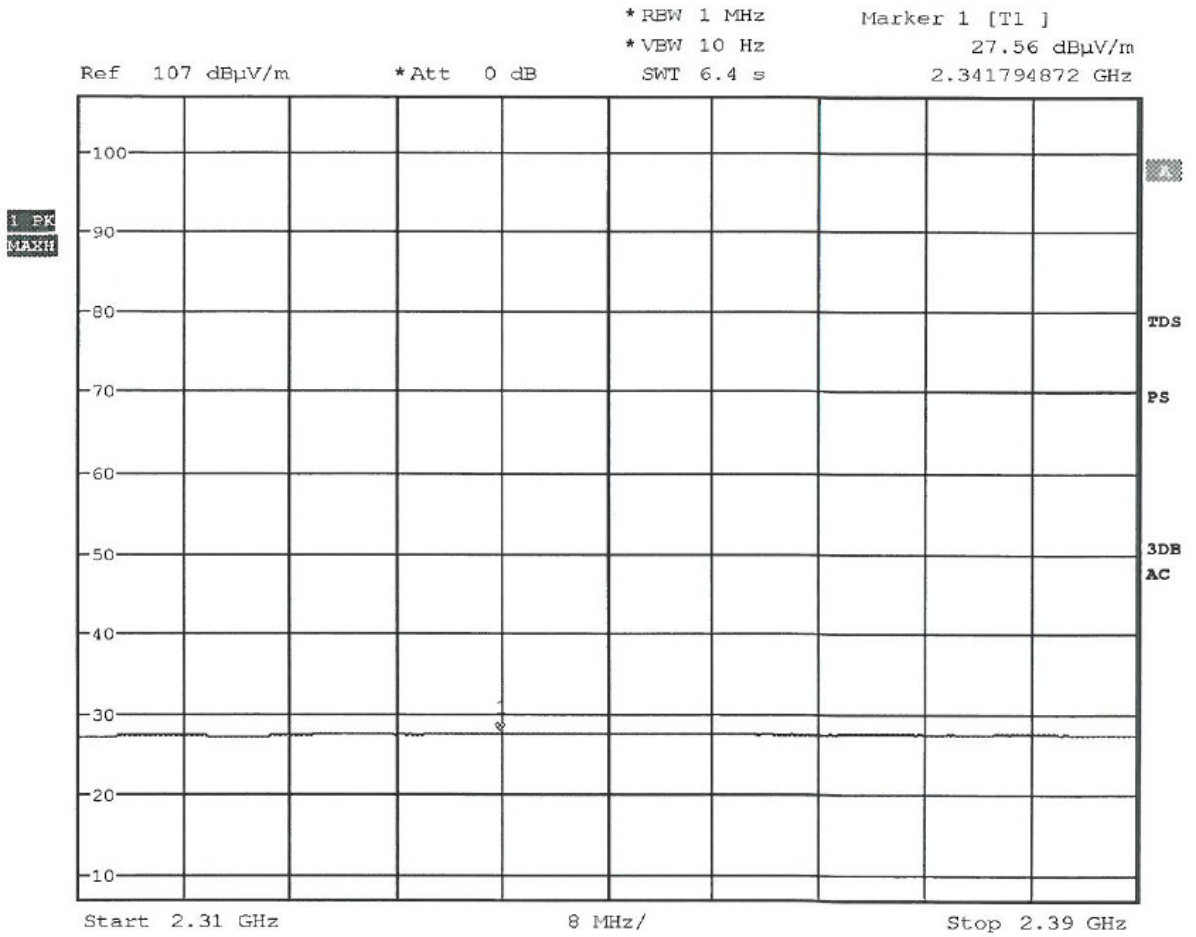
WITRON/ BT HANDSET/ MM01BT/ 00120802041-001/ 2402MHz/ VERT.

Date: 9.AUG.2012   17:21:19

Vertical Polarization

Ref 107 dBµV/m	*Att 0 dB	*RBW 1 MHz	Marker 1 [T1]	41.35 dBµV/m
		*VBW 1 MHz		
		*SWT 60 s		2.345769231 GHz

Start 2.31 GHz   8 MHz/   Stop 2.39 GHz
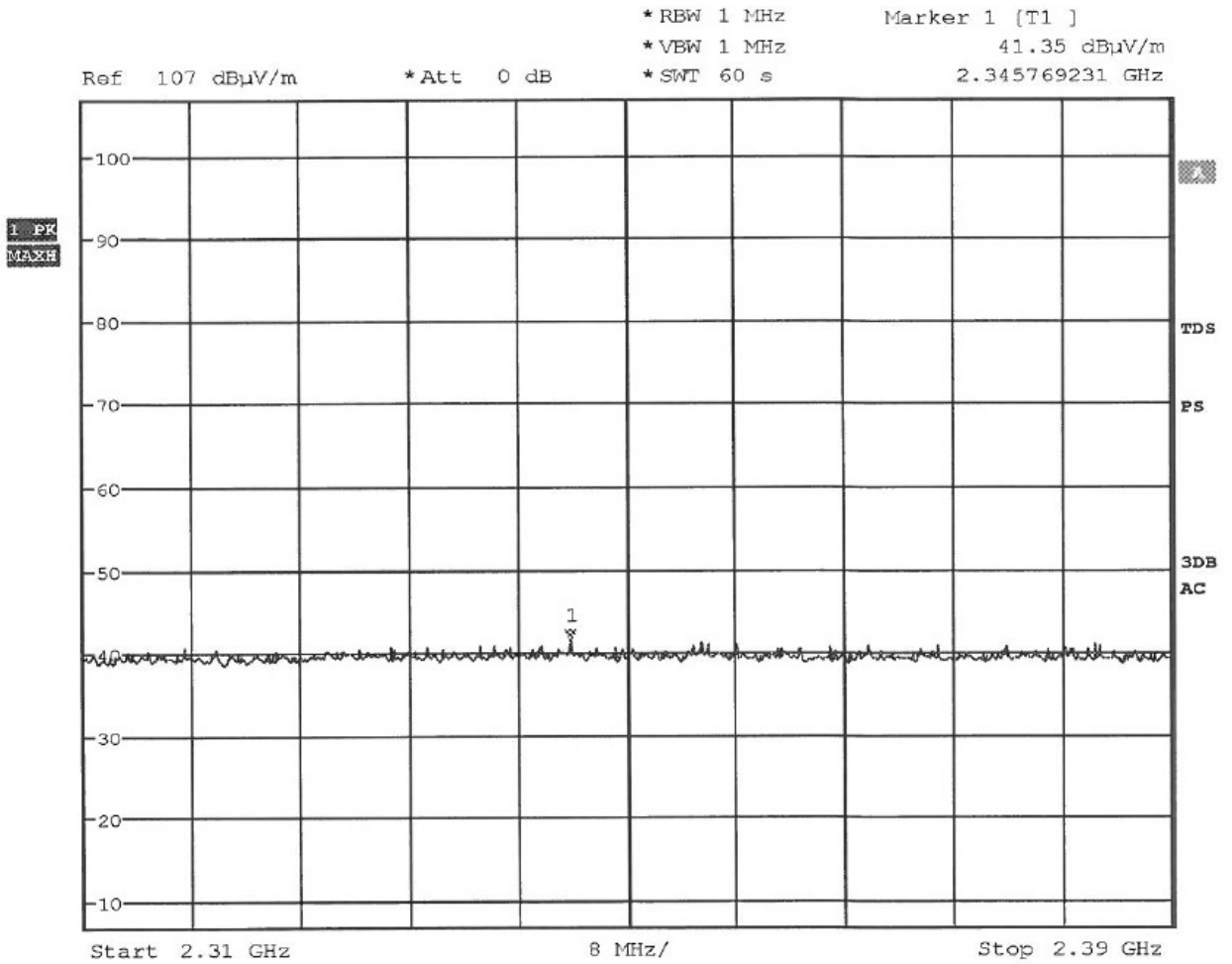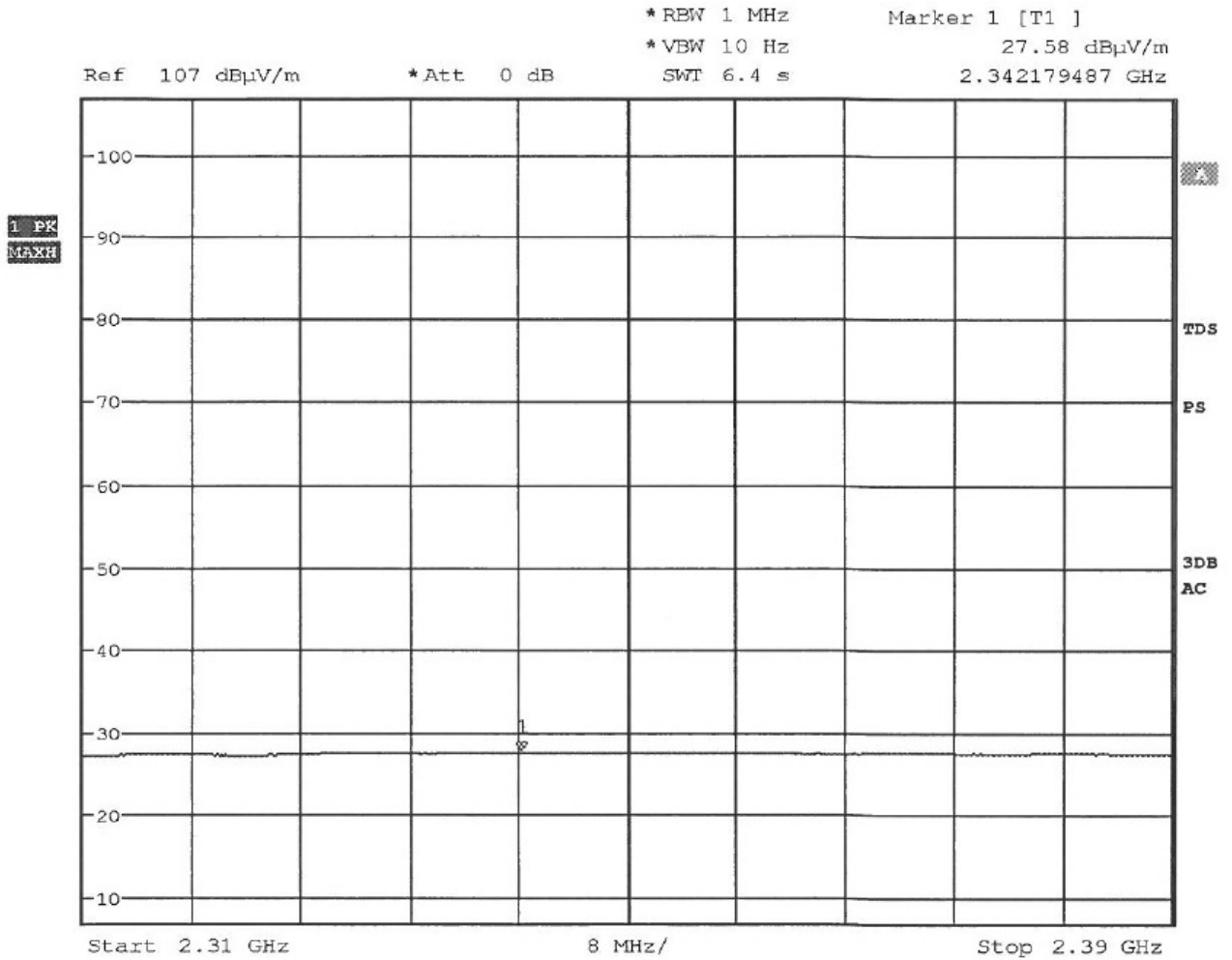
WITRON/ BT HANDSET/ MM01BT/ 00120802041-001/ 2402MHz/ HORI.

Date: 9.AUG.2012 17:21:03

Horizontal Polarization

```
                                    * RBW  1 MHz      Marker 1 [T1 ]
                                    * VBW  10 Hz          27.58 dBµV/m
     Ref    107 dBµV/m    * Att   0 dB    SWT  6.4 s     2.342179487 GHz
```
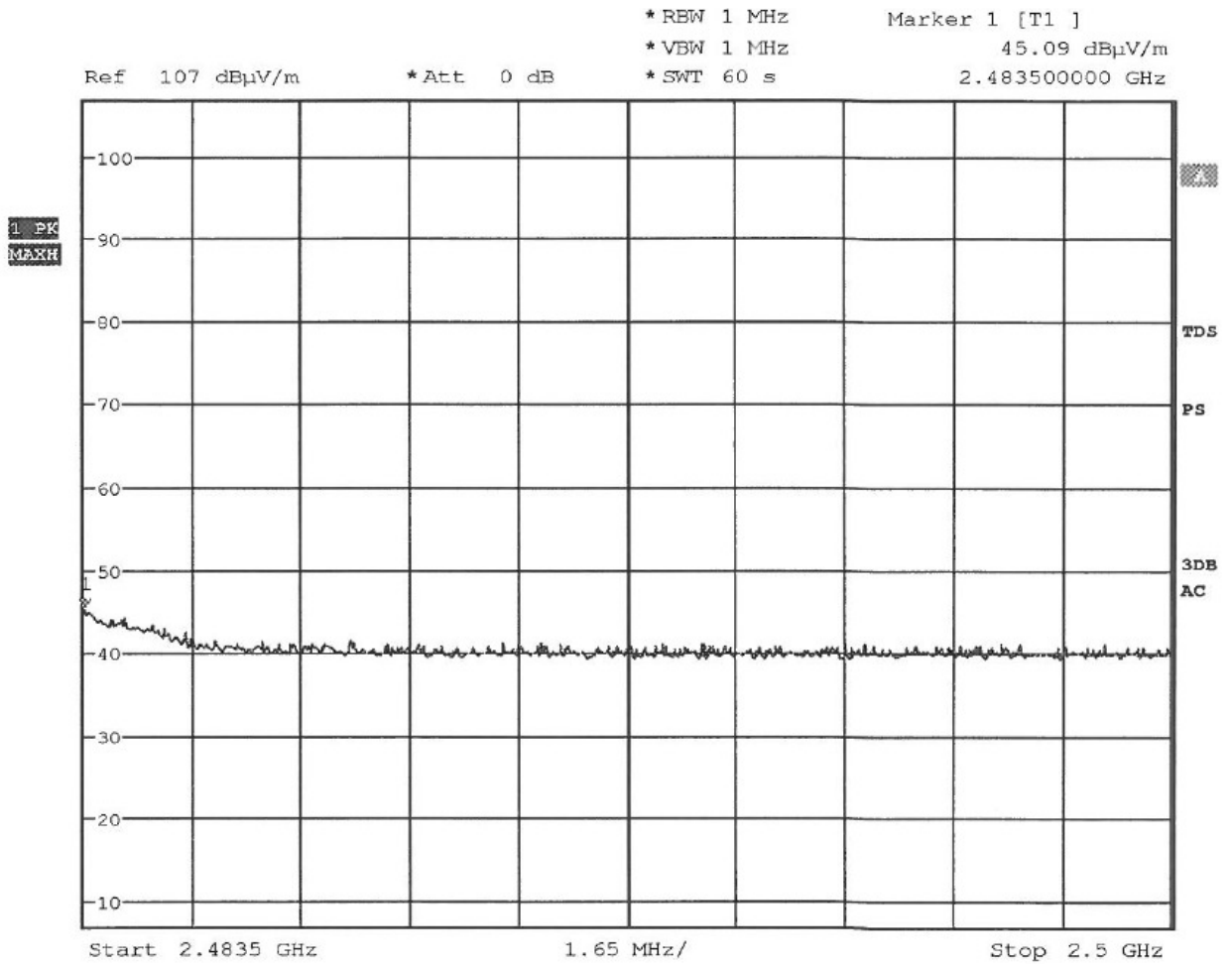
WITRON/ BT HANDSET/ MM01BT/ 00120802041-001/ 2402MHz/ HORI.
Date: 9.AUG.2012   17:19:51

Horizontal Polarization

Tx frequency: 2480MHz (radiated measurement)

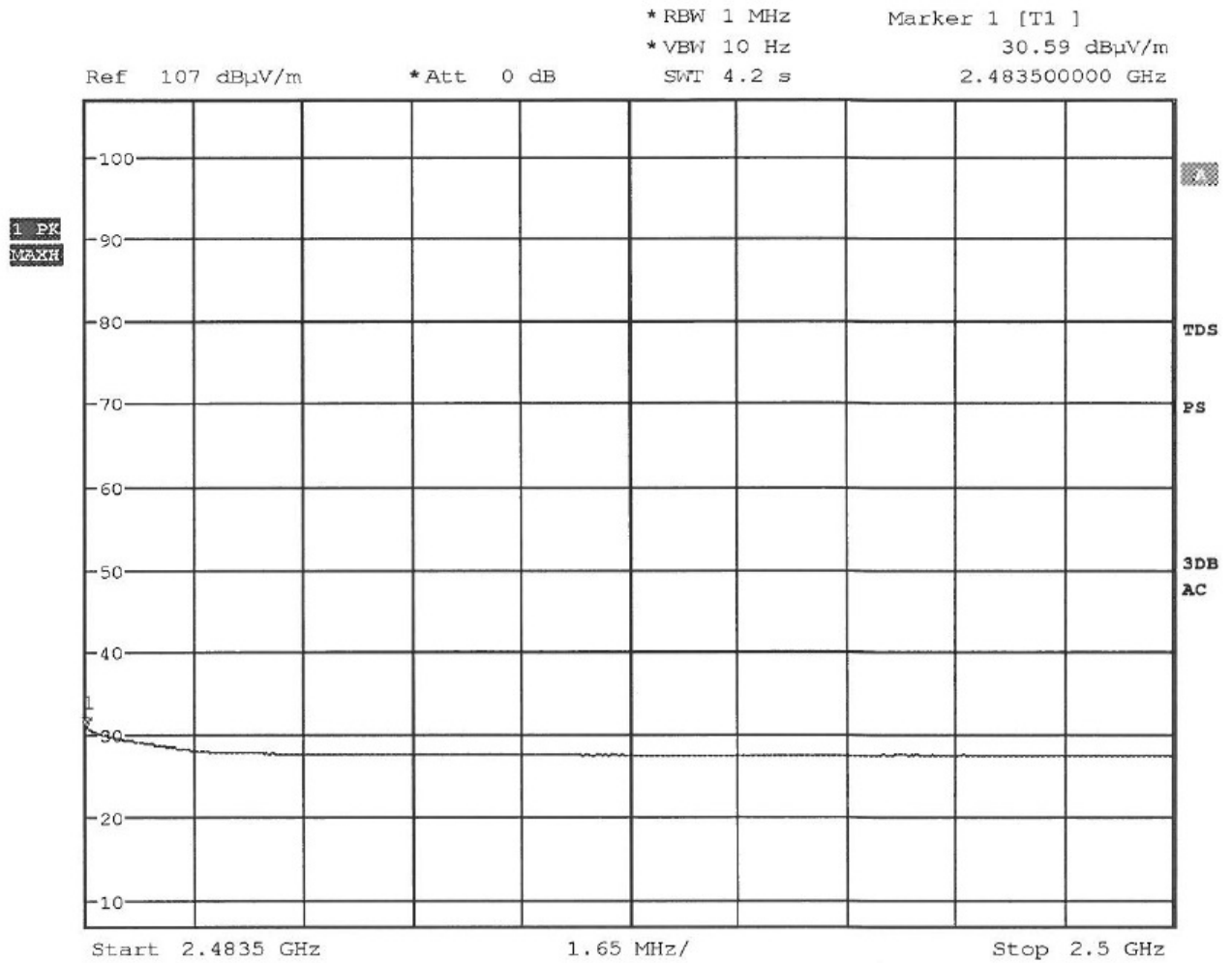|	
* RBW 1 MHz	Marker 1 [T1]
* VBW 1 MHz	45.09 dBµV/m
Ref 107 dBµV/m * Att 0 dB * SWT 60 s	2.483500000 GHz

WITRON/ BT HANDSET/ MM01BT/ 00120802041-001/ 2480MHz/ VERT.
Date: 9.AUG.2012 17:42:12

Vertical Polarization

```
                                        * RBW  1 MHz        Marker 1 [T1 ]
                                        * VBW  10 Hz              30.59 dBµV/m
        Ref    107 dBµV/m      * Att   0 dB    SWT  4.2 s      2.483500000 GHz
```

WITRON/ BT HANDSET/ MM01BT/ 00120802041-001/ 2480MHz/ VERT.

Date: 9.AUG.2012   17:42:43

Vertical Polarization

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```
                                          * RBW  1 MHz       Marker 1 [T1 ]
                                          * VBW  1 MHz              50.01 dBµV/m
         Ref   107 dBµV/m      * Att  0 dB   * SWT  60 s        2.483579327 GHz
```
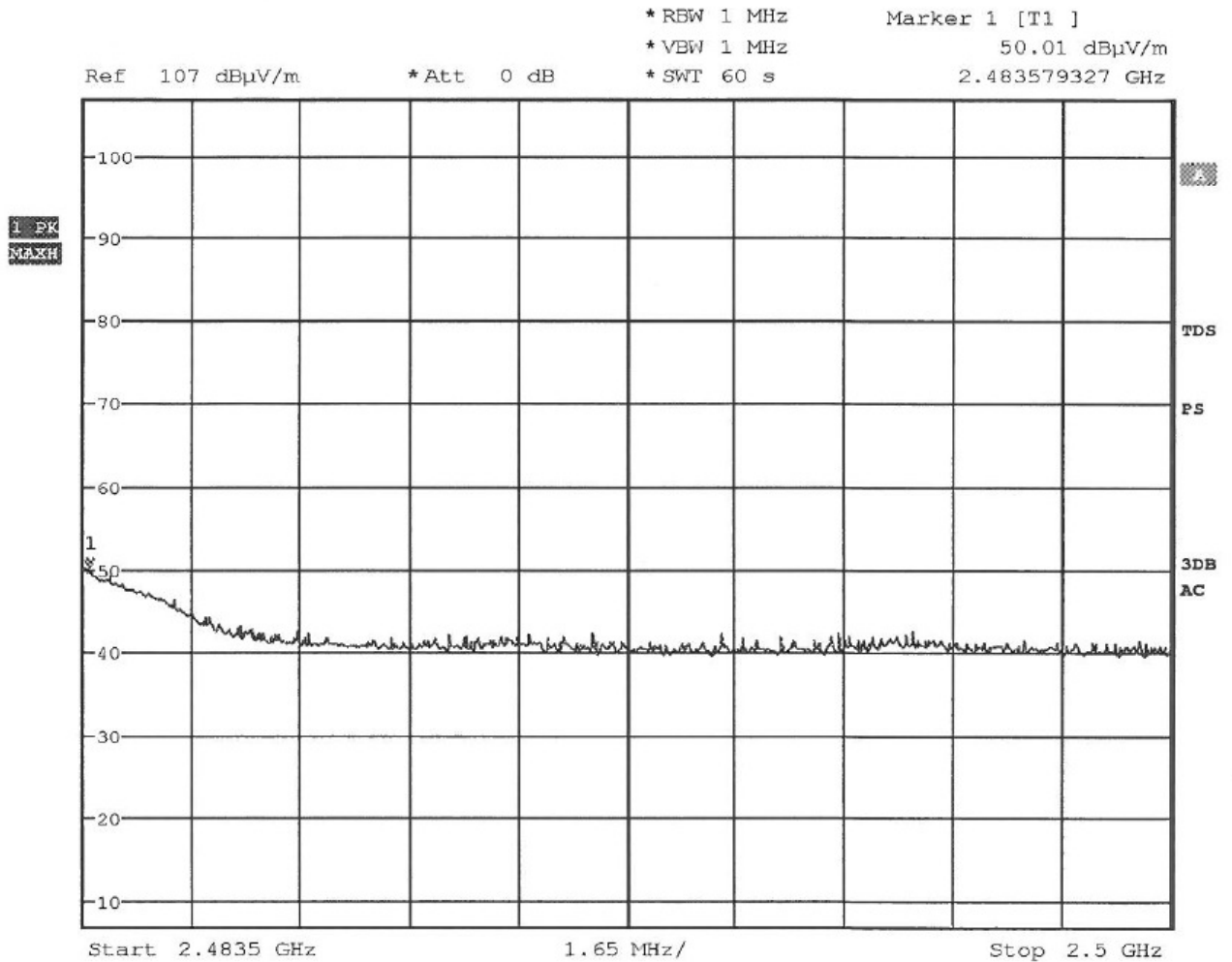


```
WITRON/ BT HANDSET/ MM01BT/ 00120802041-001/ 2480MHz/ HORI.
Date: 9.AUG.2012  17:44:00
```

Horizontal Polarization

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```
                                        * RBW  1 MHz        Marker 1 [T1 ]
                                        * VBW  10 Hz                32.88 dBµV/m
        Ref   107 dBµV/m      * Att   0 dB     SWT  4.2 s    2.483500000 GHz
```
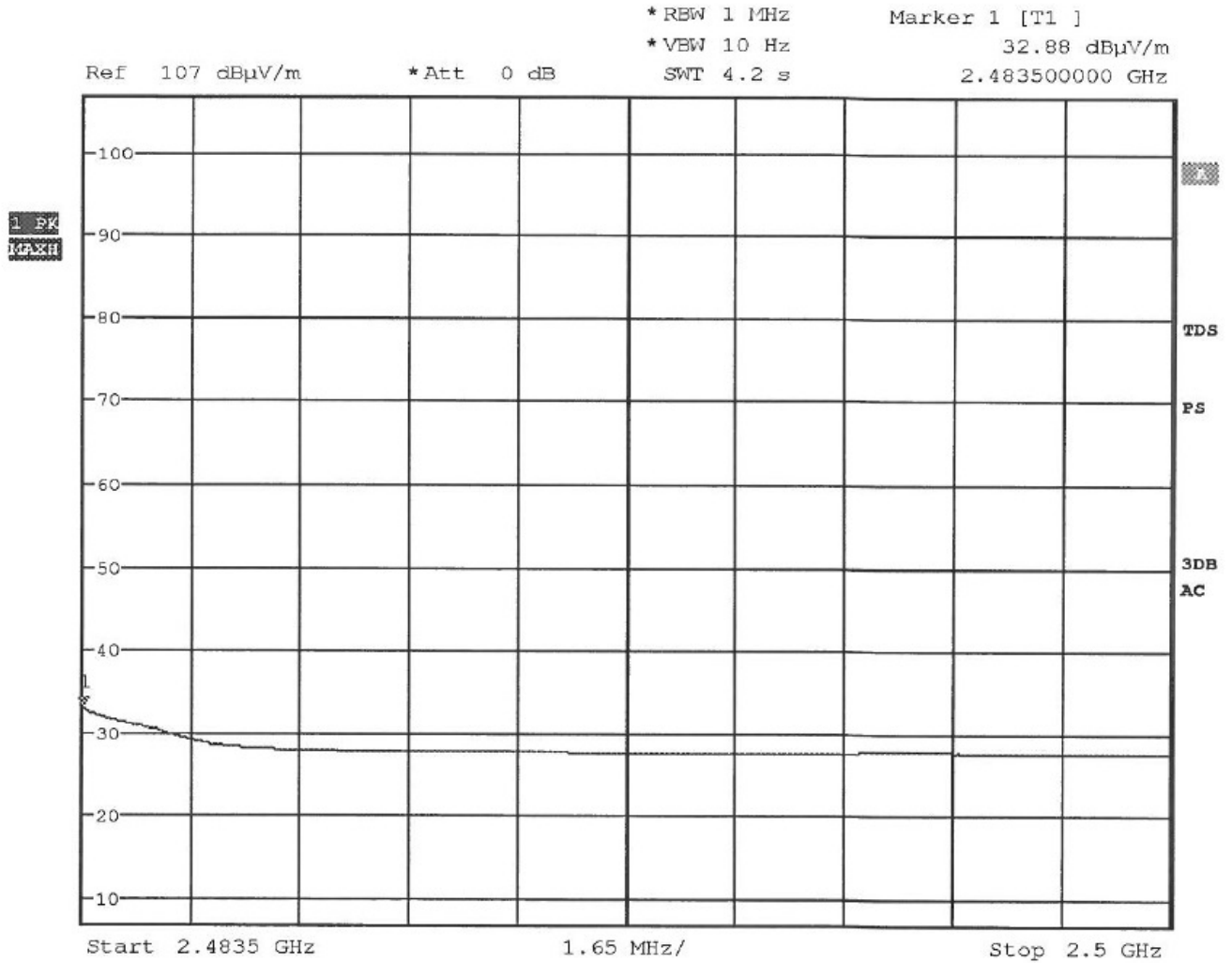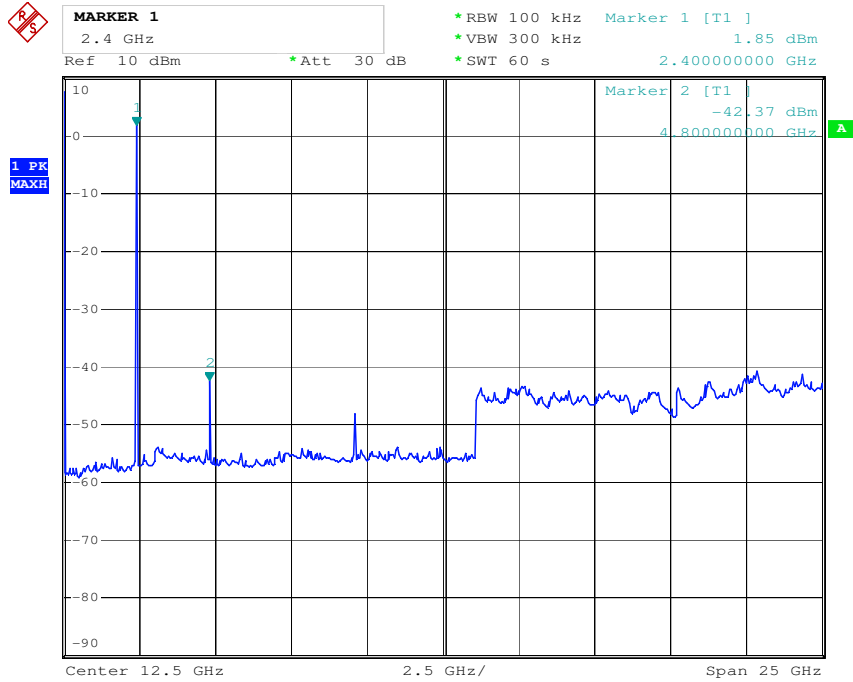
WITRON/ BT HANDSET/ MM01BT/ 00120802041-001/ 2480MHz/ HORI.
Date: 9.AUG.2012 17:44:10

Horizontal Polarization

Spurious Emissions - Conducted
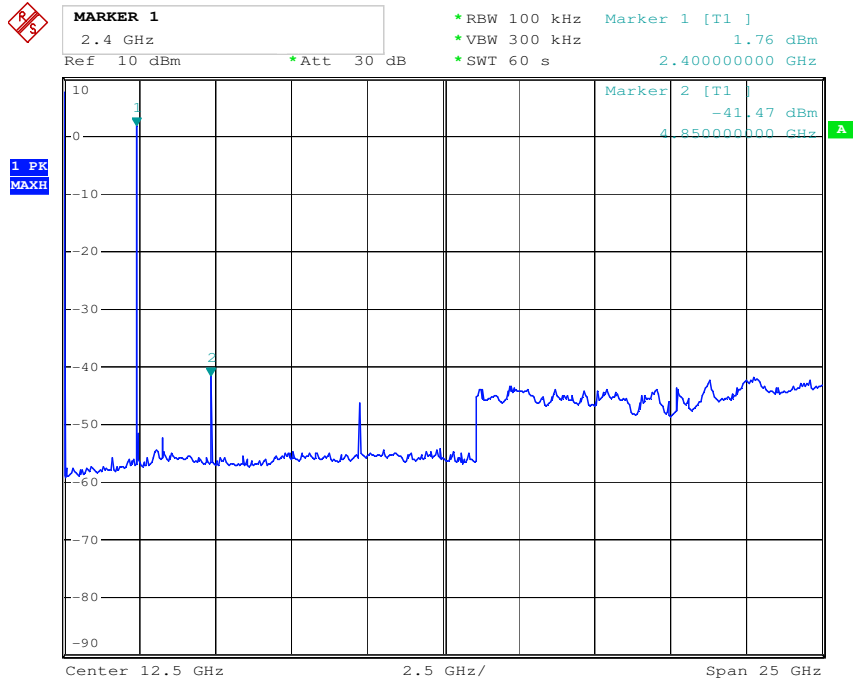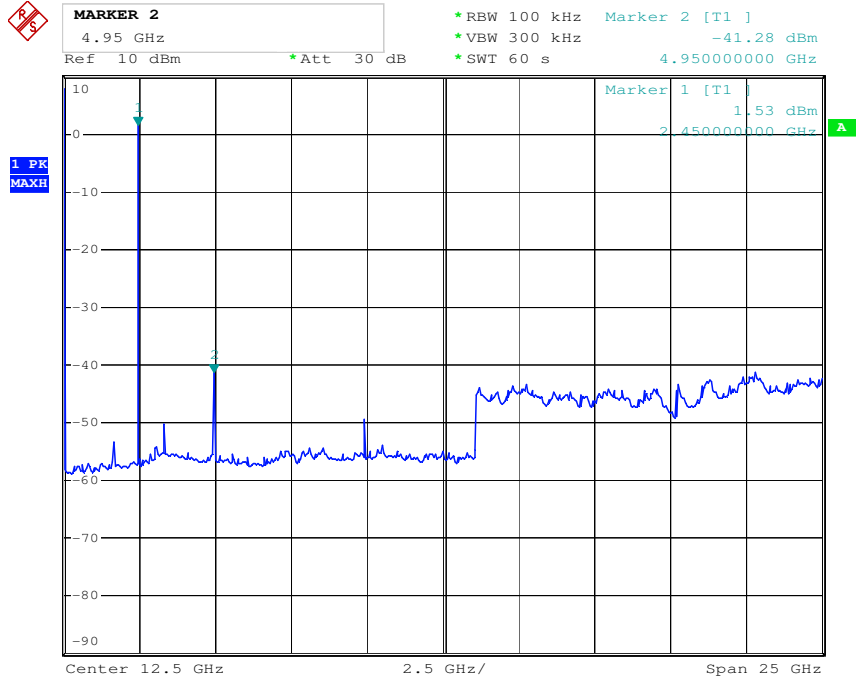
Tx frequency: 2402MHz

Tx frequency: 2441MHz

Tx frequency: 2480MHz

MARKER 2		*RBW 100 kHz	Marker 2 [T1]
4.95 GHz		*VBW 300 kHz	−41.28 dBm
Ref 10 dBm	*Att 30 dB	*SWT 60 s	4.950000000 GHz

Date: 16.AUG.2012 10:41:32