

Annex I

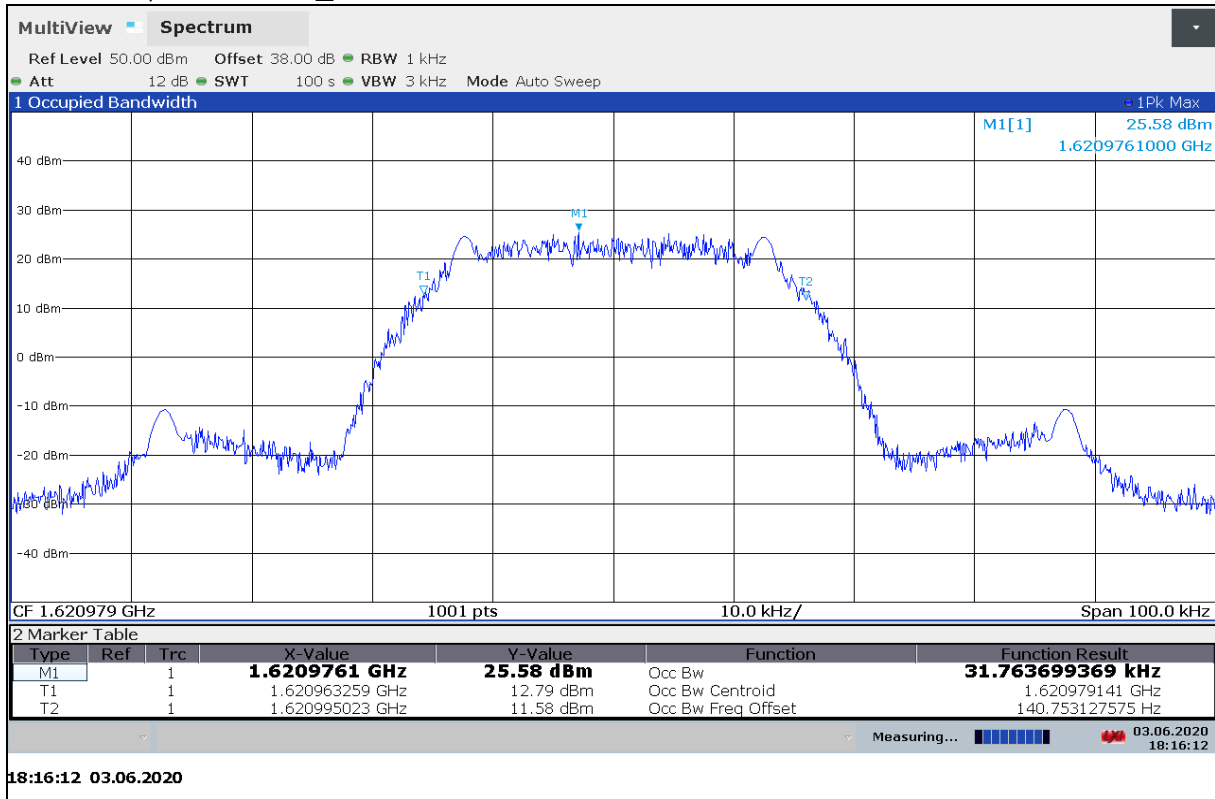


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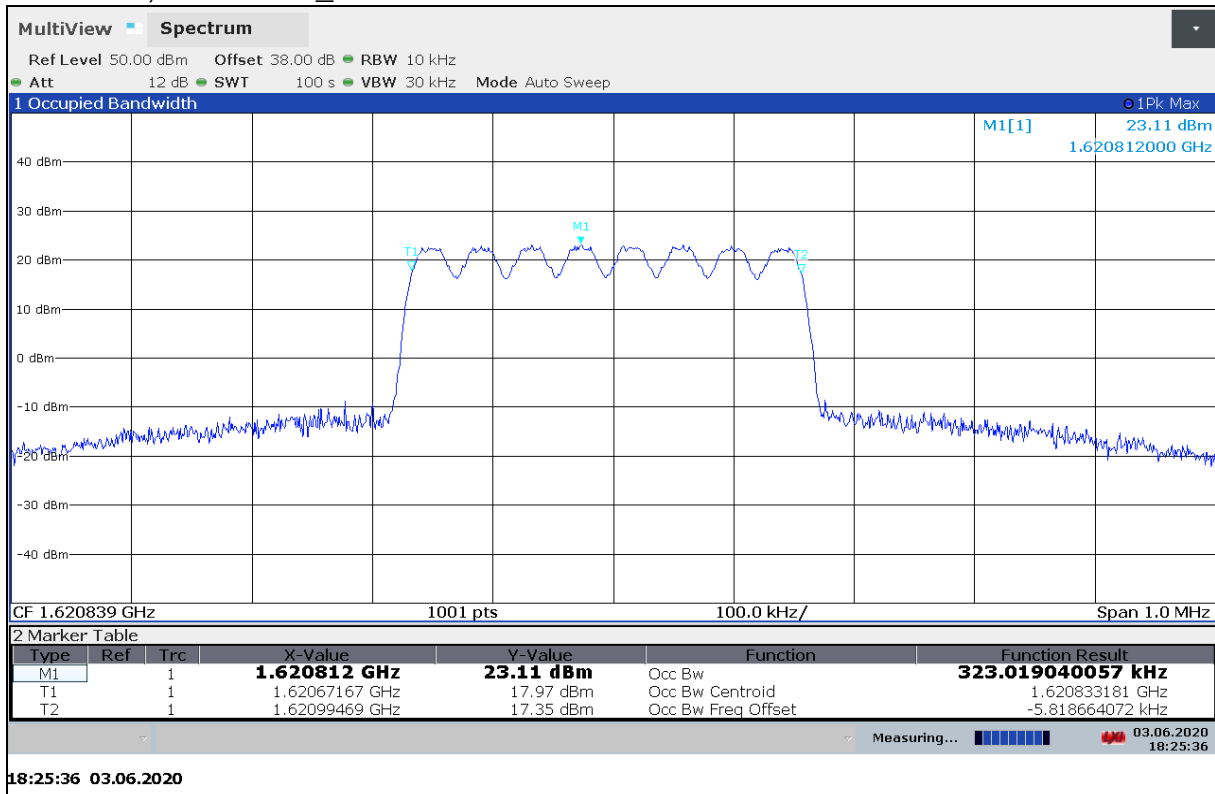
Test report annex authorized:

Meheza Walla
Lab Manager
Radio Communications & EMC

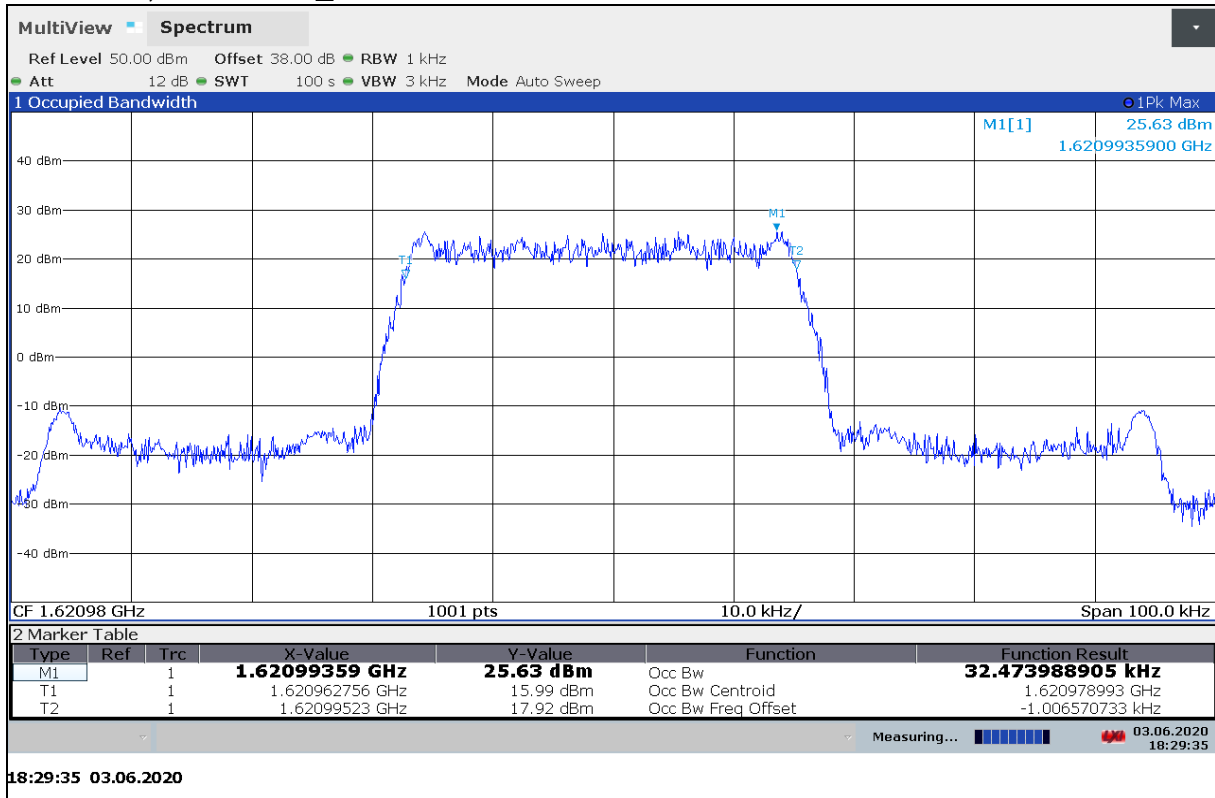
Plot No. 1, OBW TCH_B1



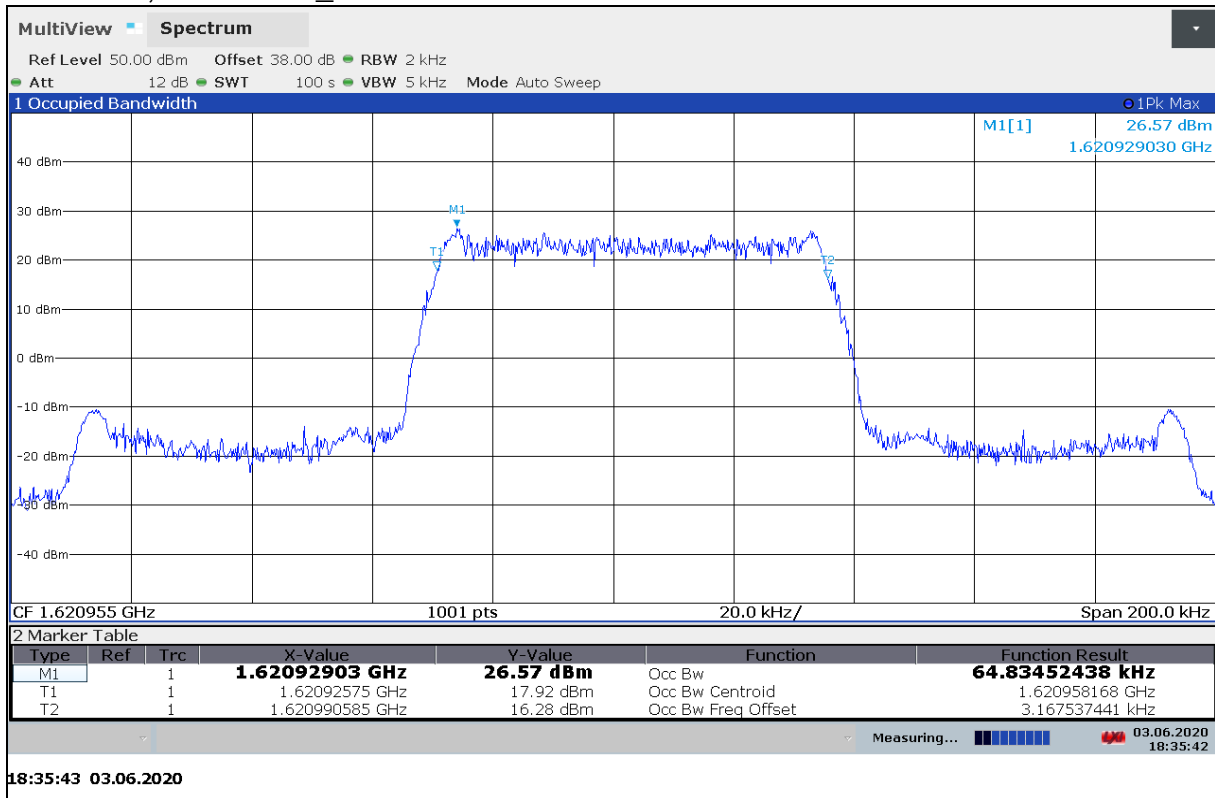
Plot No. 2, OBW TCH_B8



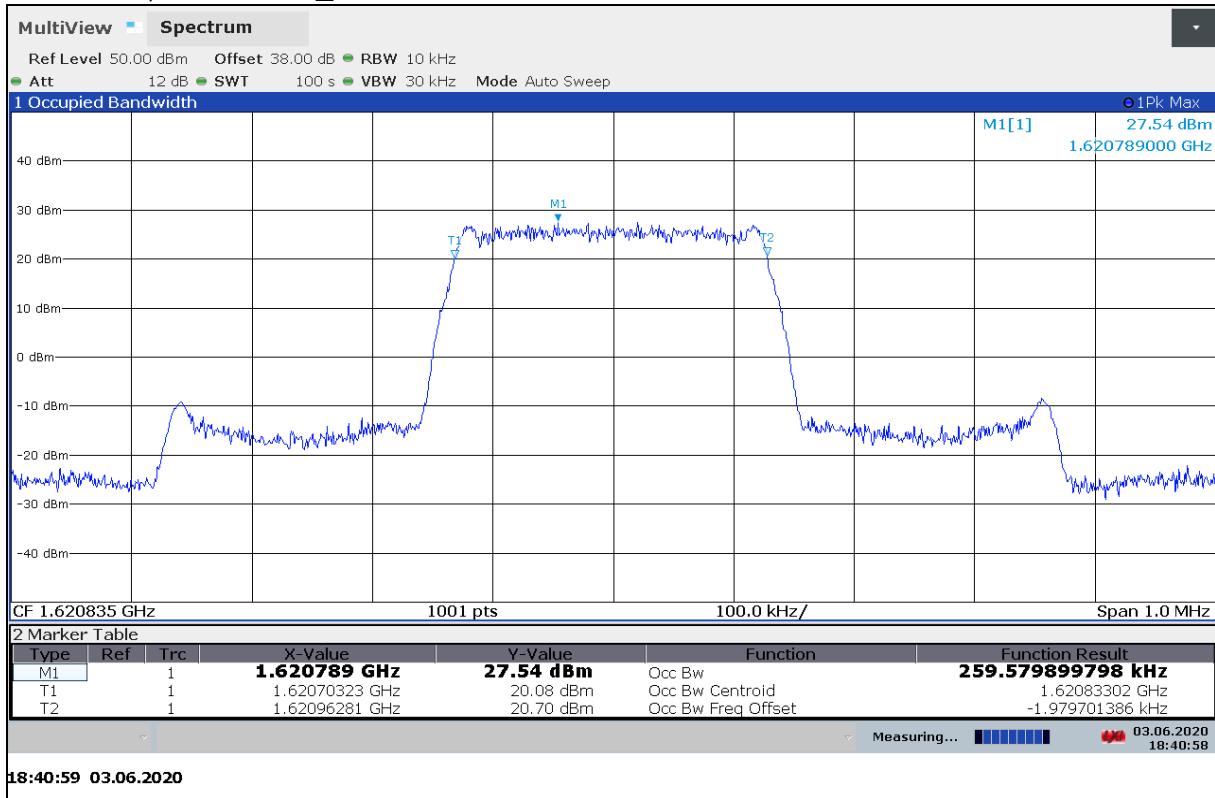
Plot No. 3, OBW TCH_C1



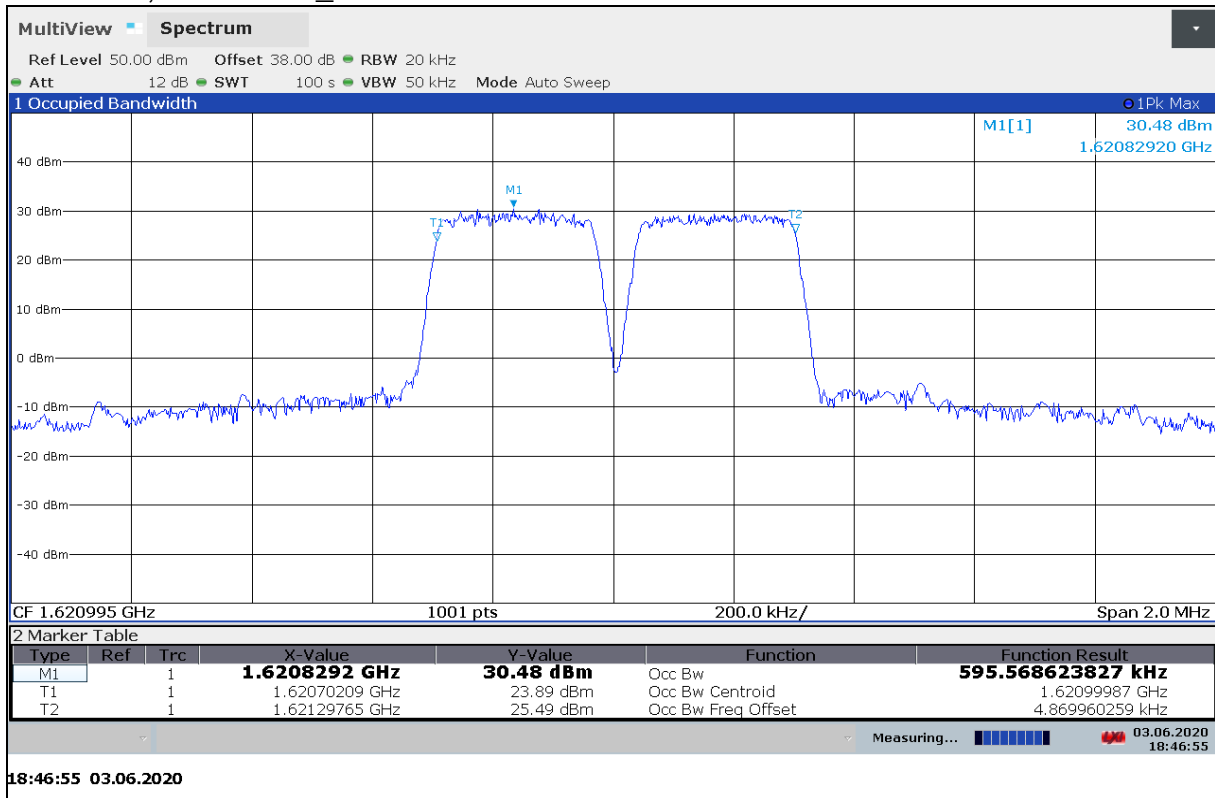
Plot No. 4, OBW TCH_C2



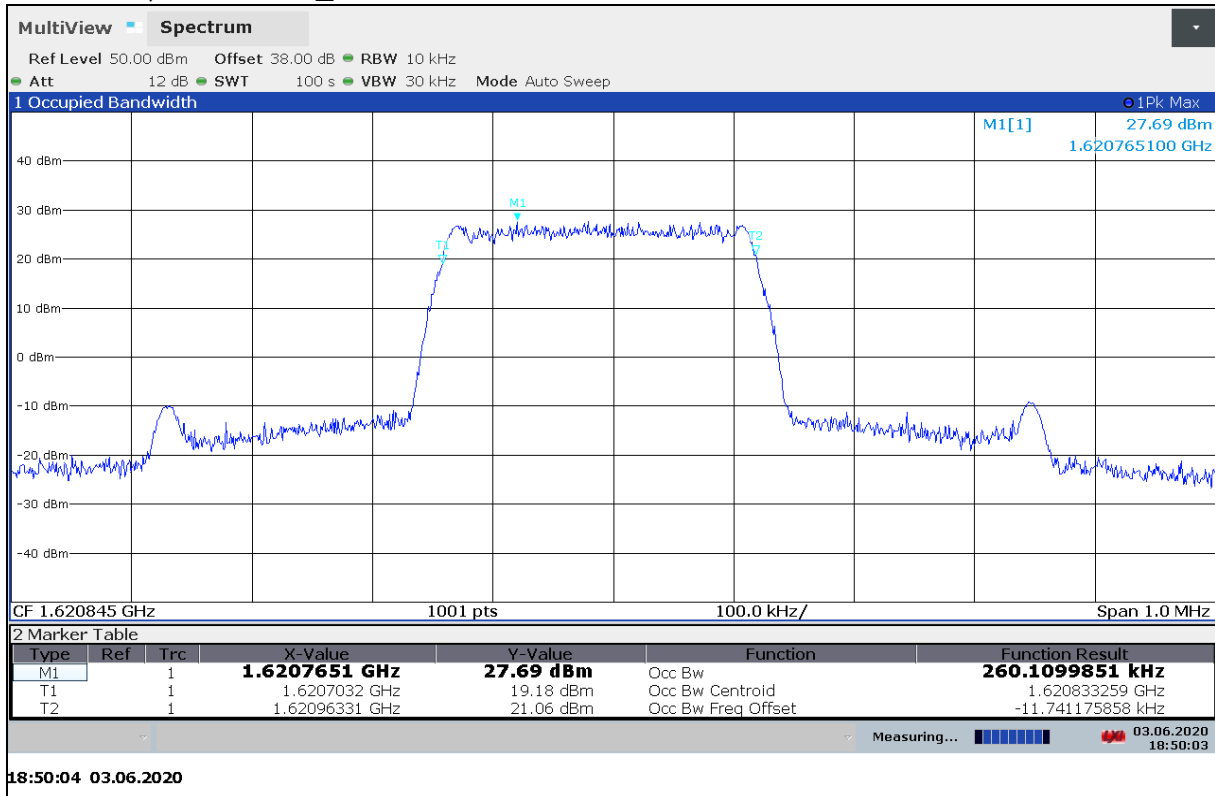
Plot No. 5, OBW TCH_C8Q



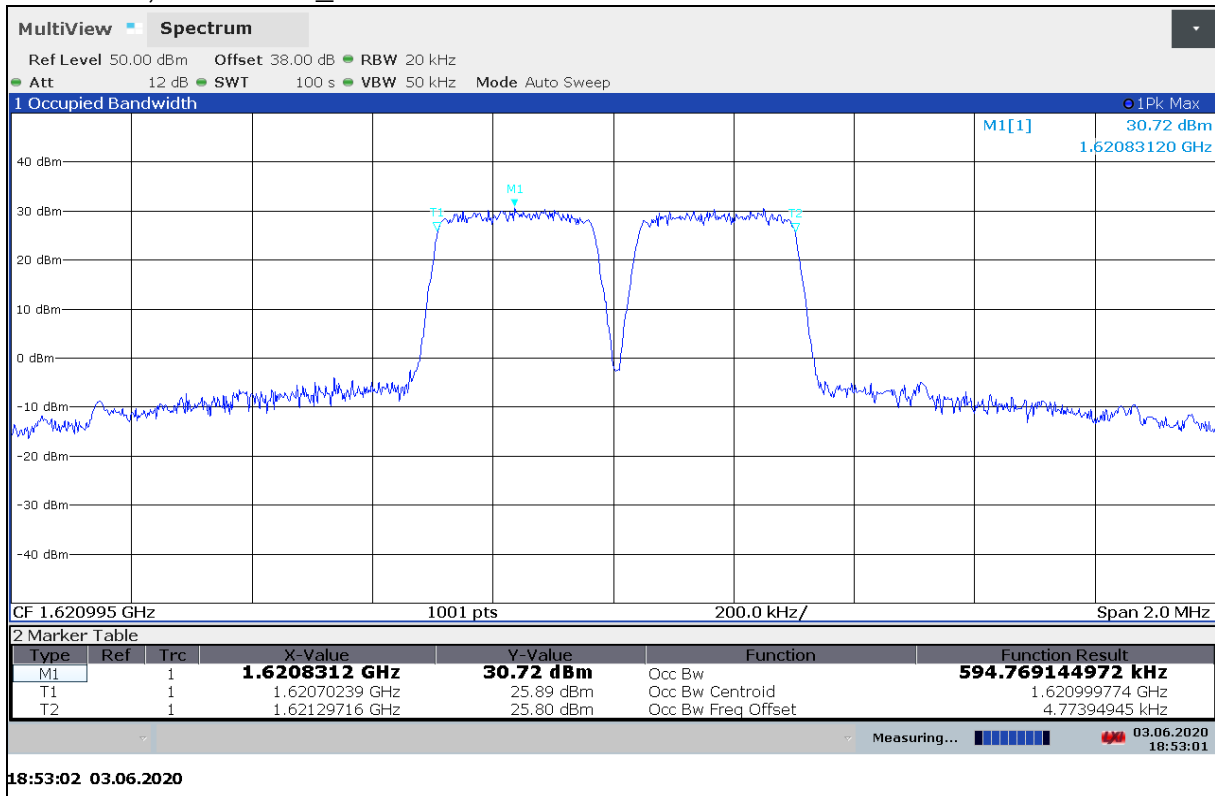
Plot No. 6, OBW TCH_2C8Q



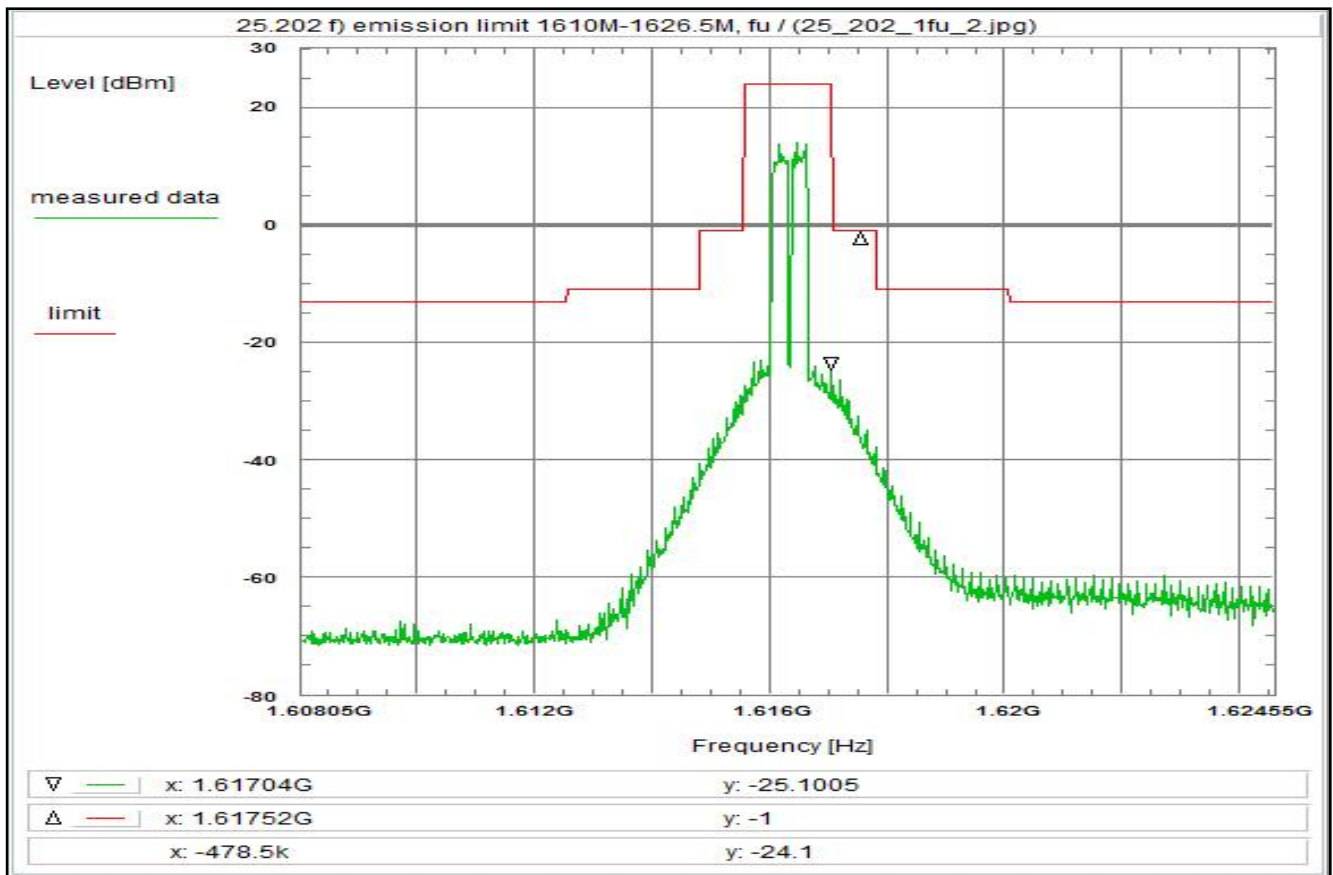
Plot No. 7, OBW TCH_C8A



Plot No. 8, OBW TCH_2C8A



Plot No. 9



Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
Emission limitations
Modulated rf-carrier at the lower edge of the band (fu)

Limit:
Limit according to 25.202 f):
50-100% of assigned bw: -25dBc/4kHz
100-250% of assigned bw: -35dBc/4kHz
> 250% of assigned bw: $-43+10\log(P_{max})\text{dBc}/4\text{kHz} = -43 \text{ dBW}$
The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the above schedule.

Test results:
see plot (an explicit table was not generated)

Operating condition of DUT:
operating condition 1, see test report chapter 5.2
Modulation TCH_2C8A, fl

Test setup:
see test report chapter 6.2

Test equipment:
see test report chapter 6.1 - 6.2: C220, R001, U005 + POWER SPLITTER

Remark:

Test result: Test passed

Environment condition:

Date & Time: Mon 08/Jun/2020 13:10:58
Location: CTC advanced GmbH, Laboratory RC-SYS
Temperature: 22 °C
Humidity: 55 %
Voltage: 24 VDC

Setup of measurement equipment:

Start frequency: 1.60805 GHz
Stop frequency: 1.62455 GHz
Center frequency: 1.6163 GHz
Frequency span: 16.5 MHz
Resolution-BW: 10 kHz
Video-BW: 1 kHz
Input attenuation: 12 dB
Trace-Mode: Max-Hold
Detector-Mode: AVG

Correction:

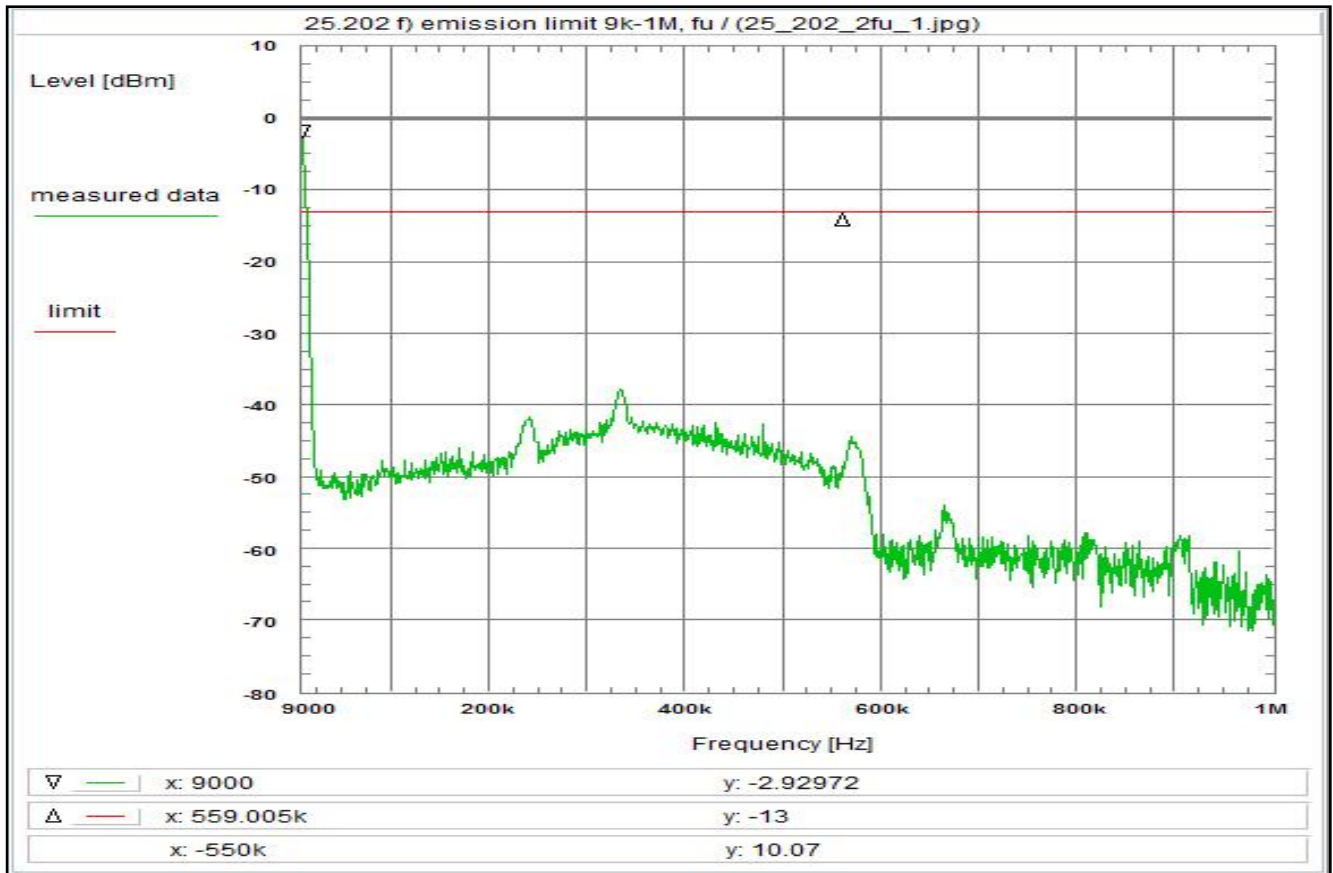
Directional coupler + 0.0 dB
Coaxial cable + 0.0 dB
DUT-Antenna (on-axis) + 10.4 dBi
Test antenna + 0.0 dB
BW correction factor (10k -> 4k) - 4.0 dB
Atten. between HPA and feedhorn + 0.0 dB
(U005 + POWER SPLITTER) + 37.5 dB
TOTAL CORRECTION: + 43.9 dB

Remarks:

Carrier-on state / Carrier at the lower edge of the band (fu)

RMS detector

Plot No. 10



Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
Emission limitations
Modulated rf-carrier at the lower edge of the band (fu)

Limit:
Limit according to 25.202 f):
50-100% of assigned bw: -25dBc/4kHz
100-250% of assigned bw: -35dBc/4kHz
> 250% of assigned bw: $-43+10\log(P_{max})dBc/4kHz = -43$ dBW
The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the above schedule.

Test results:
see plot (an explicit table was not generated)

Operating condition of DUT:
operating condition 1, see test report chapter 5.2
Modulation TCH_2C8A, fl-fm-fh, valid for all modulations

Test setup:
see test report chapter 6.2

Test equipment:
see test report chapter 6.1 - 6.2: C220, R001, U005 + POWER SPLITTER

Remark:

Test result: Test passed

Environment condition:

Date & Time: Mon 08/Jun/2020 13:57:50
Location: CTC advanced GmbH, Laboratory RC-SYS
Temperature: 22 °C
Humidity: 55 %
Voltage: 24 VDC

Setup of measurement equipment:

Start frequency: 9 kHz
Stop frequency: 1 MHz
Center frequency: 504.5 kHz
Frequency span: 991 kHz
Resolution-BW: 10 kHz
Video-BW: 100 kHz
Input attenuation: 0 dB
Trace-Mode: Max-Hold
Detector-Mode: Pos Peak

Correction:

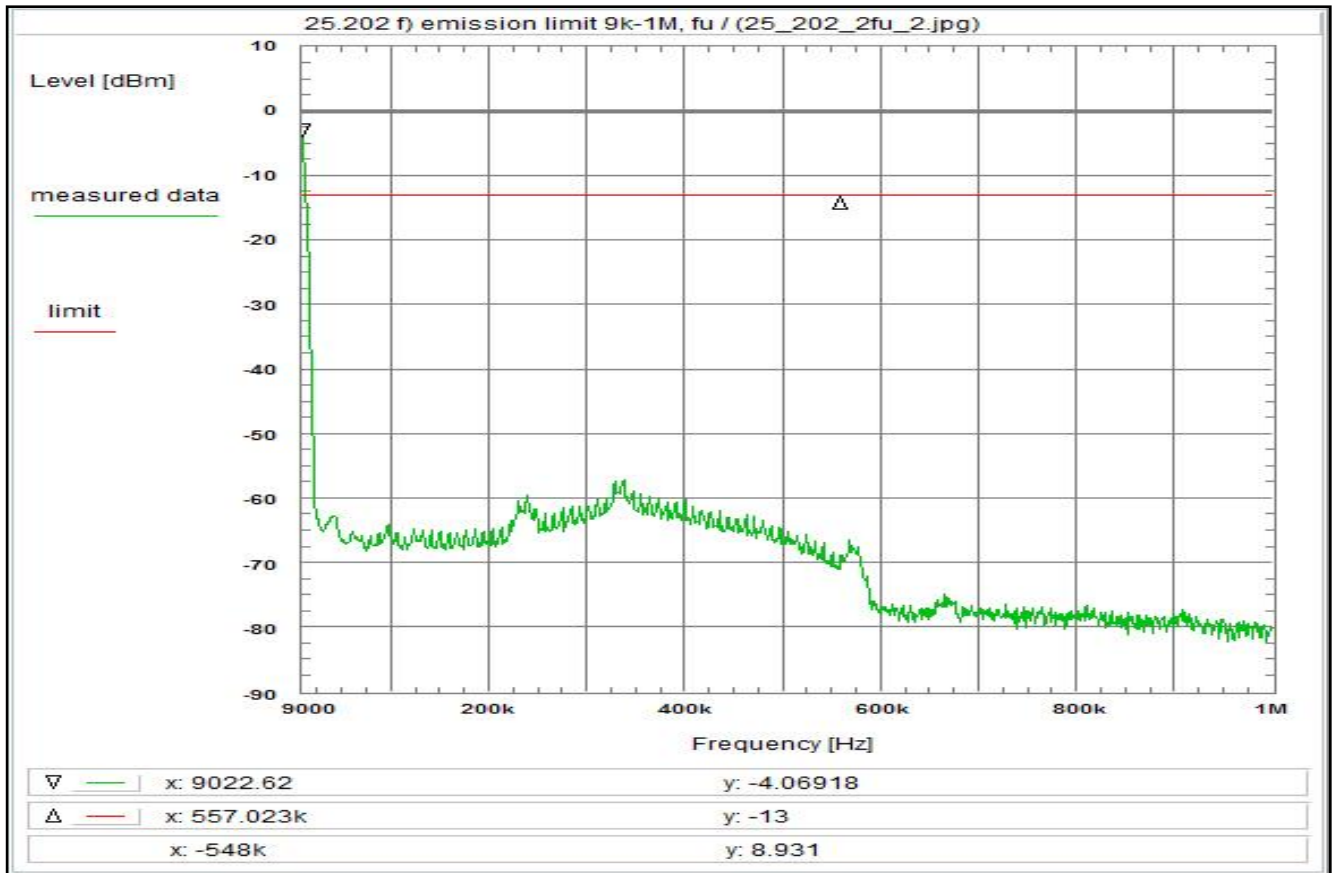
Directional coupler + 0.0 dB
Coaxial cable + 0.0 dB
DUT-Antenna (on-axis) + 10.4 dB
Test antenna + 0.0 dB
BW correction factor (10k -> 4k) - 4.0 dB
Atten. between HPA and feedhorn + 0.0 dB
(U005 + POWER SPLITTER) + 37.0 dB
TOTAL CORRECTION: + 43.4 dB

Remarks:

Carrier-on state / Carrier at the lower edge of the band (fu)

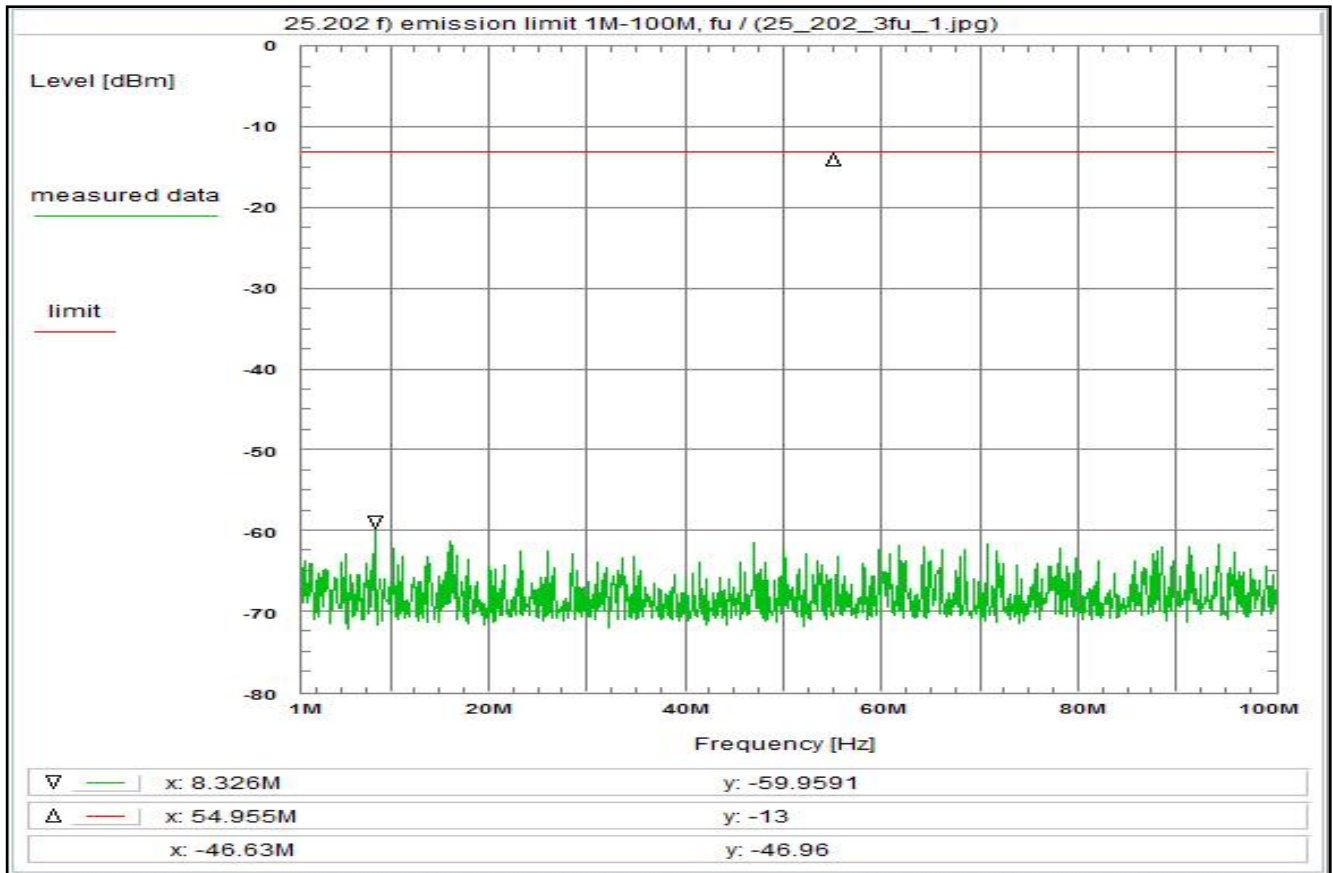
Peak detector
Rather left the plot, shows the zero line of the PXA

Plot No. 11



<p>Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations Emission limitations Modulated rf-carrier at the lower edge of the band (fu)</p> <p>Limit: Limit according to 25.202 f): 50-100% of assigned bw: -25dBc/4kHz 100-250% of assigned bw: -35dBc/4kHz > 250% of assigned bw: -43+10log(Pmax)dBc/4kHz = -43 dBW The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the above schedule.</p> <p>Test results: see plot (an explicit table was not generated)</p> <p>Operating condition of DUT: operating condition 1, see test report chapter 5.2 Modulation TCH_2C8A, fl-fm-fh, valid for all modulations</p> <p>Test setup: see test report chapter 6.2</p> <p>Test equipment: see test report chapter 6.1 - 6.2: C220, R001, U005 + POWER SPLITTER</p> <p>Remark:</p> <p>Test result: Test passed</p>	<p>Environment condition: Date & Time: Mon 08/Jun/2020 14:00:37 Location: CTC advanced GmbH, Laboratory RC-SYS Temperature: 22 °C Humidity: 55 % Voltage: 24 VDC</p> <p>Setup of measurement equipment: Start frequency: 9 kHz Stop frequency: 1 MHz Center frequency: 504.5 kHz Frequency span: 991 kHz Resolution-BW: 10 kHz Video-BW: 1 kHz Input attenuation: 0 dB Trace-Mode: Max-Hold Detector-Mode: AVG</p> <p>Correction: Directional coupler + 0.0 dB Coaxial cable + 0.0 dB DUT-Antenna (on-axis) + 10.4 dBi Test antenna + 0.0 dB BW correction factor (10k -> 4k) - 4.0 dB Atten. between HPA and feedhorn + 0.0 dB (U005 + POWER SPLITTER) + 37.0 dB TOTAL CORRECTION: + 43.4 dB</p> <p>Remarks: Carrier-on state / Carrier at the lower edge of the band (fu)</p> <p>RMS detector Rather left the plot, shows the zero line of the PXA</p>
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Plot No. 12



Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
Emission limitations
Modulated rf-carrier at the lower edge of the band (fu)

Limit:
Limit according to 25.202 f):
50-100% of assigned bw: -25dBc/4kHz
100-250% of assigned bw: -35dBc/4kHz
> 250% of assigned bw: $-43+10\log(P_{max})dBc/4kHz = -43$ dBW
The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the above schedule.

Test results:
see plot (an explicit table was not generated)

Operating condition of DUT:
operating condition 1, see test report chapter 5.2
Modulation TCH_2C8A, fl-fm-fh, valid for all modulations

Test setup:
see test report chapter 6.2

Test equipment:
see test report chapter 6.1 - 6.2: C220, R001, U005 + POWER SPLITTER

Remark:

Test result: Test passed

Environment condition:
Date & Time: Mon 08/Jun/2020 13:51:11
Location: CTC advanced GmbH, Laboratory RC-SYS
Temperature: 22 °C
Humidity: 55 %
Voltage: 24 VDC

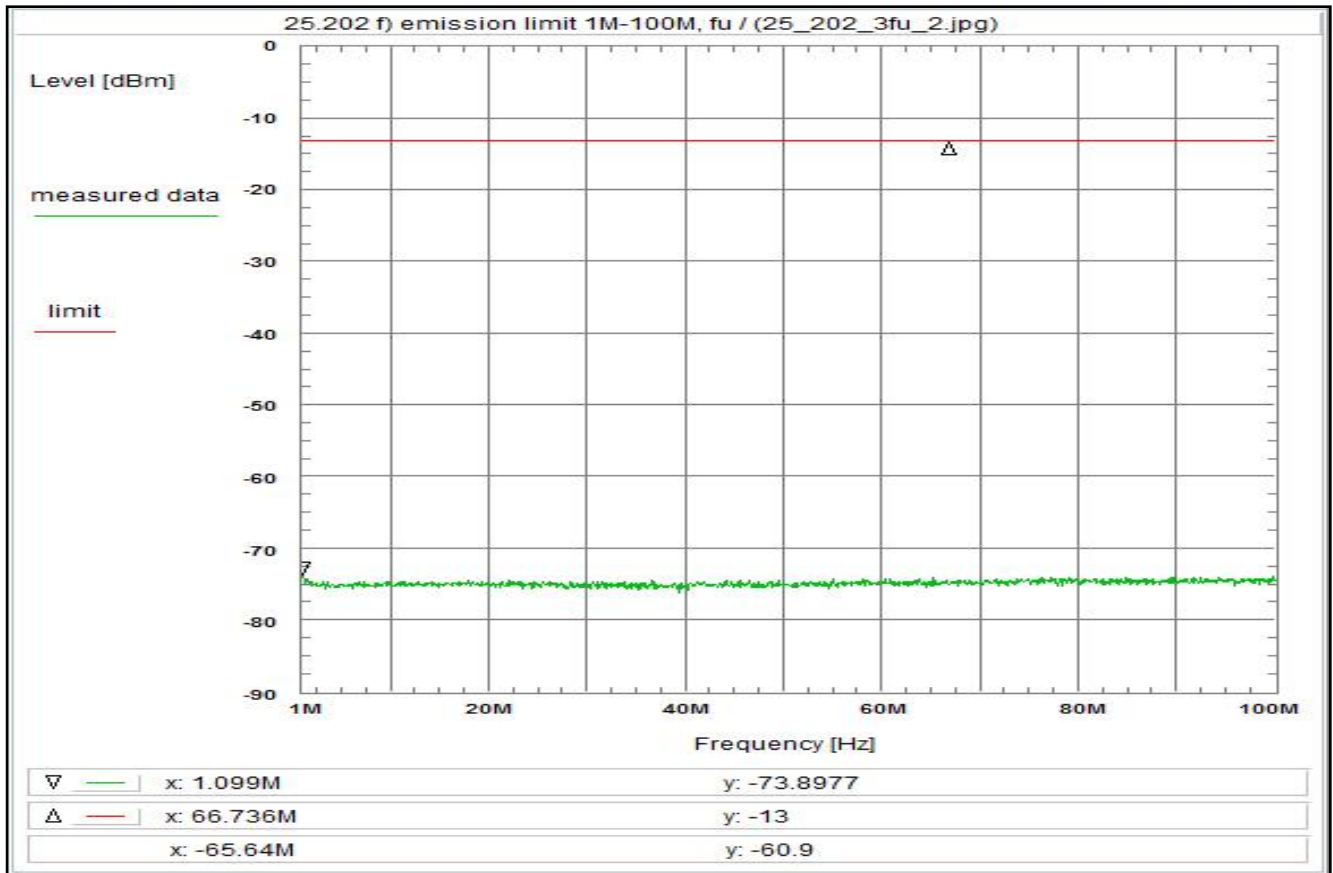
Setup of measurement equipment:
Start frequency: 1 MHz
Stop frequency: 100 MHz
Center frequency: 50.5 MHz
Frequency span: 99 MHz
Resolution-BW: 10 kHz
Video-BW: 100 kHz
Input attenuation: 0 dB
Trace-Mode: Max-Hold
Detector-Mode: Pos Peak

Correction:
Directional coupler + 0.0 dB
Coaxial cable + 0.0 dB
DUT-Antenna (on-axis) + 10.4 dBi
Test antenna + 0.0 dB
BW correction factor (10k -> 4k) - 4.0 dB
Atten. between HPA and feedhorn + 0.0 dB
(U005 + POWER SPLITTER) + 37.0 dB
TOTAL CORRECTION: + 43.4 dB

Remarks:
Carrier-on state / Carrier at the lower edge of the band (fu)

Peak detector

Plot No. 13



Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
Emission limitations
Modulated rf-carrier at the lower edge of the band (fu)

Limit:
Limit according to 25.202 f):
50-100% of assigned bw: -25dBc/4kHz
100-250% of assigned bw: -35dBc/4kHz
> 250% of assigned bw: $-43+10\log(P_{max})dBc/4kHz = -43$ dBW
The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the above schedule.

Test results:
see plot (an explicit table was not generated)

Operating condition of DUT:
operating condition 1, see test report chapter 5.2
Modulation TCH_2C8A, fl-fm-fh, valid for all modulations

Test setup:
see test report chapter 6.2

Test equipment:
see test report chapter 6.1 - 6.2: C220, R001, U005 + POWER SPLITTER

Remark:

Test result: Test passed

Environment condition:
Date & Time: Mon 08/Jun/2020 13:53:43
Location: CTC advanced GmbH, Laboratory RC-SYS
Temperature: 22 °C
Humidity: 55 %
Voltage: 24 VDC

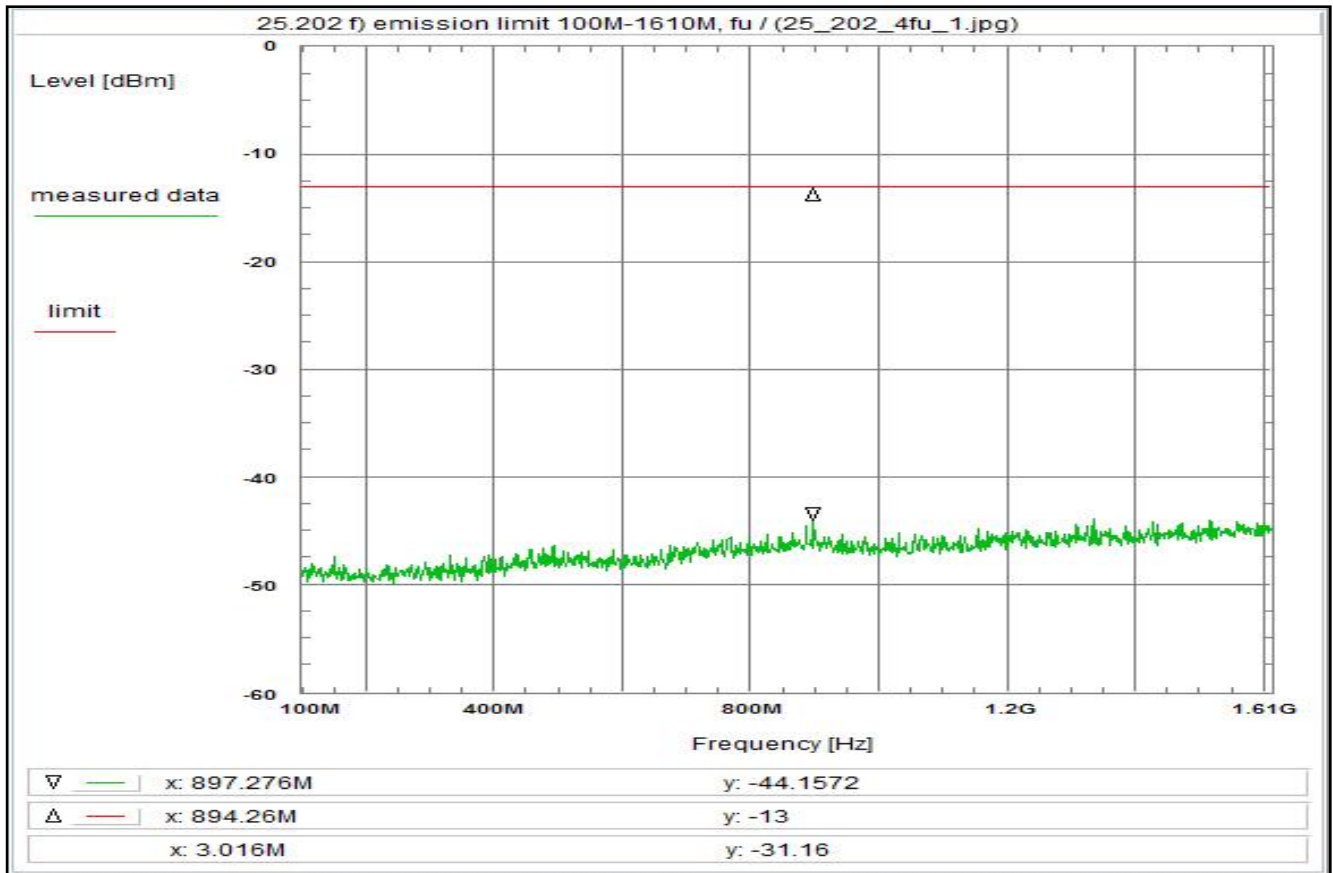
Setup of measurement equipment:
Start frequency: 1 MHz
Stop frequency: 100 MHz
Center frequency: 50.5 MHz
Frequency span: 99 MHz
Resolution-BW: 10 kHz
Video-BW: 1 kHz
Input attenuation: 0 dB
Trace-Mode: Max-Hold
Detector-Mode: AVG

Correction:
Directional coupler + 0.0 dB
Coaxial cable + 0.0 dB
DUT-Antenna (on-axis) + 10.4 dBi
Test antenna + 0.0 dB
BW correction factor (10k -> 4k) - 4.0 dB
Atten. between HPA and feedhorn + 0.0 dB
(U005 + POWER SPLITTER) + 37.0 dB
TOTAL CORRECTION: + 43.4 dB

Remarks:
Carrier-on state / Carrier at the lower edge of the band (fu)

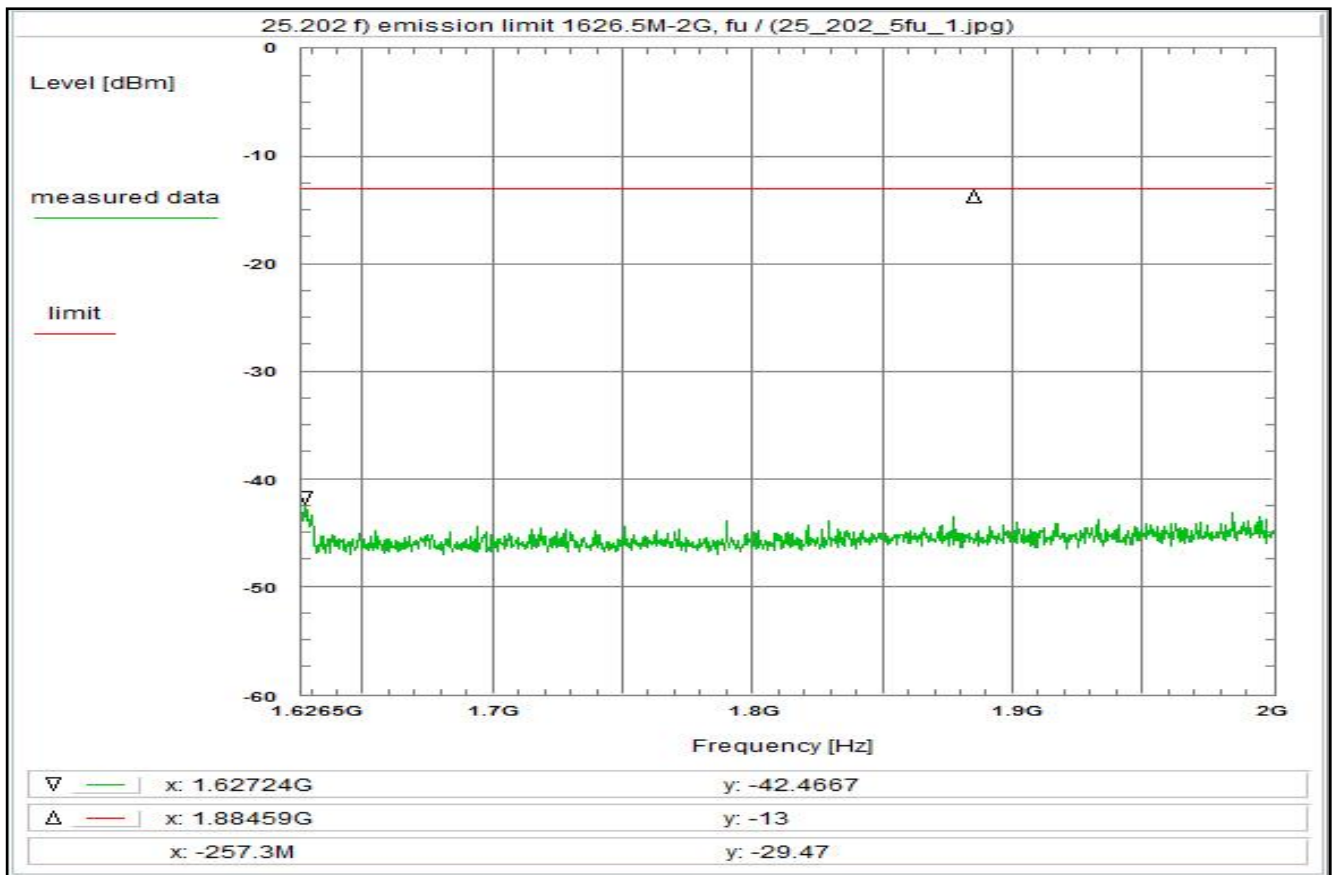
RMS detector

Plot No. 14



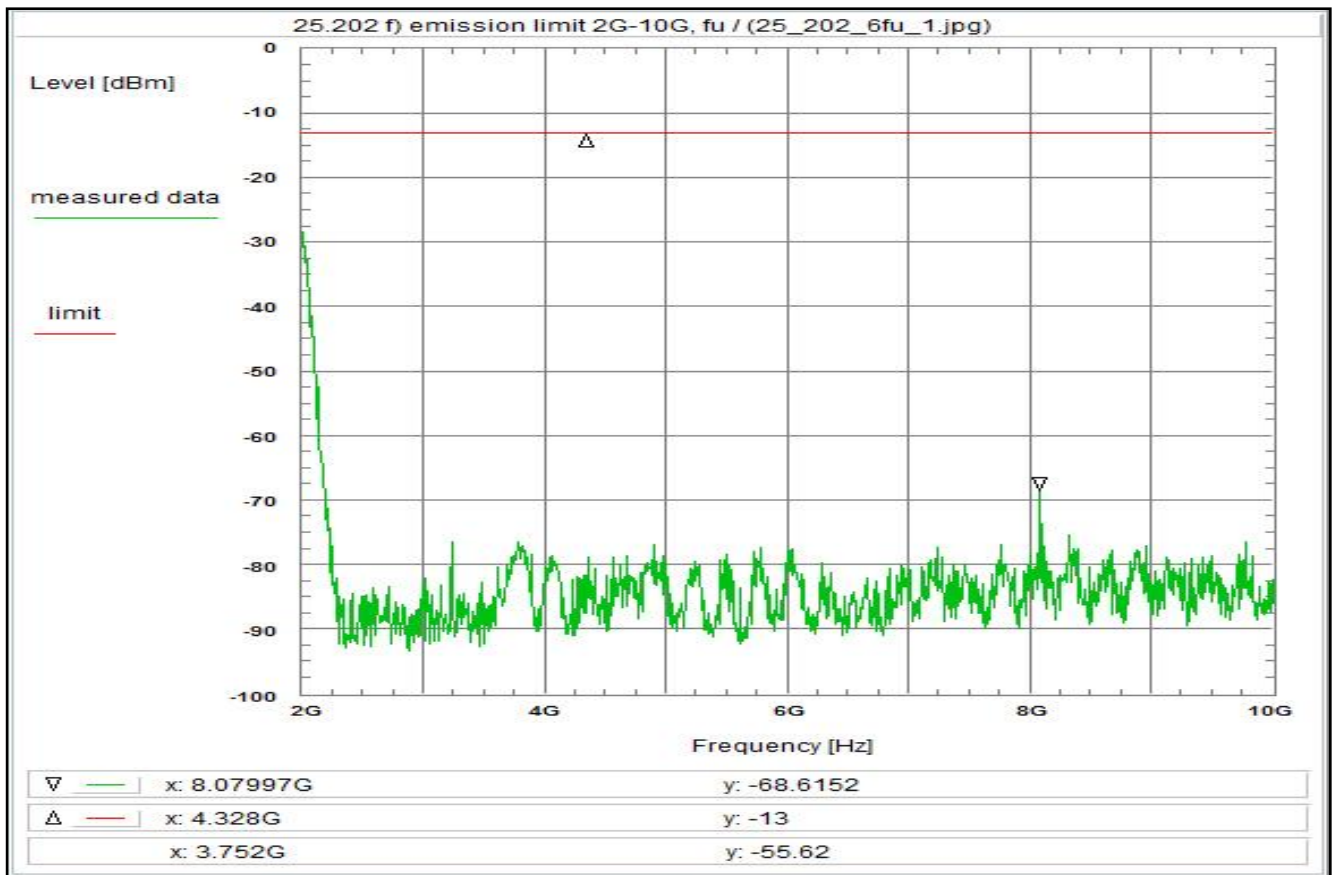
<p>Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations Emission limitations Modulated rf-carrier at the lower edge of the band (fu)</p> <p>Limit: <u>Limit according to 25.202 f):</u> 50-100% of assigned bw: -25dBc/4kHz 100-250% of assigned bw: -35dBc/4kHz > 250% of assigned bw: $-43+10\log(P_{max})\text{dBc}/4\text{kHz} = -43\text{ dBW}$ The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the above schedule.</p> <p>Test results: see plot (an explicit table was not generated)</p> <p>Operating condition of DUT: operating condition 1, see test report chapter 5.2 Modulation TCH_2C8A, fl</p> <p>Test setup: see test report chapter 6.2</p> <p>Test equipment: see test report chapter 6.1 - 6.2: C220, R001, U005 + POWER SPLITTER</p> <p>Remark:</p> <p>Test result: Test passed</p>	<p>Environment condition: Date & Time: Mon 08/Jun/2020 13:14:58 Location: CTC advanced GmbH, Laboratory RC-SYS Temperature: 22 °C Humidity: 55 % Voltage: 24 VDC</p> <p>Setup of measurement equipment: Start frequency: 100 MHz Stop frequency: 1.61 GHz Center frequency: 855 MHz Frequency span: 1.51 GHz Resolution-BW: 10 kHz Video-BW: 100 kHz Input attenuation: 12 dB Trace-Mode: Max-Hold Detector-Mode: Pos Peak</p> <p>Correction: Directional coupler + 0.0 dB Coaxial cable + 0.0 dB DUT-Antenna (on-axis) + 10.4 dBi Test antenna + 0.0 dB BW correction factor (10k -> 4k) - 4.0 dB Atten. between HPA and feedhorn + 0.0 dB (U005 + POWER SPLITTER) + 37.0 dB TOTAL CORRECTION: + 43.4 dB</p> <p>Remarks: Carrier-on state / Carrier at the lower edge of the band (fu)</p>
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Plot No. 15



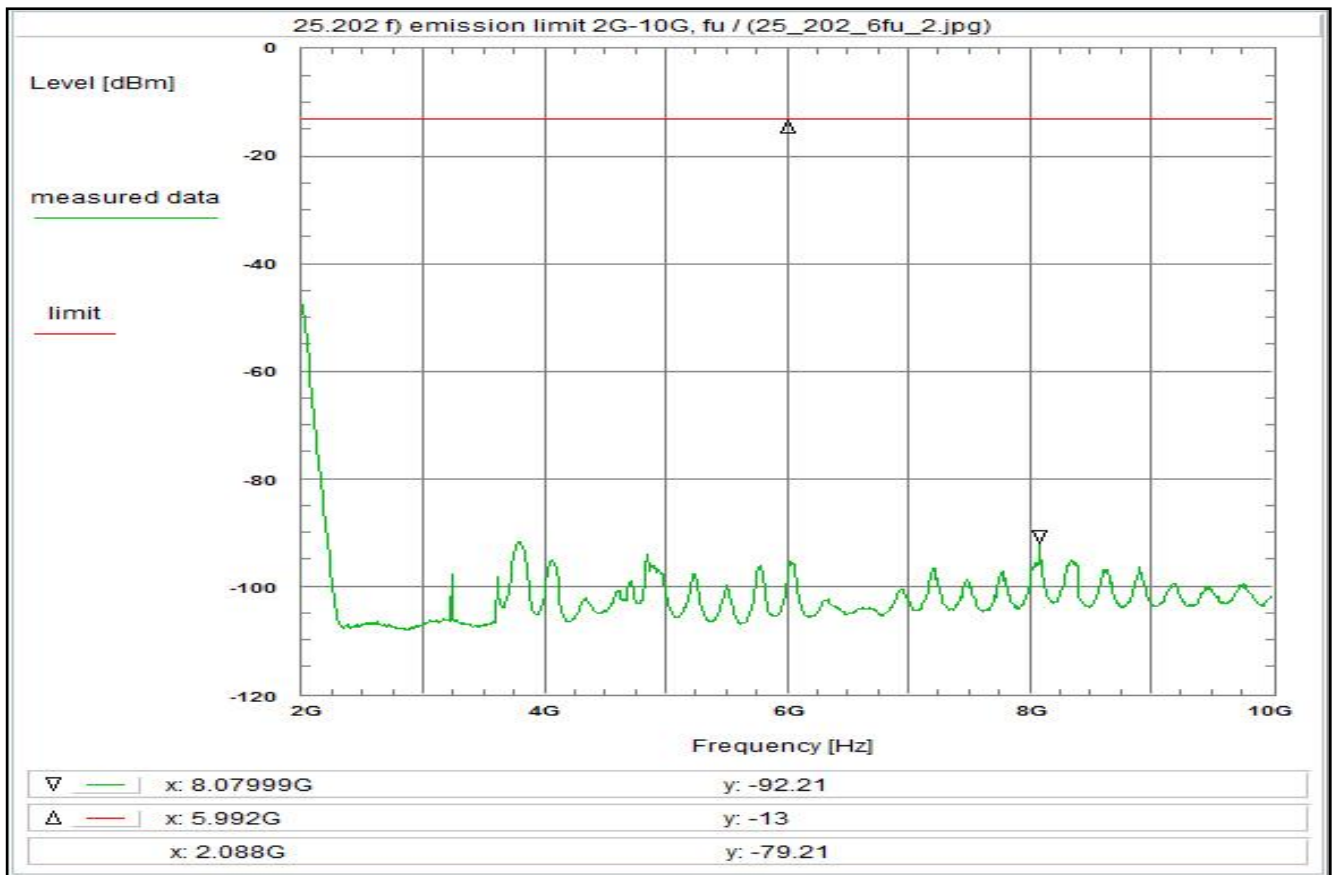
<p>Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations Emission limitations Modulated rf-carrier at the lower edge of the band (fu)</p> <p>Limit: <u>Limit according to 25.202 f):</u> 50-100% of assigned bw: -25dBc/4kHz 100-250% of assigned bw: -35dBc/4kHz > 250% of assigned bw: $-43+10\log(P_{max})dBc/4kHz = -43$ dBW The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the above schedule.</p> <p>Test results: see plot (an explicit table was not generated)</p> <p>Operating condition of DUT: operating condition 1, see test report chapter 5.2 Modulation TCH_2C8A, fl</p> <p>Test setup: see test report chapter 6.2</p> <p>Test equipment: see test report chapter 6.1 - 6.2: C220, R001, U005 + POWER SPLITTER</p> <p>Remark:</p> <p>Test result: Test passed</p>	<p>Environment condition: Date & Time: Mon 08/Jun/2020 13:16:40 Location: CTC advanced GmbH, Laboratory RC-SYS Temperature: 22 °C Humidity: 55 % Voltage: 24 VDC</p> <p>Setup of measurement equipment: Start frequency: 1.6265 GHz Stop frequency: 2 GHz Center frequency: 1.81325 GHz Frequency span: 373.5 MHz Resolution-BW: 10 kHz Video-BW: 100 kHz Input attenuation: 12 dB Trace-Mode: Max-Hold Detector-Mode: Pos Peak</p> <p>Correction: Directional coupler + 0.0 dB Coaxial cable + 0.0 dB DUT-Antenna (on-axis) + 10.4 dBi Test antenna + 0.0 dB BW correction factor (10k -> 4k) - 4.0 dB Atten. between HPA and feedhorn + 0.0 dB (U005 + POWER SPLITTER) + 37.7 dB TOTAL CORRECTION: + 44.1 dB</p> <p>Remarks: Carrier-on state / Carrier at the lower edge of the band (fu)</p>
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Plot No. 16



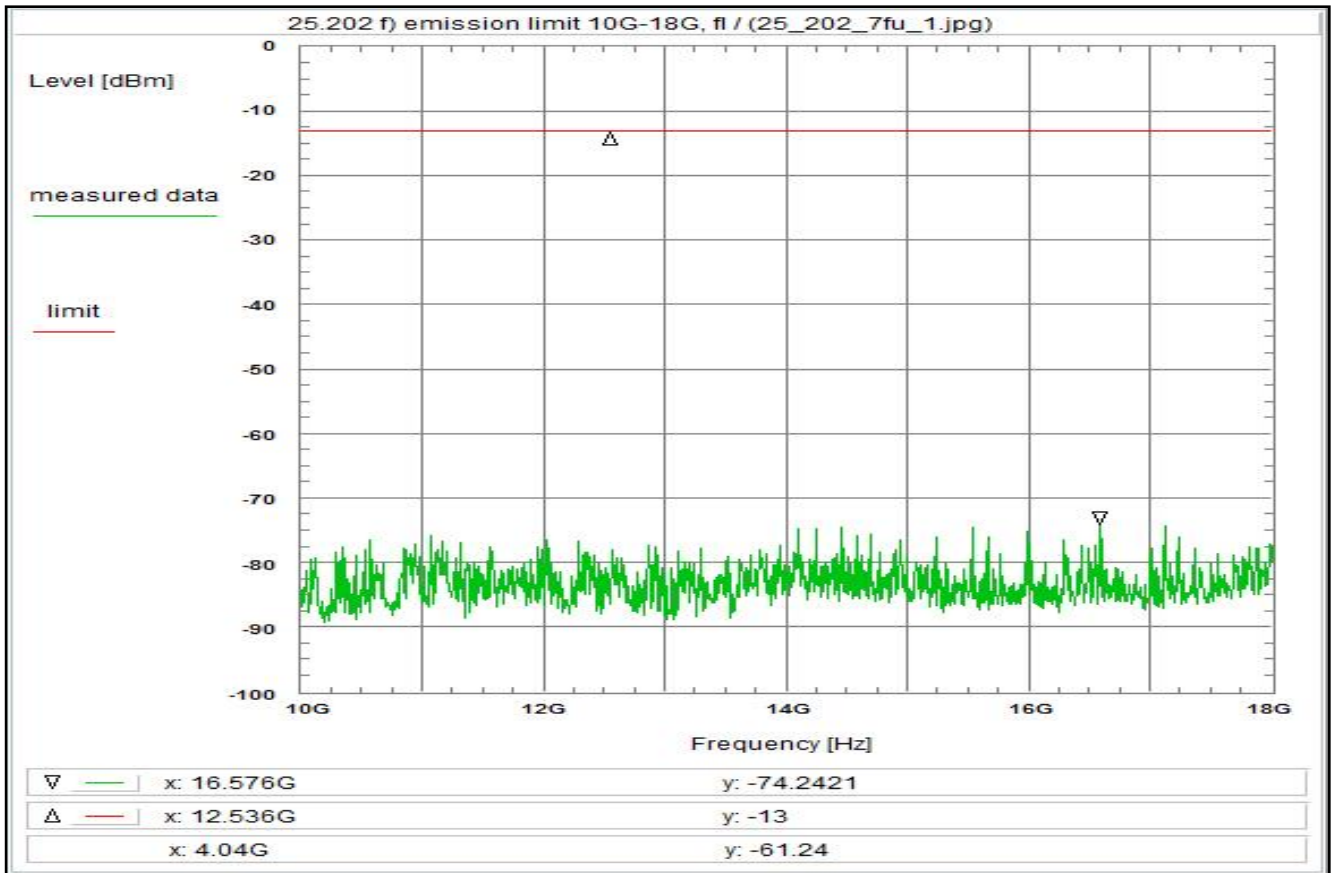
<p>Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations Emission limitations Modulated rf-carrier at the lower edge of the band (fu)</p> <p>Limit: <u>Limit according to 25.202 f):</u> 50-100% of assigned bw: -25dBc/4kHz 100-250% of assigned bw: -35dBc/4kHz > 250% of assigned bw: $-43+10\log(P_{max})dBc/4kHz = -43 dBW$ The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the above schedule.</p> <p>Test results: see plot (an explicit table was not generated)</p> <p>Operating condition of DUT: operating condition 1, see test report chapter 5.2 Mode TCH_2C8A, fl</p> <p>Test setup: see test report chapter 6.2</p> <p>Test equipment: see test report chapter 6.1 - 6.2: C220, C220, FHPF, R001</p> <p>Remark:</p> <p>Test result: Test passed</p>	<p>Environment condition: Date & Time: Wed 10/Jun/2020 15:27:59 Location: CTC advanced GmbH, Laboratory RC-SYS Temperature: 22 °C Humidity: 55 % Voltage: 24 VDC</p> <p>Setup of measurement equipment: Start frequency: 2 GHz Stop frequency: 10 GHz Center frequency: 6 GHz Frequency span: 8 GHz Resolution-BW: 100 kHz Video-BW: 1 MHz Input attenuation: 0 dB Trace-Mode: Max-Hold Detector-Mode: Pos Peak</p> <p>Correction: Directional coupler + 0.0 dB Coaxial cable (C220) + 1.7 dB DUT-Antenna (on-axis) + 10.4 dBi Test antenna + 0.0 dB BW correction factor (100k -> 4k) - 14.0 dB Atten. between HPA and feedhorn + 0.0 dB (FHPF) + 12.5 dB TOTAL CORRECTION: + 10.6 dB</p> <p>Remarks: Carrier-on state / Carrier at the lower edge of the band (fu)</p> <p>Peak Detector Rather left the plot show the behaviour of the HPF</p>
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Plot No. 17



<p>Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations Emission limitations Modulated rf-carrier at the lower edge of the band (fu)</p> <p>Limit: <u>Limit according to 25.202 f):</u> 50-100% of assigned bw: -25dBc/4kHz 100-250% of assigned bw: -35dBc/4kHz > 250% of assigned bw: $-43+10\log(P_{max})dBc/4kHz = -43 dBW$ The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the above schedule.</p> <p>Test results: see plot (an explicit table was not generated)</p> <p>Operating condition of DUT: operating condition 1, see test report chapter 5.2 Mode TCH_2C8A, fl</p> <p>Test setup: see test report chapter 6.2</p> <p>Test equipment: see test report chapter 6.1 - 6.2: C220, C220, FHPF, R001</p> <p>Remark:</p> <p>Test result: Test passed</p>	<p>Environment condition: Date & Time: Wed 10/Jun/2020 15:31:10 Location: CTC advanced GmbH, Laboratory RC-SYS Temperature: 22 °C Humidity: 55 % Voltage: 24 VDC</p> <p>Setup of measurement equipment: Start frequency: 2 GHz Stop frequency: 10 GHz Center frequency: 6 GHz Frequency span: 8 GHz Resolution-BW: 100 kHz Video-BW: 10 kHz Input attenuation: 0 dB Trace-Mode: Max-Hold Detector-Mode: AVG</p> <p>Correction: Directional coupler + 0.0 dB Coaxial cable (C220) + 1.7 dB DUT-Antenna (on-axis) + 10.4 dBi Test antenna + 0.0 dB BW correction factor (100k -> 4k) - 14.0 dB Atten. between HPA and feedhorn + 0.0 dB (FHPF) + 12.5 dB TOTAL CORRECTION: + 10.6 dB</p> <p>Remarks: Carrier-on state / Carrier at the lower edge of the band (fu)</p> <p>RMS Detector Rather left the plot show the behaviour of the HPF</p>
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Plot No. 18



Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
Emission limitations
Modulated rf-carrier at the lower edge of the band (fl)

Limit:
Limit according to 25.202 f):
50-100% of assigned bw: -25dBc/4kHz
100-250% of assigned bw: -35dBc/4kHz
> 250% of assigned bw: $-43+10\log(P_{max})\text{dBc}/4\text{kHz} = -43 \text{ dBW}$
The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the above schedule.

Test results:
see plot (an explicit table was not generated)

Operating condition of DUT:
operating condition 1, see test report chapter 5.2
Mode TCH_2C8A, fl

Test setup:
see test report chapter 6.2

Test equipment:
see test report chapter 6.1 - 6.2: C220, C220, FHPF, R001

Remark:

Test result: Test passed

Environment condition:

Date & Time: Wed 10/Jun/2020 16:08:43
Location: CTC advanced GmbH, Laboratory RC-SYS
Temperature: 22 °C
Humidity: 55 %
Voltage: 24 VDC

Setup of measurement equipment:

Start frequency: 10 GHz
Stop frequency: 18 GHz
Center frequency: 14 GHz
Frequency span: 8 GHz
Resolution-BW: 100 kHz
Video-BW: 1 MHz
Input attenuation: 0 dB
Trace-Mode: Max-Hold
Detector-Mode: Pos Peak

Correction:

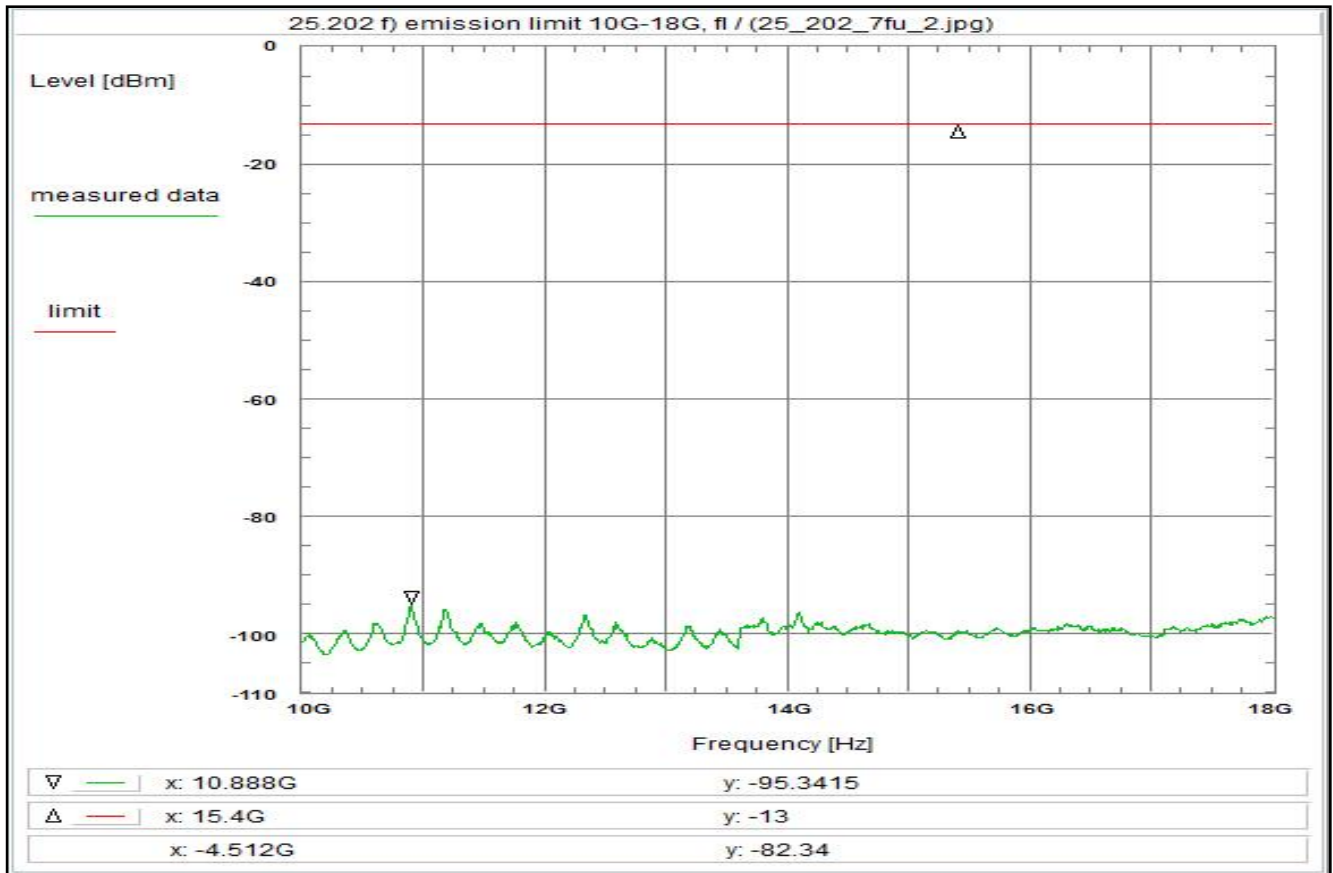
Directional coupler + 0.0 dB
Coaxial cable (C220) + 2.7 dB
DUT-Antenna (on-axis) + 10.4 dBi
Test antenna + 0.0 dB
BW correction factor (100k -> 4k) - 14.0 dB
Atten. between HPA and feedhorn + 0.0 dB
(FHPF) + 12.5 dB
TOTAL CORRECTION: + 11.6 dB

Remarks:

Carrier-on state / Carrier at the lower edge of the band (fu)

Peak Detector

Plot No. 19



Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
Emission limitations
Modulated rf-carrier at the lower edge of the band (fl)

Limit:
Limit according to 25.202 f):
50-100% of assigned bw: -25dBc/4kHz
100-250% of assigned bw: -35dBc/4kHz
> 250% of assigned bw: $-43+10\log(P_{max})dBc/4kHz = -43 dBW$
The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the above schedule.

Test results:
see plot (an explicit table was not generated)

Operating condition of DUT:
operating condition 1, see test report chapter 5.2
Mode TCH_2C8A, fl

Test setup:
see test report chapter 6.2

Test equipment:
see test report chapter 6.1 - 6.2: C220, C220, FHPF, R001

Remark:

Test result: Test passed

Environment condition:
Date & Time: Wed 10/Jun/2020 16:11:10
Location: CTC advanced GmbH, Laboratory RC-SYS
Temperature: 22 °C
Humidity: 55 %
Voltage: 24 VDC

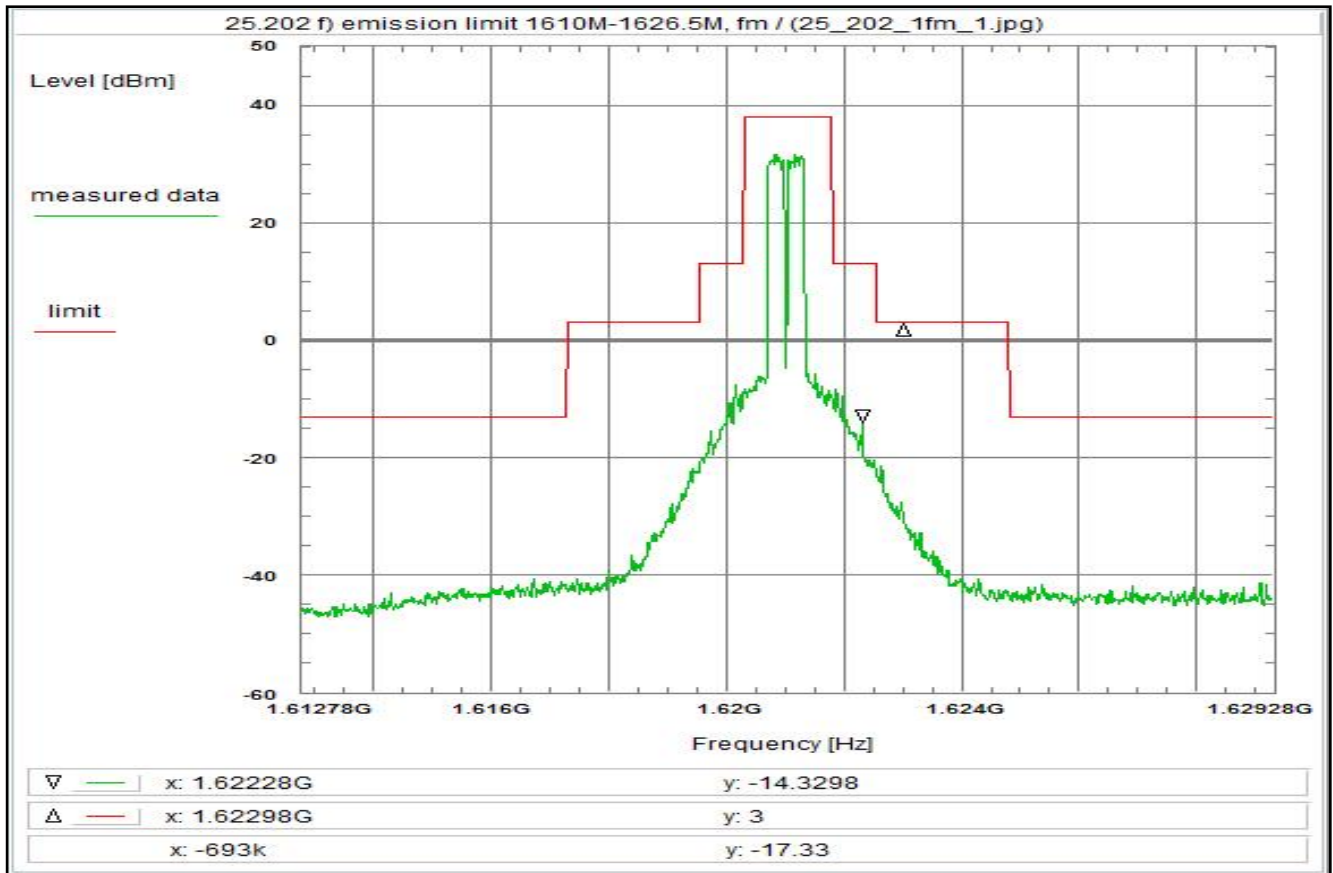
Setup of measurement equipment:
Start frequency: 10 GHz
Stop frequency: 18 GHz
Center frequency: 14 GHz
Frequency span: 8 GHz
Resolution-BW: 100 kHz
Video-BW: 10 kHz
Input attenuation: 0 dB
Trace-Mode: Max-Hold
Detector-Mode: AVG

Correction:
Directional coupler + 0.0 dB
Coaxial cable (C220) + 2.7 dB
DUT-Antenna (on-axis) + 10.4 dBi
Test antenna + 0.0 dB
BW correction factor (100k -> 4k) - 14.0 dB
Atten. between HPA and feedhorn + 0.0 dB
(FHPF) + 12.5 dB
TOTAL CORRECTION: + 11.6 dB

Remarks:
Carrier-on state / Carrier at the lower edge of the band (fu)

RMS Detector

Plot No. 20



Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
Emission limitations
Modulated rf-carrier in the middle of the band (fm)

Limit:

Limit according to 25.202 f):

50-100% of assigned bw: -25dBc/4kHz
100-250% of assigned bw: -35dBc/4kHz
> 250% of assigned bw: $-43+10\log(P_{max})\text{dBc}/4\text{kHz} = -43 \text{ dBW}$
The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the above schedule.

Test results:

see plot (an explicit table was not generated)

Operating condition of DUT:

operating condition 1, see test report chapter 5.2
Modulation TCH_2C8A, fm

Test setup:

see test report chapter 6.2

Test equipment:

see test report chapter 6.1 - 6.2: C220, R001, U005 + POWER SPLITTER

Remark:

Test result: Test passed

Environment condition:

Date & Time: Mon 08/Jun/2020 14:03:58
Location: CTC advanced GmbH, Laboratory RC-SYS
Temperature: 22 °C
Humidity: 55 %
Voltage: 24 VDC

Setup of measurement equipment:

Start frequency: 1.61278 GHz
Stop frequency: 1.62928 GHz
Center frequency: 1.62103 GHz
Frequency span: 16.5 MHz
Resolution-BW: 10 kHz
Video-BW: 100 kHz
Input attenuation: 12 dB
Trace-Mode: Max-Hold
Detector-Mode: Pos Peak

Correction:

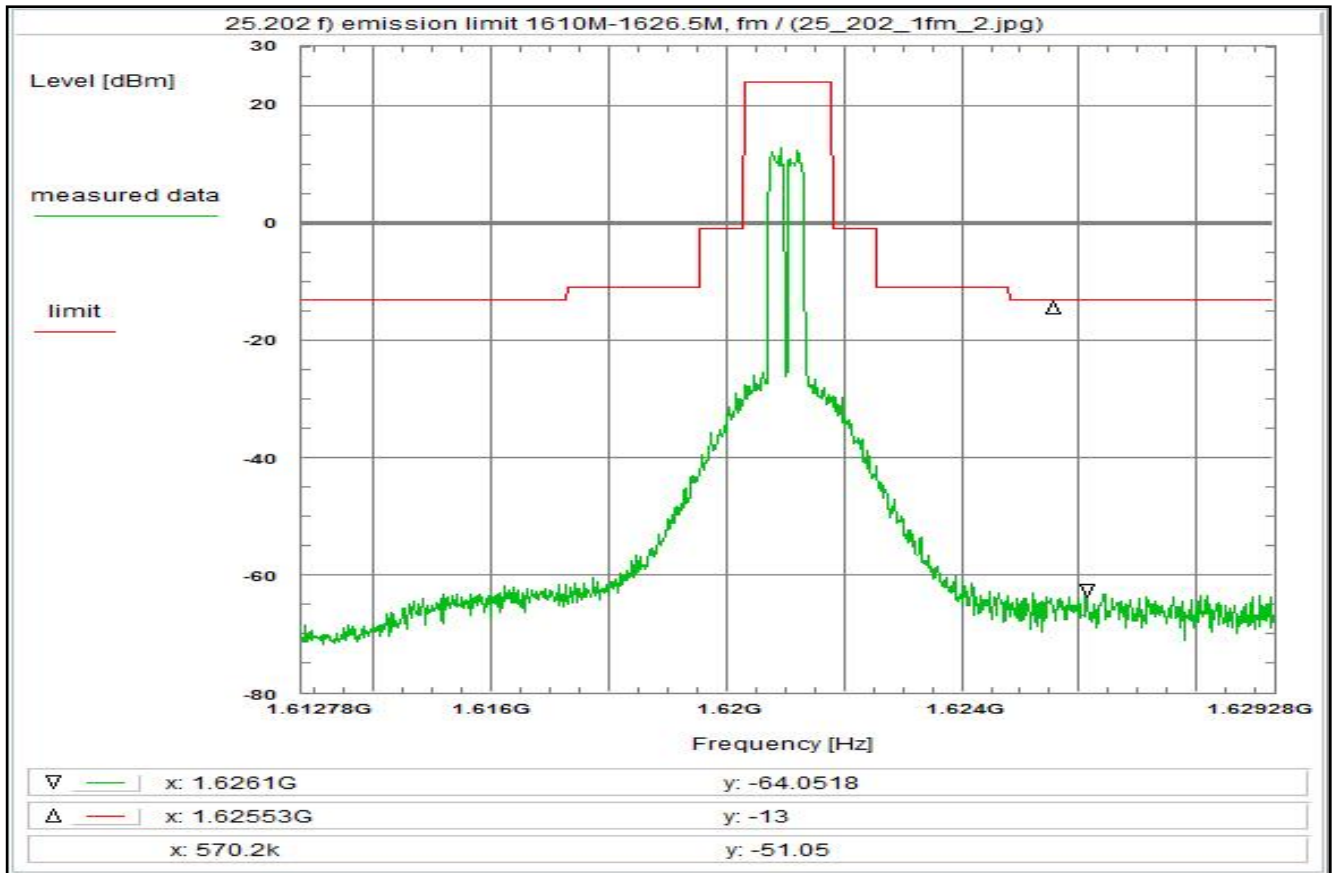
Directional coupler + 0.0 dB
Coaxial cable + 0.0 dB
DUT-Antenna (on-axis) + 10.4 dB
Test antenna + 0.0 dB
BW correction factor (10k -> 4k) - 4.0 dB
Atten. between HPA and feedhorn + 0.0 dB
(U005 + POWER SPLITTER) + 37.5 dB
TOTAL CORRECTION: + 43.9 dB

Remarks:

Carrier-on state / Carrier in the middle of the band (fm)

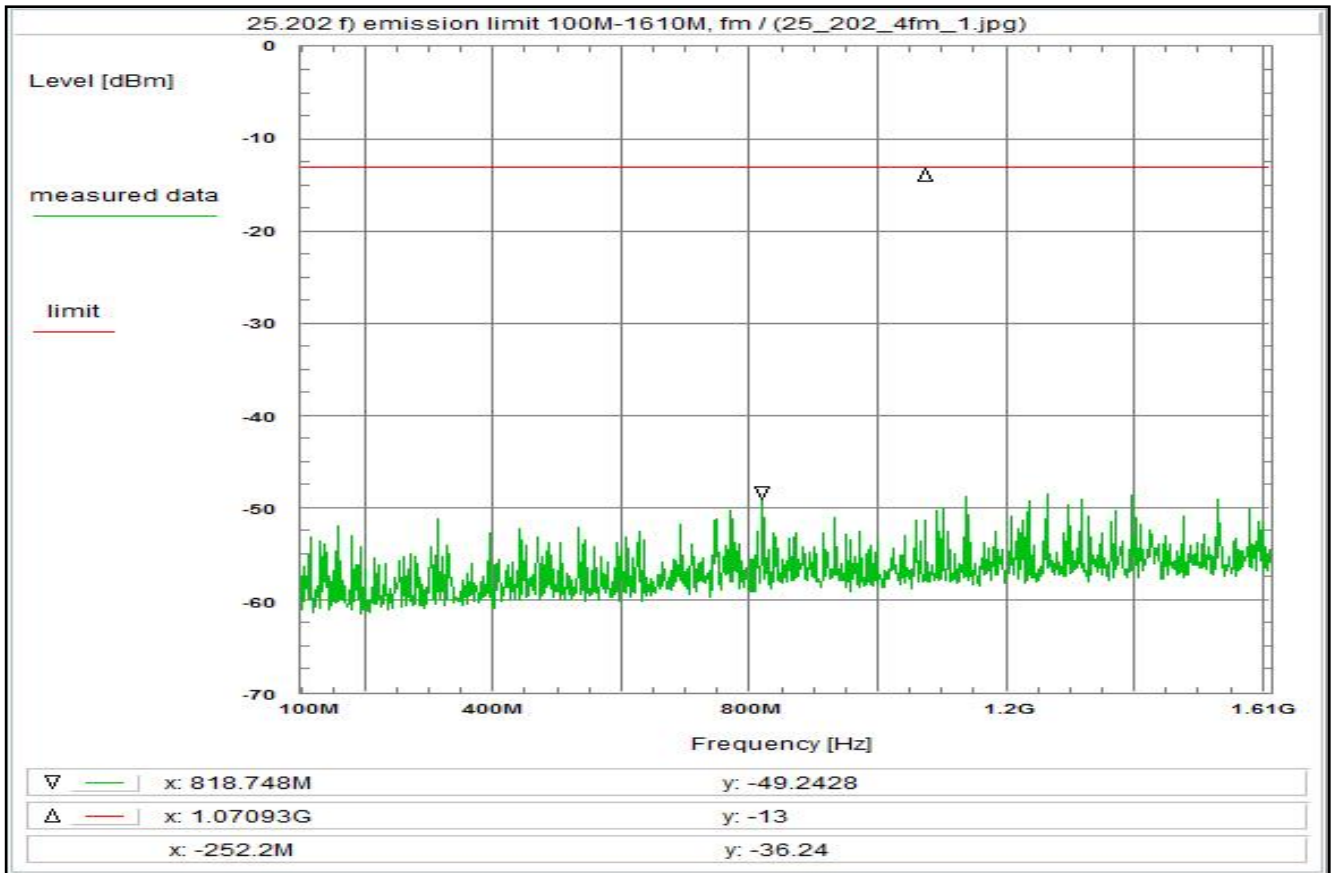
Peak detector

Plot No. 21



<p>Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations Emission limitations Modulated rf-carrier in the middle of the band (fm)</p> <p>Limit: <u>Limit according to 25.202 f):</u> 50-100% of assigned bw: -25dBc/4kHz 100-250% of assigned bw: -35dBc/4kHz > 250% of assigned bw: $-43+10\log(P_{max})dBc/4kHz = -43$ dBW The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the above schedule.</p> <p>Test results: see plot (an explicit table was not generated)</p> <p>Operating condition of DUT: operating condition 1, see test report chapter 5.2 Modulation TCH_2C8A, fm</p> <p>Test setup: see test report chapter 6.2</p> <p>Test equipment: see test report chapter 6.1 - 6.2: C220, R001, U005 + POWER SPLITTER</p> <p>Remark:</p> <p>Test result: Test passed</p>	<p>Environment condition: Date & Time: Mon 08/Jun/2020 14:07:29 Location: CTC advanced GmbH, Laboratory RC-SYS Temperature: 22 °C Humidity: 55 % Voltage: 24 VDC</p> <p>Setup of measurement equipment: Start frequency: 1.61278 GHz Stop frequency: 1.62928 GHz Center frequency: 1.62103 GHz Frequency span: 16.5 MHz Resolution-BW: 10 kHz Video-BW: 1 kHz Input attenuation: 12 dB Trace-Mode: Max-Hold Detector-Mode: AVG</p> <p>Correction: Directional coupler + 0.0 dB Coaxial cable + 0.0 dB DUT-Antenna (on-axis) + 10.4 dB Test antenna + 0.0 dB BW correction factor (10k -> 4k) - 4.0 dB Atten. between HPA and feedhorn + 0.0 dB (U005 + POWER SPLITTER) + 37.5 dB TOTAL CORRECTION: + 43.9 dB</p> <p>Remarks: Carrier-on state / Carrier in the middle of the band (fm)</p> <p>RMS detector</p>
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Plot No. 22



Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
Emission limitations
Modulated rf-carrier in the middle of the band (fm)

Limit:
Limit according to 25.202 f):
50-100% of assigned bw: -25dBc/4kHz
100-250% of assigned bw: -35dBc/4kHz
> 250% of assigned bw: $-43+10\log(P_{max})\text{dBc}/4\text{kHz} = -43\text{ dBW}$
The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the above schedule.

Test results:
see plot (an explicit table was not generated)

Operating condition of DUT:
operating condition 1, see test report chapter 5.2
Modulation TCH_2C8A, fm

Test setup:
see test report chapter 6.2

Test equipment:
see test report chapter 6.1 - 6.2: C220, R001, U005 + POWER SPLITTER

Remark:

Test result: Test passed

Environment condition:

Date & Time: Mon 08/Jun/2020 14:10:38
Location: CTC advanced GmbH, Laboratory RC-SYS
Temperature: 22 °C
Humidity: 55 %
Voltage: 24 VDC

Setup of measurement equipment:

Start frequency: 100 MHz
Stop frequency: 1.61 GHz
Center frequency: 855 MHz
Frequency span: 1.51 GHz
Resolution-BW: 10 kHz
Video-BW: 10 kHz
Input attenuation: 12 dB
Trace-Mode: Clear Write
Detector-Mode: Pos Peak

Correction:

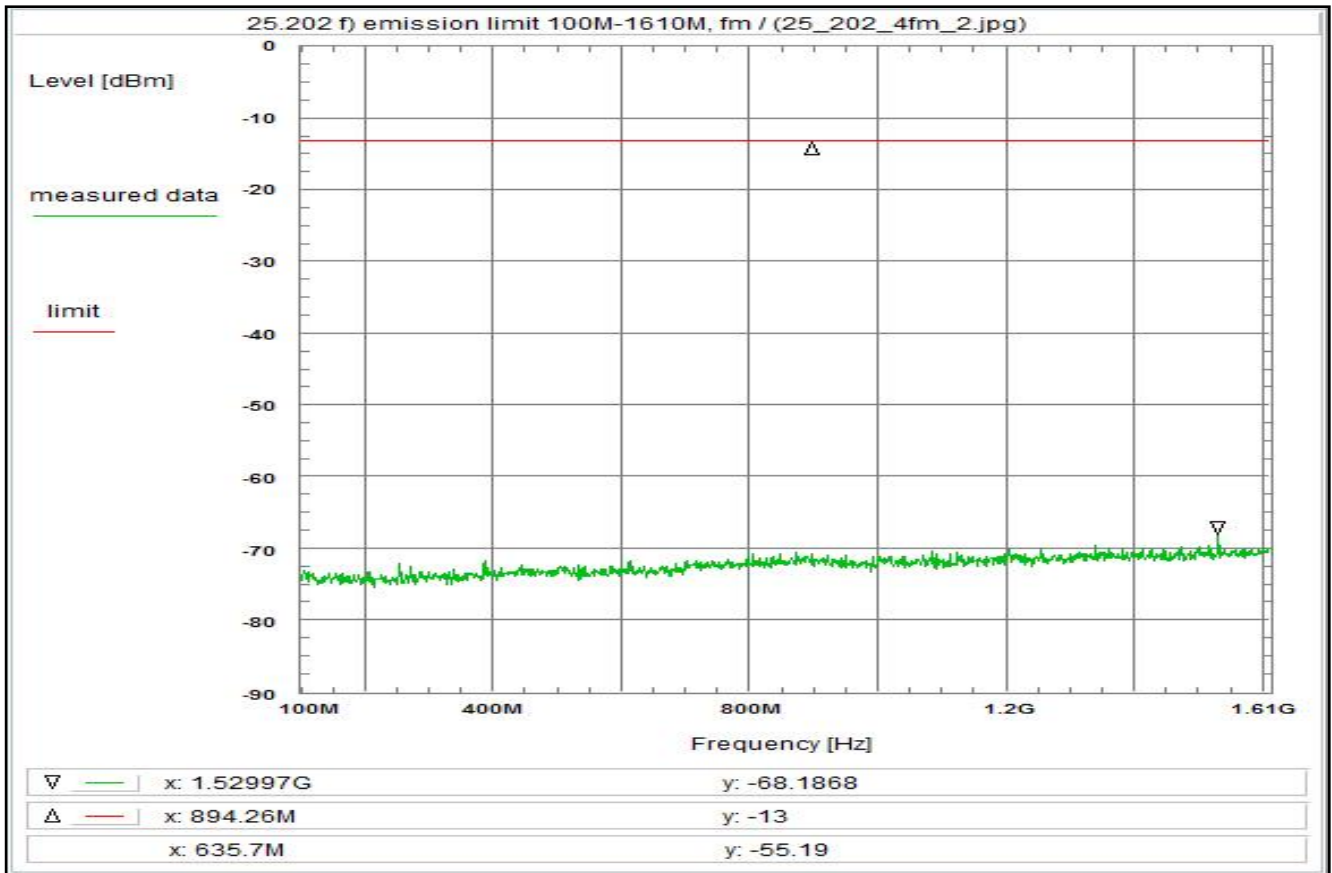
Directional coupler + 0.0 dB
Coaxial cable + 0.0 dB
DUT-Antenna (on-axis) + 10.4 dBi
Test antenna + 0.0 dB
BW correction factor (10k -> 4k) - 4.0 dB
Atten. between HPA and feedhorn + 0.0 dB
(U005 + POWER SPLITTER) + 37.0 dB
TOTAL CORRECTION: + 43.4 dB

Remarks:

Carrier-on state / Carrier in the middle of the band (fm)

Peak detector

Plot No. 23



Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
Emission limitations
Modulated rf-carrier in the middle of the band (fm)

Limit:
Limit according to 25.202 f):
50-100% of assigned bw: -25dBc/4kHz
100-250% of assigned bw: -35dBc/4kHz
> 250% of assigned bw: $-43+10\log(P_{max})dBc/4kHz = -43$ dBW
The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the above schedule.

Test results:
see plot (an explicit table was not generated)

Operating condition of DUT:
operating condition 1, see test report chapter 5.2
Modulation TCH_2C8A, fm

Test setup:
see test report chapter 6.2

Test equipment:
see test report chapter 6.1 - 6.2: C220, R001, U005 + POWER SPLITTER

Remark:

Test result: Test passed

Environment condition:
Date & Time: Mon 08/Jun/2020 14:14:44
Location: CTC advanced GmbH, Laboratory RC-SYS
Temperature: 22 °C
Humidity: 55 %
Voltage: 24 VDC

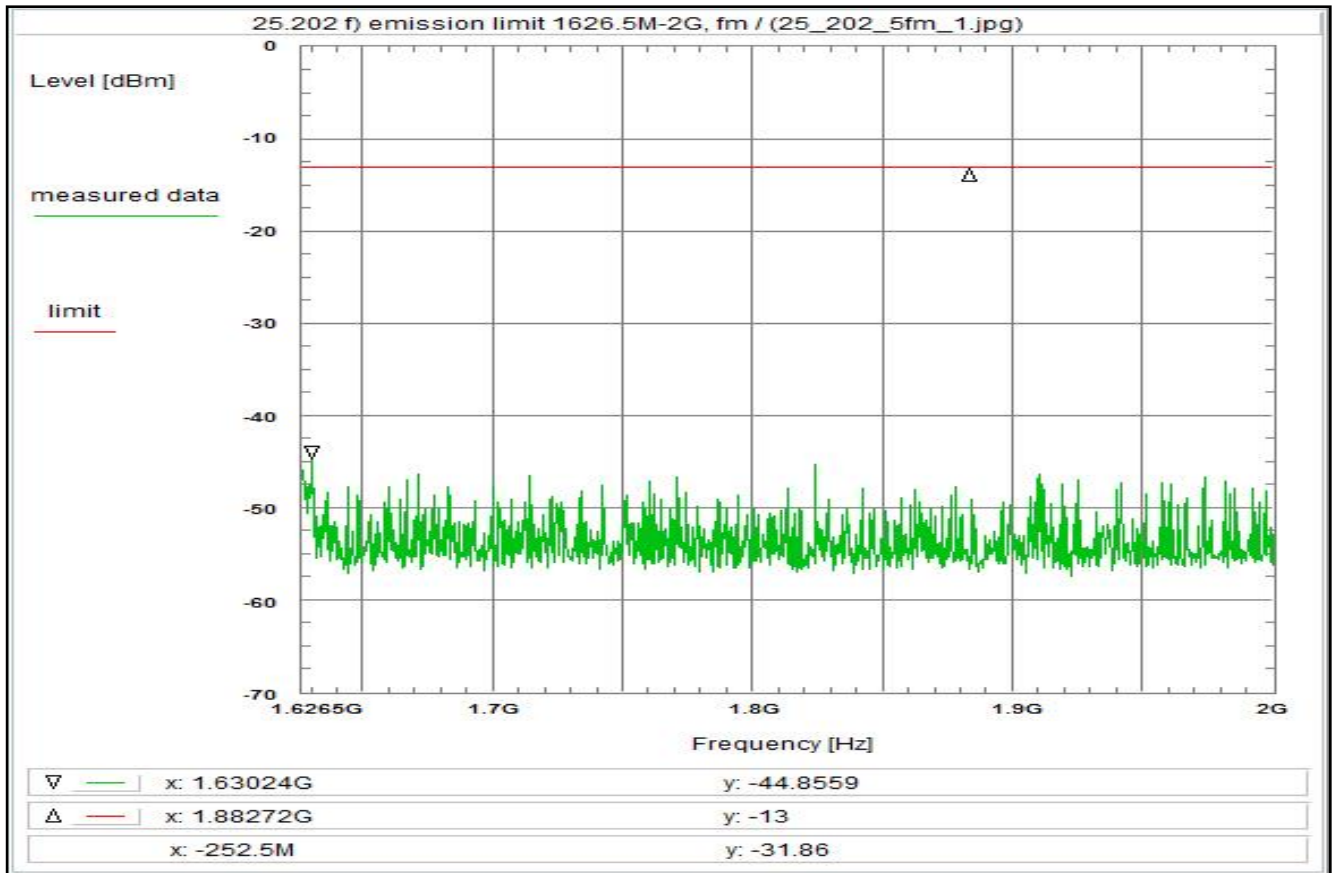
Setup of measurement equipment:
Start frequency: 100 MHz
Stop frequency: 1.61 GHz
Center frequency: 855 MHz
Frequency span: 1.51 GHz
Resolution-BW: 10 kHz
Video-BW: 1 kHz
Input attenuation: 12 dB
Trace-Mode: Clear Write
Detector-Mode: AVG

Correction:
Directional coupler + 0.0 dB
Coaxial cable + 0.0 dB
DUT-Antenna (on-axis) + 10.4 dBi
Test antenna + 0.0 dB
BW correction factor (10k -> 4k) - 4.0 dB
Atten. between HPA and feedhorn + 0.0 dB
(U005 + POWER SPLITTER) + 37.0 dB
TOTAL CORRECTION: + 43.4 dB

Remarks:
Carrier-on state / Carrier in the middle of the band (fm)

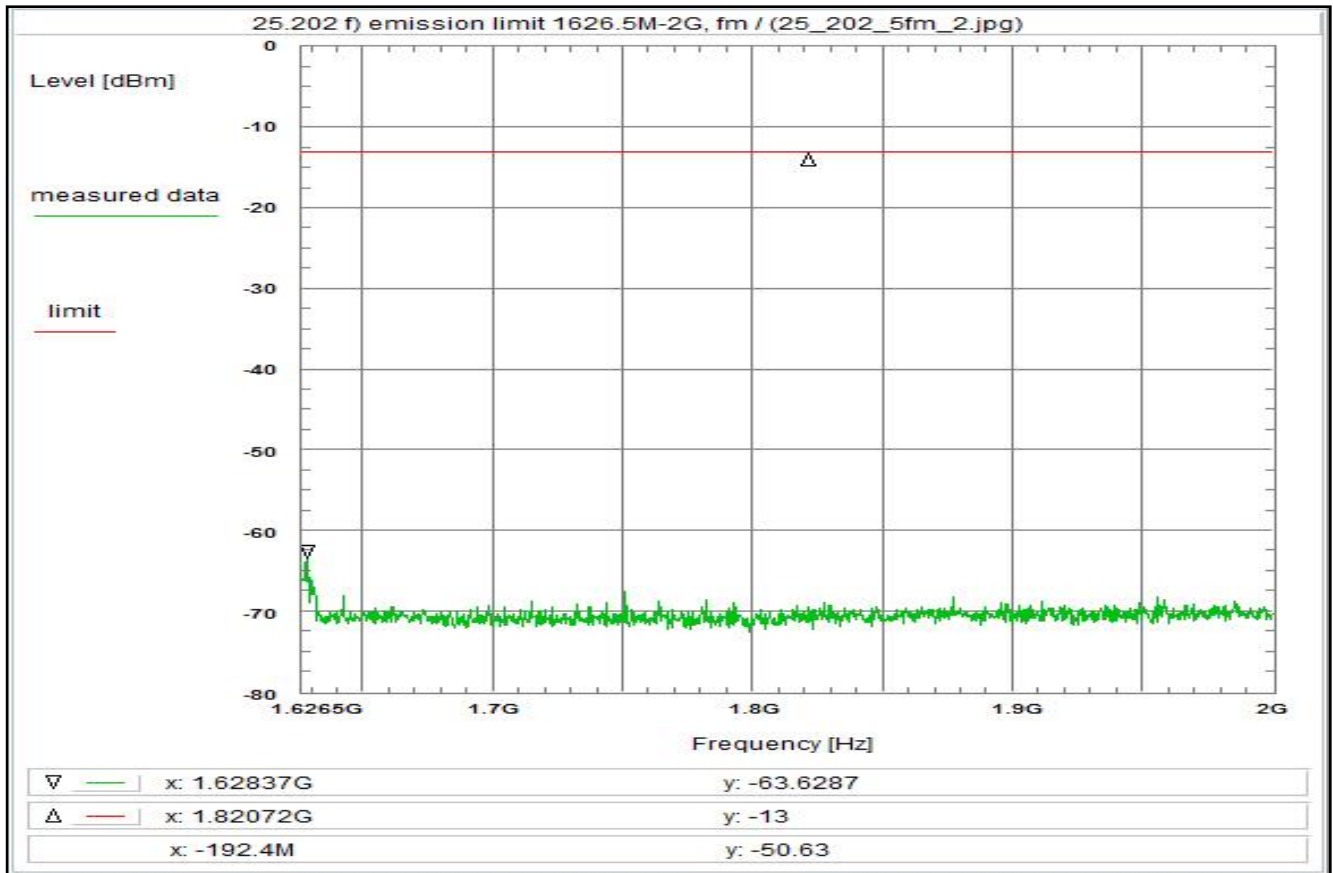
RMS detector

Plot No. 24



<p>Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations Emission limitations Modulated rf-carrier in the middle of the band (fm)</p> <p>Limit: <u>Limit according to 25.202 f):</u> 50-100% of assigned bw: -25dBc/4kHz 100-250% of assigned bw: -35dBc/4kHz > 250% of assigned bw: $-43+10\log(P_{max})\text{dBc}/4\text{kHz} = -43 \text{ dBW}$ The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the above schedule.</p> <p>Test results: see plot (an explicit table was not generated)</p> <p>Operating condition of DUT: operating condition 1, see test report chapter 5.2 Modulation TCH_2C8A, fm</p> <p>Test setup: see test report chapter 6.2</p> <p>Test equipment: see test report chapter 6.1 - 6.2: C220, R001, U005 + POWER SPLITTER</p> <p>Remark:</p> <p>Test result: Test passed</p>	<p>Environment condition: Date & Time: Mon 08/Jun/2020 14:18:09 Location: CTC advanced GmbH, Laboratory RC-SYS Temperature: 22 °C Humidity: 55 % Voltage: 24 VDC</p> <p>Setup of measurement equipment: Start frequency: 1.6265 GHz Stop frequency: 2 GHz Center frequency: 1.81325 GHz Frequency span: 373.5 MHz Resolution-BW: 10 kHz Video-BW: 100 kHz Input attenuation: 12 dB Trace-Mode: Max-Hold Detector-Mode: Pos Peak</p> <p>Correction: Directional coupler + 0.0 dB Coaxial cable + 0.0 dB DUT-Antenna (on-axis) + 10.4 dBi Test antenna + 0.0 dB BW correction factor (10k -> 4k) - 4.0 dB Atten. between HPA and feedhorn + 0.0 dB (U005 + POWER SPLITTER) + 37.7 dB TOTAL CORRECTION: + 44.1 dB</p> <p>Remarks: Carrier-on state / Carrier in the middle of the band (fm)</p> <p>Peak detector</p>
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Plot No. 25



Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
Emission limitations
Modulated rf-carrier in the middle of the band (fm)

Limit:
Limit according to 25.202 f):
50-100% of assigned bw: -25dBc/4kHz
100-250% of assigned bw: -35dBc/4kHz
> 250% of assigned bw: $-43+10\log(P_{max})\text{dBc}/4\text{kHz} = -43 \text{ dBW}$
The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the above schedule.

Test results:
see plot (an explicit table was not generated)

Operating condition of DUT:
operating condition 1, see test report chapter 5.2
Modulation TCH_2C8A, fm

Test setup:
see test report chapter 6.2

Test equipment:
see test report chapter 6.1 - 6.2: C220, R001, U005 + POWER SPLITTER

Remark:

Test result: Test passed

Environment condition:
Date & Time: Mon 08/Jun/2020 14:20:29
Location: CTC advanced GmbH, Laboratory RC-SYS
Temperature: 22 °C
Humidity: 55 %
Voltage: 24 VDC

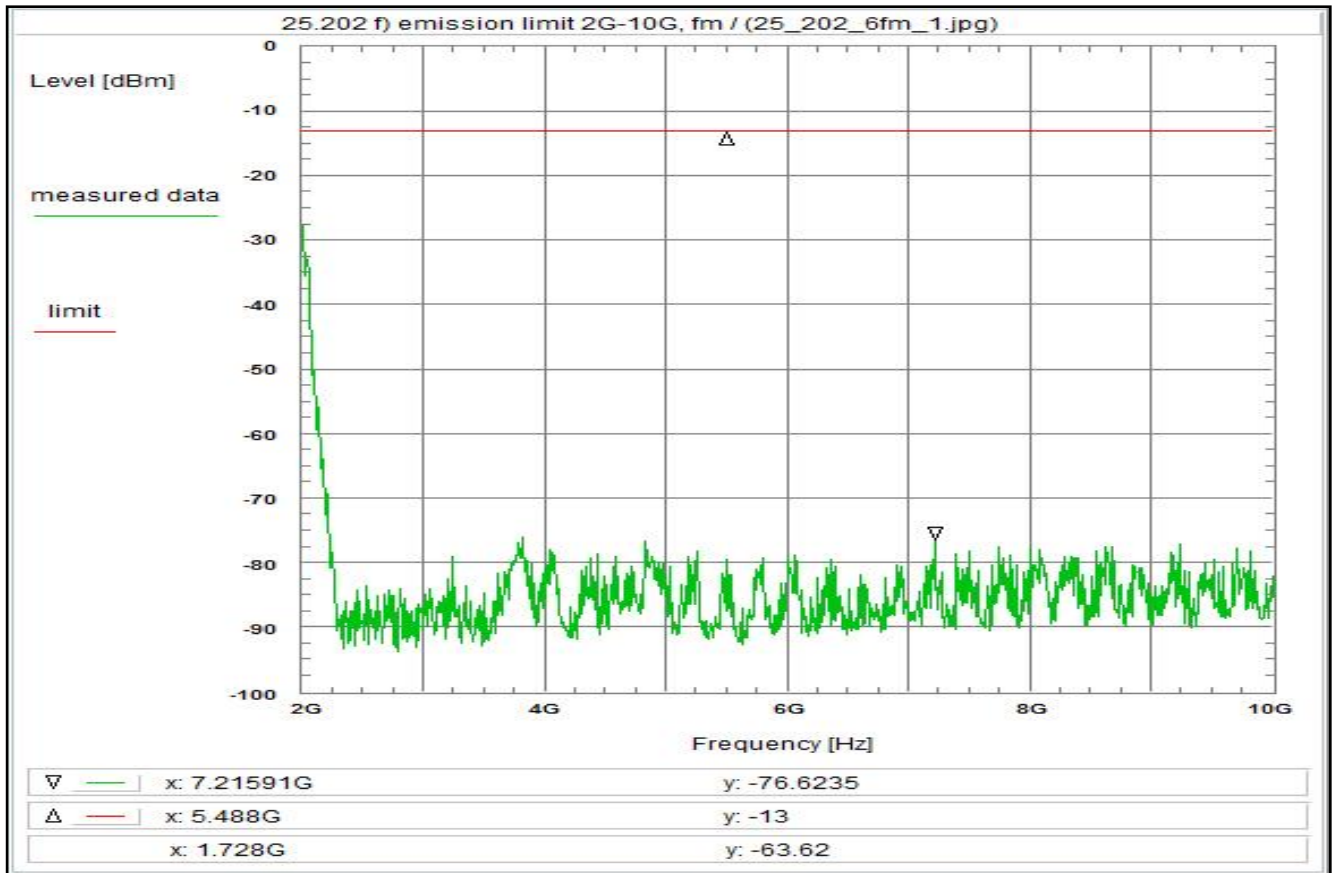
Setup of measurement equipment:
Start frequency: 1.6265 GHz
Stop frequency: 2 GHz
Center frequency: 1.81325 GHz
Frequency span: 373.5 MHz
Resolution-BW: 10 kHz
Video-BW: 1 kHz
Input attenuation: 12 dB
Trace-Mode: Max-Hold
Detector-Mode: AVG

Correction:
Directional coupler + 0.0 dB
Coaxial cable + 0.0 dB
DUT-Antenna (on-axis) + 10.4 dBi
Test antenna + 0.0 dB
BW correction factor (10k -> 4k) - 4.0 dB
Atten. between HPA and feedhorn + 0.0 dB
(U005 + POWER SPLITTER) + 37.7 dB
TOTAL CORRECTION: + 44.1 dB

Remarks:
Carrier-on state / Carrier in the middle of the band (fm)

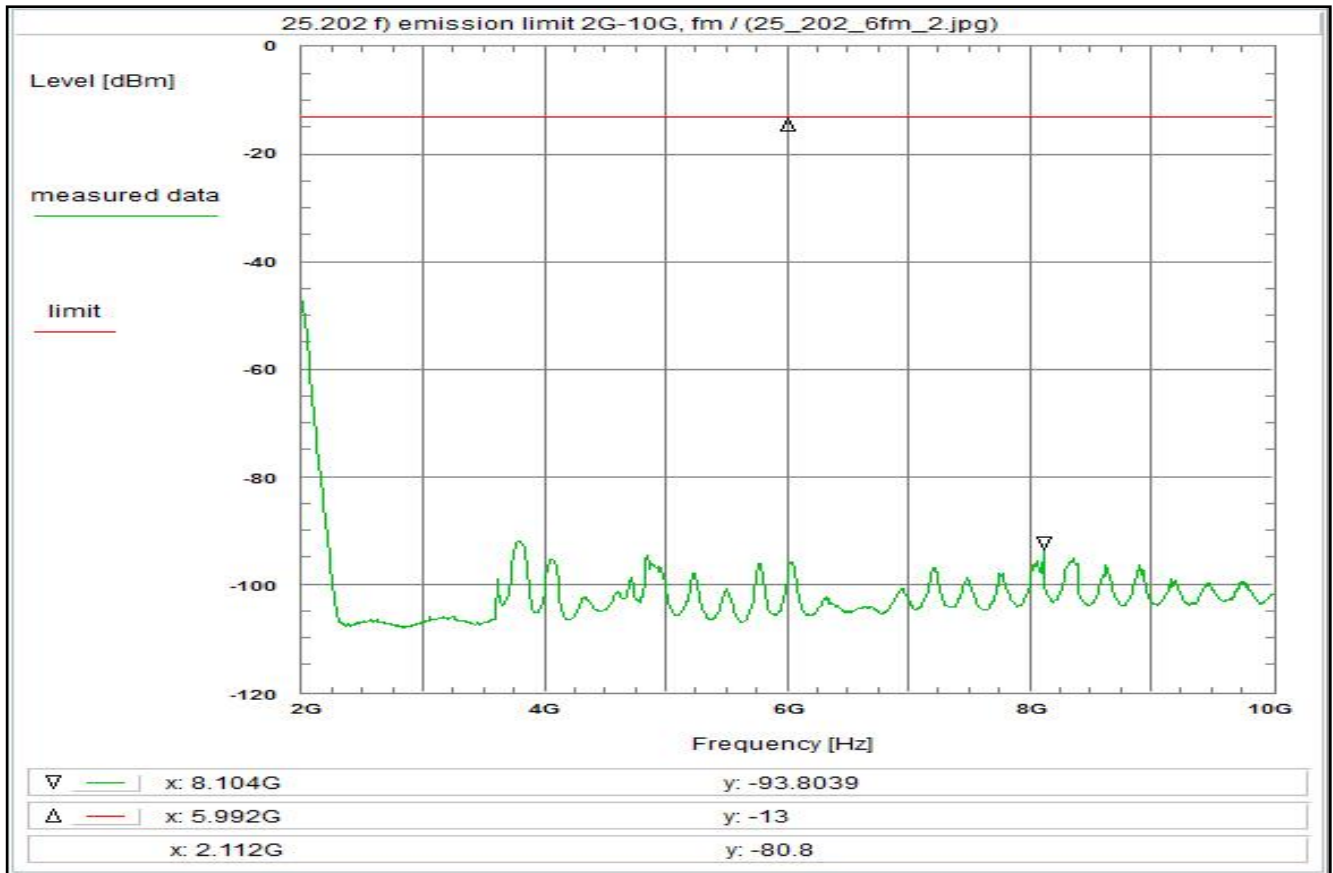
RMS detector

Plot No. 26



<p>Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations Emission limitations Modulated rf-carrier in the middle of the band (fm)</p> <p>Limit: <u>Limit according to 25.202 f):</u> 50-100% of assigned bw: -25dBc/4kHz 100-250% of assigned bw: -35dBc/4kHz > 250% of assigned bw: $-43+10\log(P_{max})\text{dBc}/4\text{kHz} = -43\text{ dBW}$ The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the above schedule.</p> <p>Test results: see plot (an explicit table was not generated)</p> <p>Operating condition of DUT: operating condition 1, see test report chapter 5.2 Mode TCH_2C8A, fm</p> <p>Test setup: see test report chapter 6.2</p> <p>Test equipment: see test report chapter 6.1 - 6.2: C220, C220, FHPF, R001</p> <p>Remark:</p> <p>Test result: Test passed</p>	<p>Environment condition: Date & Time: Wed 10/Jun/2020 15:37:25 Location: CTC advanced GmbH, Laboratory RC-SYS Temperature: 22 °C Humidity: 55 % Voltage: 24 VDC</p> <p>Setup of measurement equipment: Start frequency: 2 GHz Stop frequency: 10 GHz Center frequency: 6 GHz Frequency span: 8 GHz Resolution-BW: 100 kHz Video-BW: 1 MHz Input attenuation: 0 dB Trace-Mode: Max-Hold Detector-Mode: Pos Peak</p> <p>Correction: Directional coupler + 0.0 dB Coaxial cable (C220) + 1.7 dB DUT-Antenna (on-axis) + 10.4 dBi Test antenna + 0.0 dB BW correction factor (100k -> 4k) - 14.0 dB Atten. between HPA and feedhorn + 0.0 dB (FHPF) + 12.5 dB TOTAL CORRECTION: + 10.6 dB</p> <p>Remarks: Carrier-on state / Carrier in the middle of the band (fm)</p> <p>Peak Detector Rather left the plot show the behaviour of the HPF</p>
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Plot No. 27



Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
Emission limitations
Modulated rf-carrier in the middle of the band (fm)

Limit:
Limit according to 25.202 f):
50-100% of assigned bw: -25dBc/4kHz
100-250% of assigned bw: -35dBc/4kHz
> 250% of assigned bw: $-43+10\log(P_{max})dBc/4kHz = -43$ dBW
The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the above schedule.

Test results:
see plot (an explicit table was not generated)

Operating condition of DUT:
operating condition 1, see test report chapter 5.2
Mode TCH_2C8A, fm

Test setup:
see test report chapter 6.2

Test equipment:
see test report chapter 6.1 - 6.2: C220, C220, FHPF, R001

Remark:

Test result: Test passed

Environment condition:
Date & Time: Wed 10/Jun/2020 15:40:09
Location: CTC advanced GmbH, Laboratory RC-SYS
Temperature: 22 °C
Humidity: 55 %
Voltage: 24 VDC

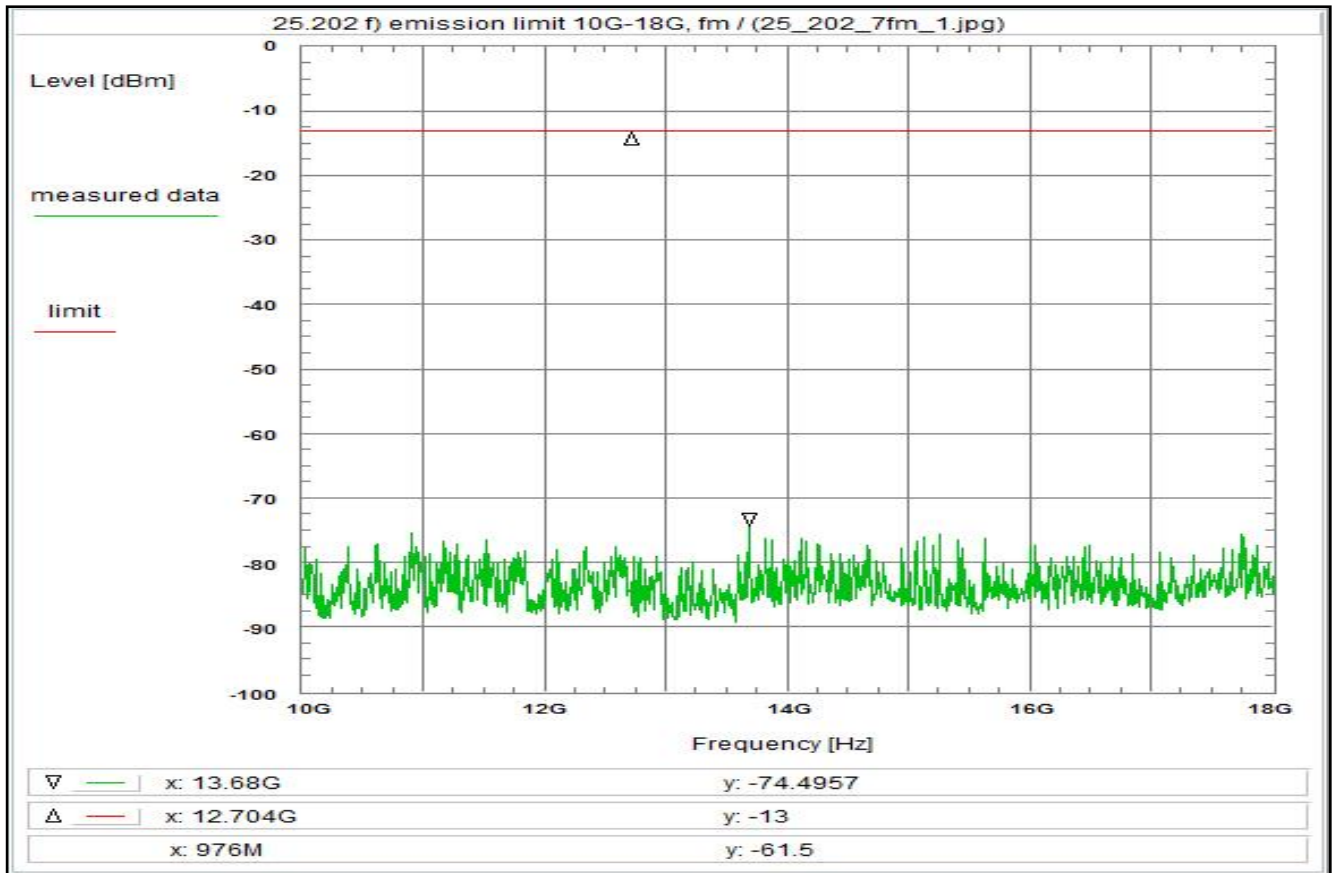
Setup of measurement equipment:
Start frequency: 2 GHz
Stop frequency: 10 GHz
Center frequency: 6 GHz
Frequency span: 8 GHz
Resolution-BW: 100 kHz
Video-BW: 10 kHz
Input attenuation: 0 dB
Trace-Mode: Max-Hold
Detector-Mode: AVG

Correction:
Directional coupler + 0.0 dB
Coaxial cable (C220) + 1.7 dB
DUT-Antenna (on-axis) + 10.4 dBi
Test antenna + 0.0 dB
BW correction factor (100k -> 4k) - 14.0 dB
Atten. between HPA and feedhorn + 0.0 dB
(FHPF) + 12.5 dB
TOTAL CORRECTION: + 10.6 dB

Remarks:
Carrier-on state / Carrier in the middle of the band (fm)

RMS Detector
Rather left the plot show the behaviour of the HPF

Plot No. 28



Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
Emission limitations
Modulated rf-carrier in the middle of the band (fm)

Limit:
Limit according to 25.202 f):
50-100% of assigned bw: -25dBc/4kHz
100-250% of assigned bw: -35dBc/4kHz
> 250% of assigned bw: $-43+10\log(P_{max})dBc/4kHz = -43 dBW$
The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the above schedule.

Test results:
see plot (an explicit table was not generated)

Operating condition of DUT:
operating condition 1, see test report chapter 5.2
Mode TCH_2C8A, fm

Test setup:
see test report chapter 6.2

Test equipment:
see test report chapter 6.1 - 6.2: C220, C220, FHPF, R001

Remark:

Test result: Test passed

Environment condition:
Date & Time: Wed 10/Jun/2020 16:01:59
Location: CTC advanced GmbH, Laboratory RC-SYS
Temperature: 22 °C
Humidity: 55 %
Voltage: 24 VDC

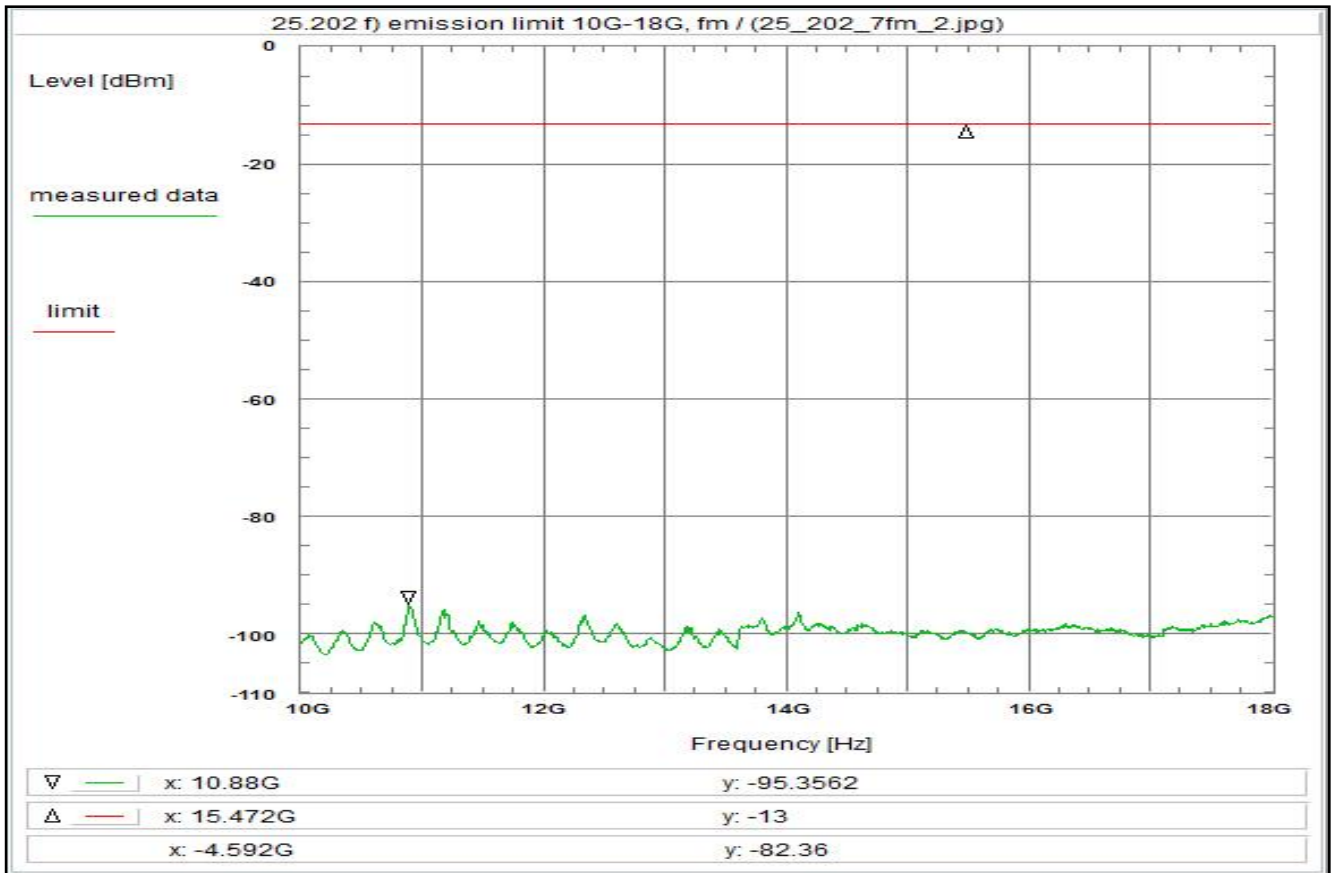
Setup of measurement equipment:
Start frequency: 10 GHz
Stop frequency: 18 GHz
Center frequency: 14 GHz
Frequency span: 8 GHz
Resolution-BW: 100 kHz
Video-BW: 1 MHz
Input attenuation: 0 dB
Trace-Mode: Max-Hold
Detector-Mode: Pos Peak

Correction:
Directional coupler + 0.0 dB
Coaxial cable (C220) + 2.7 dB
DUT-Antenna (on-axis) + 10.4 dBi
Test antenna + 0.0 dB
BW correction factor (100k -> 4k) - 14.0 dB
Atten. between HPA and feedhorn + 0.0 dB
(FHPF) + 12.5 dB
TOTAL CORRECTION: + 11.6 dB

Remarks:
Carrier-on state / Carrier in the middle of the band (fm)

Peak Detector

Plot No. 29



Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
Emission limitations
Modulated rf-carrier in the middle of the band (fm)

Limit:

Limit according to 25.202 f):

50-100% of assigned bw: -25dBc/4kHz
100-250% of assigned bw: -35dBc/4kHz
> 250% of assigned bw: $-43+10\log(P_{max})\text{dBc}/4\text{kHz} = -43 \text{ dBW}$
The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the above schedule.

Test results:

see plot (an explicit table was not generated)

Operating condition of DUT:

operating condition 1, see test report chapter 5.2
Mode TCH_2C8A, fm

Test setup:

see test report chapter 6.2

Test equipment:

see test report chapter 6.1 - 6.2: C220, C220, FHPF, R001

Remark:

Test result: Test passed

Environment condition:

Date & Time: Wed 10/Jun/2020 16:04:36
Location: CTC advanced GmbH, Laboratory RC-SYS
Temperature: 22 °C
Humidity: 55 %
Voltage: 24 VDC

Setup of measurement equipment:

Start frequency: 10 GHz
Stop frequency: 18 GHz
Center frequency: 14 GHz
Frequency span: 8 GHz
Resolution-BW: 100 kHz
Video-BW: 10 kHz
Input attenuation: 0 dB
Trace-Mode: Max-Hold
Detector-Mode: AVG

Correction:

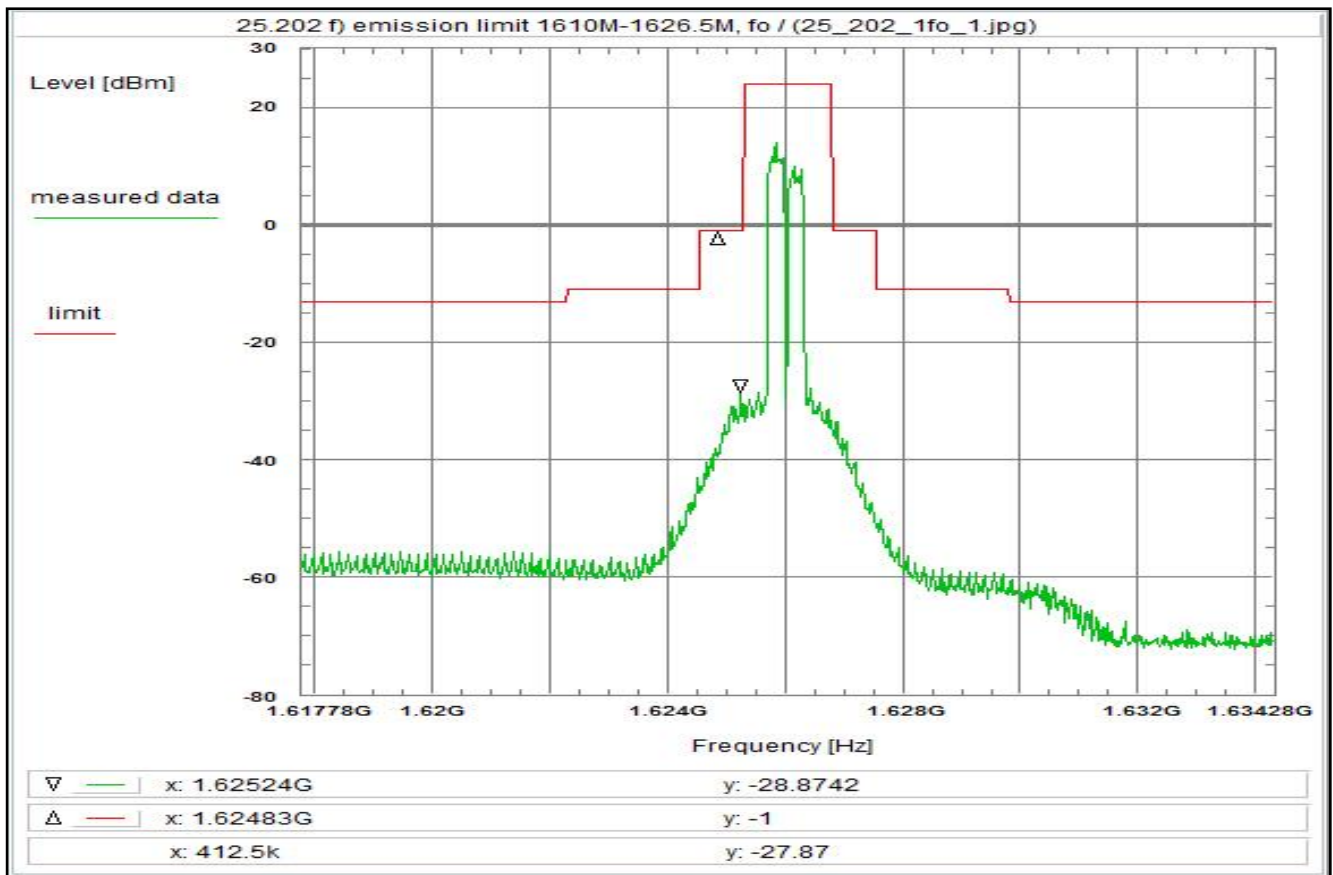
Directional coupler + 0.0 dB
Coaxial cable (C220) + 2.7 dB
DUT-Antenna (on-axis) + 10.4 dBi
Test antenna + 0.0 dB
BW correction factor (100k -> 4k) - 14.0 dB
Atten. between HPA and feedhorn + 0.0 dB
(FHPF) + 12.5 dB
TOTAL CORRECTION: + 11.6 dB

Remarks:

Carrier-on state / Carrier in the middle of the band (fm)

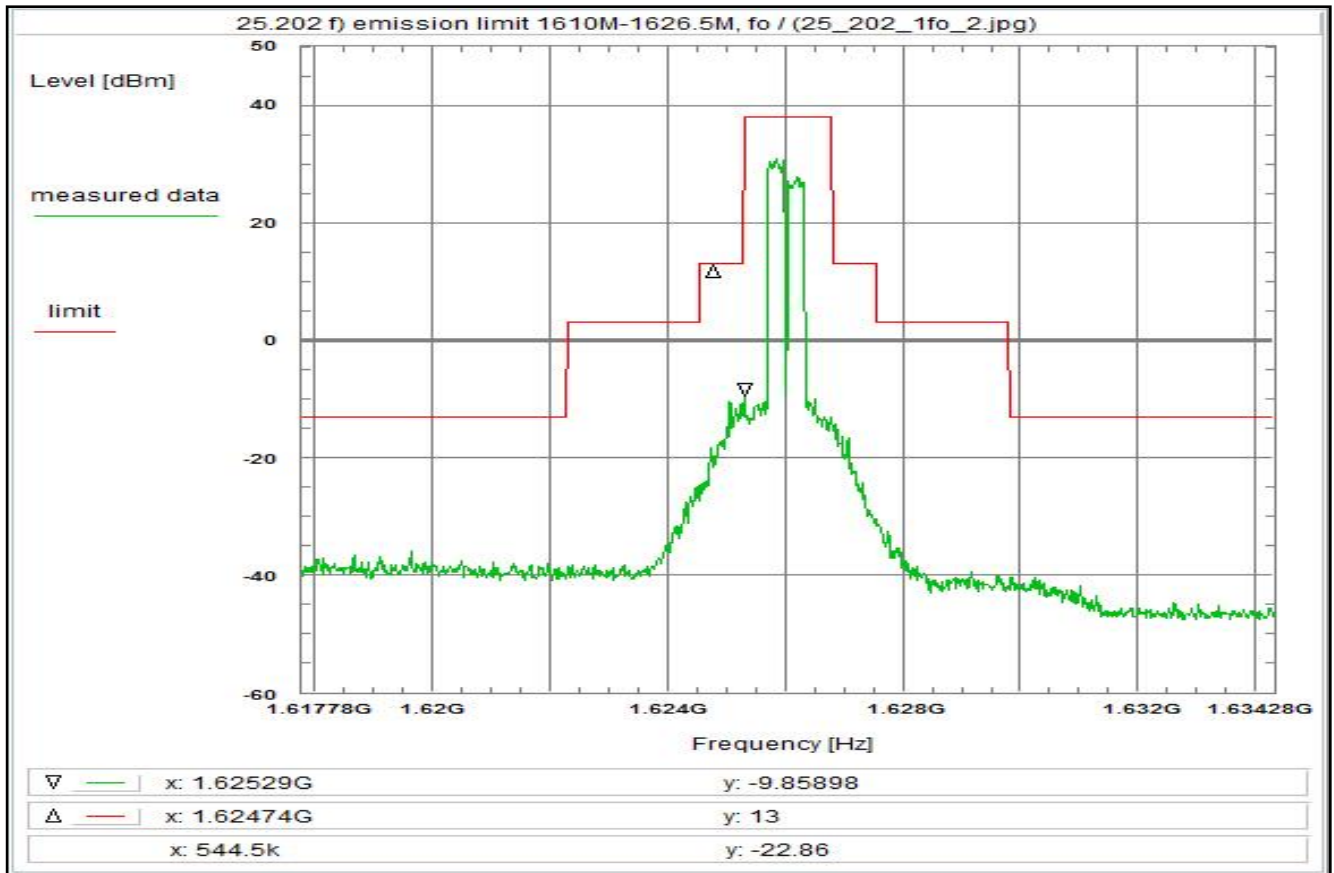
RMS Detector

Plot No. 30



<p>Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations Emission limitations Modulated rf-carrier at the upper edge of the band (fh)</p> <p>Limit: <u>Limit according to 25.202 f):</u> 50-100% of assigned bw: -25dBc/4kHz 100-250% of assigned bw: -35dBc/4kHz > 250% of assigned bw: -43+10log(Pmax)dBc/4kHz = -43 dBW The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the above schedule.</p> <p>Test results: see plot (an explicit table was not generated)</p> <p>Operating condition of DUT: operating condition 1, see test report chapter 5.2 Modulation TCH_2C8A, fh</p> <p>Test setup: see test report chapter 6.2</p> <p>Test equipment: see test report chapter 6.1 - 6.2: C220, R001, U005 + POWER SPLITTER</p> <p>Remark:</p> <p>Test result: Test passed</p>	<p>Environment condition: Date & Time: Mon 08/Jun/2020 15:25:46 Location: CTC advanced GmbH, Laboratory RC-SYS Temperature: 22 °C Humidity: 55 % Voltage: 24 VDC</p> <p>Setup of measurement equipment: Start frequency: 1.61778 GHz Stop frequency: 1.63428 GHz Center frequency: 1.62603 GHz Frequency span: 16.5 MHz Resolution-BW: 10 kHz Video-BW: 1 kHz Input attenuation: 12 dB Trace-Mode: Max-Hold Detector-Mode: AVG</p> <p>Correction: Directional coupler + 0.0 dB Coaxial cable + 0.0 dB DUT-Antenna (on-axis) + 10.4 dBi Test antenna + 0.0 dB BW correction factor (10k -> 4k) - 4.0 dB Atten. between HPA and feedhorn + 0.0 dB (U005 + POWER SPLITTER) + 37.6 dB TOTAL CORRECTION: + 44.0 dB</p> <p>Remarks: Carrier-on state / Carrier at the upper edge of the band (fo)</p> <p>RMS detector</p>
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Plot No. 31



Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
Emission limitations
Modulated rf-carrier at the upper edge of the band (fo)

Limit:
Limit according to 25.202 f):
50-100% of assigned bw: -25dBc/4kHz
100-250% of assigned bw: -35dBc/4kHz
> 250% of assigned bw: -43+10log(Pmax)dBc/4kHz = -43 dBW
The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the above schedule.

Test results:
see plot (an explicit table was not generated)

Operating condition of DUT:
operating condition 1, see test report chapter 5.2
Modulation TCH_2C8A, fh

Test setup:
see test report chapter 6.2

Test equipment:
see test report chapter 6.1 - 6.2: C220, R001

Remark:

Test result: Test passed

Environment condition:
Date & Time: Mon 08/Jun/2020 15:29:30
Location: CTC advanced GmbH, Laboratory RC-SYS
Temperature: 22 °C
Humidity: 55 %
Voltage: 24 VDC

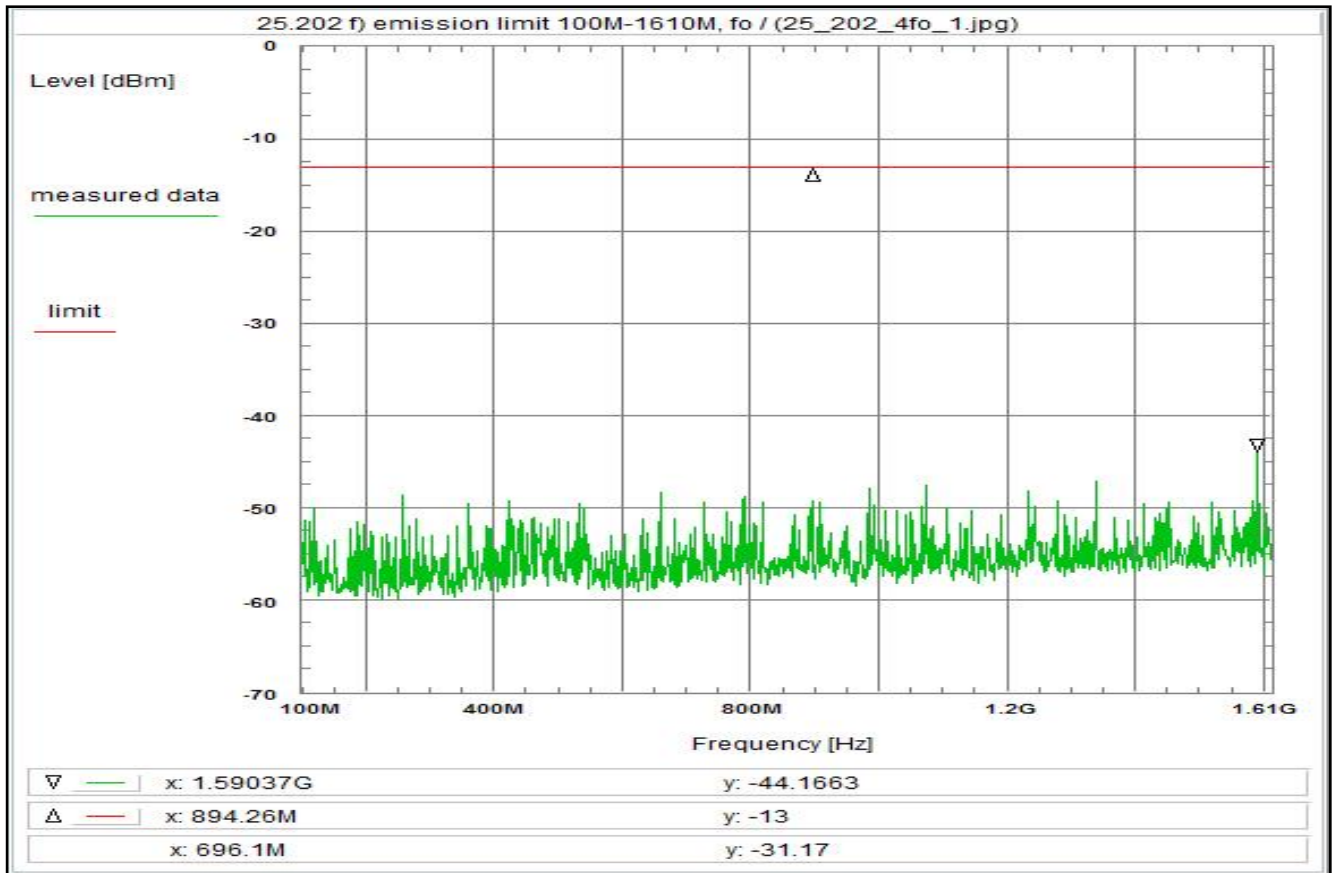
Setup of measurement equipment:
Start frequency: 1.61778 GHz
Stop frequency: 1.63428 GHz
Center frequency: 1.62603 GHz
Frequency span: 16.5 MHz
Resolution-BW: 10 kHz
Video-BW: 100 kHz
Input attenuation: 12 dB
Trace-Mode: Max-Hold
Detector-Mode: Pos Peak

Correction:
Directional coupler + 0.0 dB
Coaxial cable + 0.0 dB
DUT-Antenna (on-axis) + 10.4 dBi
Test antenna + 0.0 dB
BW correction factor (10k -> 4k) - 4.0 dB
Atten. between HPA and feedhorn + 0.0 dB
(U005 + POWER SPLITTER) + 37.6 dB
TOTAL CORRECTION: + 44.0 dB

Remarks:
Carrier-on state / Carrier at the upper edge of the band (fo)

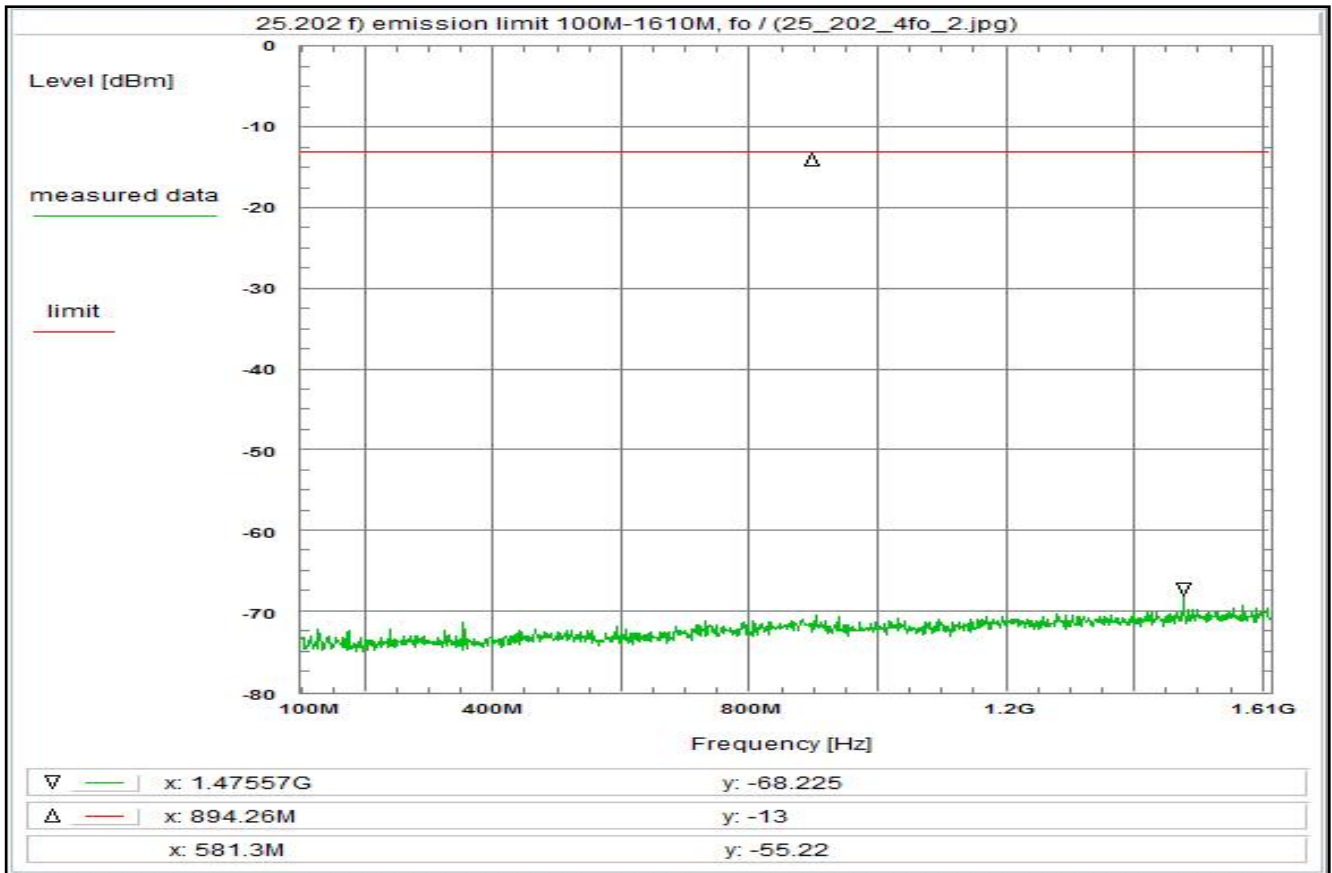
RMS detector

Plot No. 32



<p>Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations Emission limitations Modulated rf-carrier at the upper edge of the band (fh)</p> <p>Limit: <u>Limit according to 25.202 f):</u> 50-100% of assigned bw: -25dBc/4kHz 100-250% of assigned bw: -35dBc/4kHz > 250% of assigned bw: $-43+10\log(P_{max})\text{dBc}/4\text{kHz} = -43\text{ dBW}$ The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the above schedule.</p> <p>Test results: see plot (an explicit table was not generated)</p> <p>Operating condition of DUT: operating condition 1, see test report chapter 5.2 Modulation TCH_2C8A, fh</p> <p>Test setup: see test report chapter 6.2</p> <p>Test equipment: see test report chapter 6.1 - 6.2: C220, R001, U005 + POWER SPLITTER</p> <p>Remark:</p> <p>Test result: Test passed</p>	<p>Environment condition: Date & Time: Mon 08/Jun/2020 15:32:17 Location: CTC advanced GmbH, Laboratory RC-SYS Temperature: 22 °C Humidity: 55 % Voltage: 24 VDC</p> <p>Setup of measurement equipment: Start frequency: 100 MHz Stop frequency: 1.61 GHz Center frequency: 855 MHz Frequency span: 1.51 GHz Resolution-BW: 10 kHz Video-BW: 100 kHz Input attenuation: 12 dB Trace-Mode: Max-Hold Detector-Mode: Pos Peak</p> <p>Correction: Directional coupler + 0.0 dB Coaxial cable + 0.0 dB DUT-Antenna (on-axis) + 10.4 dBi Test antenna + 0.0 dB BW correction factor (10k -> 4k) - 4.0 dB Atten. between HPA and feedhorn + 0.0 dB (U005 + POWER SPLITTER) + 37.0 dB TOTAL CORRECTION: + 43.4 dB</p> <p>Remarks: Carrier-on state / Carrier at the upper edge of the band (fo)</p> <p>Peak detector</p>
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Plot No. 33



Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
Emission limitations
Modulated rf-carrier at the upper edge of the band (fh)

Limit:

Limit according to 25.202 f):

50-100% of assigned bw: -25dBc/4kHz
100-250% of assigned bw: -35dBc/4kHz
> 250% of assigned bw: $-43+10\log(P_{max})\text{dBc}/4\text{kHz} = -43 \text{ dBW}$
The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the above schedule.

Test results:

see plot (an explicit table was not generated)

Operating condition of DUT:

operating condition 1, see test report chapter 5.2
Modulation TCH_2C8A, fh

Test setup:

see test report chapter 6.2

Test equipment:

see test report chapter 6.1 - 6.2: C220, R001, U005 + POWER SPLITTER

Remark:

Test result: Test passed

Environment condition:

Date & Time: Mon 08/Jun/2020 15:35:40
Location: CTC advanced GmbH, Laboratory RC-SYS
Temperature: 22 °C
Humidity: 55 %
Voltage: 24 VDC

Setup of measurement equipment:

Start frequency: 100 MHz
Stop frequency: 1.61 GHz
Center frequency: 855 MHz
Frequency span: 1.51 GHz
Resolution-BW: 10 kHz
Video-BW: 1 kHz
Input attenuation: 12 dB
Trace-Mode: Max-Hold
Detector-Mode: AVG

Correction:

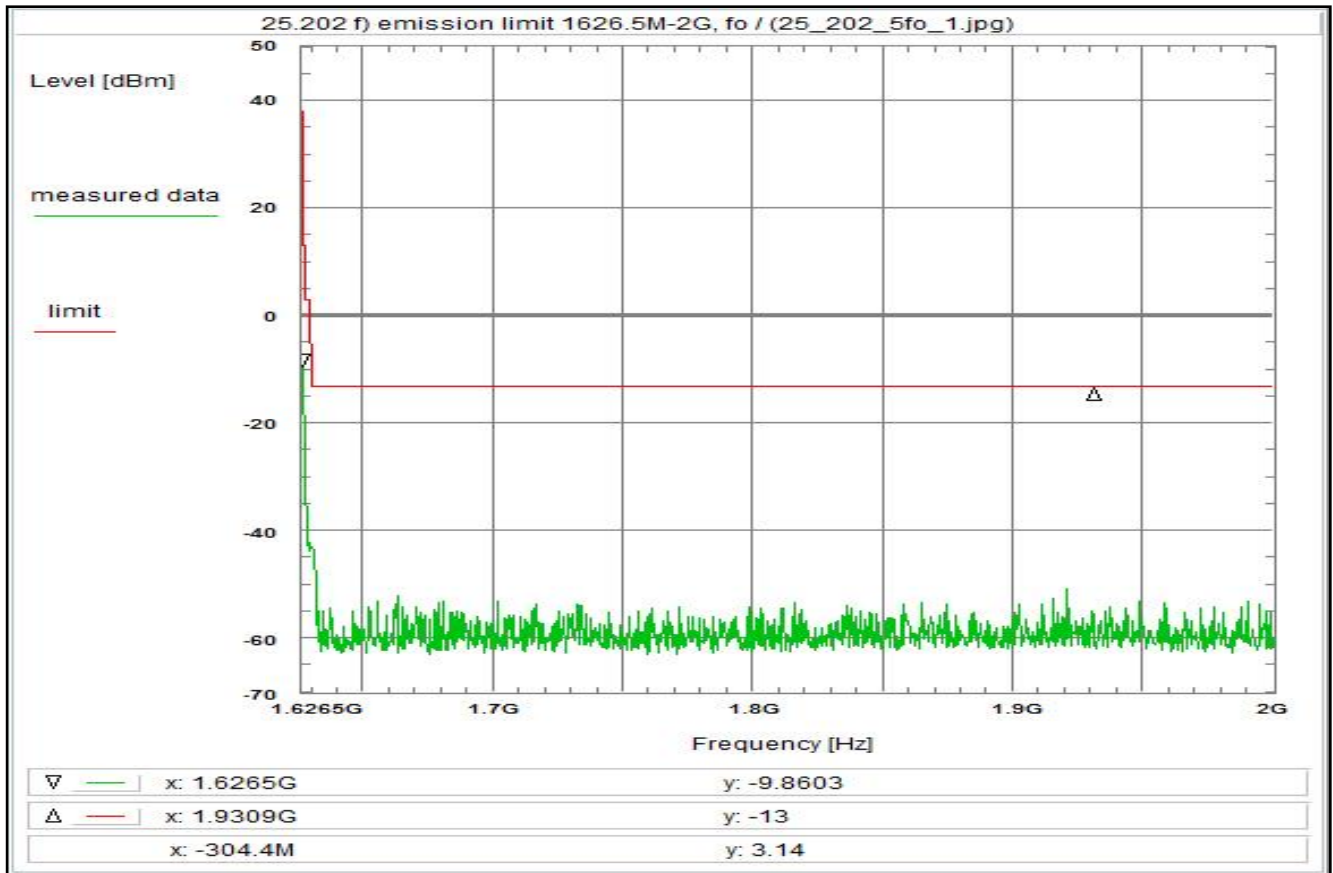
Directional coupler + 0.0 dB
Coaxial cable + 0.0 dB
DUT-Antenna (on-axis) + 10.4 dBi
Test antenna + 0.0 dB
BW correction factor (10k -> 4k) - 4.0 dB
Atten. between HPA and feedhorn + 0.0 dB
(U005 + POWER SPLITTER) + 37.0 dB
TOTAL CORRECTION: + 43.4 dB

Remarks:

Carrier-on state / Carrier at the upper edge of the band (fo)

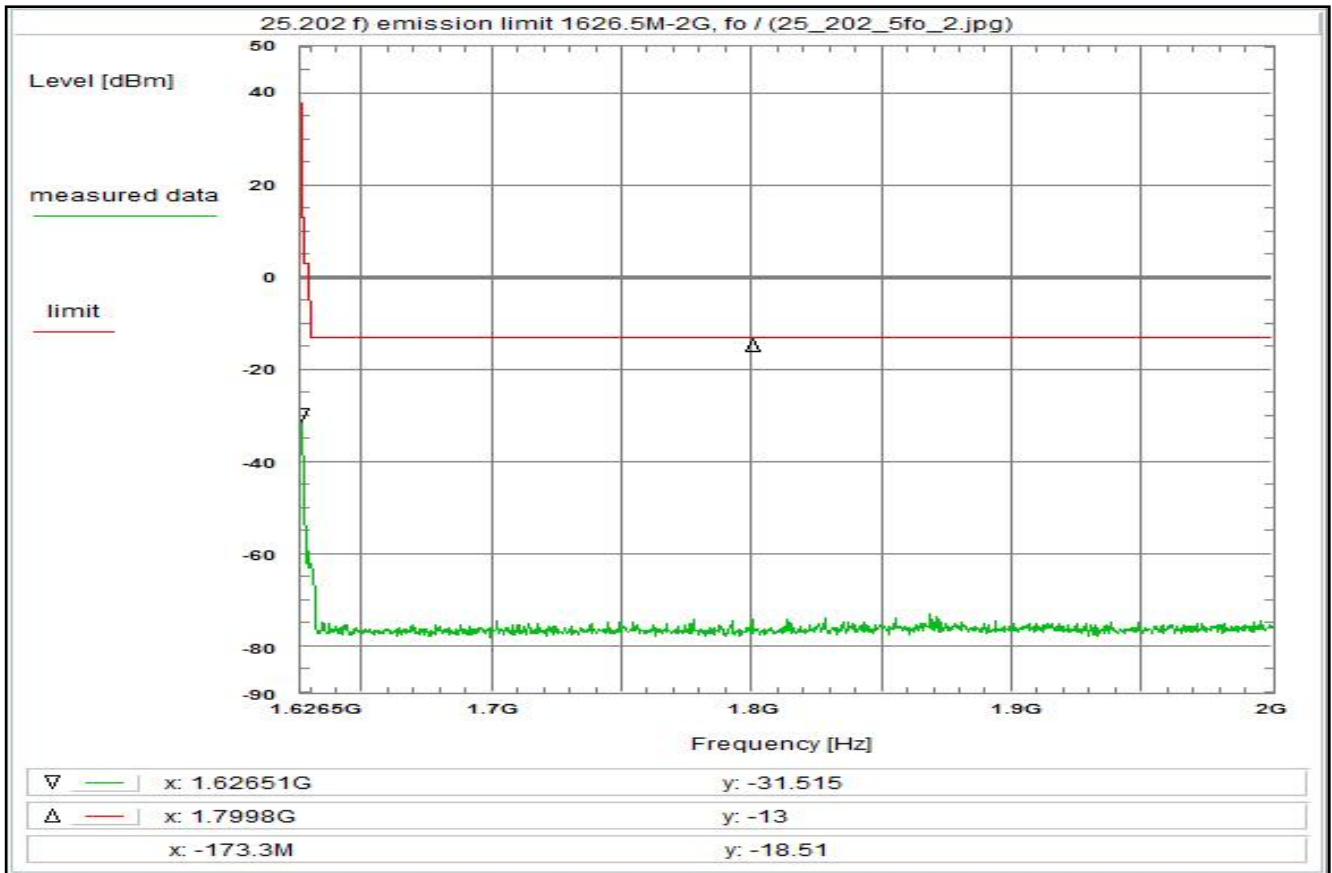
RMS detector

Plot No. 34



<p>Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations Emission limitations Modulated rf-carrier at the upper edge of the band (fo)</p> <p>Limit: <u>Limit according to 25.202 f):</u> 50-100% of assigned bw: -25dBc/4kHz 100-250% of assigned bw: -35dBc/4kHz > 250% of assigned bw: $-43+10\log(P_{max})\text{dBc}/4\text{kHz} = -43 \text{ dBW}$ The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the above schedule.</p> <p>Test results: see plot (an explicit table was not generated)</p> <p>Operating condition of DUT: operating condition 1, see test report chapter 5.2 Modulation TCH_2C8A, fh</p> <p>Test setup: see test report chapter 6.2</p> <p>Test equipment: see test report chapter 6.1 - 6.2: C220, R001, U005 + POWER SPLITTER</p> <p>Remark:</p> <p>Test result: Test passed</p>	<p>Environment condition: Date & Time: Mon 08/Jun/2020 15:41:52 Location: CTC advanced GmbH, Laboratory RC-SYS Temperature: 22 °C Humidity: 55 % Voltage: 24 VDC</p> <p>Setup of measurement equipment: Start frequency: 1.6265 GHz Stop frequency: 2 GHz Center frequency: 1.81325 GHz Frequency span: 373.5 MHz Resolution-BW: 10 kHz Video-BW: 100 kHz Input attenuation: 6 dB Trace-Mode: Max-Hold Detector-Mode: Pos Peak</p> <p>Correction: Directional coupler + 0.0 dB Coaxial cable + 0.0 dB DUT-Antenna (on-axis) + 10.4 dBi Test antenna + 0.0 dB BW correction factor (10k -> 4k) - 4.0 dB Atten. between HPA and feedhorn + 0.0 dB (U005 + POWER SPLITTER) + 37.7 dB TOTAL CORRECTION: + 44.1 dB</p> <p>Remarks: Carrier-on state / Carrier at the upper edge of the band (fo)</p> <p>Peak detector Marker shows the wanted signal</p>
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Plot No. 35



Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
Emission limitations
Modulated rf-carrier at the upper edge of the band (fh)

Limit:

Limit according to 25.202 f):

50-100% of assigned bw: -25dBc/4kHz
100-250% of assigned bw: -35dBc/4kHz
> 250% of assigned bw: $-43+10\log(P_{max})\text{dBc}/4\text{kHz} = -43 \text{ dBW}$
The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the above schedule.

Test results:

see plot (an explicit table was not generated)

Operating condition of DUT:

operating condition 1, see test report chapter 5.2
Modulation TCH_2C8A, fh

Test setup:

see test report chapter 6.2

Test equipment:

see test report chapter 6.1 - 6.2: C220, R001, U005 + POWER SPLITTER

Remark:

Test result: Test passed

Environment condition:

Date & Time: Mon 08/Jun/2020 15:45:11
Location: CTC advanced GmbH, Laboratory RC-SYS
Temperature: 22 °C
Humidity: 55 %
Voltage: 24 VDC

Setup of measurement equipment:

Start frequency: 1.6265 GHz
Stop frequency: 2 GHz
Center frequency: 1.81325 GHz
Frequency span: 373.5 MHz
Resolution-BW: 10 kHz
Video-BW: 1 kHz
Input attenuation: 6 dB
Trace-Mode: Max-Hold
Detector-Mode: AVG

Correction:

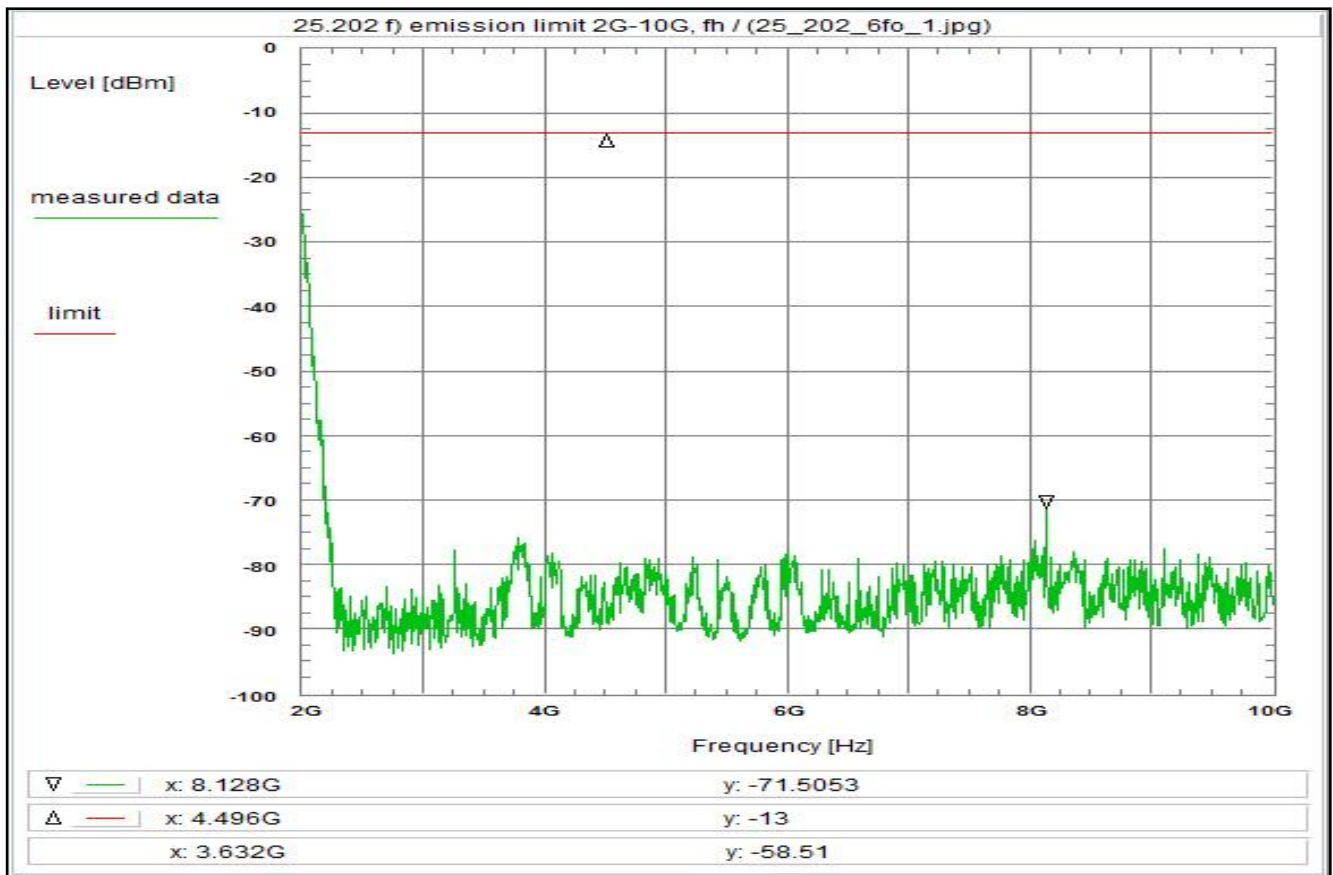
Directional coupler + 0.0 dB
Coaxial cable + 0.0 dB
DUT-Antenna (on-axis) + 10.4 dBi
Test antenna + 0.0 dB
BW correction factor (10k -> 4k) - 4.0 dB
Atten. between HPA and feedhorn + 0.0 dB
(U005 + POWER SPLITTER) + 37.7 dB
TOTAL CORRECTION: + 44.1 dB

Remarks:

Carrier-on state / Carrier at the upper edge of the band (fo)

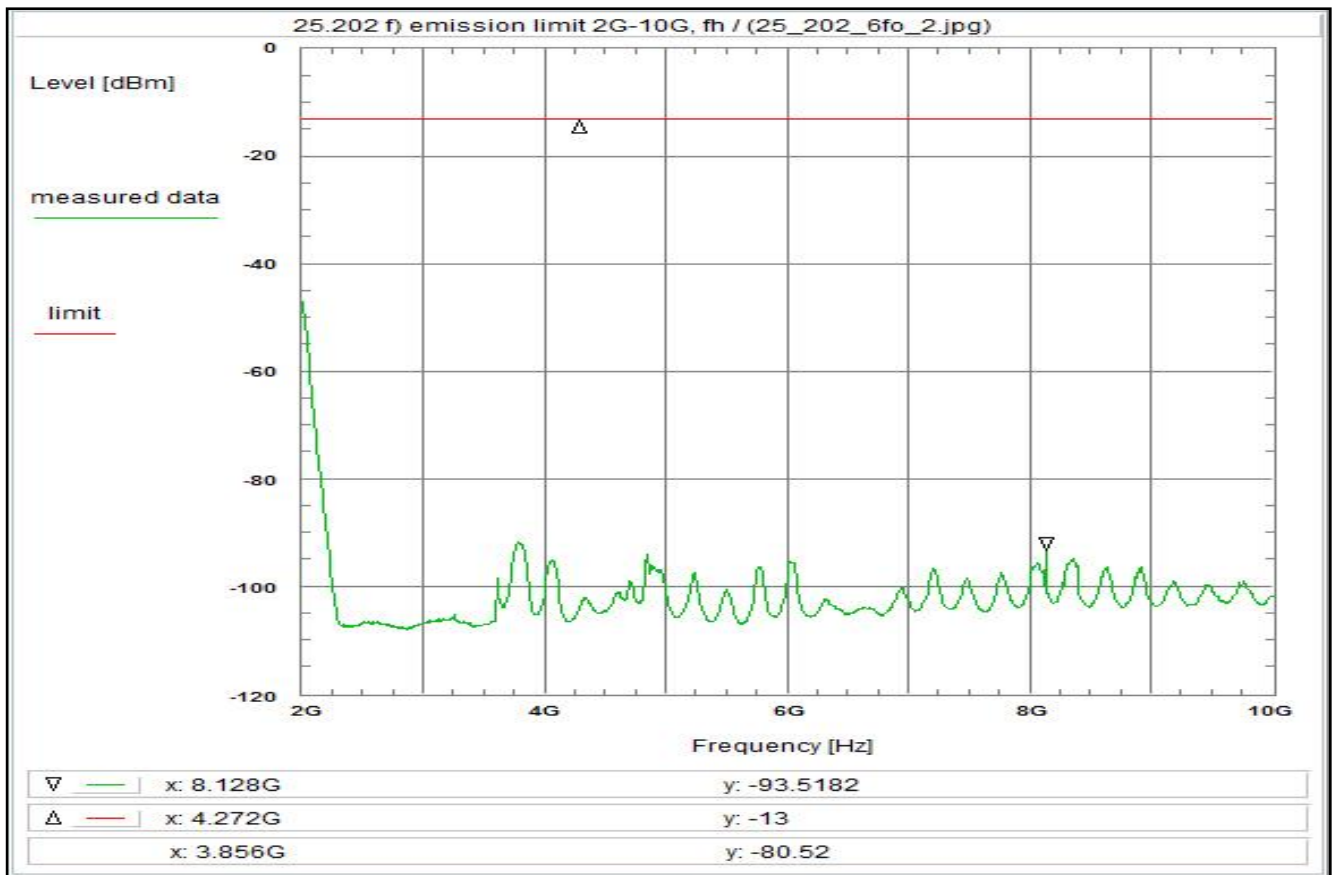
RMS detector
Marker shows the wanted signal

Plot No. 36



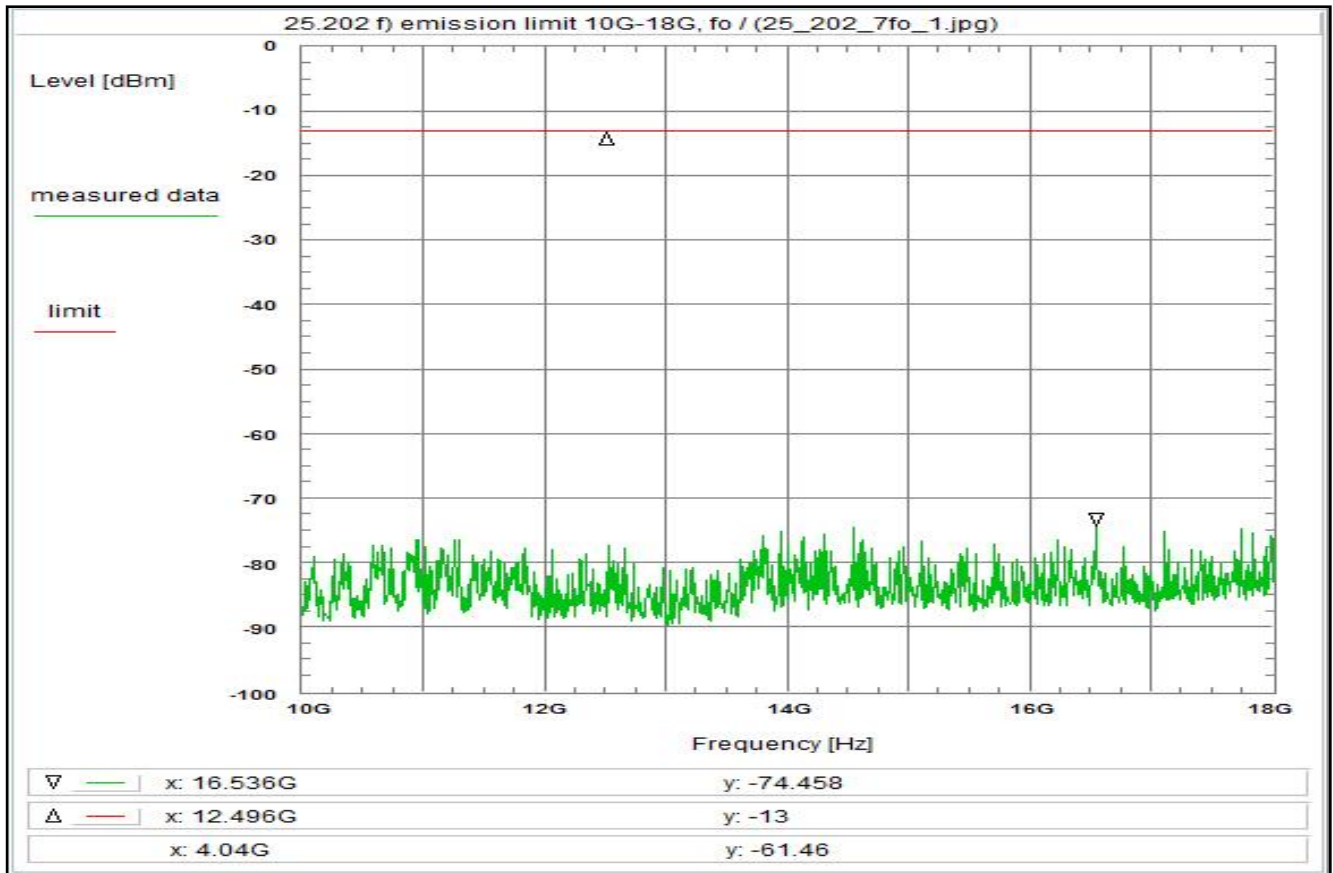
<p>Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations Emission limitations Modulated rf-carrier at the upper edge of the band (fh)</p> <p>Limit: <u>Limit according to 25.202 f):</u> 50-100% of assigned bw: -25dBc/4kHz 100-250% of assigned bw: -35dBc/4kHz > 250% of assigned bw: $-43+10\log(P_{max})\text{dBc}/4\text{kHz} = -43\text{ dBW}$ The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the above schedule.</p> <p>Test results: see plot (an explicit table was not generated)</p> <p>Operating condition of DUT: operating condition 1, see test report chapter 5.2 Mode TCH_2C8A, fh</p> <p>Test setup: see test report chapter 6.2</p> <p>Test equipment: see test report chapter 6.1 - 6.2: C220, C220, FHPF, R001</p> <p>Remark:</p> <p>Test result: Test passed</p>	<p>Environment condition: Date & Time: Wed 10/Jun/2020 15:45:50 Location: CTC advanced GmbH, Laboratory RC-SYS Temperature: 22 °C Humidity: 55 % Voltage: 24 VDC</p> <p>Setup of measurement equipment: Start frequency: 2 GHz Stop frequency: 10 GHz Center frequency: 6 GHz Frequency span: 8 GHz Resolution-BW: 100 kHz Video-BW: 1 MHz Input attenuation: 0 dB Trace-Mode: Max-Hold Detector-Mode: Pos Peak</p> <p>Correction: Directional coupler + 0.0 dB Coaxial cable (C220) + 1.7 dB DUT-Antenna (on-axis) + 10.4 dBi Test antenna + 0.0 dB BW correction factor (100k -> 4k) - 14.0 dB Atten. between HPA and feedhorn + 0.0 dB (FHPF) + 12.5 dB TOTAL CORRECTION: + 10.6 dB</p> <p>Remarks: Carrier-on state / Carrier at the upper edge of the band (fo)</p> <p>Peak Detector Rather left the plot show the behaviour of the HPF</p>
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Plot No. 37



<p>Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations Emission limitations Modulated rf-carrier at the upper edge of the band (fh)</p> <p>Limit: <u>Limit according to 25.202 f):</u> 50-100% of assigned bw: -25dBc/4kHz 100-250% of assigned bw: -35dBc/4kHz > 250% of assigned bw: $-43+10\log(P_{max})dBc/4kHz = -43$ dBW The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the above schedule.</p> <p>Test results: see plot (an explicit table was not generated)</p> <p>Operating condition of DUT: operating condition 1, see test report chapter 5.2 Mode TCH_2C8A, fh</p> <p>Test setup: see test report chapter 6.2</p> <p>Test equipment: see test report chapter 6.1 - 6.2: C220, C220, FHPF, R001</p> <p>Remark:</p> <p>Test result: Test passed</p>	<p>Environment condition: Date & Time: Wed 10/Jun/2020 15:51:26 Location: CTC advanced GmbH, Laboratory RC-SYS Temperature: 22 °C Humidity: 55 % Voltage: 24 VDC</p> <p>Setup of measurement equipment: Start frequency: 2 GHz Stop frequency: 10 GHz Center frequency: 6 GHz Frequency span: 8 GHz Resolution-BW: 100 kHz Video-BW: 10 kHz Input attenuation: 0 dB Trace-Mode: Max-Hold Detector-Mode: AVG</p> <p>Correction: Directional coupler + 0.0 dB Coaxial cable (C220) + 1.7 dB DUT-Antenna (on-axis) + 10.4 dBi Test antenna + 0.0 dB BW correction factor (100k -> 4k) - 14.0 dB Atten. between HPA and feedhorn + 0.0 dB (FHPF) + 12.5 dB TOTAL CORRECTION: + 10.6 dB</p> <p>Remarks: Carrier-on state / Carrier at the upper edge of the band (fo)</p> <p>RMS Detector Rather left the plot show the behaviour of the HPF</p>
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Plot No. 38



Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
Emission limitations
Modulated rf-carrier at the upper edge of the band (fo)

Limit:
Limit according to 25.202 f):
50-100% of assigned bw: -25dBc/4kHz
100-250% of assigned bw: -35dBc/4kHz
> 250% of assigned bw: $-43+10\log(P_{max})\text{dBc}/4\text{kHz} = -43\text{ dBW}$
The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the above schedule.

Test results:
see plot (an explicit table was not generated)

Operating condition of DUT:
operating condition 1, see test report chapter 5.2
Mode TCH_2C8A, fh

Test setup:
see test report chapter 6.2

Test equipment:
see test report chapter 6.1 - 6.2: C220, C220, FHPF, R001

Remark:

Test result: Test passed

Environment condition:
Date & Time: Wed 10/Jun/2020 15:55:20
Location: CTC advanced GmbH, Laboratory RC-SYS
Temperature: 22 °C
Humidity: 55 %
Voltage: 24 VDC

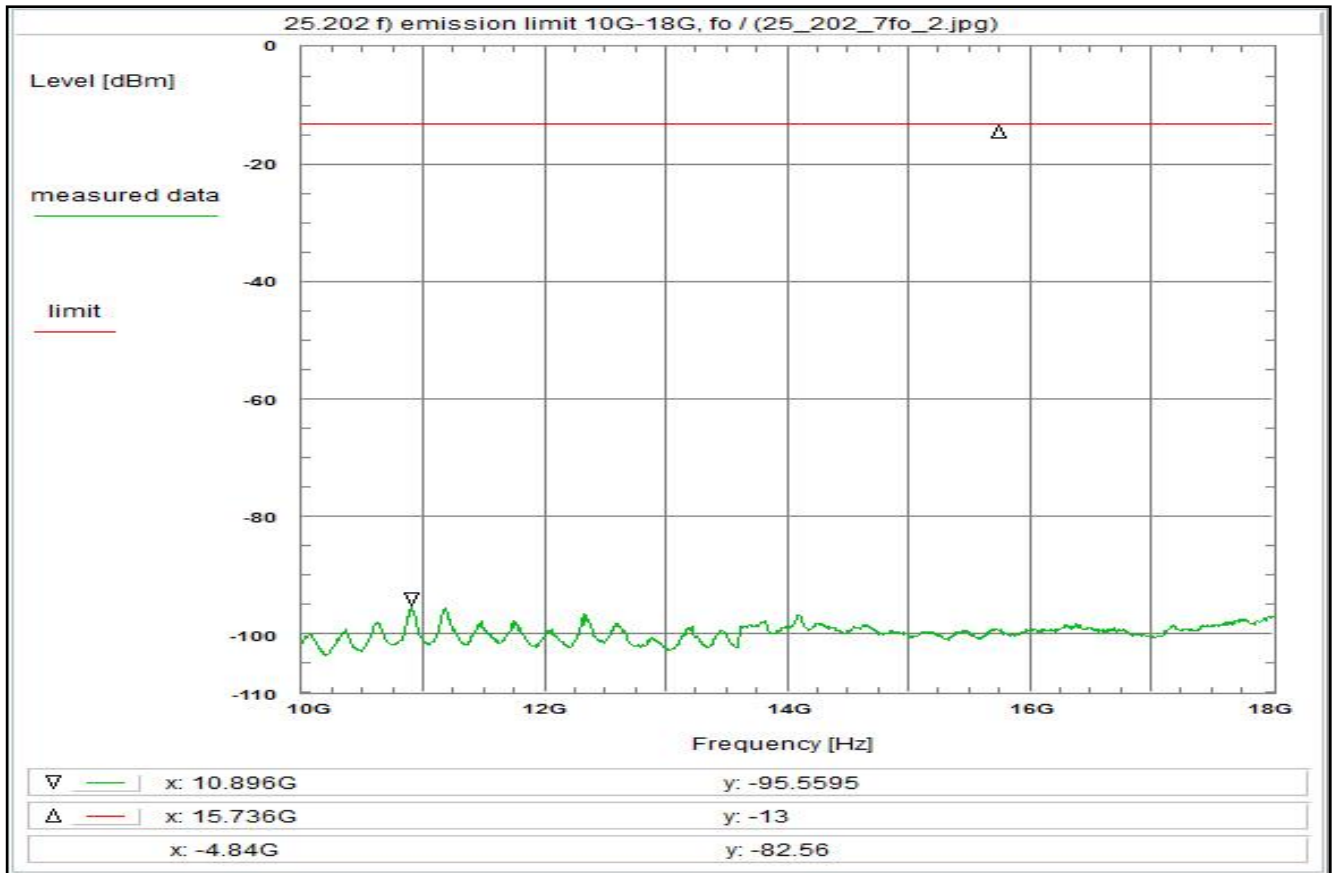
Setup of measurement equipment:
Start frequency: 10 GHz
Stop frequency: 18 GHz
Center frequency: 14 GHz
Frequency span: 8 GHz
Resolution-BW: 100 kHz
Video-BW: 1 MHz
Input attenuation: 0 dB
Trace-Mode: Max-Hold
Detector-Mode: Pos Peak

Correction:
Directional coupler + 0.0 dB
Coaxial cable (C220) + 2.7 dB
DUT-Antenna (on-axis) + 10.4 dBi
Test antenna + 0.0 dB
BW correction factor (100k -> 4k) - 14.0 dB
Atten. between HPA and feedhorn + 0.0 dB
(FHPF) + 12.5 dB
TOTAL CORRECTION: + 11.6 dB

Remarks:
Carrier-on state / Carrier at the upper edge of the band (fo)

Peak Detector

Plot No. 39



Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
Emission limitations
Modulated rf-carrier at the upper edge of the band (fo)

Limit:
Limit according to 25.202 f):
50-100% of assigned bw: -25dBc/4kHz
100-250% of assigned bw: -35dBc/4kHz
> 250% of assigned bw: $-43+10\log(P_{max})\text{dBc}/4\text{kHz} = -43 \text{ dBW}$
The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the above schedule.

Test results:
see plot (an explicit table was not generated)

Operating condition of DUT:
operating condition 1, see test report chapter 5.2
Mode TCH_2C8A, fh

Test setup:
see test report chapter 6.2

Test equipment:
see test report chapter 6.1 - 6.2: C220, C220, FHPF, R001

Remark:

Test result: Test passed

Environment condition:
Date & Time: Wed 10/Jun/2020 15:58:21
Location: CTC advanced GmbH, Laboratory RC-SYS
Temperature: 22 °C
Humidity: 55 %
Voltage: 24 VDC

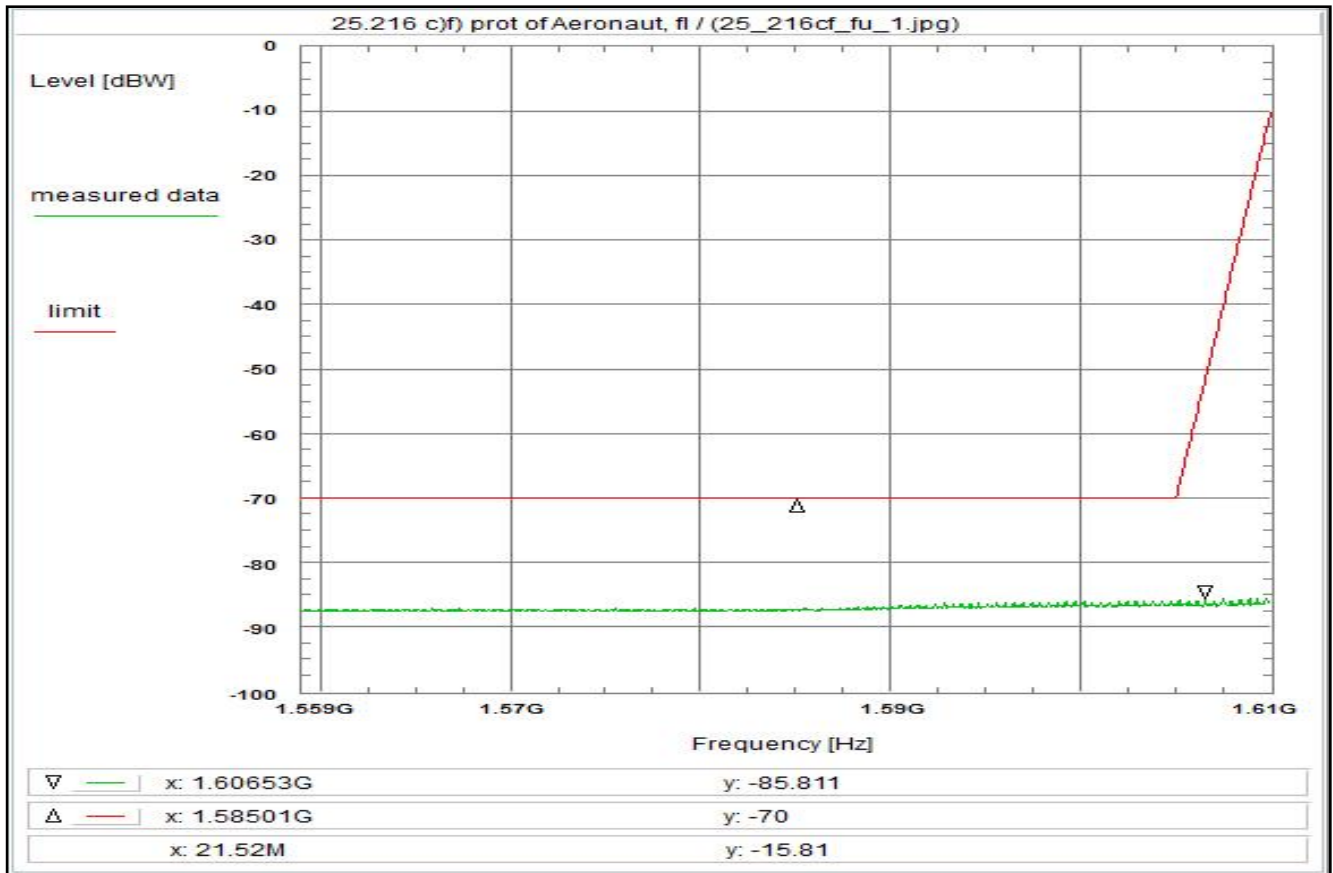
Setup of measurement equipment:
Start frequency: 10 GHz
Stop frequency: 18 GHz
Center frequency: 14 GHz
Frequency span: 8 GHz
Resolution-BW: 100 kHz
Video-BW: 10 kHz
Input attenuation: 0 dB
Trace-Mode: Max-Hold
Detector-Mode: AVG

Correction:
Directional coupler + 0.0 dB
Coaxial cable (C220) + 2.7 dB
DUT-Antenna (on-axis) + 10.4 dBi
Test antenna + 0.0 dB
BW correction factor (100k -> 4k) - 14.0 dB
Atten. between HPA and feedhorn + 0.0 dB
(FHPF) + 12.5 dB
TOTAL CORRECTION: + 11.6 dB

Remarks:
Carrier-on state / Carrier at the upper edge of the band (fo)

RMS Detector

Plot No. 40



Subclause: 25.216 g) Limits on emissions from mobile earth stations for protection of aeronautical radionavigation-satellite service
Carrier-on state, modulated carrier at the lower edge of the band (fu)
Conducted measurement at the antenna-connector

Limit:

Limit according to 25.216 g):

1559.0 - 1605.0MHz: -70dBW/1MHz

1605.0 - 1610MHz: -70 to -10dBW/1MHz (linear interpolated)

The EIRP, averaged over any two-millisecond active transmission interval from the MESSs in the carrier-on state shall not exceed the limits above.

Test results:

see plot (an explicit table was not generated)

Operating condition of DUT:

operating condition 1, see test report chapter 5.2

Modulation TCH_2C8A, fl

Test setup:

see test report chapter 6.2

Test equipment:

see test report chapter 6.1 - 6.2: C220, R001, U005 + POWER SPLITTER

Remark:

Test result: Test passed

Environment condition:

Date & Time: Mon 08/Jun/2020 16:08:21
Location: CTC advanced GmbH, Laboratory RC-SYS
Temperature: 22 °C
Humidity: 55 %
Voltage: 24 VDC

Setup of measurement equipment:

Start frequency: 1.559 GHz
Stop frequency: 1.61 GHz
Center frequency: 1.5845 GHz
Frequency span: 51 MHz
Resolution-BW: 1 MHz
Video-BW: 100 kHz
Input attenuation: 2 dB
Trace-Mode: Clear Write
Detector-Mode: AVG

Correction:

Directional coupler + 0.0 dB
Coaxial cable + 0.0 dB
DUT-Antenna (on-axis) + 10.4 dBi
Test antenna + 0.0 dB
BW correction factor + 0.0 dB
Atten. between HPA and feedhorn + 0.0 dB
(U005 + POWER SPLITTER) + 37.5 dB
TOTAL CORRECTION: + 47.9 dB

Remarks:

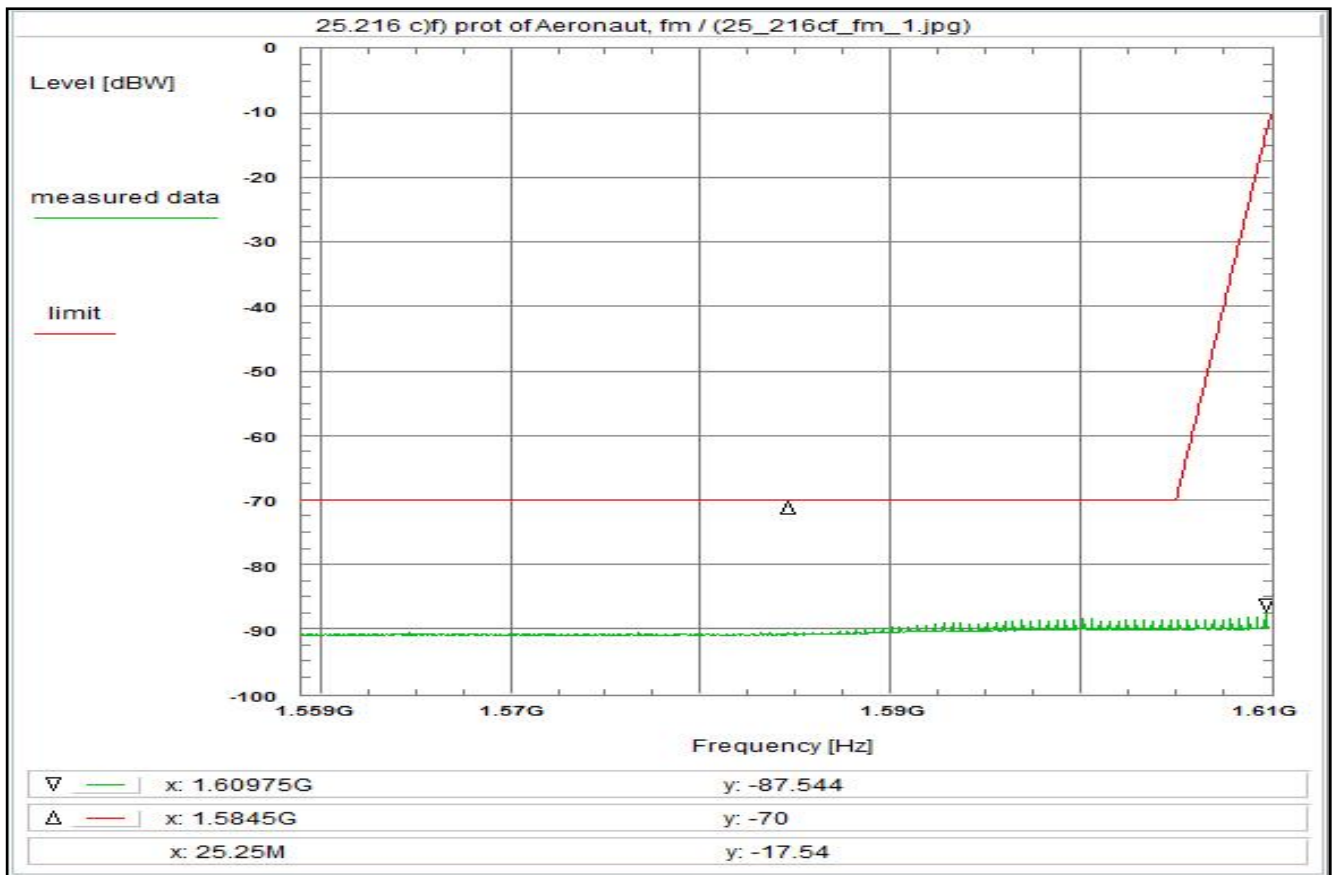
Carrier-on state / Carrier at the lower edge of the band (fu)
Measurement with 1 MHz resolution/video filter and RMS Detector.

For EIRP calculation:

'worst-case' = maximum antenna gain

RMS detector

Plot No. 41



Subclause: 25.216 g) Limits on emissions from mobile earth stations for protection of aeronautical radionavigation-satellite service
Carrier-on state, modulated carrier in the middle of the band (fm)
Conducted measurement at the antenna-connector

Limit:

Limit according to 25.216 g):

1559.0 - 1605.0MHz: -70dBW/1MHz

1605.0 - 1610MHz: -70 to -10dBW/1MHz (linear interpolated)

The EIRP, averaged over any two-millisecond active transmission interval from the MESSs in the carrier-on state shall not exceed the limits above.

Test results:

see plot (an explicit table was not generated)

Operating condition of DUT:

operating condition 1, see test report chapter 5.2

Modulation TCH_2C8A, fm

Test setup:

see test report chapter 6.2:

Test equipment:

see test report chapter 6.1 - 6.2: C220, R001, U005 + POWER SPLITTER

Remark:

Test result: Test passed

Environment condition:

Date & Time: Mon 08/Jun/2020 16:04:57
Location: CTC advanced GmbH, Laboratory RC-SYS
Temperature: 22 °C
Humidity: 55 %
Voltage: 24 VDC

Setup of measurement equipment:

Start frequency: 1.559 GHz
Stop frequency: 1.61 GHz
Center frequency: 1.5845 GHz
Frequency span: 51 MHz
Resolution-BW: 1 MHz
Video-BW: 100 kHz
Input attenuation: 0 dB
Trace-Mode: Max-Hold
Detector-Mode: AVG

Correction:

Directional coupler + 0.0 dB
Coaxial cable + 0.0 dB
DUT-Antenna (on-axis) + 10.4 dBi
Test antenna + 0.0 dB
BW correction factor + 0.0 dB
Atten. between HPA and feedhorn + 0.0 dB
(U005 + POWER SPLITTER) + 37.5 dB
TOTAL CORRECTION: + 47.9 dB

Remarks:

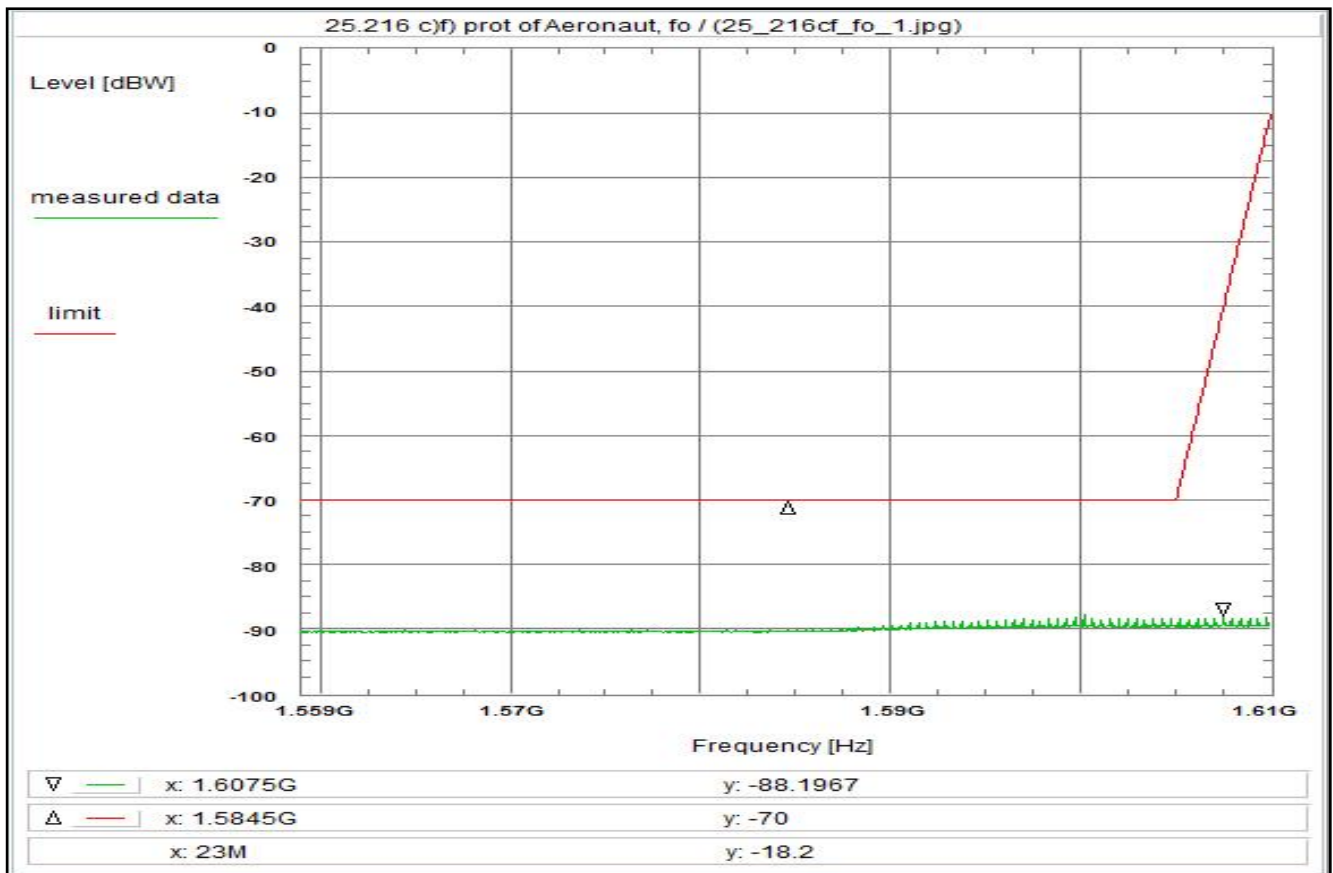
Carrier-on state / Carrier in the middle of the band (fm)
Measurement with 1 MHz resolution/video filter and RMS Detector.

For EIRP calculation:

'worst-case' = maximum antenna gain

RMS detector

Plot No. 42



Subclause: 25.216 g) Limits on emissions from mobile earth stations for protection of aeronautical radionavigation-satellite service
Carrier-on state, modulated carrier at the upper edge of the band (fo)
Conducted measurement at the antenna-connector

Limit:

Limit according to 25.216 g):

1559.0 - 1605.0MHz: -70dBW/1MHz

1605.0 - 1610MHz: -70 to -10dBW/1MHz (linear interpolated)

The EIRP, averaged over any two-millisecond active transmission interval from the MESSs in the carrier-on state shall not exceed the limits above.

Test results:

see plot (an explicit table was not generated)

Operating condition of DUT:

operating condition 1, see test report chapter 5.2

Modulation TCH_2C8A, fh

Test setup:

see test report chapter 6.2

Test equipment:

see test report chapter 6.1 - 6.2: C220, R001, U005 + POWER SPLITTER

Remark:

Test result: Test passed

Environment condition:

Date & Time: Mon 08/Jun/2020 16:02:17
Location: CTC advanced GmbH, Laboratory RC-SYS
Temperature: 22 °C
Humidity: 55 %
Voltage: 24 VDC

Setup of measurement equipment:

Start frequency: 1.559 GHz
Stop frequency: 1.61 GHz
Center frequency: 1.5845 GHz
Frequency span: 51 MHz
Resolution-BW: 1 MHz
Video-BW: 100 kHz
Input attenuation: 0 dB
Trace-Mode: Max-Hold
Detector-Mode: AVG

Correction:

Directional coupler + 0.0 dB
Coaxial cable + 0.0 dB
DUT-Antenna (on-axis) + 10.4 dBi
Test antenna + 0.0 dB
BW correction factor + 0.0 dB
Atten. between HPA and feedhorn + 0.0 dB
(U005 + POWER SPLITTER) + 37.5 dB
TOTAL CORRECTION: + 47.9 dB

Remarks:

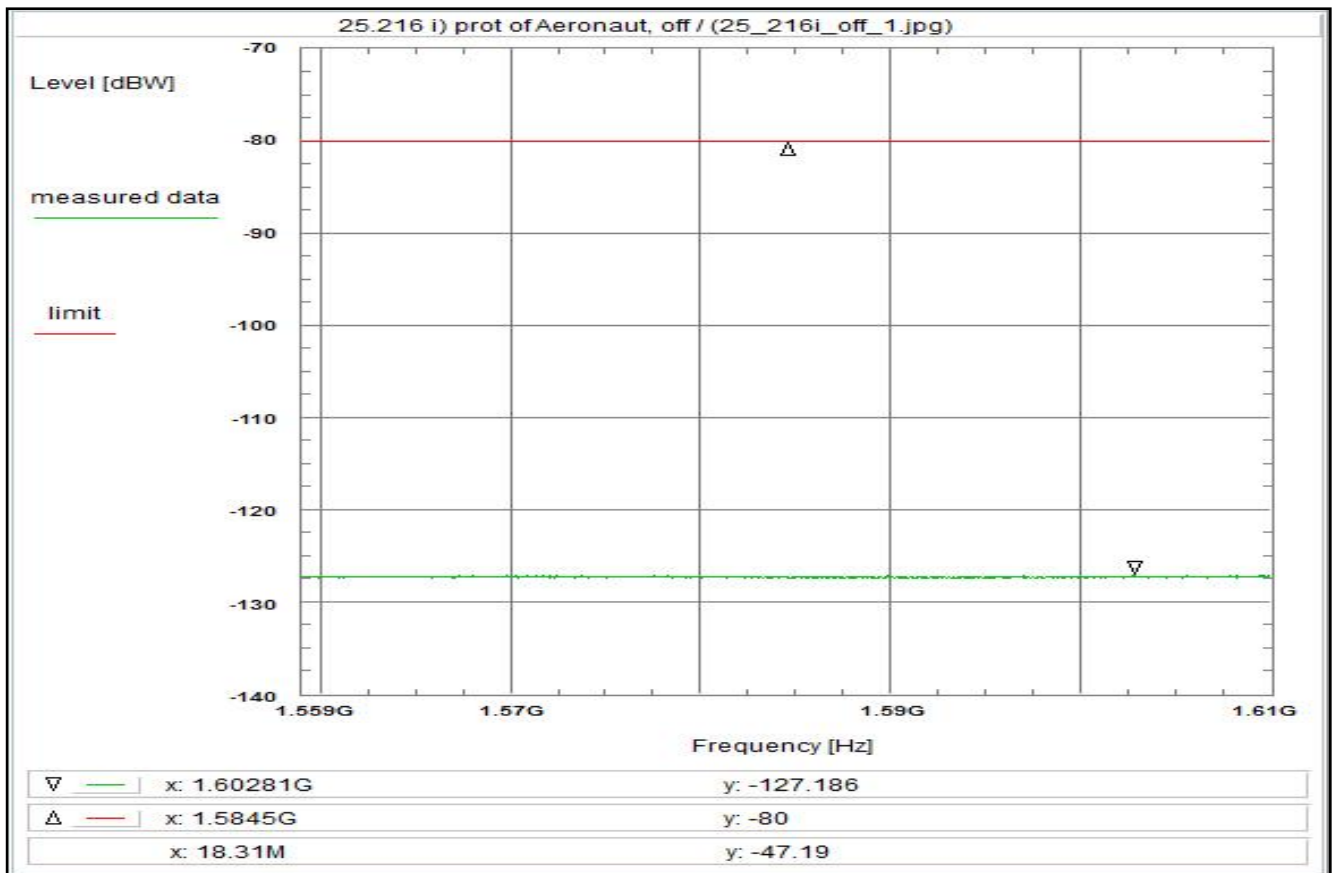
Carrier-on state / Carrier at the upper edge of the band (fo)
Measurement with 1 MHz resolution/video filter and RMS Detector.

For EIRP calculation:

'worst-case' = maximum antenna gain

RMS detector

Plot No. 43



Subclause: 25.216 i) Limits on emissions from mobile earth stations for protection of aeronautical radionavigation-satellite service
Carrier-off state, conducted measurement at the antenna-connector

Limit:
Limit according to 25.216 i): -80dBW/1MHz

The EIRP, averaged over any two-millisecond active transmission interval from the MESSs in the carrier-off state shall not exceed the limit above.

Test results:
see plot (an explicit table was not generated)

Operating condition of DUT:
operating condition 2, see test report chapter 5.2
TX off

Test setup:
see test report chapter 6.2

Test equipment:
see test report chapter 6.1 - 6.2: C220, C220, R001

Remark:

Test result: Test passed

Environment condition:

Date & Time: Mon 08/Jun/2020 16:42:50
Location: CTC advanced GmbH, Laboratory RC-SYS
Temperature: 22 °C
Humidity: 55 %
Voltage: 24 VDC

Setup of measurement equipment:

Start frequency: 1.559 GHz
Stop frequency: 1.61 GHz
Center frequency: 1.5845 GHz
Frequency span: 51 MHz
Resolution-BW: 1 MHz
Video-BW: 100 kHz
Input attenuation: 0 dB
Trace-Mode: Max-Hold
Detector-Mode: AVG

Correction:

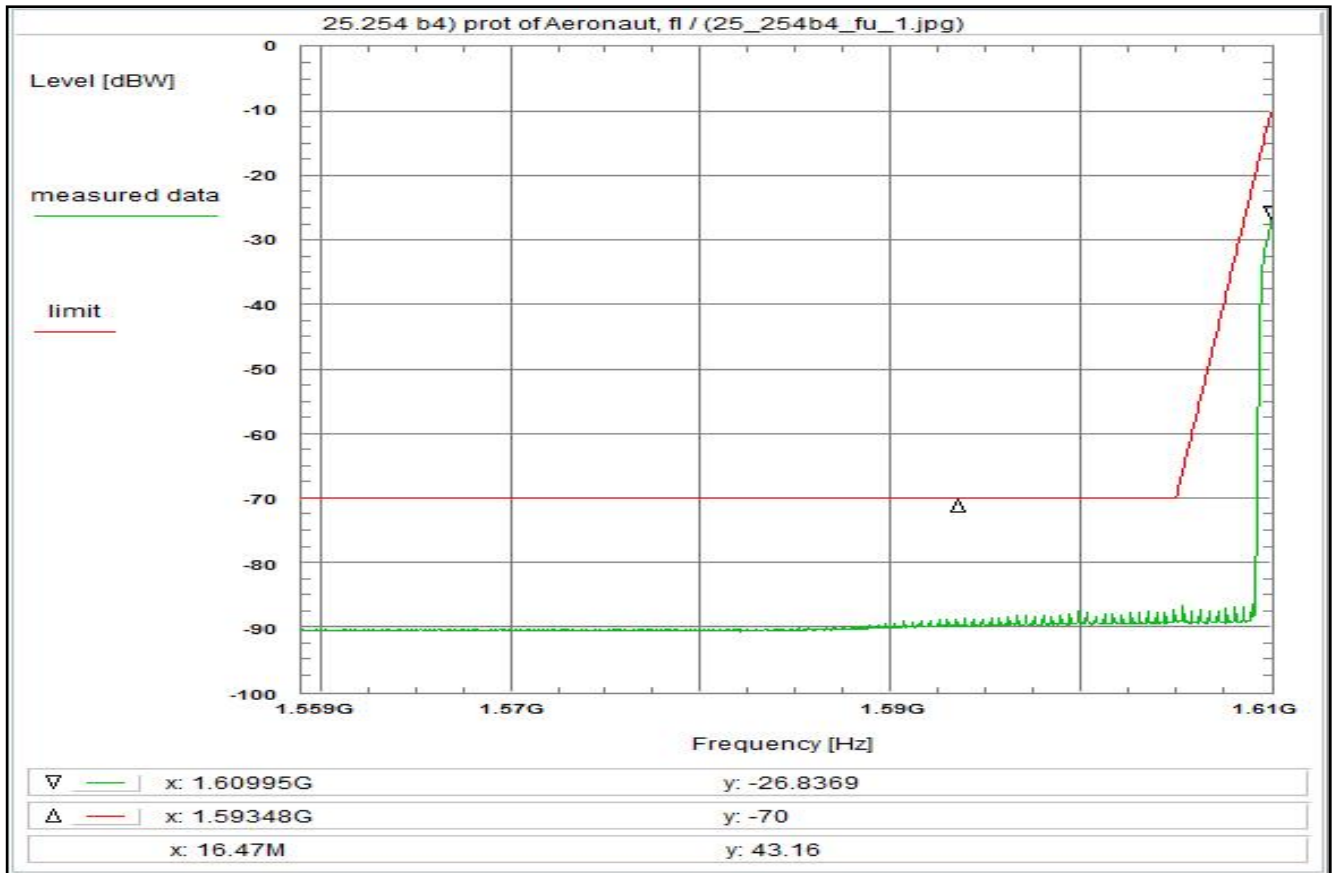
Directional coupler + 0.0 dB
Coaxial cable (C220) + 0.9 dB
DUT-Antenna (on-axis) + 10.4 dBi
Test antenna + 0.0 dB
BW correction factor + 0.0 dB
Atten. between HPA and feedhorn + 0.0 dB
Freefield attenuation + 0.0 dB
TOTAL CORRECTION: + 11.3 dB

Remarks:

Carrier-off state.
Measurement with 1 MHz resolution filter and RMS Detector.

For EIRP calculation:
'worst-case' = maximum antenna gain

Plot No. 44



Subclause: 25.254 b4) Special requirements for ancillary terrestrial components operating in the 1610-1626.5 MHz / 1525-1559 MHz bands
Carrier-on state, modulated carrier at the lower edge of the band (fu)
Conducted measurement at the antenna-connector

Limit:

Limit according to 25.254 b4):

1559.0 - 1605.0MHz: -70dBW/1MHz

1605.0 - 1610MHz: -70 to -10dBW/1MHz (linear interpolated)

The EIRP, averaged over any two-millisecond active transmission interval from the MESSs in the carrier-on state shall not exceed the limits above.

Test results:

see plot (an explicit table was not generated)

Operating condition of DUT:

operating condition 1, see test report chapter 5.2

Modulation TCH_2C8A, fl

Test setup:

see test report chapter 6.2

Test equipment:

see test report chapter 6.1 - 6.2: C220, R001, U005 + POWER SPLITTER

Remark:

Test result: Test passed

Environment condition:

Date & Time: Mon 08/Jun/2020 16:26:32
Location: CTC advanced GmbH, Laboratory RC-SYS
Temperature: 22 °C
Humidity: 55 %
Voltage: 24 VDC

Setup of measurement equipment:

Start frequency: 1.559 GHz
Stop frequency: 1.61 GHz
Center frequency: 1.5845 GHz
Frequency span: 51 MHz
Resolution-BW: 1 MHz
Video-BW: 100 kHz
Input attenuation: 0 dB
Trace-Mode: Max-Hold
Detector-Mode: AVG

Correction:

Directional coupler + 0.0 dB
Coaxial cable + 0.0 dB
DUT-Antenna (on-axis) + 10.4 dBi
Test antenna + 0.0 dB
BW correction factor + 0.0 dB
Atten. between HPA and feedhorn + 0.0 dB
(U005 + POWER SPLITTER) + 37.5 dB
TOTAL CORRECTION: + 47.9 dB

Remarks:

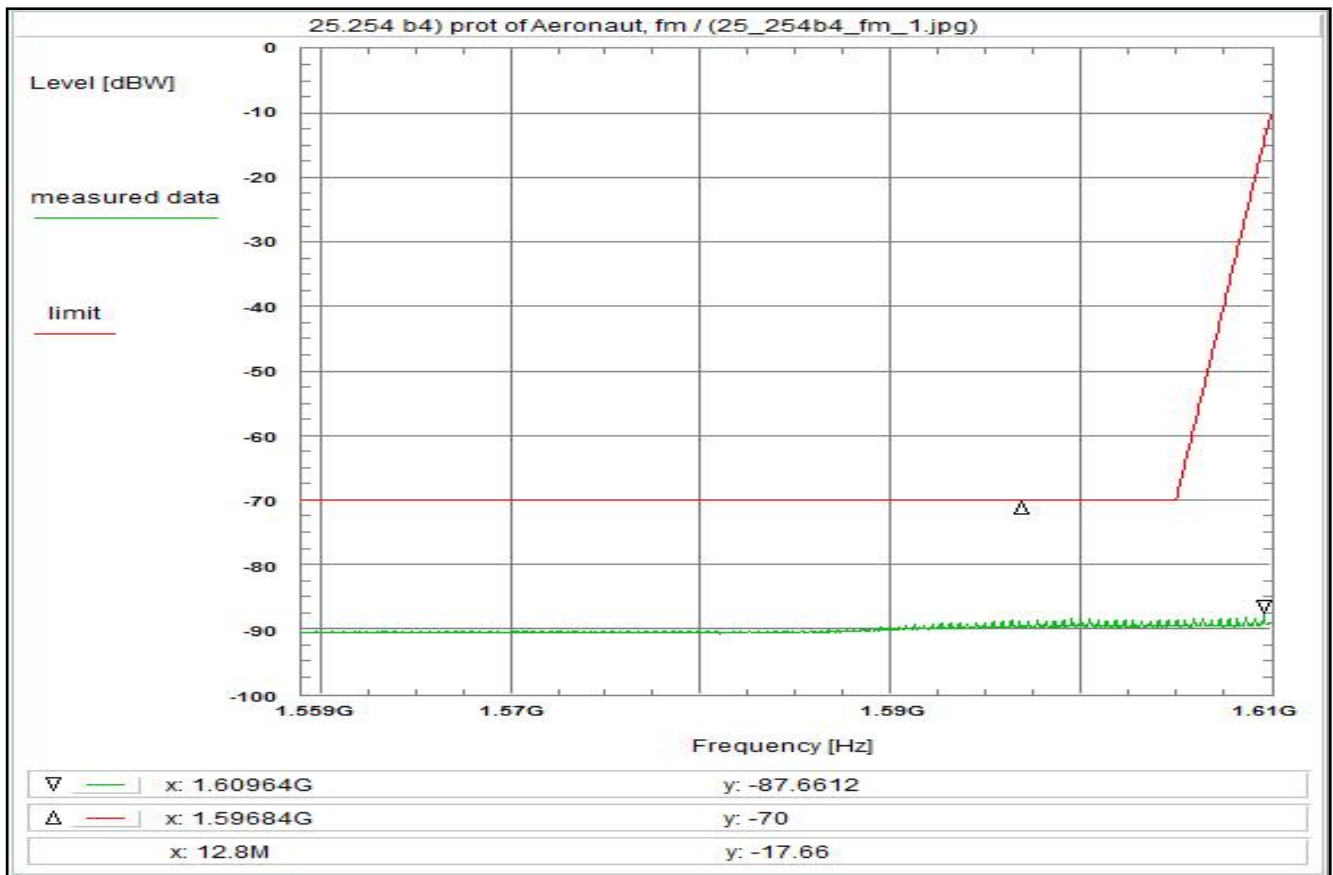
Carrier-on state / Carrier at the lower edge of the band (fu)
Measurement with 1 MHz resolution/video filter and RMS Detector.

For EIRP calculation:

'worst-case' = maximum antenna gain

RMS detector
Marker shows the wanted signal

Plot No. 45



Subclause: 25.254 b4) Special requirements for ancillary terrestrial components operating in the 1610-1626.5 MHz / 1525-1559 MHz bands
Carrier-on state, modulated carrier in the middle of the band (fm)
Conducted measurement at the antenna-connector

Limit:

Limit according to 25.254 b4):

1559.0 - 1605.0MHz: -70dBW/1MHz

1605.0 - 1610MHz: -70 to -10dBW/1MHz (linear interpolated)

The EIRP, averaged over any two-millisecond active transmission interval from the MESSs in the carrier-on state shall not exceed the limits above.

Test results:

see plot (an explicit table was not generated)

Operating condition of DUT:

operating condition 1, see test report chapter 5.2

Modulation TCH_2C8A, fm

Test setup:

see test report chapter 6.2

Test equipment:

see test report chapter 6.1 - 6.2: C220, R001, U005 + POWER SPLITTER

Remark:

Test result: Test passed

Environment condition:

Date & Time: Mon 08/Jun/2020 16:29:41
Location: CTC advanced GmbH, Laboratory RC-SYS
Temperature: 22 °C
Humidity: 55 %
Voltage: 24 VDC

Setup of measurement equipment:

Start frequency: 1.559 GHz
Stop frequency: 1.61 GHz
Center frequency: 1.5845 GHz
Frequency span: 51 MHz
Resolution-BW: 1 MHz
Video-BW: 100 kHz
Input attenuation: 0 dB
Trace-Mode: Max-Hold
Detector-Mode: AVG

Correction:

Directional coupler + 0.0 dB
Coaxial cable + 0.0 dB
DUT-Antenna (on-axis) + 10.4 dBi
Test antenna + 0.0 dB
BW correction factor + 0.0 dB
Atten. between HPA and feedhorn + 0.0 dB
(U005 + POWER SPLITTER) + 37.5 dB
TOTAL CORRECTION: + 47.9 dB

Remarks:

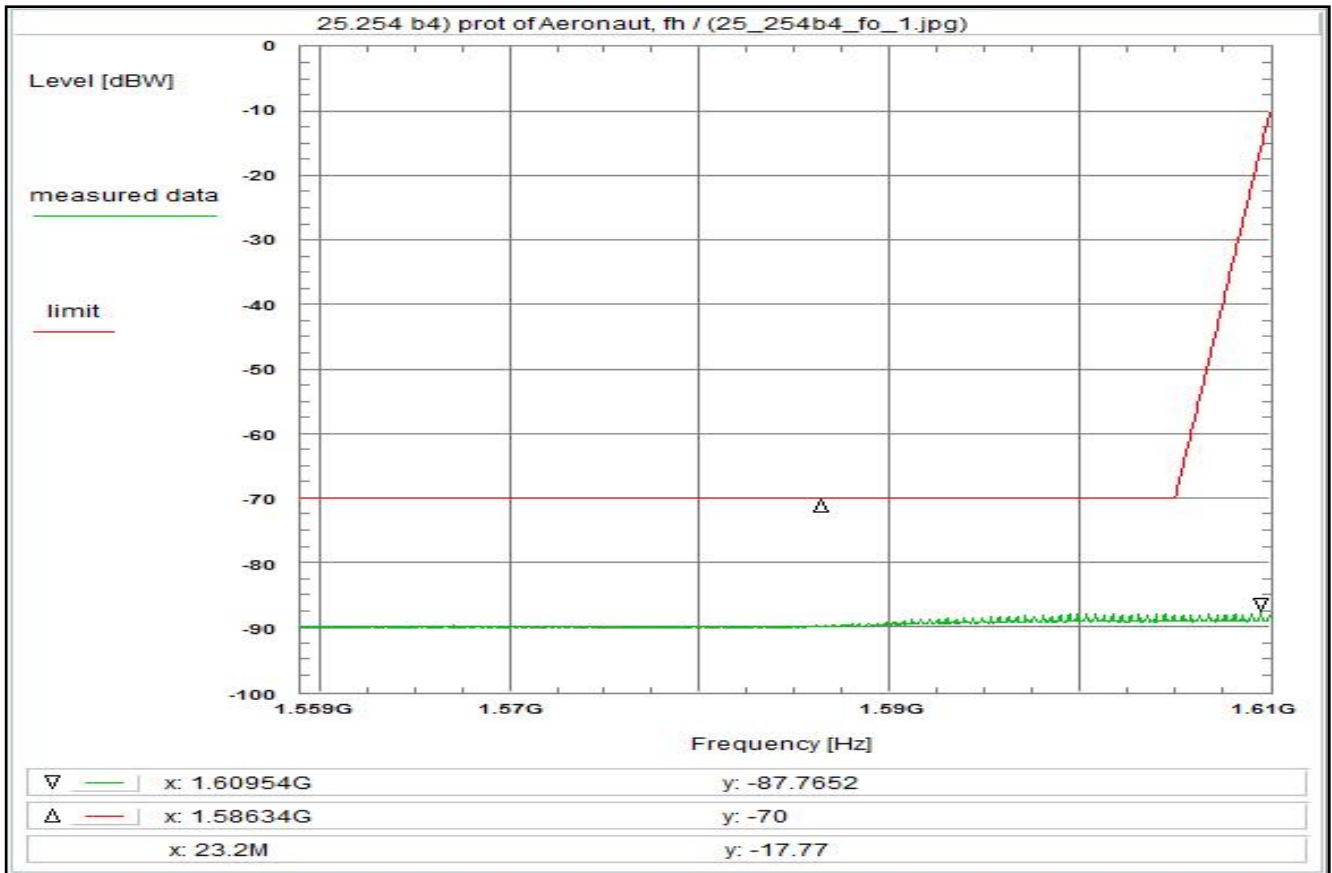
Carrier-on state / Carrier in the middle of the band (fm)
Measurement with 1 MHz resolution/video filter and RMS Detector.

For EIRP calculation:

'worst-case' = maximum antenna gain

RMS detector

Plot No. 46



Subclause: 25.254 b4) Special requirements for ancillary terrestrial components operating in the 1610-1626.5 MHz / 1525-1559 MHz bands
Carrier-on state, modulated carrier at the upper edge of the band (fo)
Conducted measurement at the antenna-connector

Limit:

Limit according to 25.254 b4):

1559.0 - 1605.0MHz: -70dBW/1MHz

1605.0 - 1610MHz: -70 to -10dBW/1MHz (linear interpolated)

The EIRP, averaged over any two-millisecond active transmission interval from the MESSs in the carrier-on state shall not exceed the limits above.

Test results:

see plot (an explicit table was not generated)

Operating condition of DUT:

operating condition 1, see test report chapter 5.2

Modulation TCH_2C8A, fh

Test setup:

see test report chapter 6.2

Test equipment:

see test report chapter 6.1-6.2: R001, U005 + POWER SPLITTER

Remark:

Test result: Test passed

Environment condition:

Date & Time: Mon 08/Jun/2020 16:32:27
Location: CTC advanced GmbH, Laboratory RC-SYS
Temperature: 22 °C
Humidity: 55 %
Voltage: 24 VDC

Setup of measurement equipment:

Start frequency: 1.559 GHz
Stop frequency: 1.61 GHz
Center frequency: 1.5845 GHz
Frequency span: 51 MHz
Resolution-BW: 1 MHz
Video-BW: 100 kHz
Input attenuation: 0 dB
Trace-Mode: Max-Hold
Detector-Mode: AVG

Correction:

Directional coupler + 0.0 dB
Coaxial cable + 0.0 dB
DUT-Antenna (on-axis) + 10.4 dBi
Test antenna + 0.0 dB
BW correction factor + 0.0 dB
Atten. between HPA and feedhorn + 0.0 dB
(U005 + POWER SPLITTER) + 37.5 dB
TOTAL CORRECTION: + 47.9 dB

Remarks:

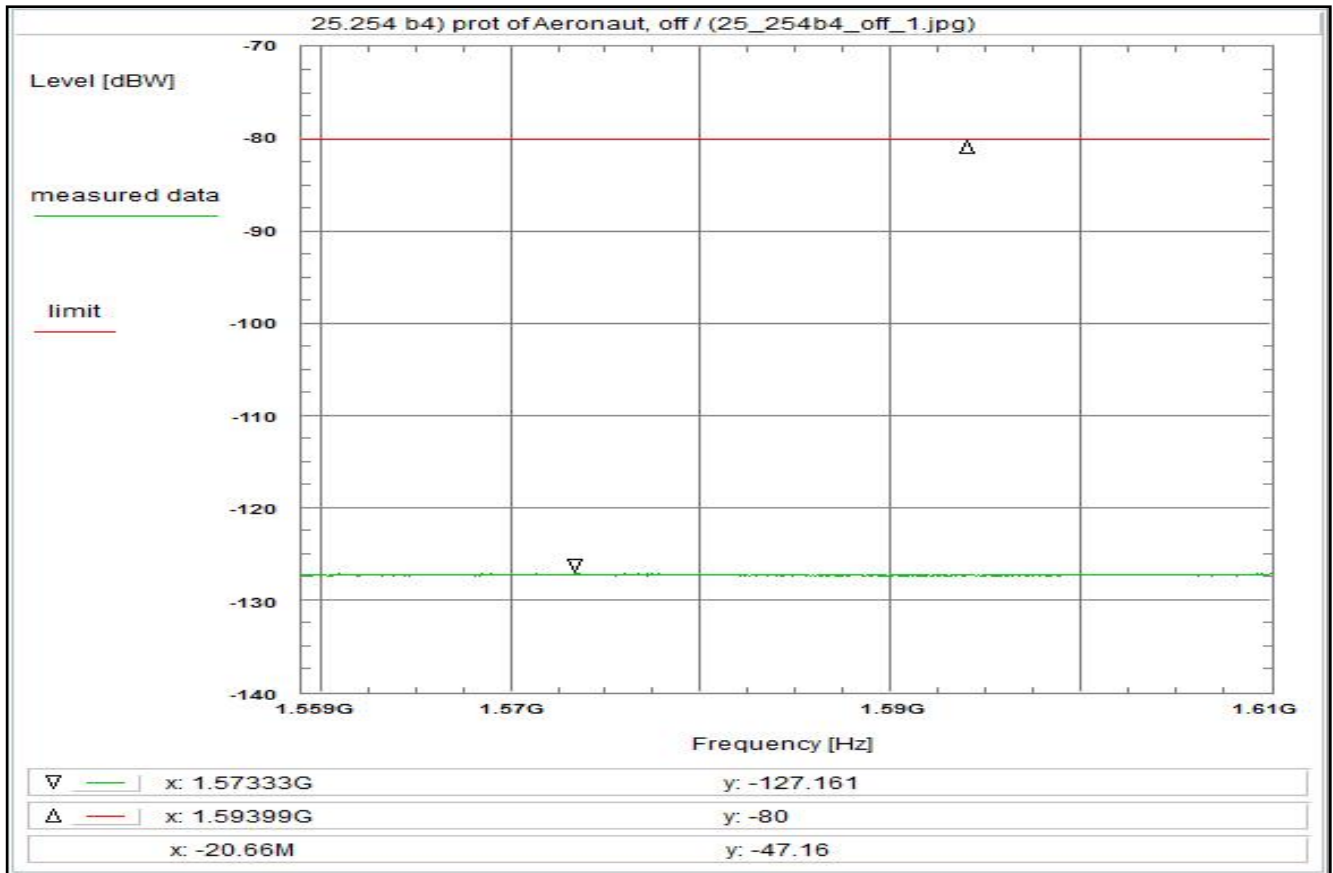
Carrier-on state / Carrier at the upper edge of the band (fo)
Measurement with 1 MHz resolution/video filter and RMS Detector.

For EIRP calculation:

'worst-case' = maximum antenna gain

RMS detector

Plot No. 47



Subclause: 25.254 b4) Special requirements for ancillary terrestrial components operating in the 1610-1626.5 MHz / 1525-1559 MHz bands
Carrier-off state, conducted measurement at the antenna-connector

Limit:
Limit according to 25.254 b4): -80dBW/1MHz

The EIRP, averaged over any two-millisecond active transmission interval from the MESSs in the carrier-off state shall not exceed the limit above.

Test results:
see plot (an explicit table was not generated)

Operating condition of DUT:
operating condition 2, see test report chapter 5.2
TX off

Test setup:
see test report chapter 6.2

Test equipment:
see test report chapter 6.1 - 6.2: C220, R001, U005 + POWER SPLITTER

Remark:

Test result: Test passed

Environment condition:

Date & Time: Mon 08/Jun/2020 16:46:34
Location: CTC advanced GmbH, Laboratory RC-SYS
Temperature: 22 °C
Humidity: 55 %
Voltage: 24 VDC

Setup of measurement equipment:

Start frequency: 1.559 GHz
Stop frequency: 1.61 GHz
Center frequency: 1.5845 GHz
Frequency span: 51 MHz
Resolution-BW: 1 MHz
Video-BW: 100 kHz
Input attenuation: 0 dB
Trace-Mode: Max-Hold
Detector-Mode: AVG

Correction:

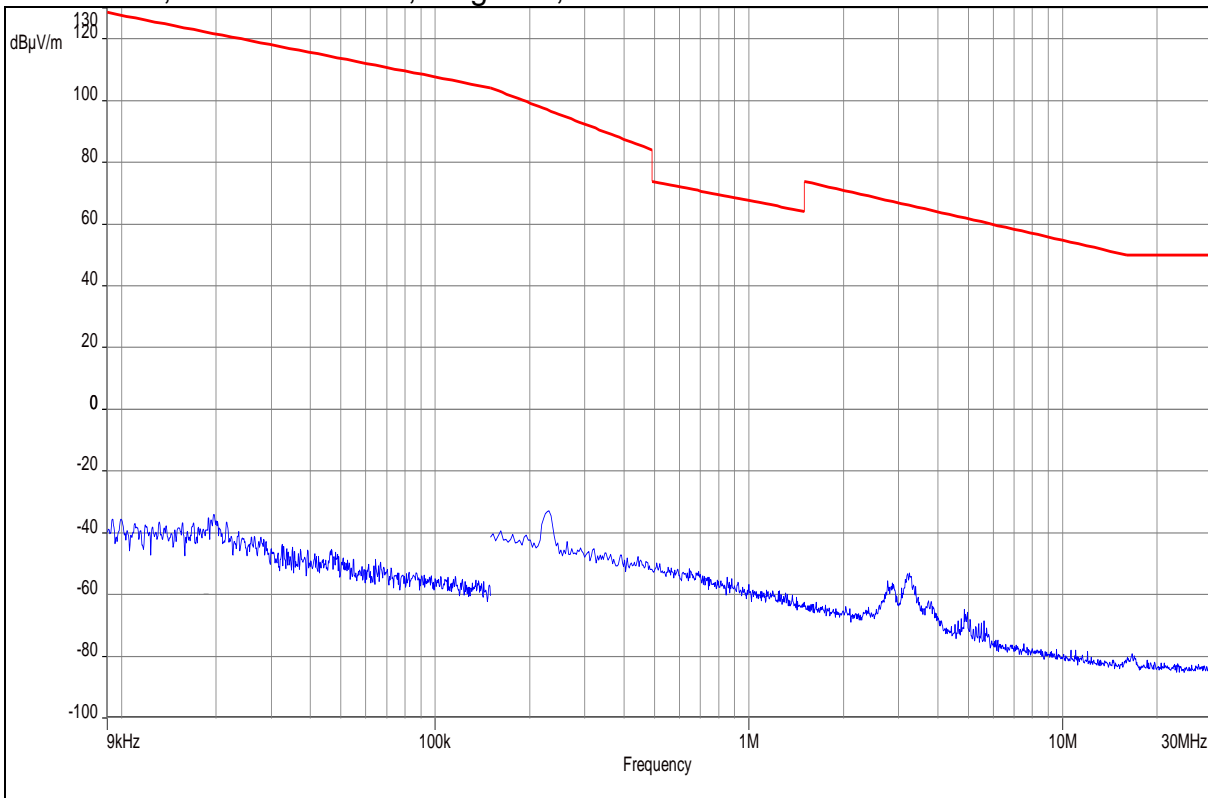
Directional coupler + 0.0 dB
Coaxial cable (C220) + 0.9 dB
DUT-Antenna (on-axis) + 10.4 dBi
Test antenna + 0.0 dB
BW correction factor + 0.0 dB
Atten. between HPA and feedhorn + 0.0 dB
Freefield attenuation + 0.0 dB
TOTAL CORRECTION: + 11.3 dB

Remarks:

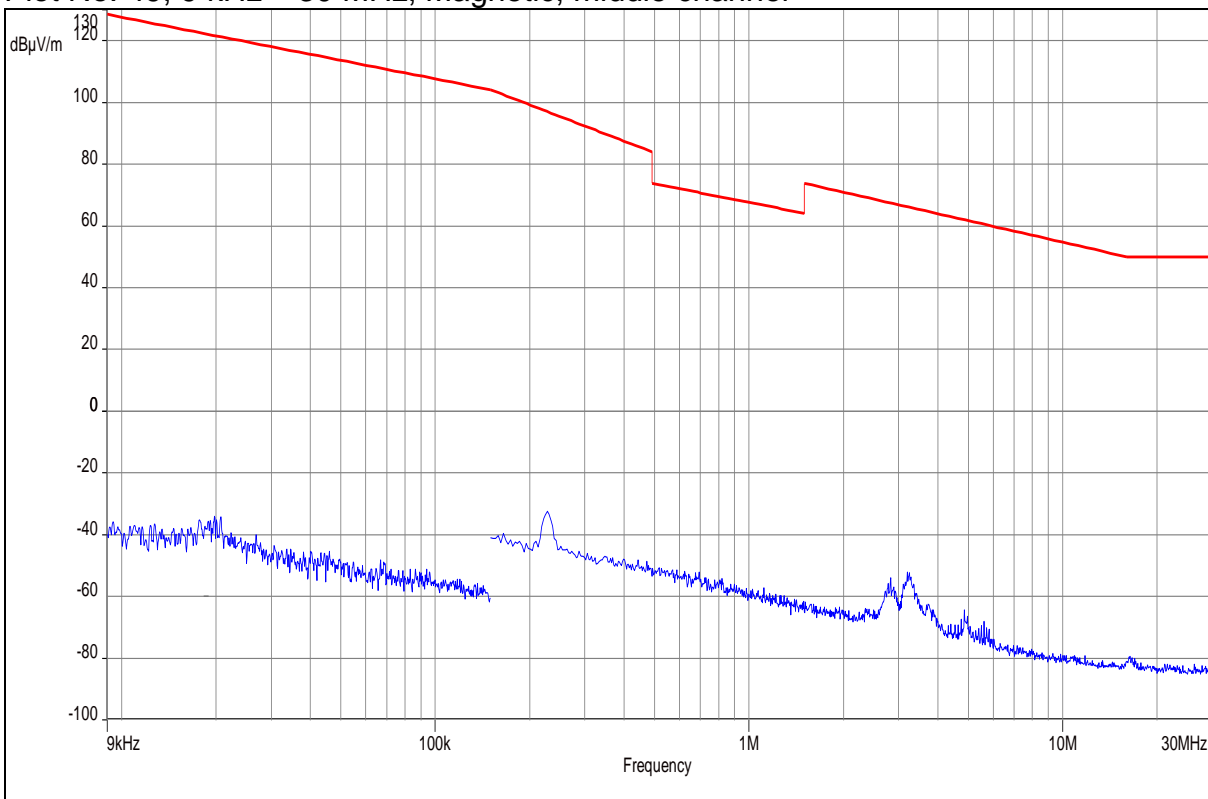
Carrier-off state.
Measurement with 1 MHz resolution filter and RMS Detector.

For EIRP calculation:
'worst-case' = maximum antenna gain

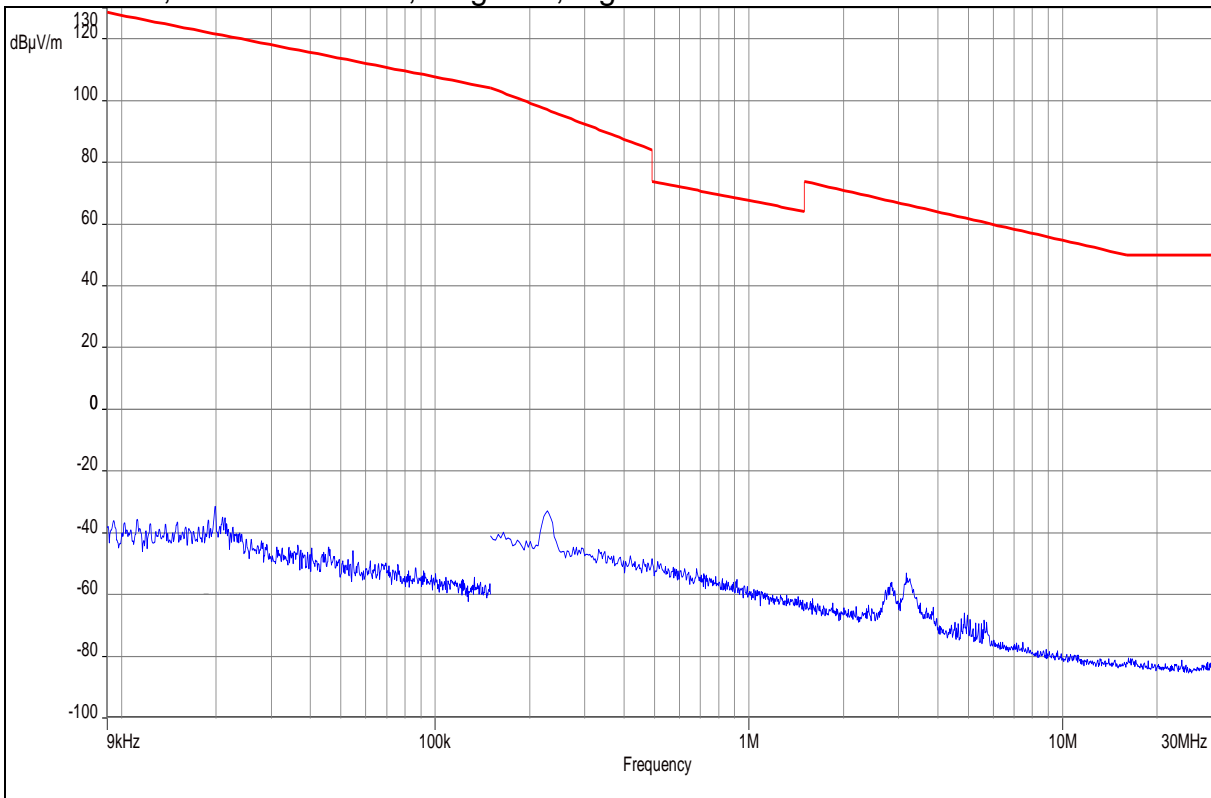
Plot No. 48, 9 kHz – 30 MHz, Magnetic, low channel



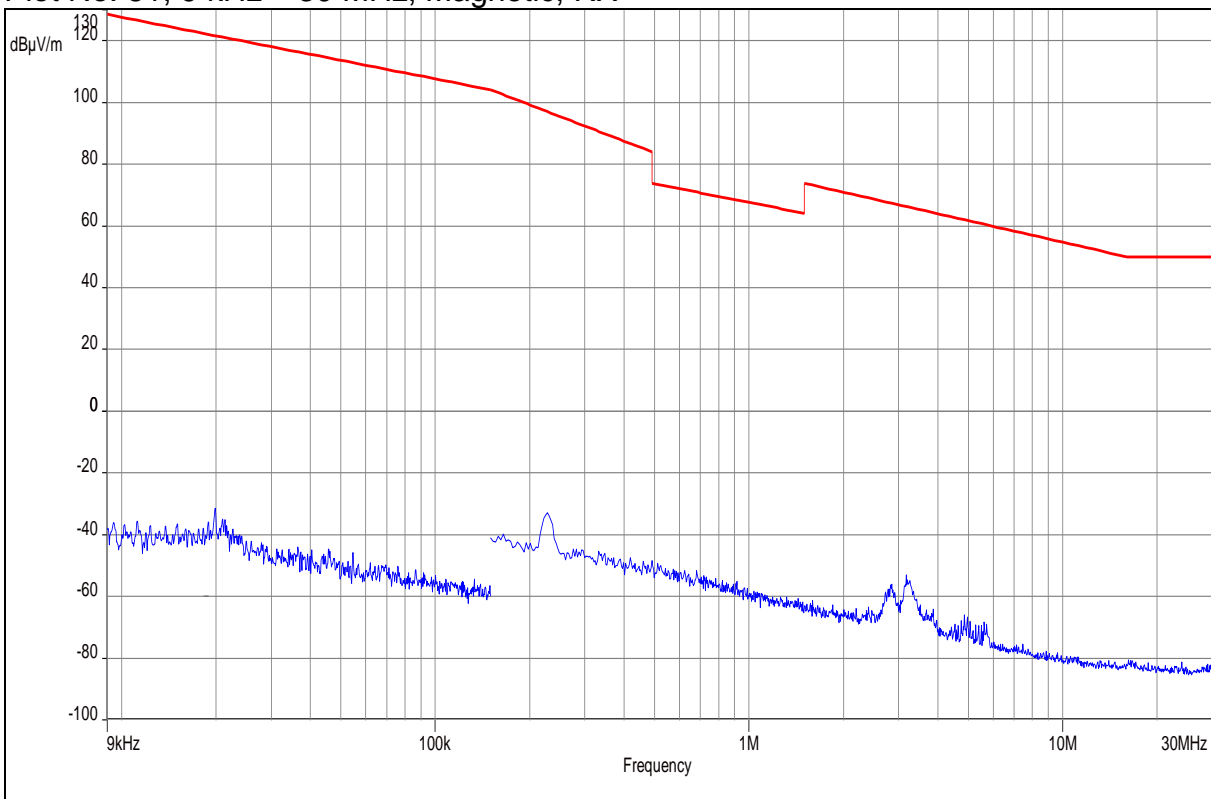
Plot No. 49, 9 kHz – 30 MHz, Magnetic, middle channel



Plot No. 50, 9 kHz – 30 MHz, Magnetic, high channel



Plot No. 51, 9 kHz – 30 MHz, Magnetic, RX

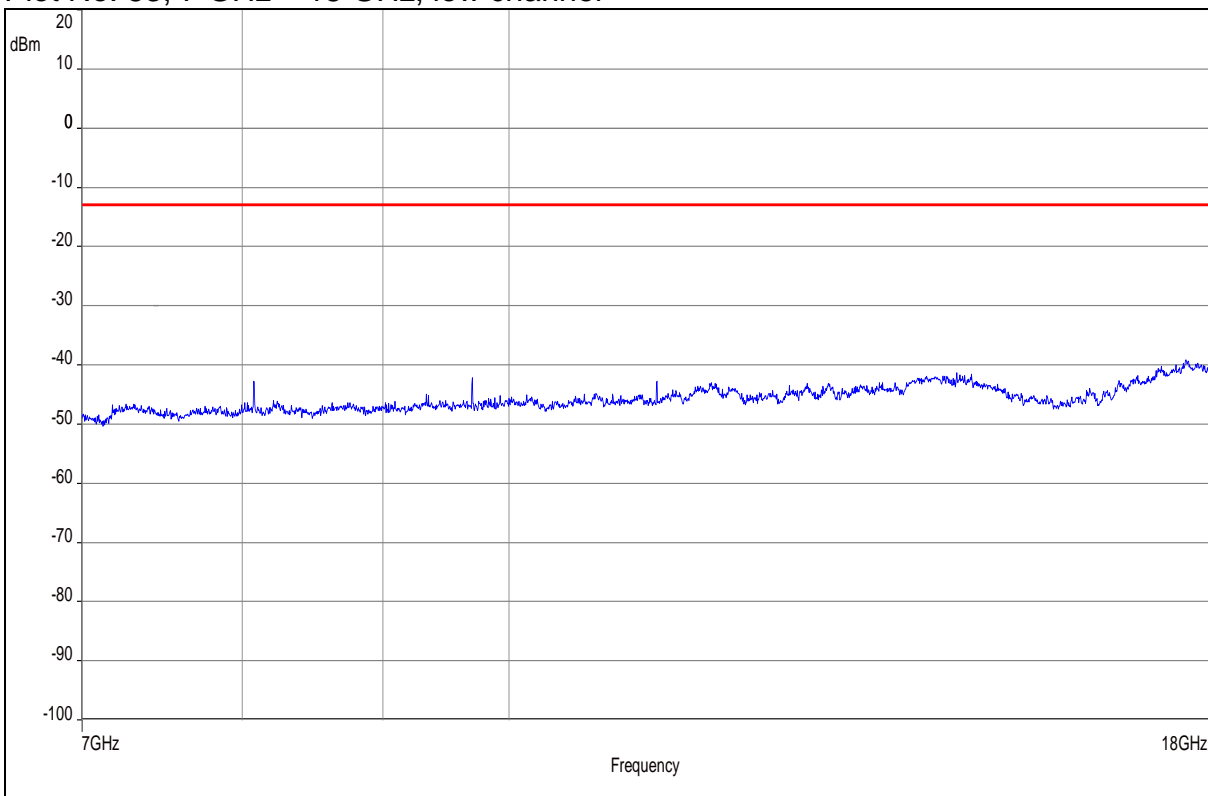


Plot No. 52, 30 MHz – 7 GHz, low channel

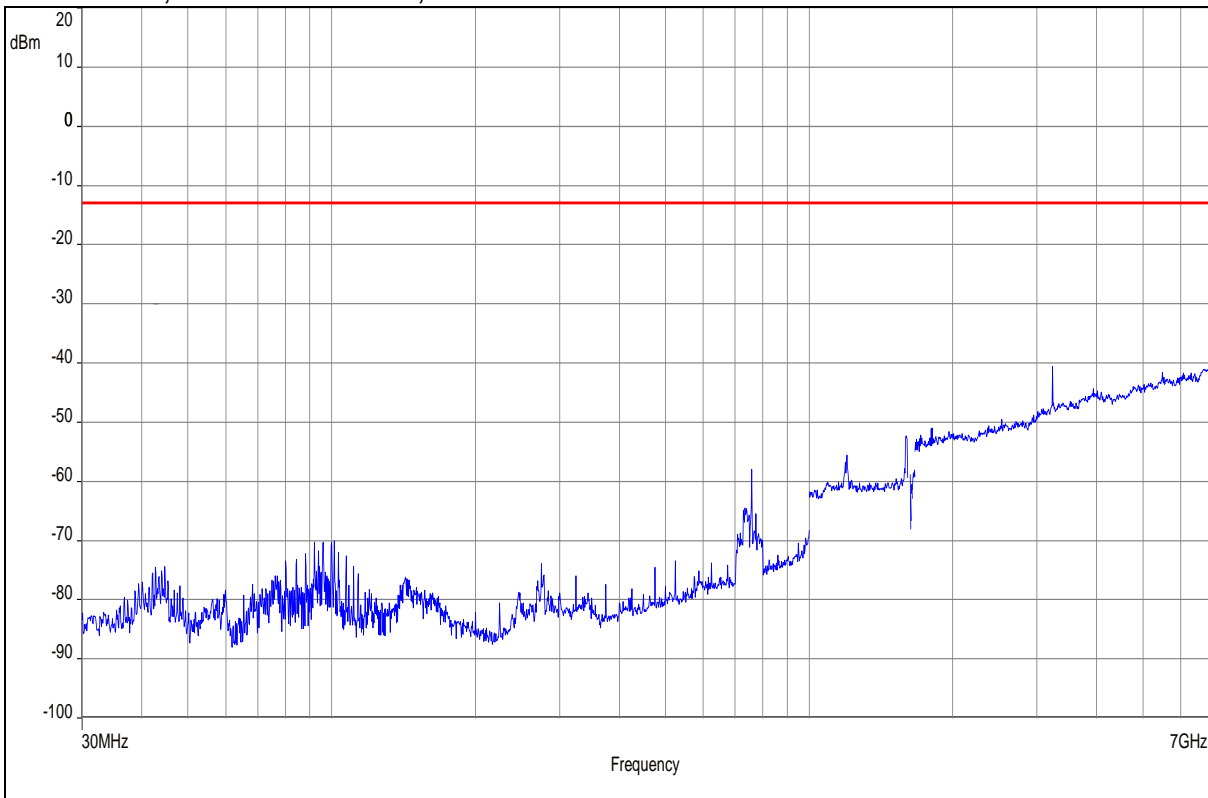


Signal notched by a rejection filter

Plot No. 53, 7 GHz – 18 GHz, low channel

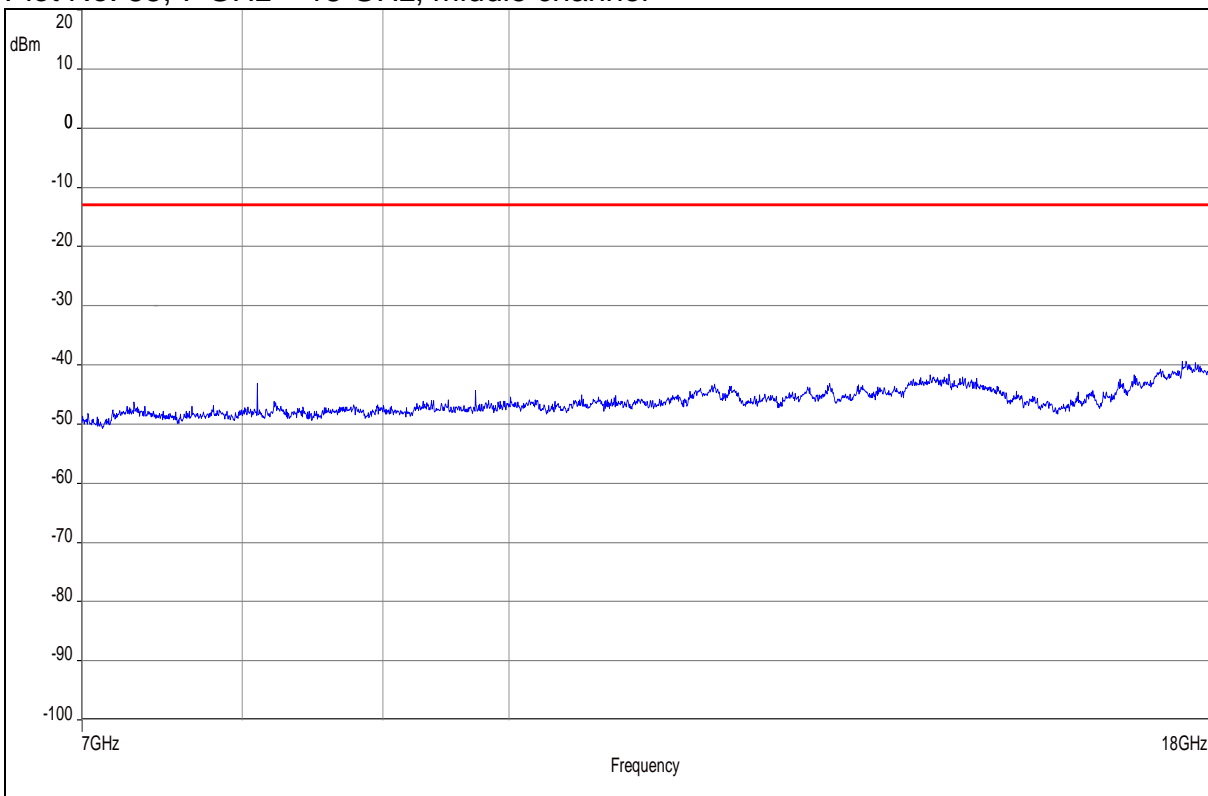


Plot No. 54, 30 MHz – 7 GHz, middle channel

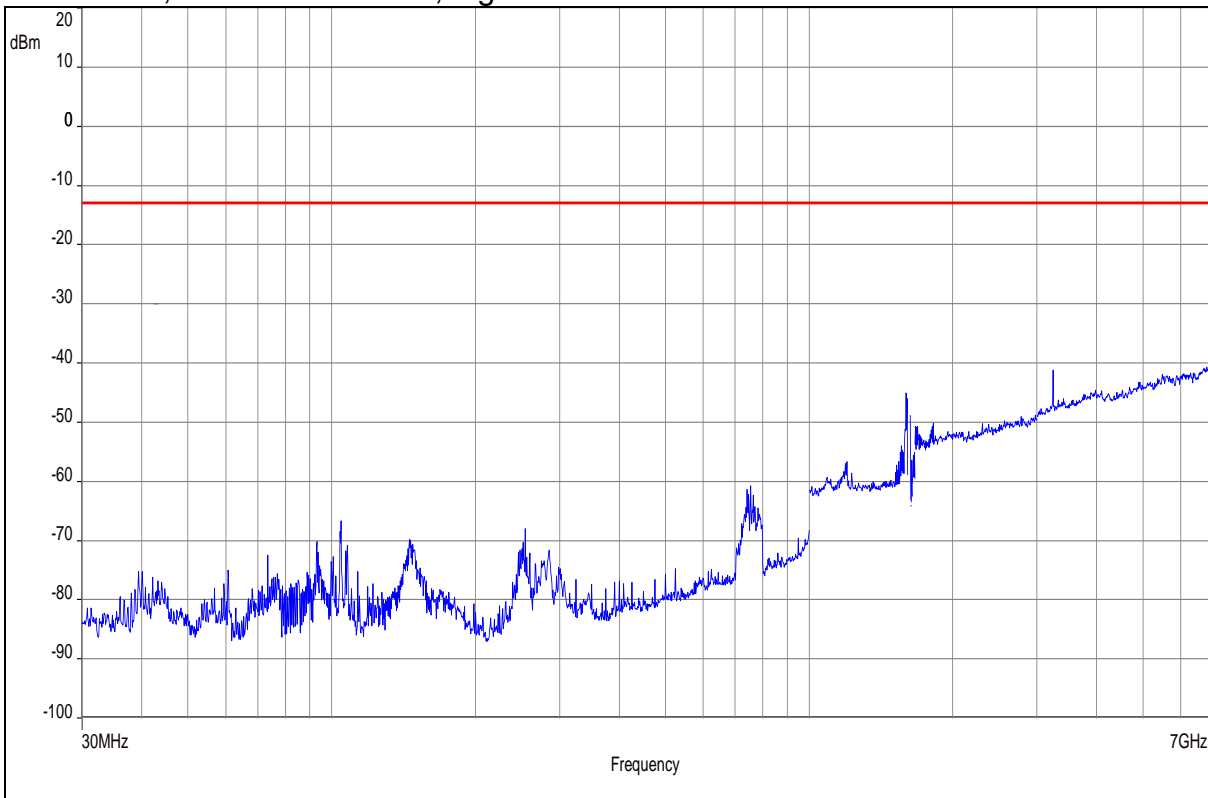


Signal notched by a rejection filter

Plot No. 55, 7 GHz – 18 GHz, middle channel

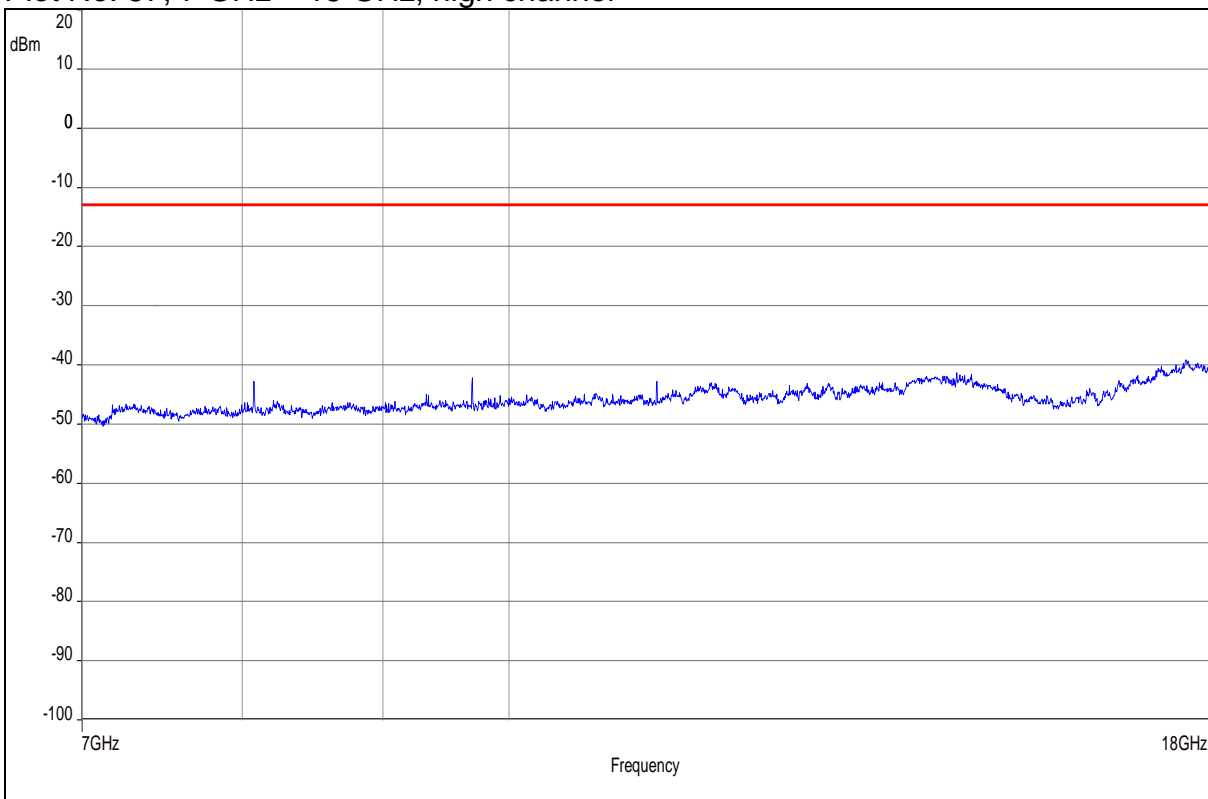


Plot No. 56, 30 MHz – 18 GHz, high channel

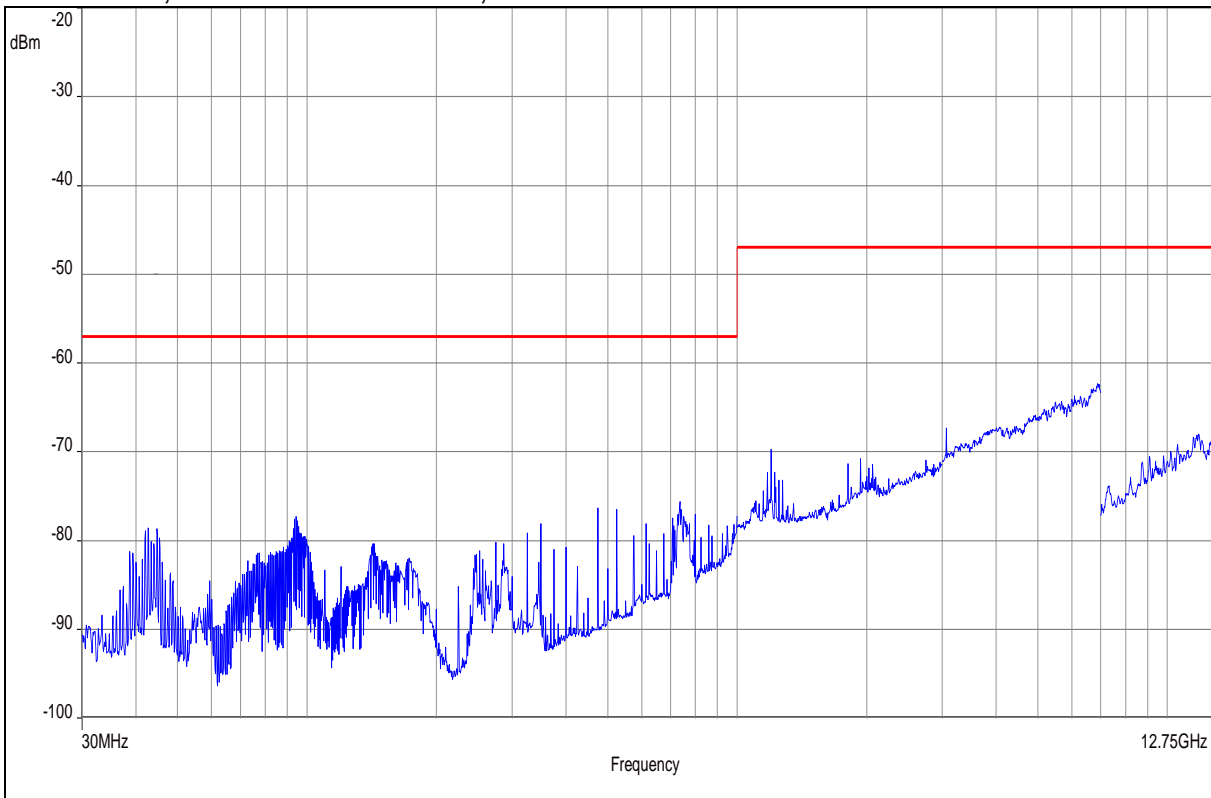


Signal notched by a rejection filter

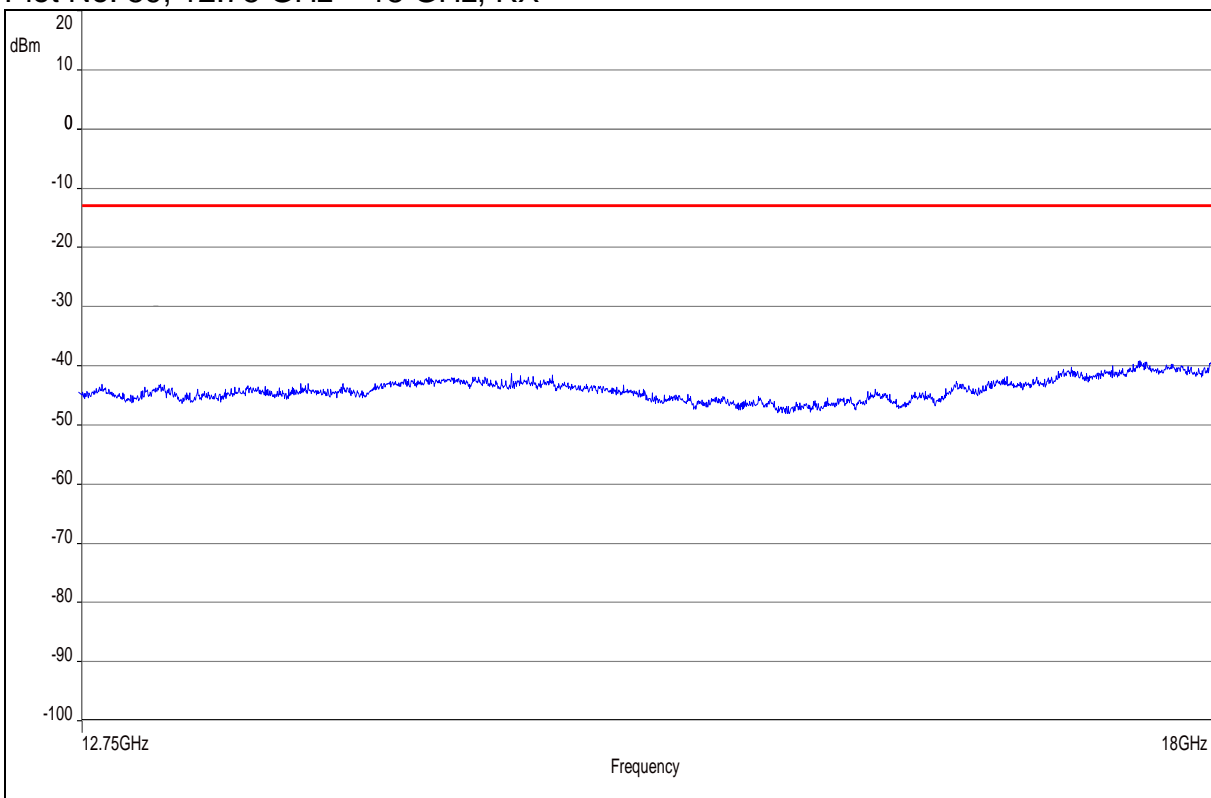
Plot No. 57, 7 GHz – 18 GHz, high channel



Plot No. 58, 30 MHz – 12.75 GHz, RX



Plot No. 59, 12.75 GHz – 18 GHz, RX



Document history

Version	Applied changes	Date of release
	Initial release - DRAFT	2020-06-30
	Editorial changes based on applicant's remarks	2020-08-07