

STATEMENT OF MEASUREMENT UNCERTAINTY

The data and results referenced in this document are true and accurate. The measurement uncertainty was calculated for all measurements listed in this test report according To CISPR 16-4 or EN TR 100-028 Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: “Uncertainty in EMC Measurements” and is documented in the Timco Engineering, Inc. quality system according to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Timco Engineering, Inc. is reported:

Test Items	Measurement Uncertainty	Notes
TR 100 028 PARAGRAPH 7.1.1 – FREQUENCY ERROR < 30 MHz	± 0.063 ppm	(1)
TR 100 028 PARAGRAPH 7.1.1 - FREQUENCY ERROR < 200 MHz	± 0.051 ppm	(1)
TR 100 028 PARAGRAPH 7.1.1 - FREQUENCY ERROR < 1 GHz	± 0.051 ppm	(1)
TR 100 028 PARAGRAPH 7.1.1 - FREQUENCY ERROR ≤ 18 GHz	± 0.051 ppm	(1)
TR 100 028 PARAGRAPH 7.1.1 - FREQUENCY ERROR ≤ 40 GHz	± 0.051 ppm	(1)
TR 100 028 PARAGRAPH 7.1.2 - CONDUCTED POWER MEASUREMENT	±0.643 dB	(1)
TR 100 028 PARAGRAPH 7.1.4.1 - CONDUCTED SPURIOUS EMISSIONS 9 kHz – 150 kHz	± 3.14 dB	(1)
TR 100 028 PARAGRAPH 7.1.4.1 - CONDUCTED SPURIOUS EMISSIONS 150 kHz – 30 MHz	± 3.08 dB	(1)
TR 100 028 PARAGRAPH 7.2 – RADIATED EMISSIONS < 200 MHz	± 2.16 dB	(1)
TR 100 028 PARAGRAPH 7.2 – RADIATED EMISSIONS < 1 GHz	± 2.15 dB	(1)
TR 100 028 PARAGRAPH 7.2 – RADIATED EMISSIONS < 18 GHz	± 2.14 dB	(1)
TR 100 028 PARAGRAPH 7.2 – RADIATED EMISSIONS ≤ 40 GHz	± 2.31 dB	(1)
FLUKE Multimeter AC Voltage Uncertainty	± 2.263 %	(1)
FLUKE Multimeter DC Voltage Uncertainty	± 0.453 %	(1)
Temperature (C°)	± 0.81 C°	

Notes: (1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=1.96.

EMC EQUIPMENT LIST

Device	Manufacturer	Model	SN	Calibrati on Date	Cal Due Date
EMI Test Receiver R & S ESU 40 firmware v 4.43 SP 3 BIOS v5.1-24-3	Rohde & Schwarz	ESU 40	100320	08/28/18	08/28/20
Software: Field Strength Program	Timco	N/A	Version 4.10.7.0	N/A	N/A
Coaxial Cable - Chamber 3 cable set (backup)	Micro-Coax	Chamber 3 cable set (backup)	KMKM-0244-02 KMKM-0670-01 KFKF-0197-00	02/27/19	02/27/21
CHAMBER	Panashield	3M	N/A	03/15/19	03/15/21
Antenna: Active Loop	ETS-Lindgren	6502	00062529	12/11/17	12/11/20
Antenna: Biconical 1057	Eaton	94455-1	1057	12/13/17	12/13/20
Antenna: Log-Periodic 1243	Electro-Metrics	96005	1243	04/20/18	04/20/21
Ant: Double-Ridged Horn/ETS Horn 1	ETS-Lindgren	3117	00035923	02/25/20	02/25/23
Noise Source 10 MHz – 18 GHz	Agilent	346B	MY44421884	n/a	n/a
Splitter 1-1000MHz	Mini-Circuits	ZFSC-4-1- BNC+	U115700825	11/19/17	11/19/20

ANNEX I – MANUFACTURER-PROVIDED INFORMATION

Note: The accuracy and precision of the following information provided by the manufacturer of the equipment under test has not been verified using test methods, cannot be verified, or is not necessary to verify.

n/a

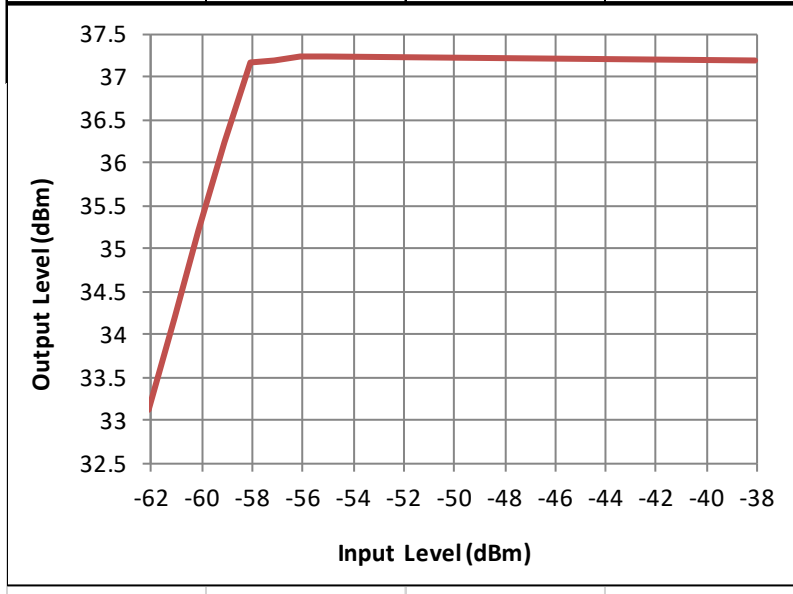
ANNEX II – MEASUREMENT DATA

KDB 935210 4.2 AGC THRESHOLD

Test Engineer: FR
 Test Date: JUL 24, 2020

406.1125 MHz, Uplink

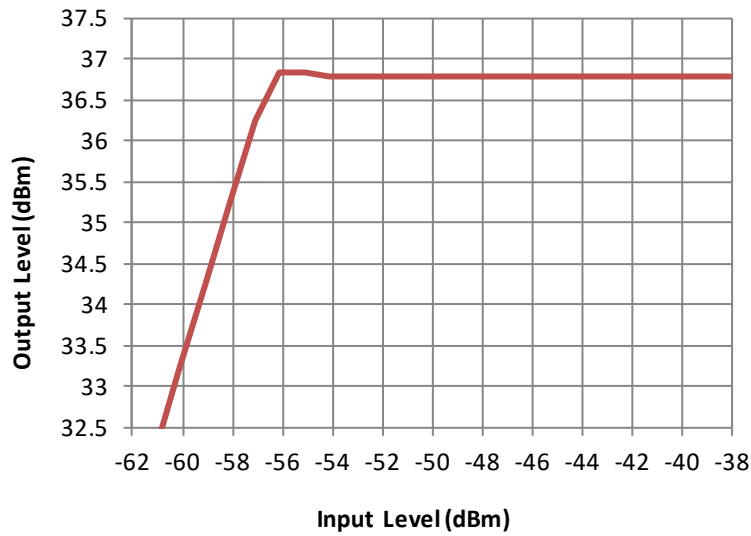
INPUT (dBm)	CORRECTED INPUT (dBm)	CORRECTED OUTPUT (dBm)	GAIN (dB)
-62	-62.1	33.12	95.2
-61	-61.1	34.19	95.3
-60	-60.1	35.21	95.3
-59	-59.1	36.25	95.4
-58	-58.1	37.17	95.3
-57	-57.1	37.19	94.3
-56	-56.1	37.23	93.3
-55	-55.1	37.23	92.3
-38	-38.1	37.2	75.3



AGC Level

450.0125 MHz, Uplink

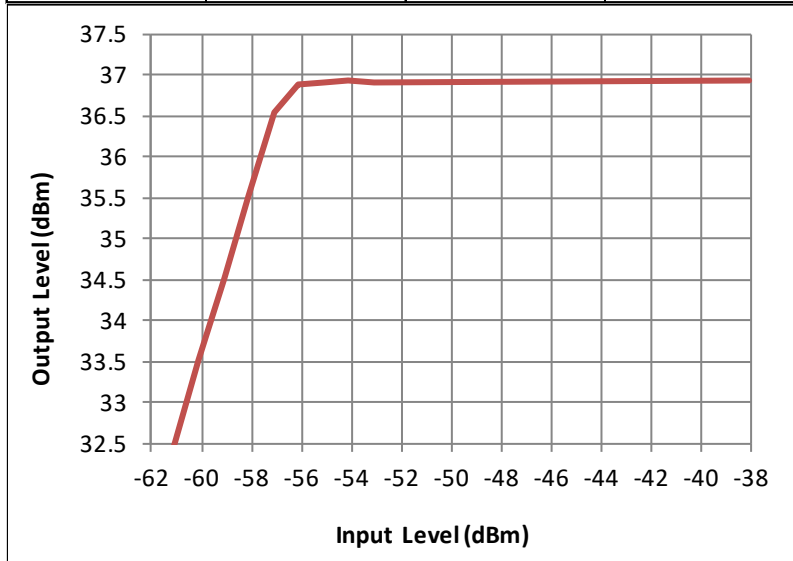
INPUT (dBm)	CORRECTED INPUT (dBm)	CORRECTED OUTPUT (dBm)	GAIN (dB)
-62	-62.1	31.17	93.3
-61	-61.1	32.22	93.3
-60	-60.1	33.23	93.3
-59	-59.1	34.24	93.3
-58	-58.1	35.23	93.3
-57	-57.1	36.25	93.4
-56	-56.1	36.84	92.9
-55	-55.1	36.84	91.9
-54	-54.1	36.8	90.9
-53	-53.1	36.8	89.9
-52	-52.1	36.8	88.9
-38	-38.1	36.8	74.9



AGC Level

469.9875 MHz, Downlink

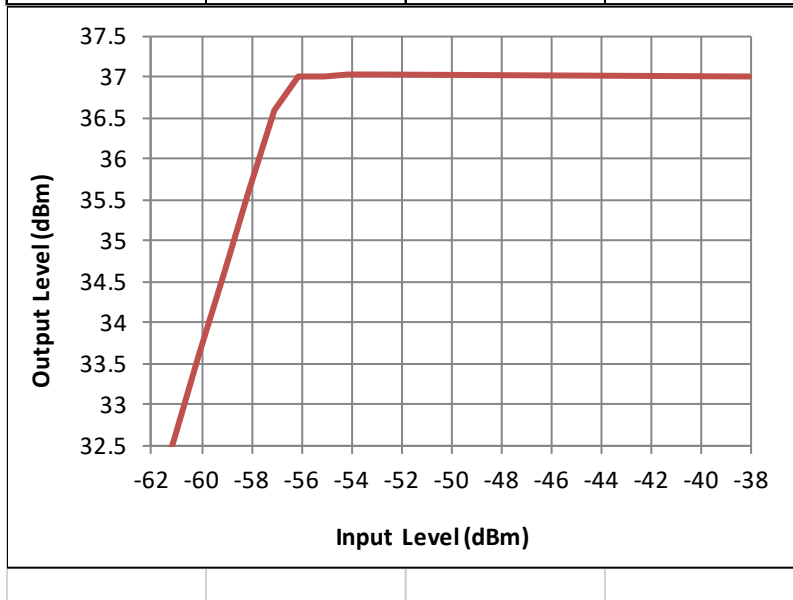
INPUT (dBm)	CORRECTED INPUT (dBm)	CORRECTED OUTPUT (dBm)	GAIN (dB)
-65	-65.1	28.44	93.5
-64	-64.1	29.4	93.5
-63	-63.1	30.45	93.6
-62	-62.1	31.51	93.6
-61	-61.1	32.5	93.6
-60	-60.1	33.52	93.6
-59	-59.1	34.51	93.6
-58	-58.1	35.52	93.6
-57	-57.1	36.54	93.6
-56	-56.1	36.88	93.0
-55	-55.1	36.91	92.0
-54	-54.1	36.93	91.0
-53	-53.1	36.92	90.0
-38	-38.1	36.94	75.0



AGC Level

511.9875 MHz, Downlink

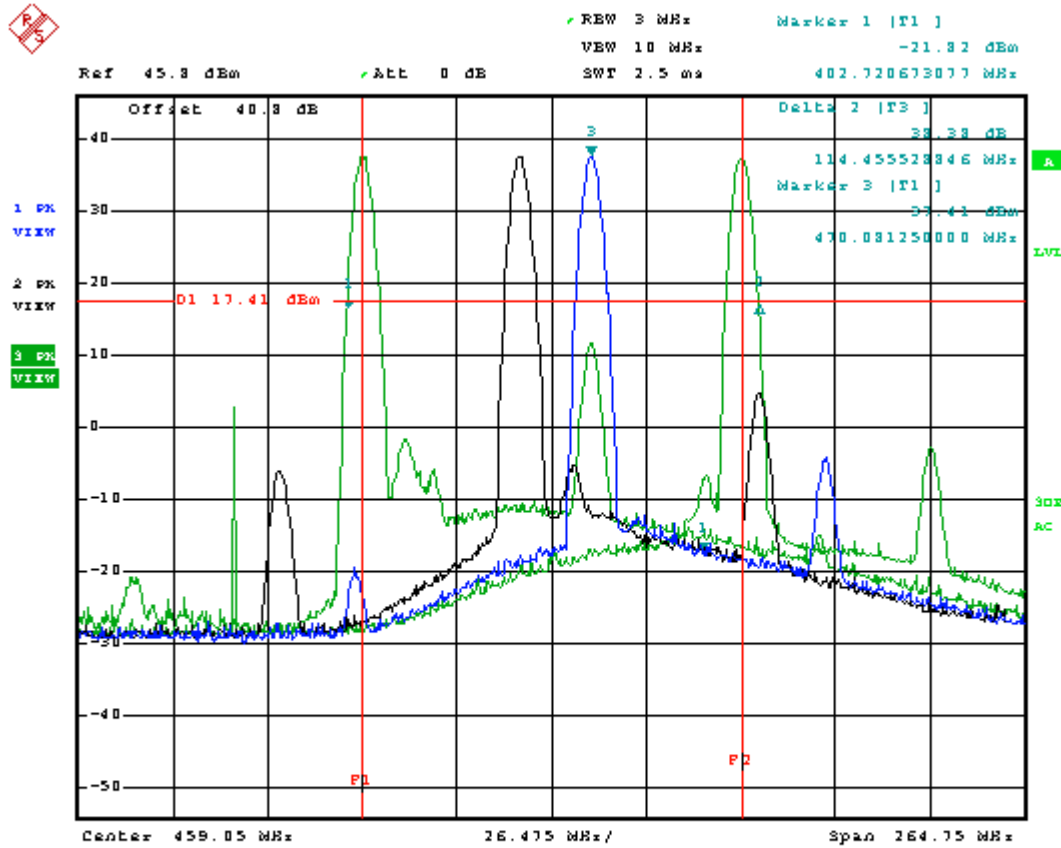
INPUT (dBm)	CORRECTED INPUT (dBm)	CORRECTED OUTPUT (dBm)	GAIN (dB)
-65	-65.1	28.55	93.7
-64	-64.1	29.55	93.7
-63	-63.1	30.57	93.7
-62	-62.1	31.57	93.7
-61	-61.1	32.59	93.7
-60	-60.1	33.6	93.7
-59	-59.1	34.61	93.7
-58	-58.1	35.6	93.7
-57	-57.1	36.6	93.7
-56	-56.1	37.01	93.1
-55	-55.1	37.01	92.1
-54	-54.1	37.02	91.1
-53	-53.1	37.02	90.1
-38	-38.1	37	75.1



KDB 935210 4.3 OUT OF BAND REJECTION

Test Engineer: FR
 Test Date: JUL 28, 2020

UHF Out of Band Rejection Plot



Date: 28.JUL.2020 12:09:08

Note: Class B Out of Band Rejection mode is shown above. The device allows for channel bandwidths up to 500 kHz. User software prevents the end-user from tuning the channels to operate outside the intended band.

2.1046 RF POWER OUTPUT

KDB 935210 4.5 RF POWER OUTPUT & GAIN

Test Engineer: FR
 Test Date: DEC 16 2020

Frequency	AGC Level	Input (dBm)	Output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	Gain (dB)	Output ERP (W)
406.1125	AGC	-56.1	37.23	0.00	0.24	93.3	5.00
406.1125	AGC +3	-53.1	37.2	0.00	0.21	90.3	5.00
406.1125	Saturation	-38.1	37.2	0.00	0.21	75.3	5.00
450.0125	AGC	-56.1	36.84	0.00	0.00	92.9	4.83
450.0125	AGC +3	-53.1	36.84	0.00	0.00	89.9	4.83
450.0125	Saturation	-38.1	36.8	0.00	0.00	74.9	4.79
469.9875	AGC	-56.1	36.88	0.00	0.00	93.0	4.88
469.9875	AGC +3	-53.1	36.92	0.00	0.00	90.0	4.92
469.9875	Saturation	-38.1	36.94	0.00	0.00	75.0	4.94
511.9875	AGC	-56.1	37.01	0.00	0.02	93.1	5.00
511.9875	AGC +3	-53.1	37.02	0.00	0.03	90.1	5.00
511.9875	Saturation	-38.1	37	0.00	0.01	75.1	5.00

Note: "Cable Loss" represents the value of loss that will be used upon signal booster deployment to keep the device compliant with the standard.

Max Power Output = 36.99 dBm (5 W)

Max Gain = 93.3 dB

KDB 935210 4.6 NOISE FIGURE
 Test Engineer: FR
 Test Date: JUL 29, 2020
406.1125 MHz, Uplink

FCC KDB 935210 S. 4.6, ISED RSS-131 S. 6.4 - NOISE FIGURE	
Measurement Freq. (MHz)	406.1125
Noise Source ENR (dB)	15.1126
Noise Source T_s^{OFF}, T_o (K)	290
Noise Source T_s^{ON} (K)	9701.4518
Noise Source Cal N_2^{off} (dB)	-125.09
Noise Source Cal N_2^{off} (pW)	0.00031
Noise Source Cal N_2^{on} (dB)	-119.4
Noise Source Cal N_2^{on} (pW)	0.00115
Calibration Ratio Y_2	3.7068
Calibration T_2	3186.9568
Noise + EUT N_{12}^{off} (dB)	-34.43
Noise + EUT N_{12}^{off} (pW)	360578.64
Noise + EUT N_{12}^{on} (dB)	-23.61
Noise + EUT N_{12}^{on} (pW)	4355118.74
Noise + EUT Ratio Y_{12}	12.0781
Noise + EUT T_{12}	559.5517
Gain (Ratio)	4764413633.5087
Gain (dB)	96.7801
2nd Stage Correction T_1	559.551748290210
Noise Factor F	2.92949
Noise Figure (dB)	4.67
Limit (dB)	9.00
Margin (dB)	4.33

Noise Figure

450.0125 MHz, Uplink

FCC KDB 935210 S. 4.6, ISED RSS-131 S. 6.4 - NOISE FIGURE	
Measurement Freq. (MHz)	450.0125
Noise Source ENR (dB)	15.1072
Noise Source T_s^{OFF}, T_O (K)	290
Noise Source T_s^{ON} (K)	9689.8315
Noise Source Cal N_2^{off} (dB)	-111.47
Noise Source Cal N_2^{off} (pW)	0.00713
Noise Source Cal N_2^{on} (dB)	-107.21
Noise Source Cal N_2^{on} (pW)	0.01901
Calibration Ratio Y_2	2.6669
Calibration T_2	5349.2492
Noise + EUT N_{12}^{off} (dB)	-27.17
Noise + EUT N_{12}^{off} (pW)	1918668.74
Noise + EUT N_{12}^{on} (dB)	-17.37
Noise + EUT N_{12}^{on} (pW)	18323144.22
Noise + EUT Ratio Y_{12}	9.5499
Noise + EUT T_{12}	809.4050
Gain (Ratio)	1380586339.6563
Gain (dB)	91.4006
2nd Stage Correction T_1	809.405023388252
Noise Factor F	3.79105
Noise Figure (dB)	5.79
Limit (dB)	9.00
Margin (dB)	3.21

Noise Figure

469.9875 MHz, Downlink

FCC KDB 935210 S. 4.6, ISED RSS-131 S. 6.4 - NOISE FIGURE	
Measurement Freq. (MHz)	469.9875
Noise Source ENR (dB)	15.1048
Noise Source T_s^{OFF}, T_O (K)	290
Noise Source T_s^{ON} (K)	9684.5488
Noise Source Cal N_2^{off} (dB)	-111.47
Noise Source Cal N_2^{off} (pW)	0.00713
Noise Source Cal N_2^{on} (dB)	-107.21
Noise Source Cal N_2^{on} (pW)	0.01901
Calibration Ratio Y_2	2.6669
Calibration T_2	5346.0800
Noise + EUT N_{12}^{off} (dB)	-37.77
Noise + EUT N_{12}^{off} (pW)	167109.06
Noise + EUT N_{12}^{on} (dB)	-26.32
Noise + EUT N_{12}^{on} (pW)	2333458.06
Noise + EUT Ratio Y_{12}	13.9637
Noise + EUT T_{12}	434.6821
Gain (Ratio)	182318041.2317
Gain (dB)	82.6083
2nd Stage Correction T_1	434.682022479565
Noise Factor F	2.49890
Noise Figure (dB)	3.98
Limit (dB)	9.00
Margin (dB)	5.02

Noise Figure

511.9875 MHz, Downlink

FCC KDB 935210 S. 4.6, ISED RSS-131 S. 6.4 - NOISE FIGURE	
Measurement Freq. (MHz)	511.9875
Noise Source ENR (dB)	15.0996
Noise Source T_s^{OFF}, T_O (K)	290
Noise Source T_s^{ON} (K)	9673.4511
Noise Source Cal N_2^{off} (dB)	-123.85
Noise Source Cal N_2^{off} (pW)	0.00041
Noise Source Cal N_2^{on} (dB)	-119.47
Noise Source Cal N_2^{on} (pW)	0.00113
Calibration Ratio Y_2	2.7416
Calibration T_2	5097.9136
Noise + EUT N_{12}^{off} (dB)	-36.28
Noise + EUT N_{12}^{off} (pW)	235504.93
Noise + EUT N_{12}^{on} (dB)	-24.4
Noise + EUT N_{12}^{on} (pW)	3630780.55
Noise + EUT Ratio Y_{12}	15.4170
Noise + EUT T_{12}	360.8600
Gain (Ratio)	4730783348.8871
Gain (dB)	96.7493
2nd Stage Correction T_1	360.859966488933
Noise Factor F	2.24434
Noise Figure (dB)	3.51
Limit (dB)	9.00
Margin (dB)	5.49



2.1047 AUDIO FREQUENCY RESPONSE

2.1047 LOW PASS FILTER RESPONSE

Test Engineer: _____
Test Date: _____

N/A. Device does not accept audio input.



2.1047 MODULATION LIMITING

Test Engineer: _____
Test Date: _____

N/A. Device does not have means to limit modulation.

90.209 OCCUPIED BANDWIDTH

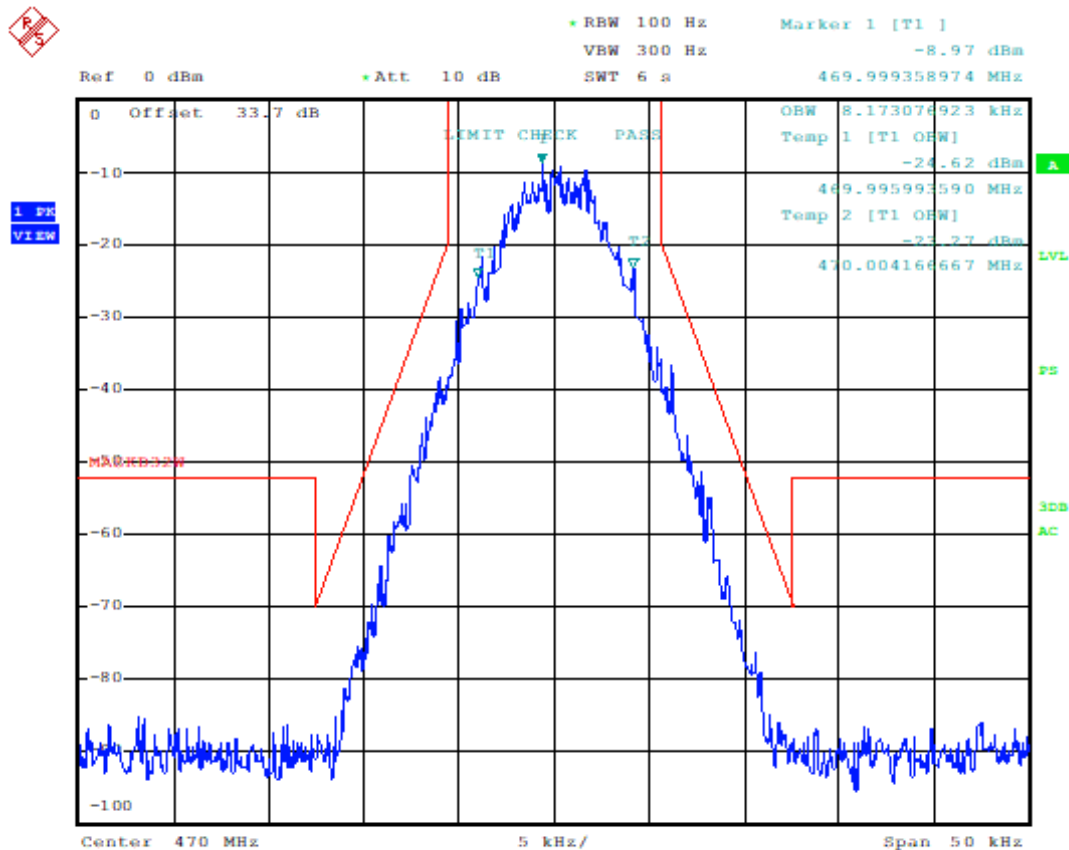
90.210 EMISSION MASKS

KDB 935210 4.4 INPUT VS OUTPUT COMPARISON

Test Engineer: FR
 Test Date: JUL 27, 2020

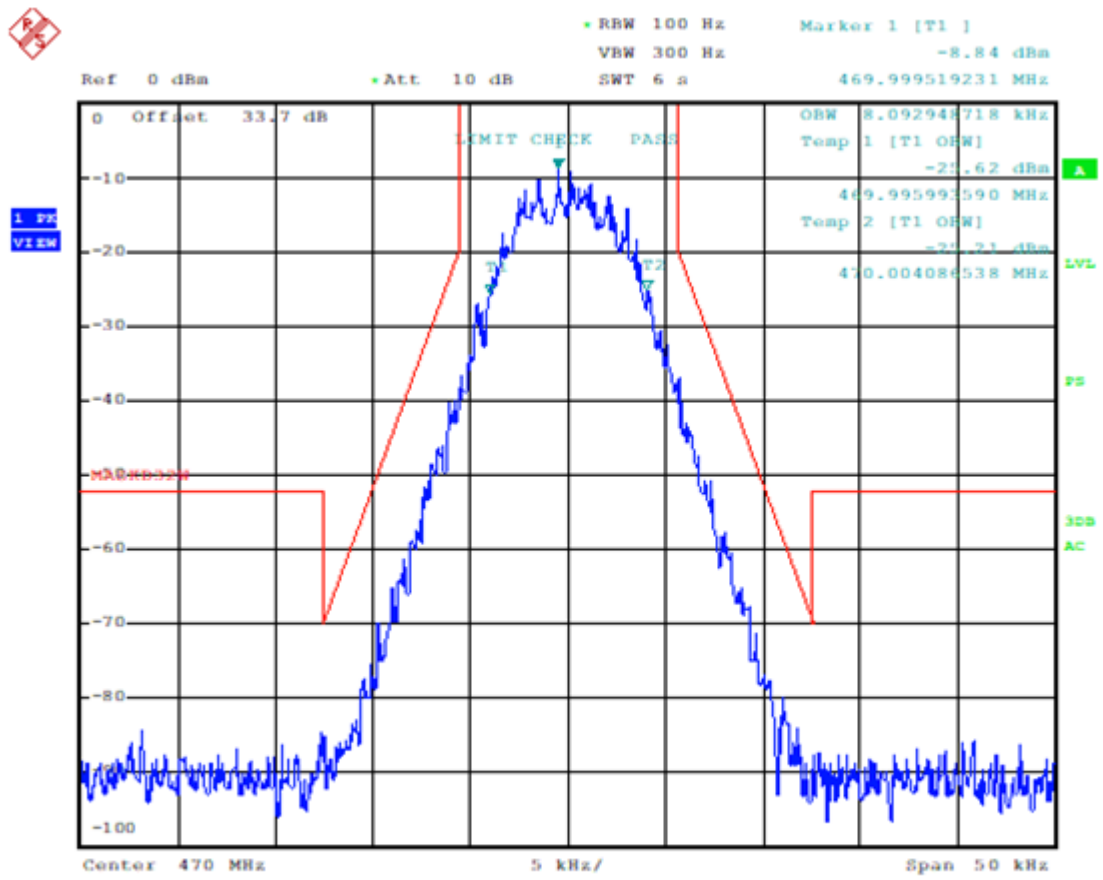
Input Signals

8K10F1E/F1D (P25 Phase I C4FM Voice, Data)



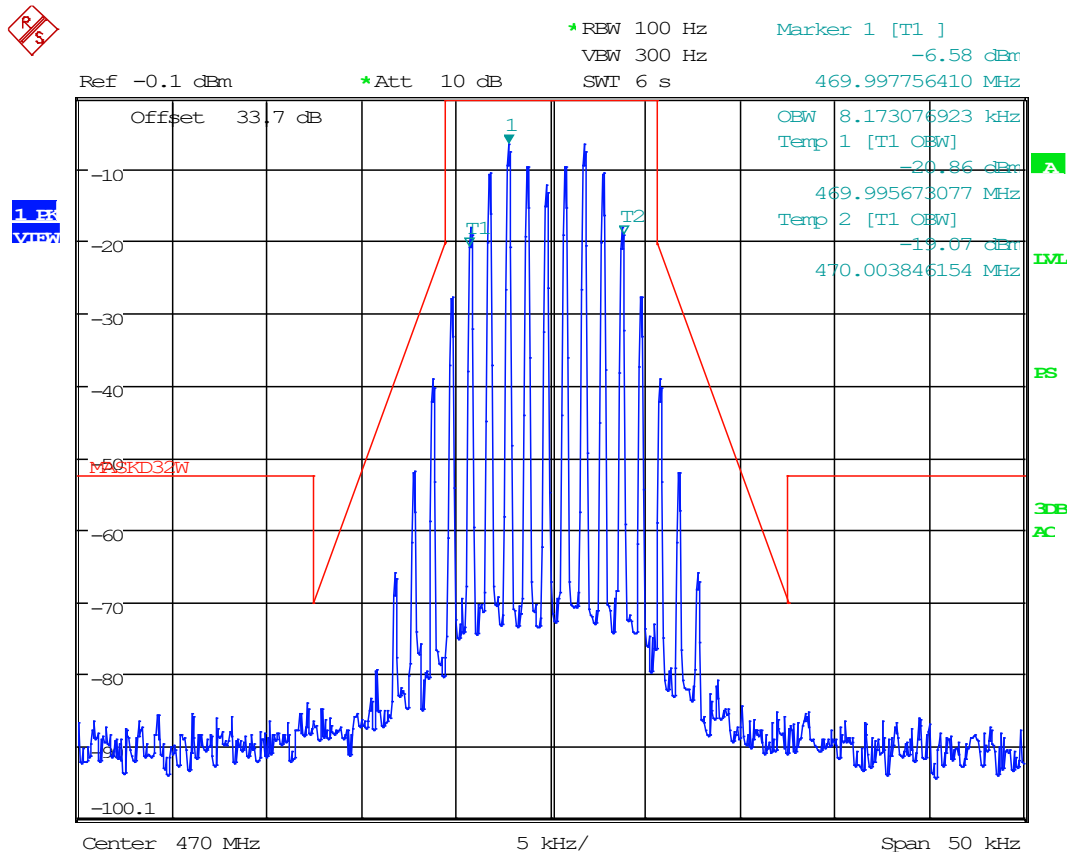
Input Signals

8K10F1W (P25 Phase II H-CPM Voice & Data)



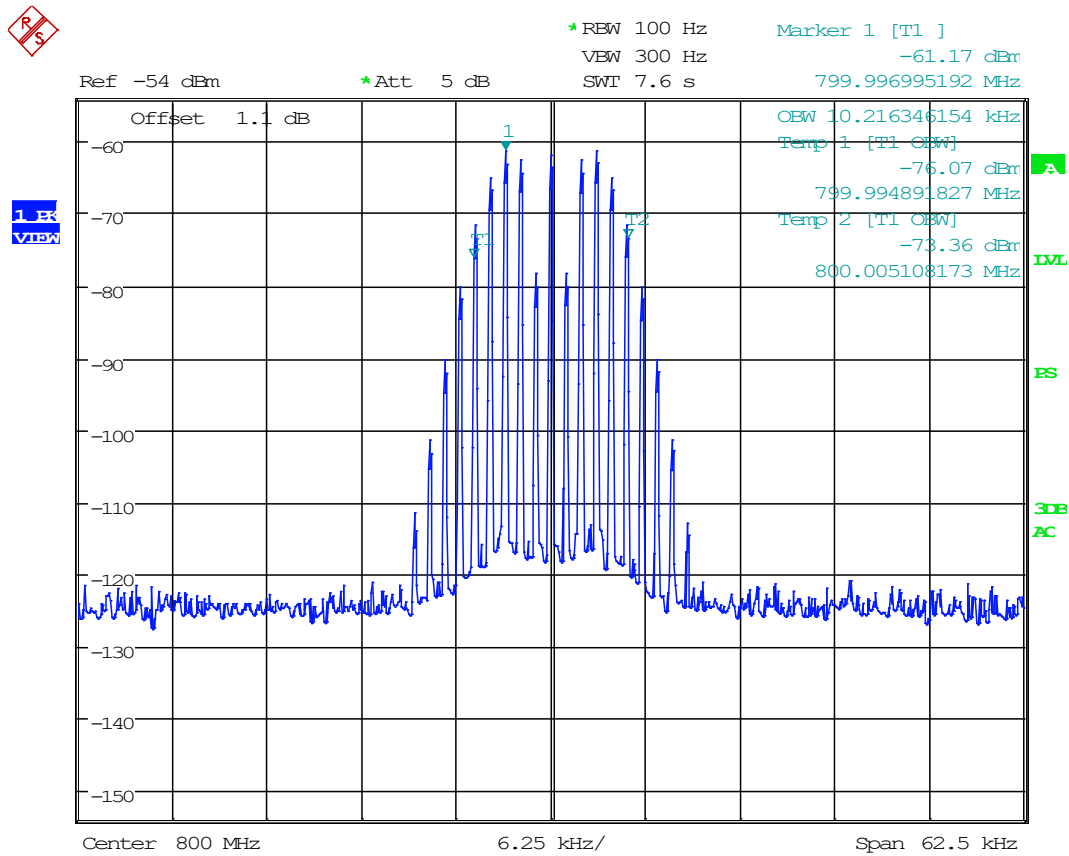
Input Signals

11K3F3E (Narrowband Analog FM Voice)



Input Signals

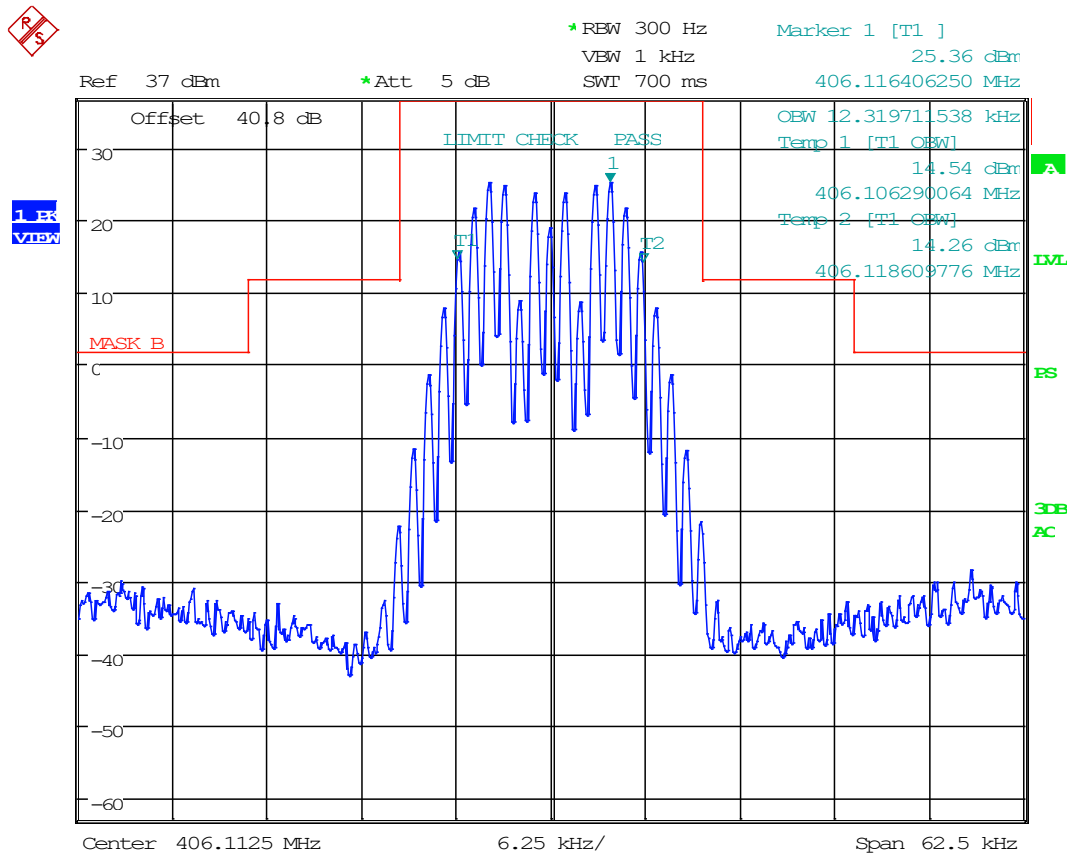
16K0F3E (Wideband Analog FM Voice)



Date: 30.JAN.2019 14:23:14

EMISSION MASK & IVO

406.1125 MHz, Uplink, 25k FM, At AGC

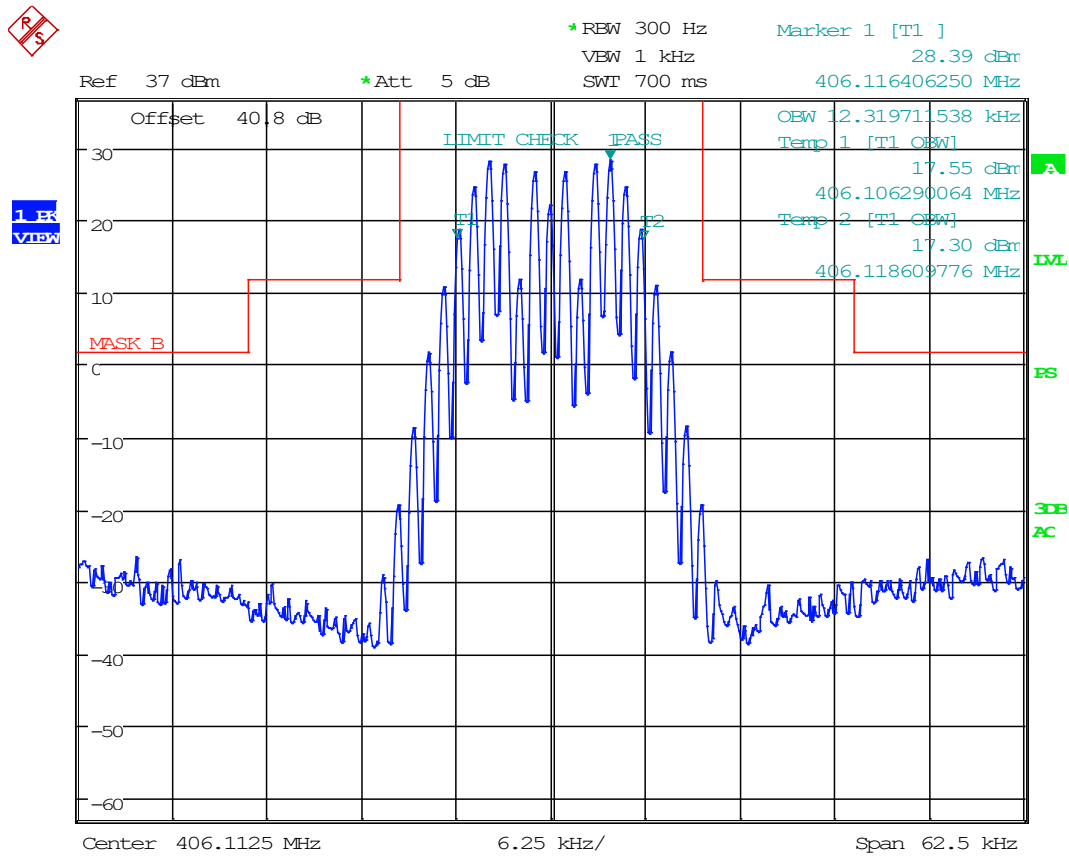


Date: 27.JUL.2020 17:40:49

Comparison to Input: Complies with Standards

EMISSION MASK & IVO

406.1125 MHz, Uplink, 25k FM, At AGC +3 dB

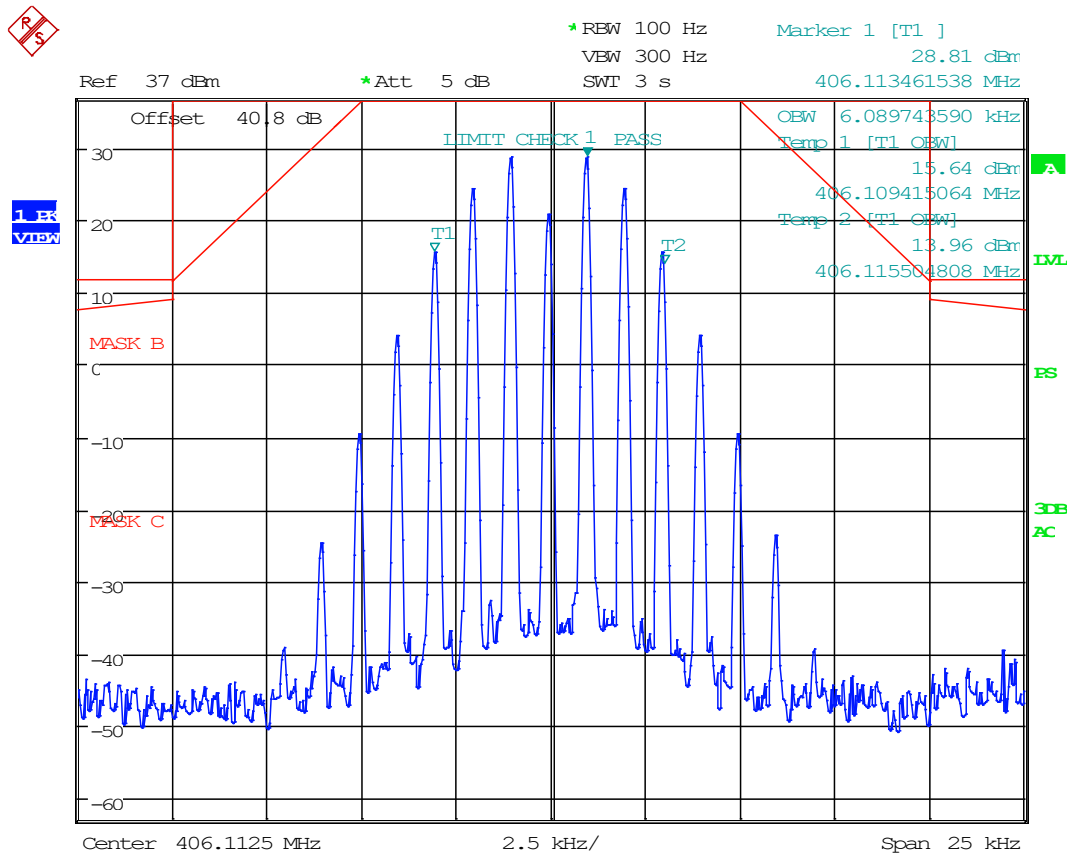


Date: 27.JUL.2020 17:41:32

Comparison to Input: Complies with Standards

EMISSION MASK & IVO

406.1125 MHz, Uplink, 12.5k FM, OBW



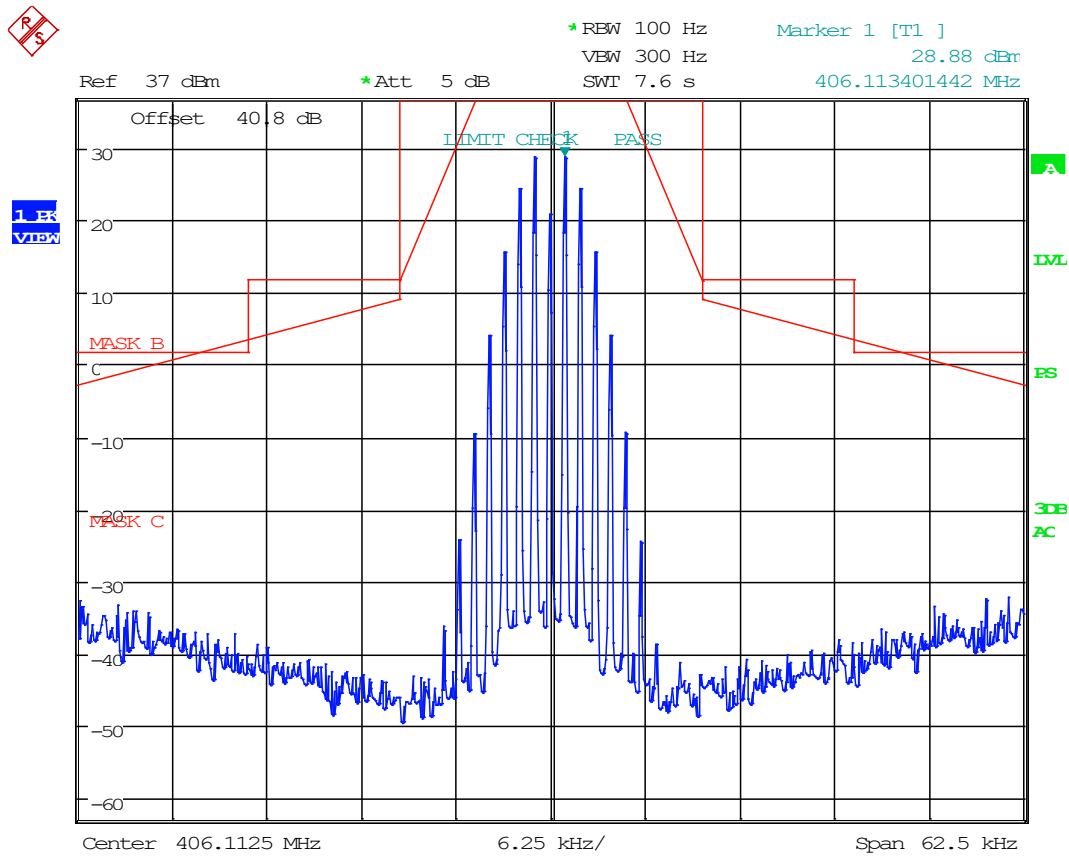
Date: 27.JUL.2020 17:29:43

Note: Occupied Bandwidth (99%) for this emission was taken separately, due to measurement setup being incompatible with the setup used in Emission Mask compliance.

Comparison to Input: Complies with Standards

EMISSION MASK & IVO

406.1125 MHz, Uplink, 12.5k FM, At AGC

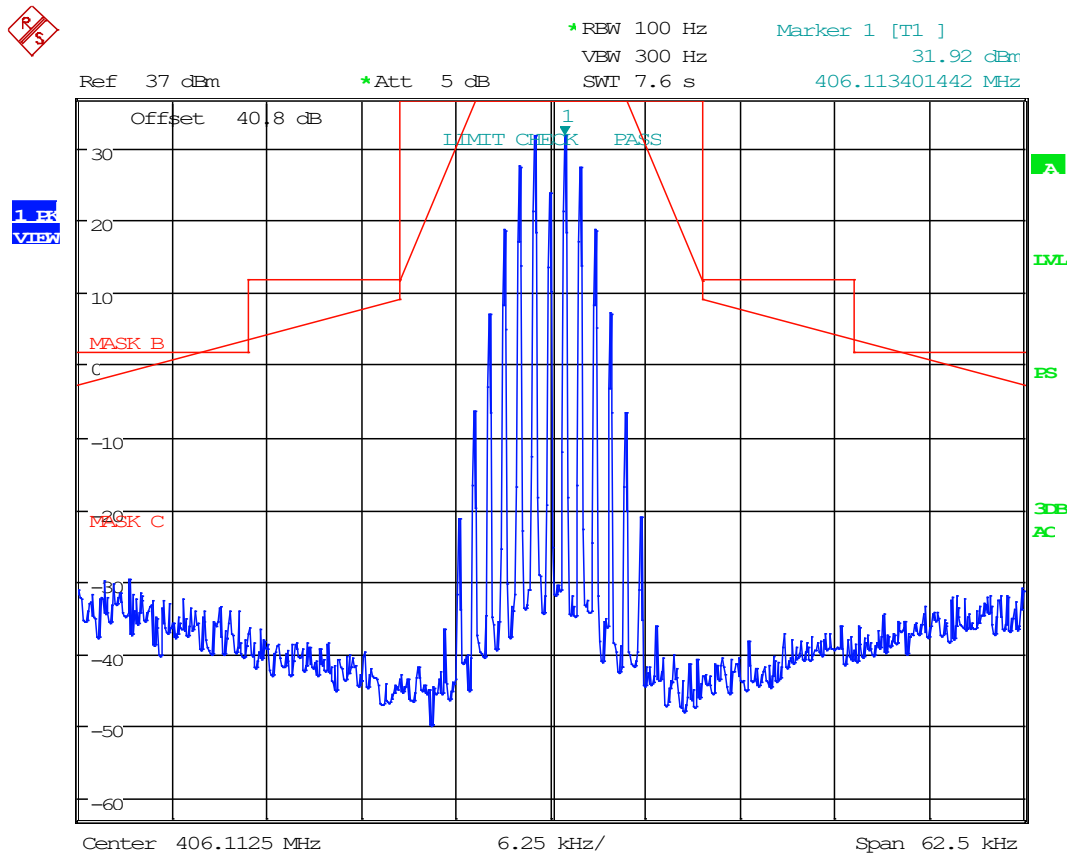


Date: 27.JUL.2020 17:28:31

Comparison to Input: Complies with Standards

EMISSION MASK & IVO

406.1125 MHz, Uplink, 12.5k FM, At AGC +3 dB

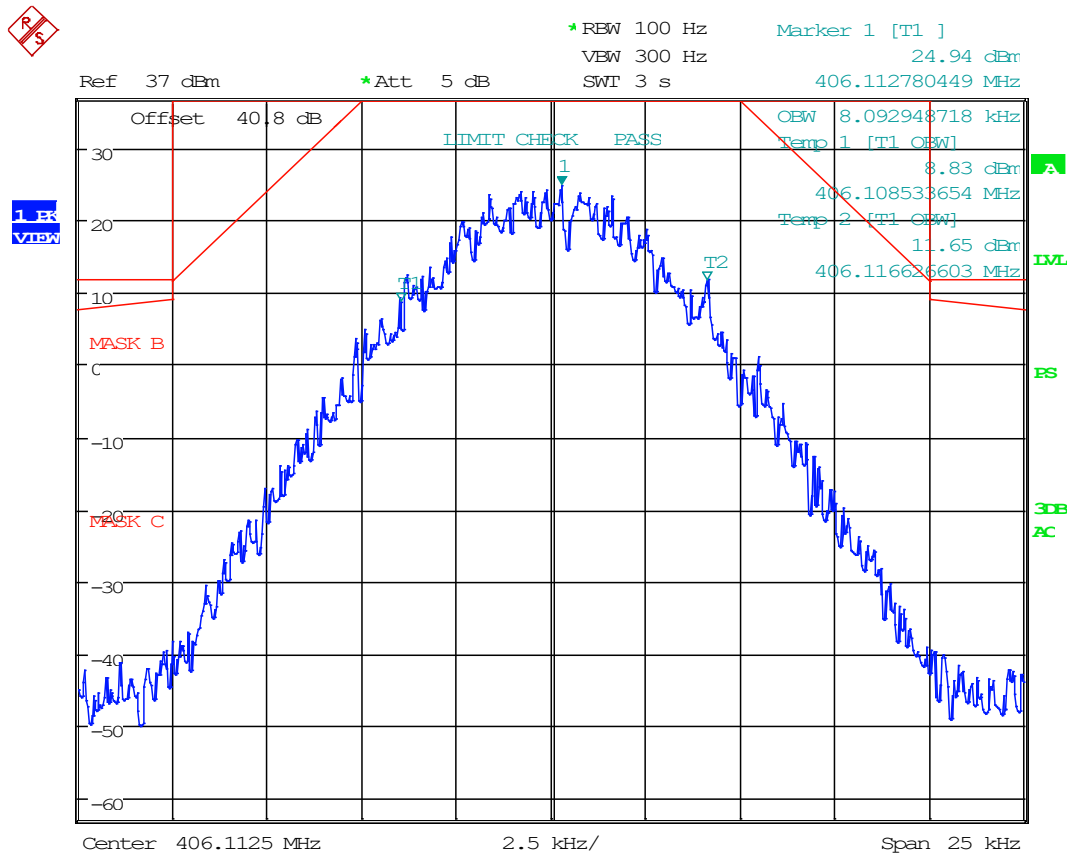


Date: 27.JUL.2020 17:27:34

Comparison to Input: Complies with Standards

EMISSION MASK & IVO

406.1125 MHz, Uplink, C4FM, OBW



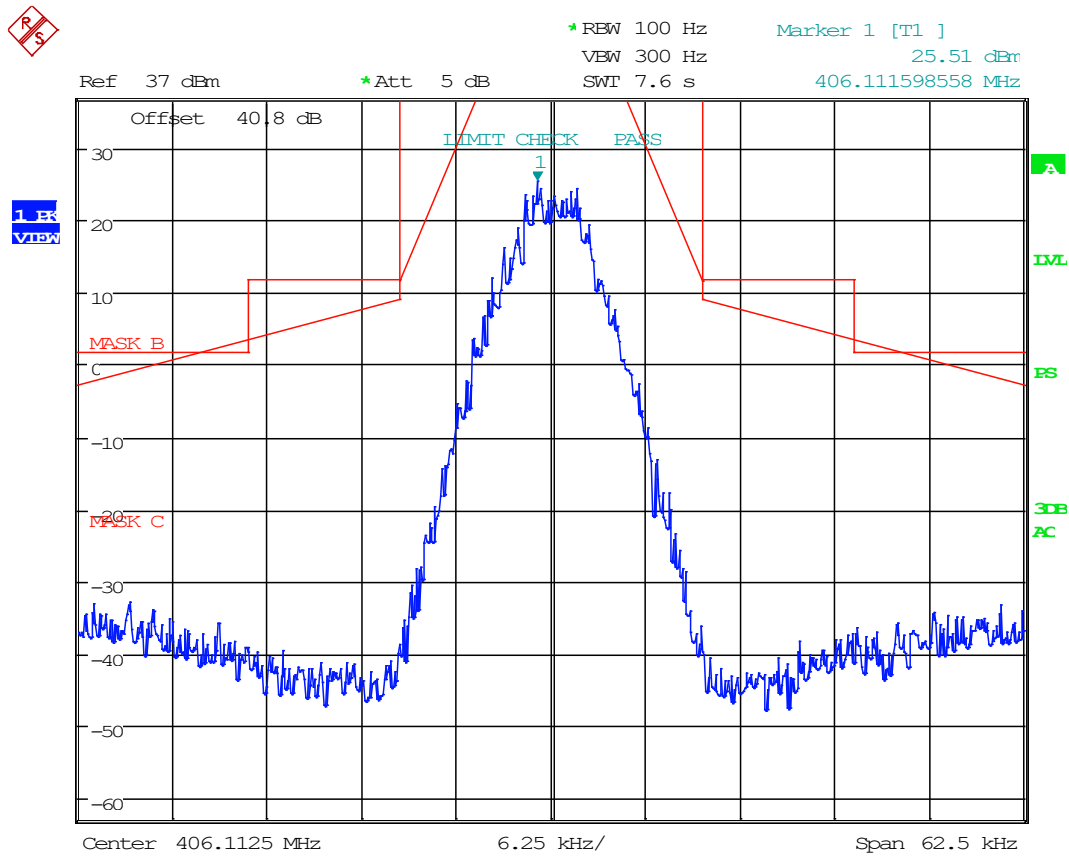
Date: 27.JUL.2020 17:30:55

Note: Occupied Bandwidth (99%) for this emission was taken separately, due to measurement setup being incompatible with the setup used in Emission Mask compliance.

Comparison to Input: Complies with Standards

EMISSION MASK & IVO

406.1125 MHz, Uplink, C4FM, At AGC

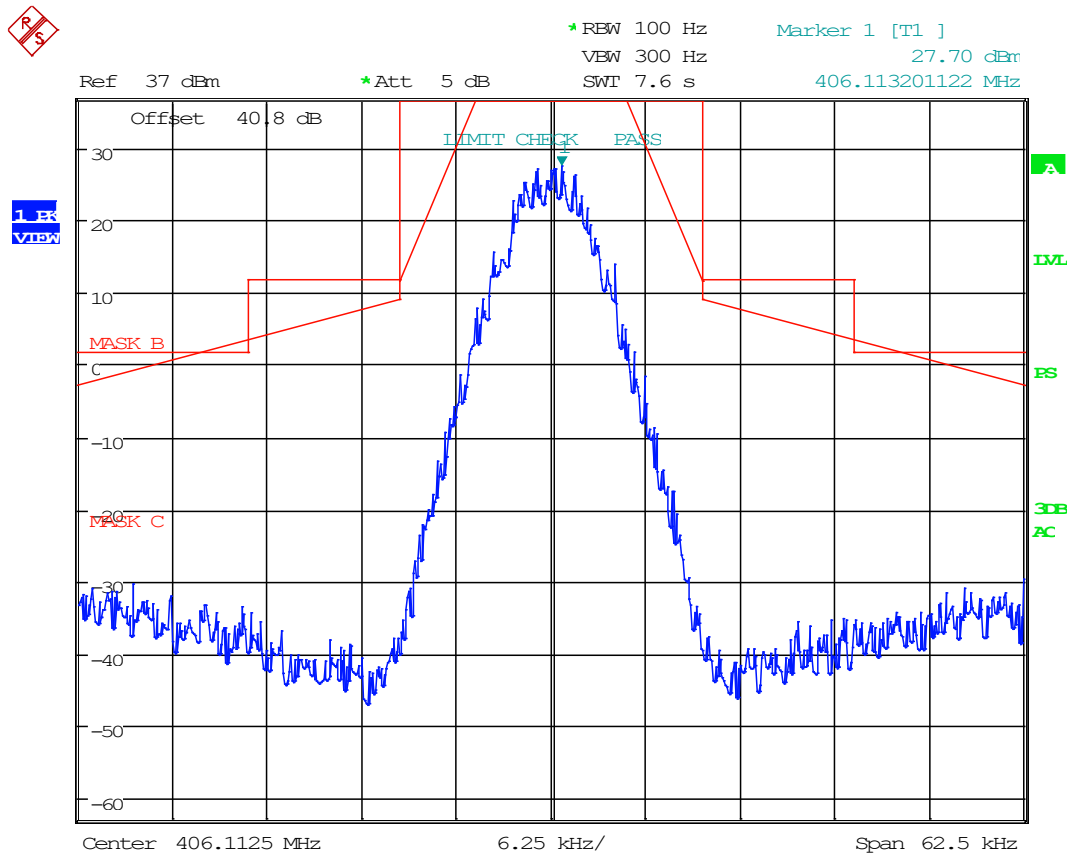


Date: 27.JUL.2020 17:37:59

Comparison to Input: Complies with Standards

EMISSION MASK & IVO

406.1125 MHz, Uplink, C4FM, At AGC +3 dB

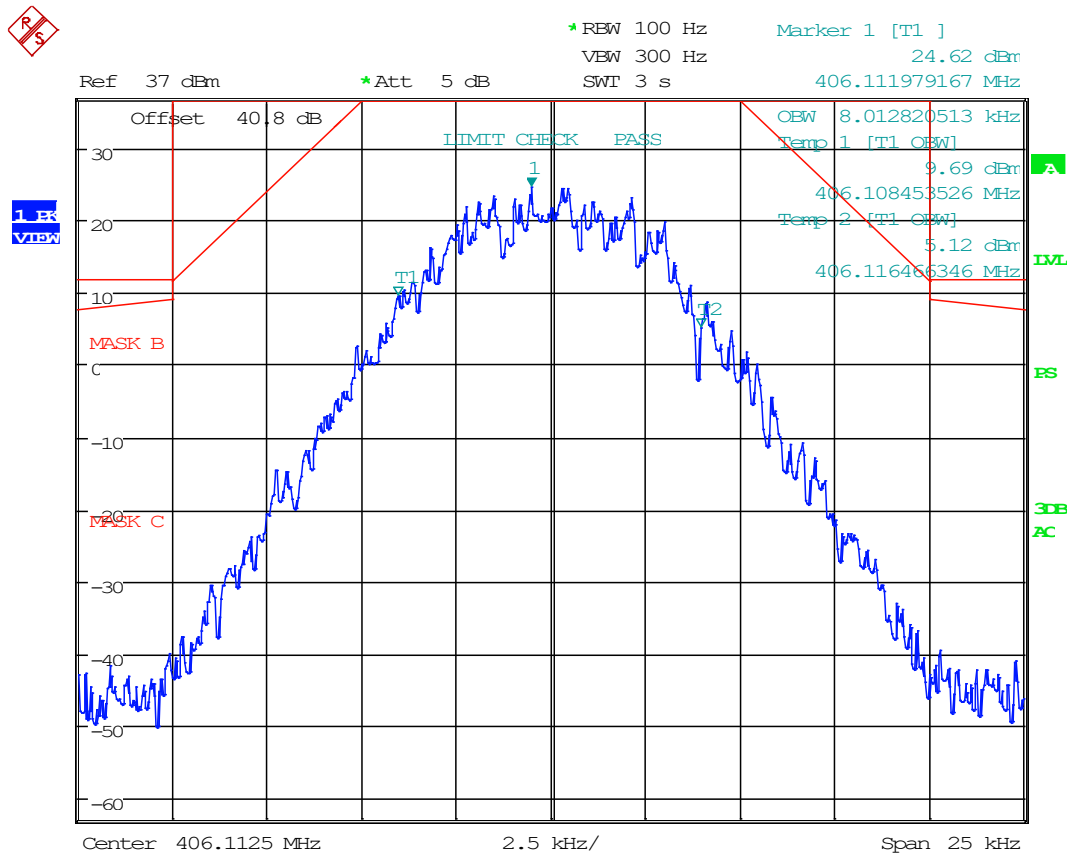


Date: 27.JUL.2020 17:38:59

Comparison to Input: Complies with Standards

EMISSION MASK & IVO

406.1125 MHz, Uplink, H-CPM, OBW



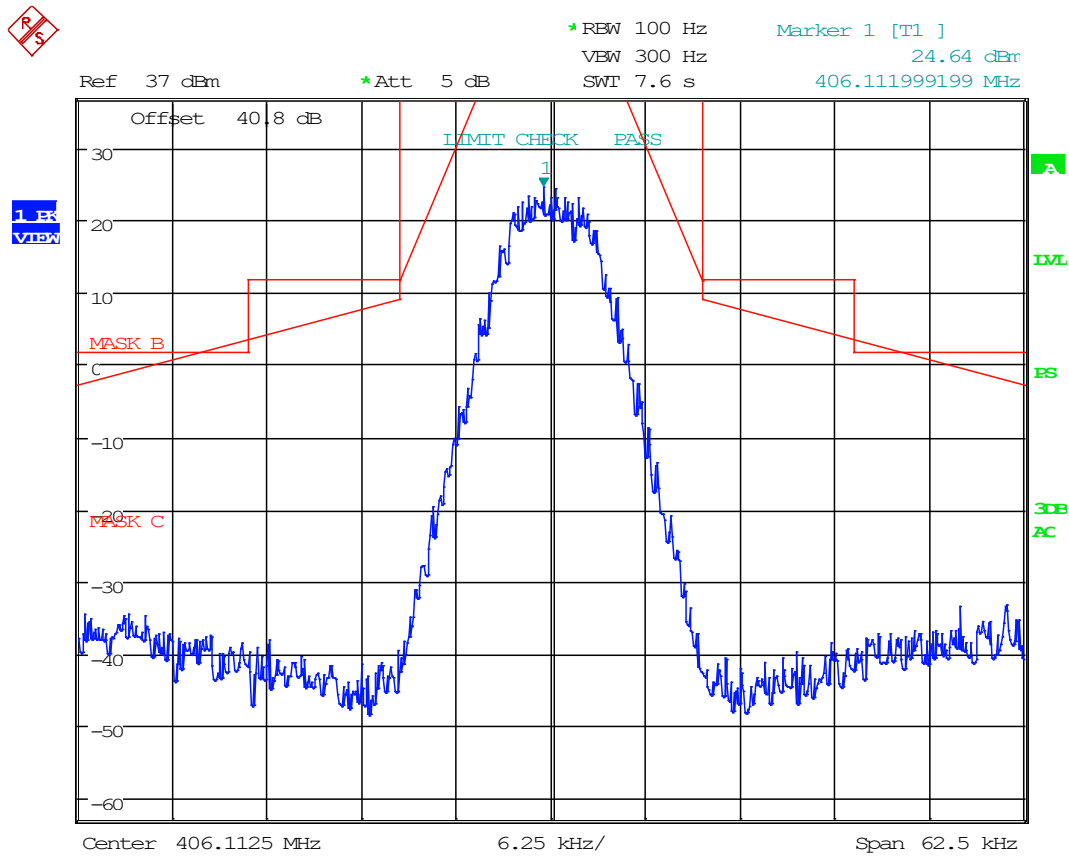
Date: 27.JUL.2020 17:31:41

Note: Occupied Bandwidth (99%) for this emission was taken separately, due to measurement setup being incompatible with the setup used in Emission Mask compliance.

Comparison to Input: Complies with Standards

EMISSION MASK & IVO

406.1125 MHz, Uplink, H-CPM, AT AGC

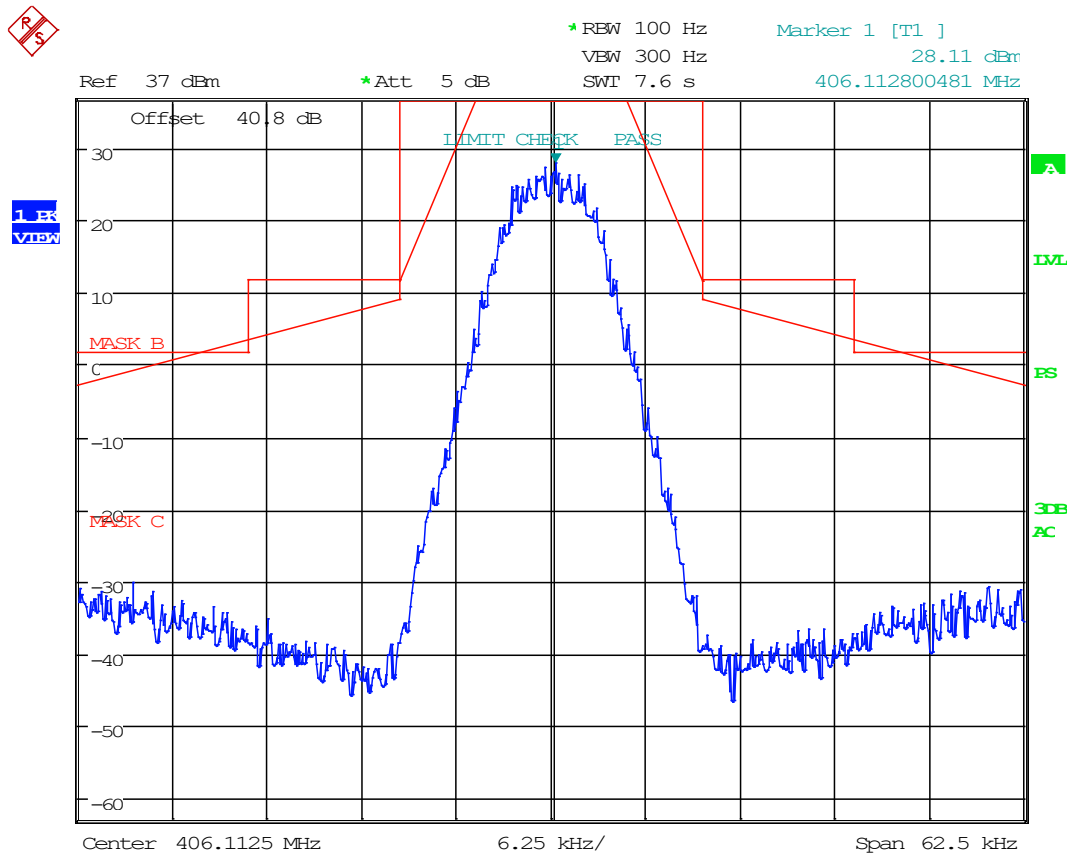


Date: 27.JUL.2020 17:36:52

Comparison to Input: Complies with Standards

EMISSION MASK & IVO

406.1125 MHz, Uplink, H-CPM, AT AGC +3 DB

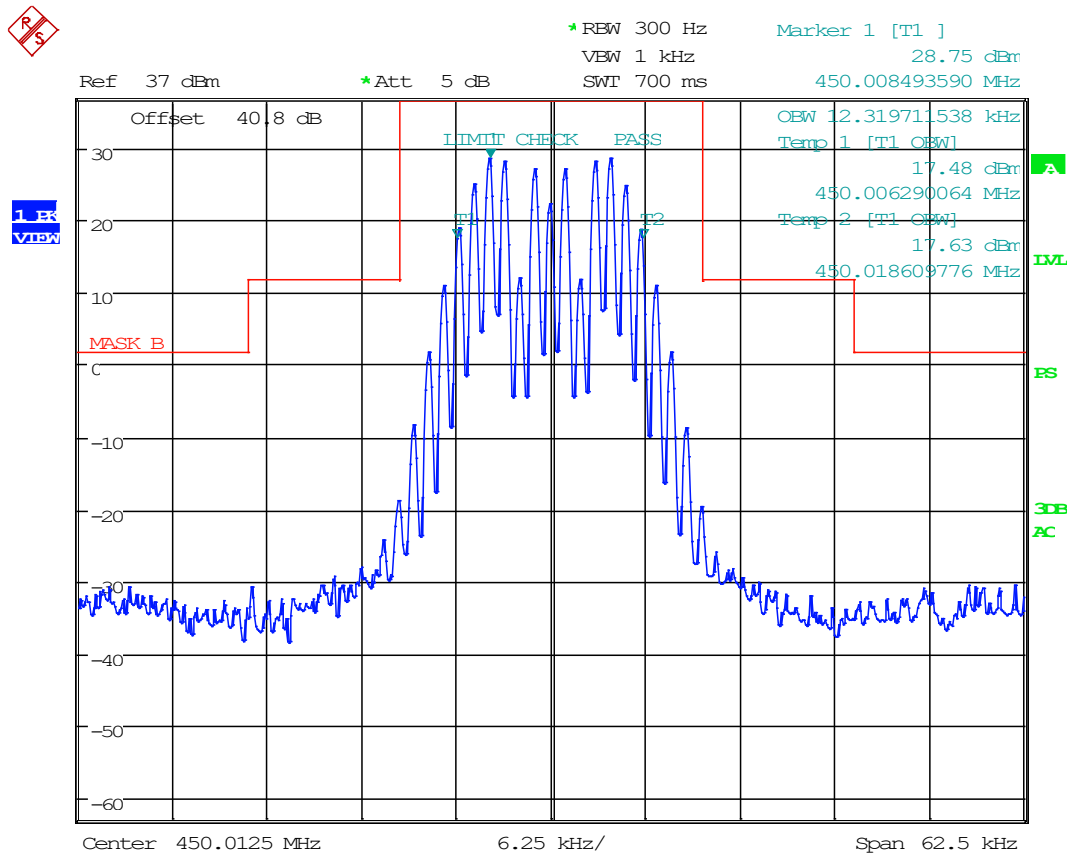


Date: 27.JUL.2020 17:35:59

Comparison to Input: Complies with Standards

EMISSION MASK & IVO

450.0125 MHz, Uplink, 25k FM, At AGC

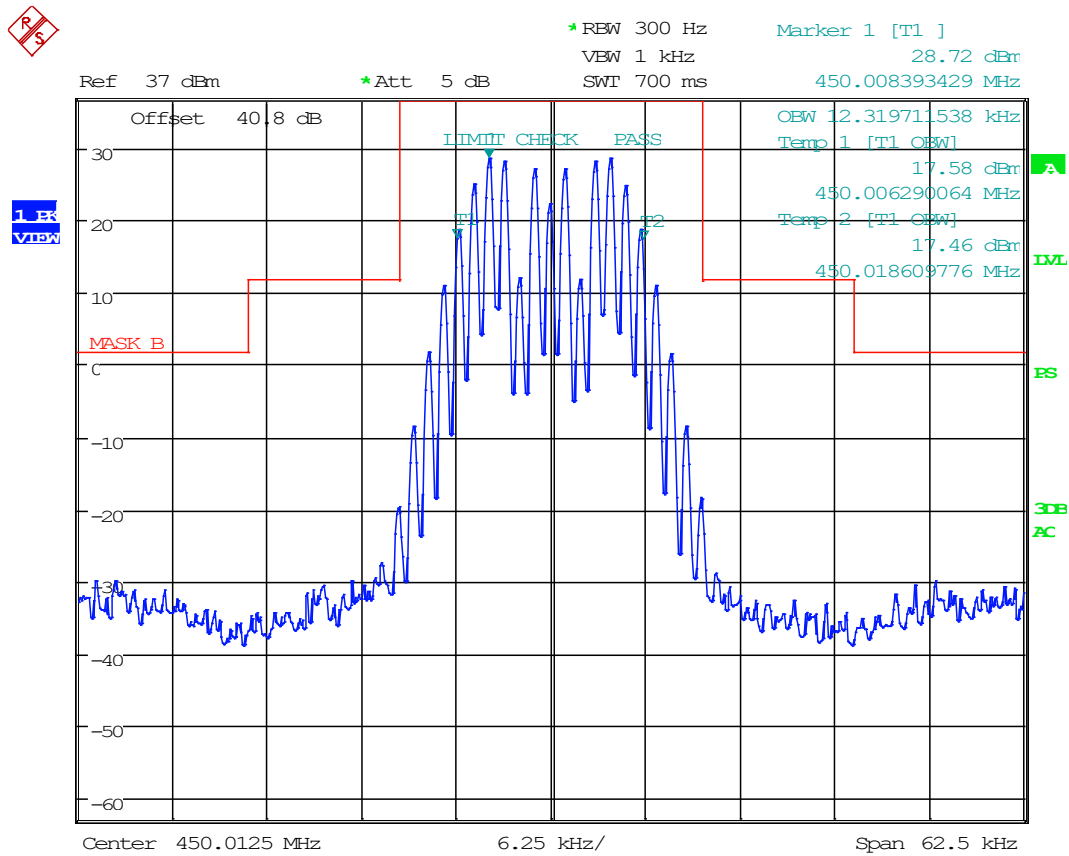


Date: 27.JUL.2020 11:23:18

Comparison to Input: Complies with Standards

EMISSION MASK & IVO

450.0125 MHz, Uplink, 25k FM, At AGC +3 dB

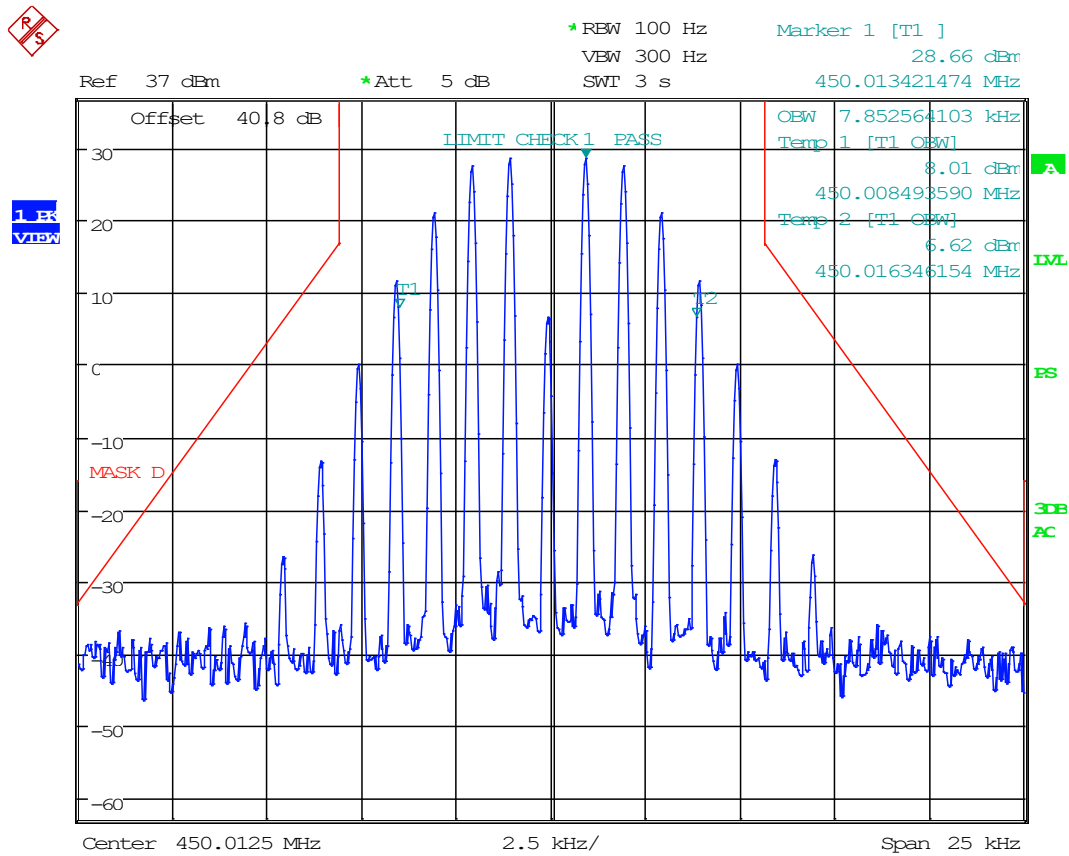


Date: 27.JUL.2020 11:24:07

Comparison to Input: Complies with Standards

EMISSION MASK & IVO

450.0125 MHz, Uplink, 12.5k FM, At AGC

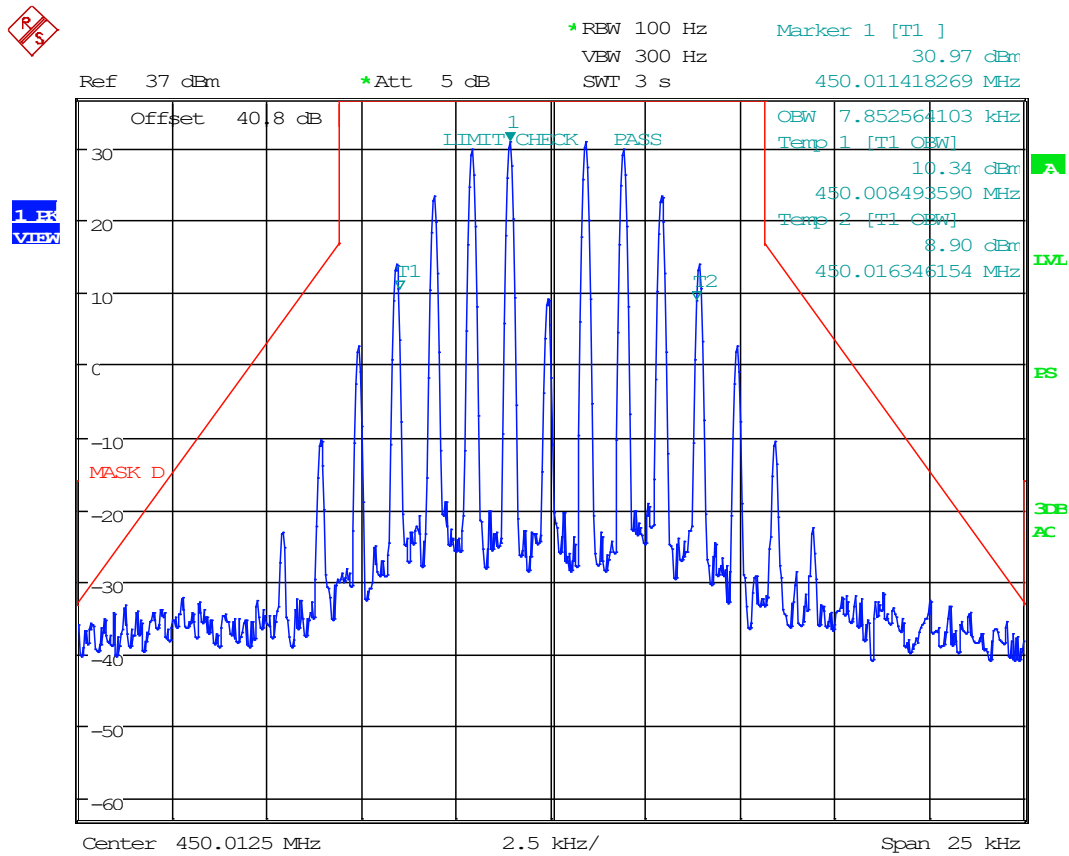


Date: 24.JUL.2020 18:41:05

Comparison to Input: Complies with Standards

EMISSION MASK & IVO

450.0125 MHz, Uplink, 12.5k FM, At AGC +3 dB

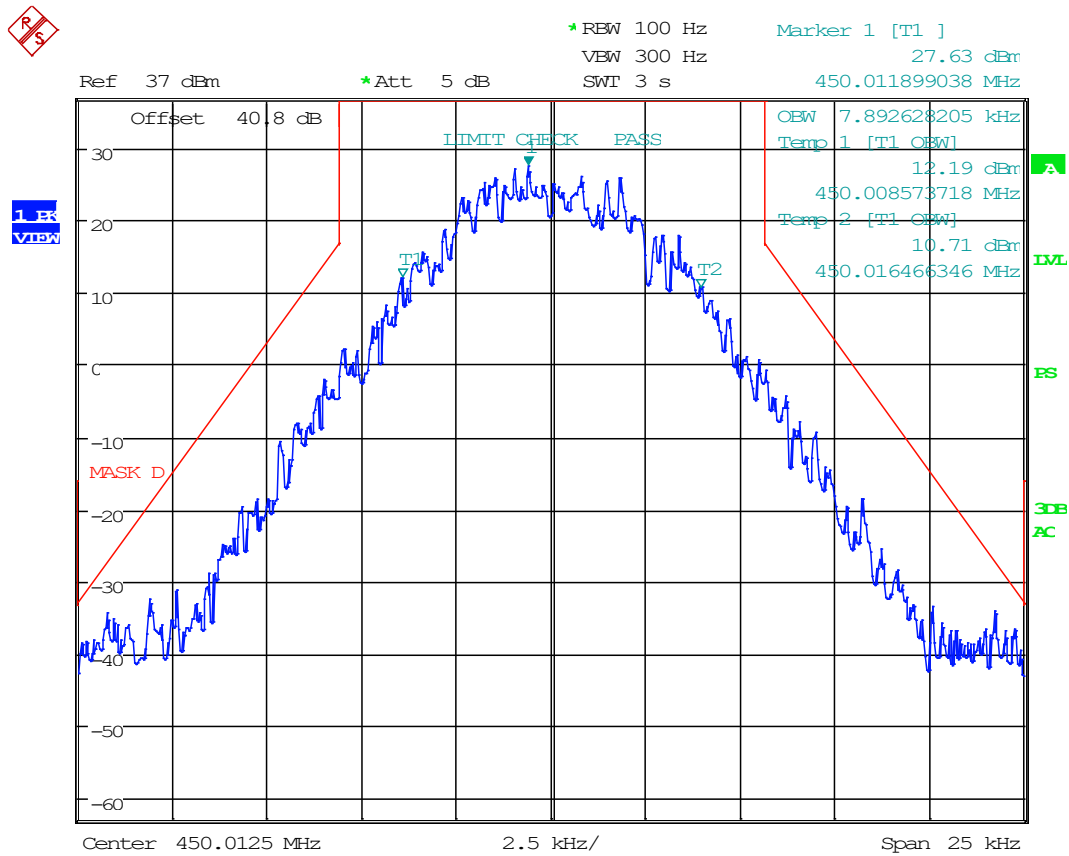


Date: 24.JUL.2020 18:42:24

Comparison to Input: Complies with Standards

EMISSION MASK & IVO

450.0125 MHz, Uplink, C4FM, At AGC

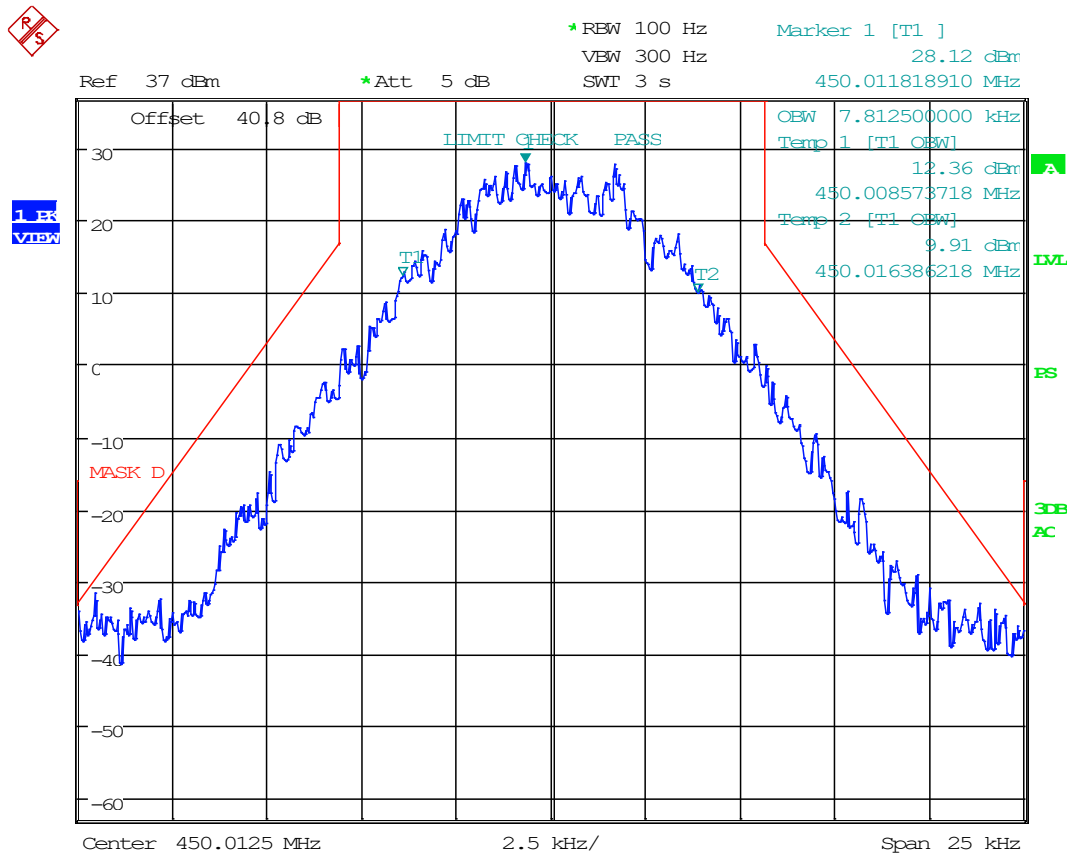


Date: 24.JUL.2020 18:43:31

Comparison to Input: Complies with Standards

EMISSION MASK & IVO

450.0125 MHz, Uplink, C4FM, At AGC +3 dB

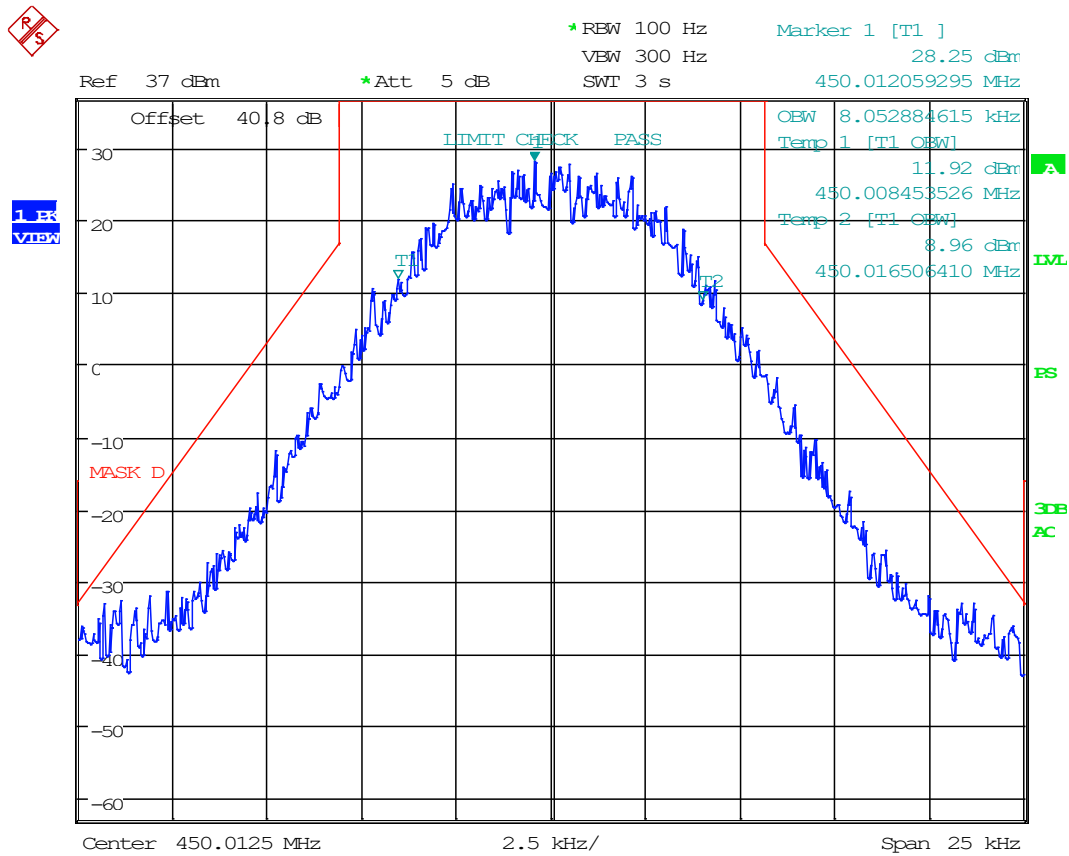


Date: 24.JUL.2020 18:44:18

Comparison to Input: Complies with Standards

EMISSION MASK & IVO

450.0125 MHz, Uplink, H-CPM, AT AGC +3 DB

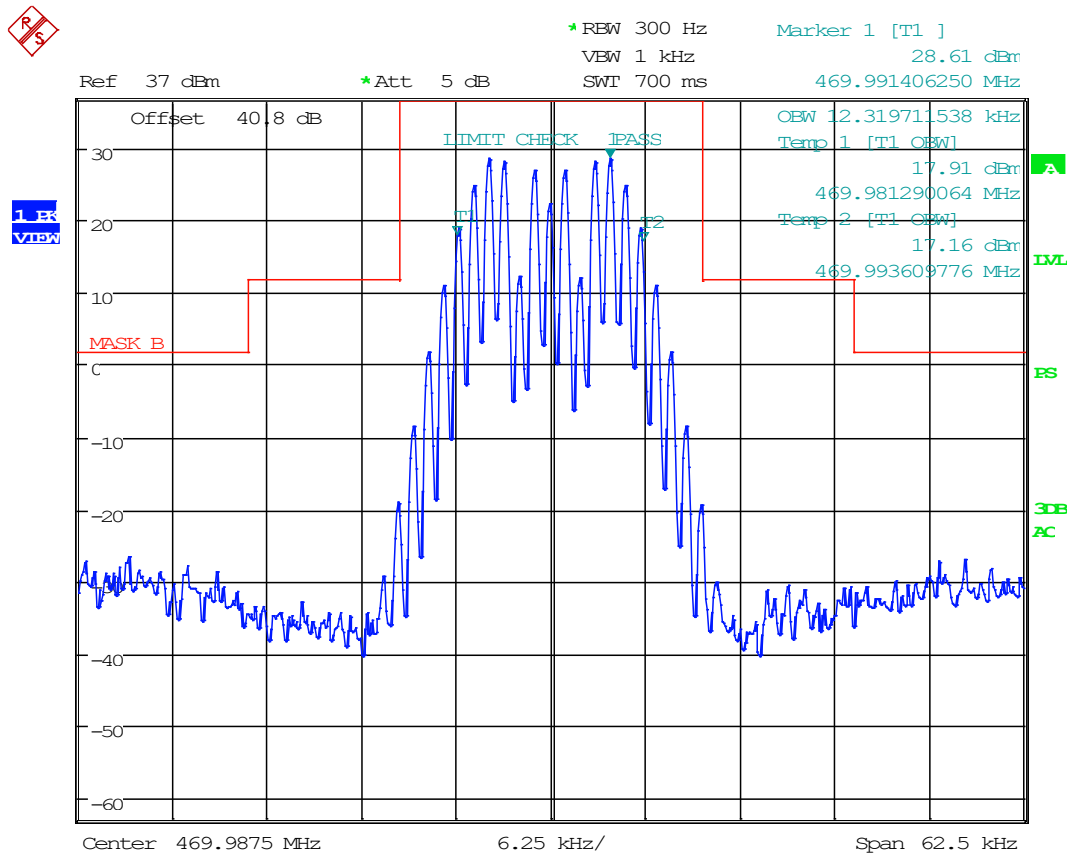


Date: 24.JUL.2020 18:47:07

Comparison to Input: Complies with Standards

EMISSION MASK & IVO

469.9875 MHz, Downlink, 25k FM, At AGC

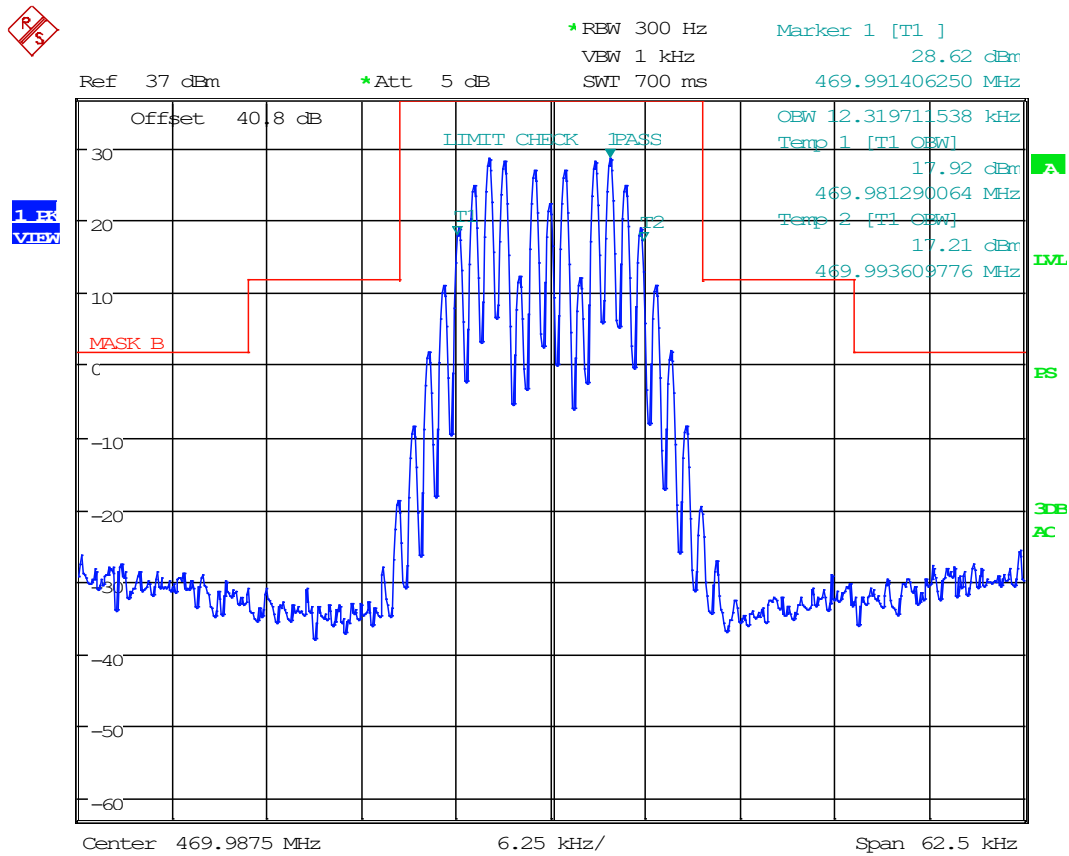


Date: 27.JUL.2020 13:05:22

Comparison to Input: Complies with Standards

EMISSION MASK & IVO

469.9875 MHz, Downlink, 25k FM, At AGC +3 dB

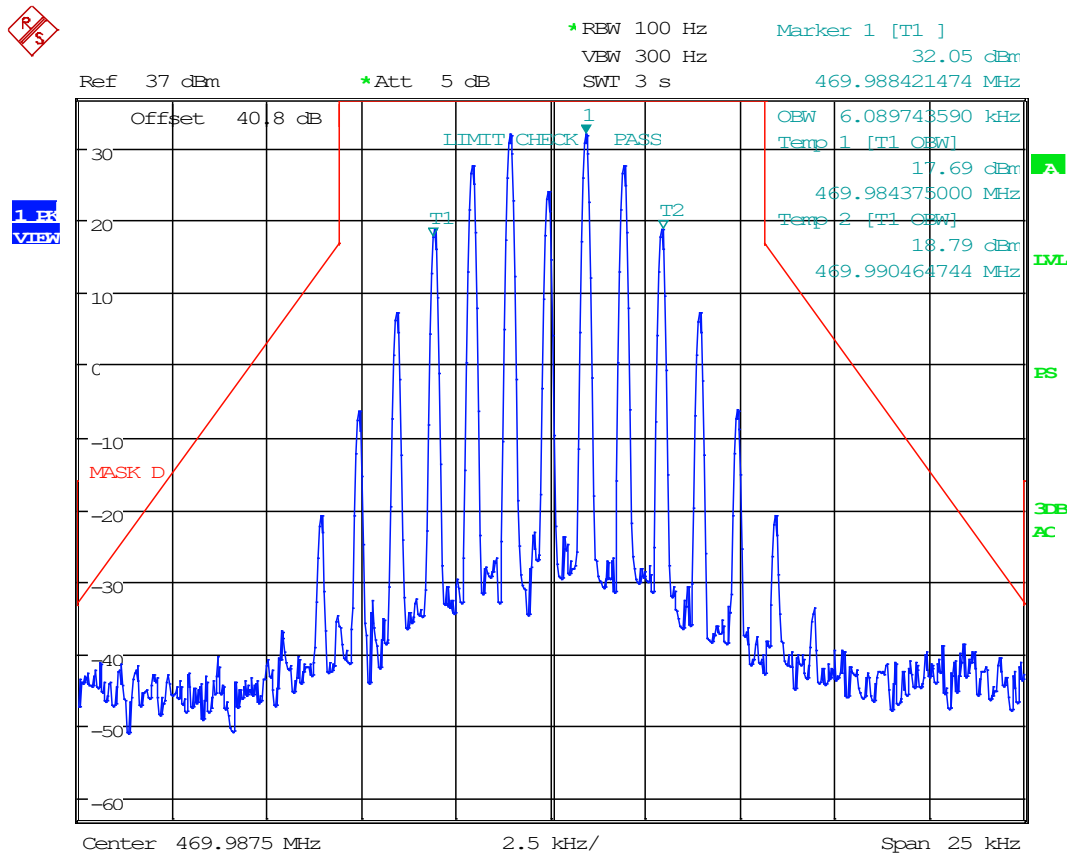


Date: 27.JUL.2020 13:05:58

Comparison to Input: Complies with Standards

EMISSION MASK & IVO

469.9875 MHz, Downlink, 12.5k FM, At AGC

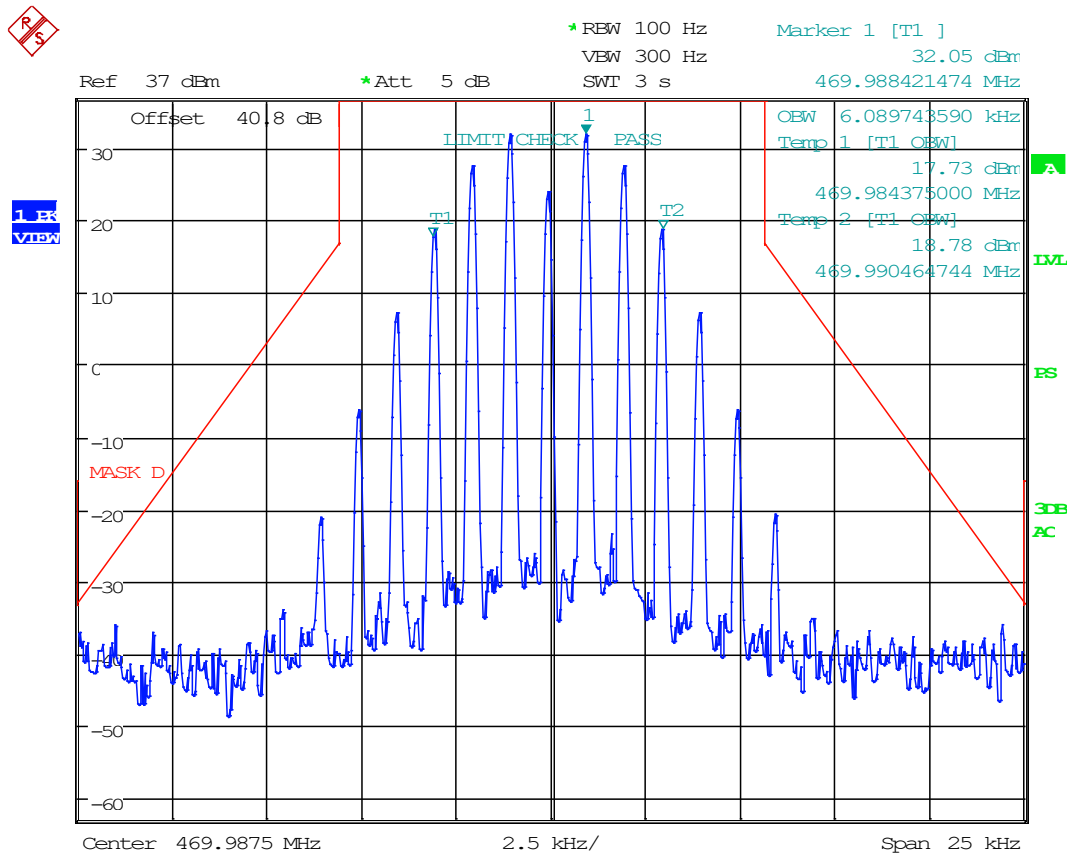


Date: 27.JUL.2020 12:56:26

Comparison to Input: Complies with Standards

EMISSION MASK & IVO

469.9875 MHz, Downlink, 12.5k FM, At AGC +3 dB

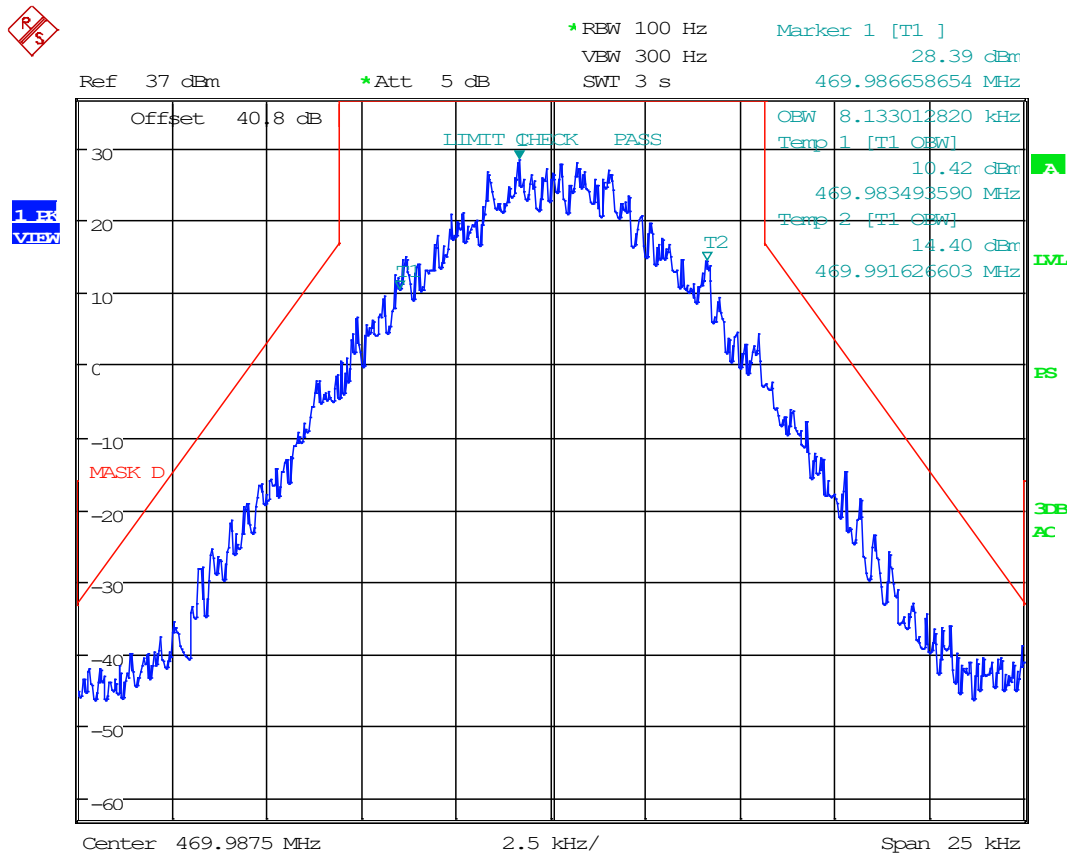


Date: 27.JUL.2020 12:57:09

Comparison to Input: Complies with Standards

EMISSION MASK & IVO

469.9875 MHz, Downlink, C4FM, At AGC

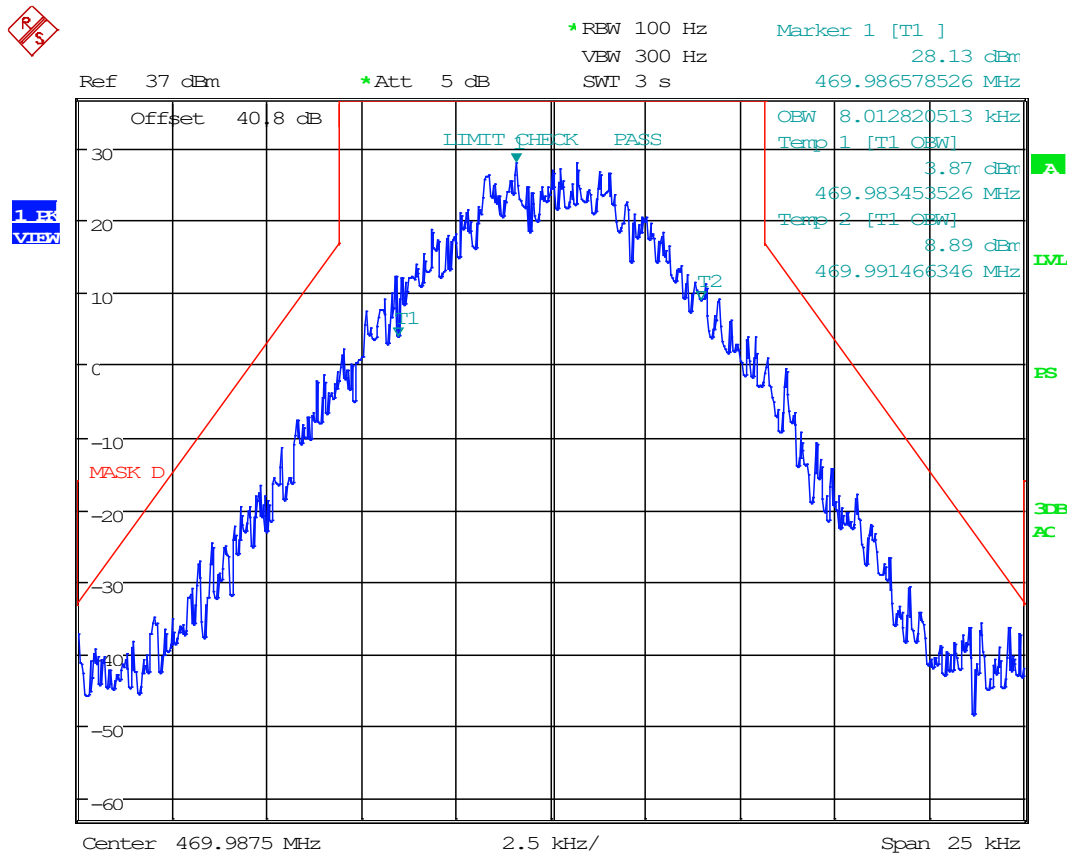


Date: 27.JUL.2020 13:01:12

Comparison to Input: Complies with Standards

EMISSION MASK & IVO

469.9875 MHz, Downlink, C4FM, At AGC +3 dB

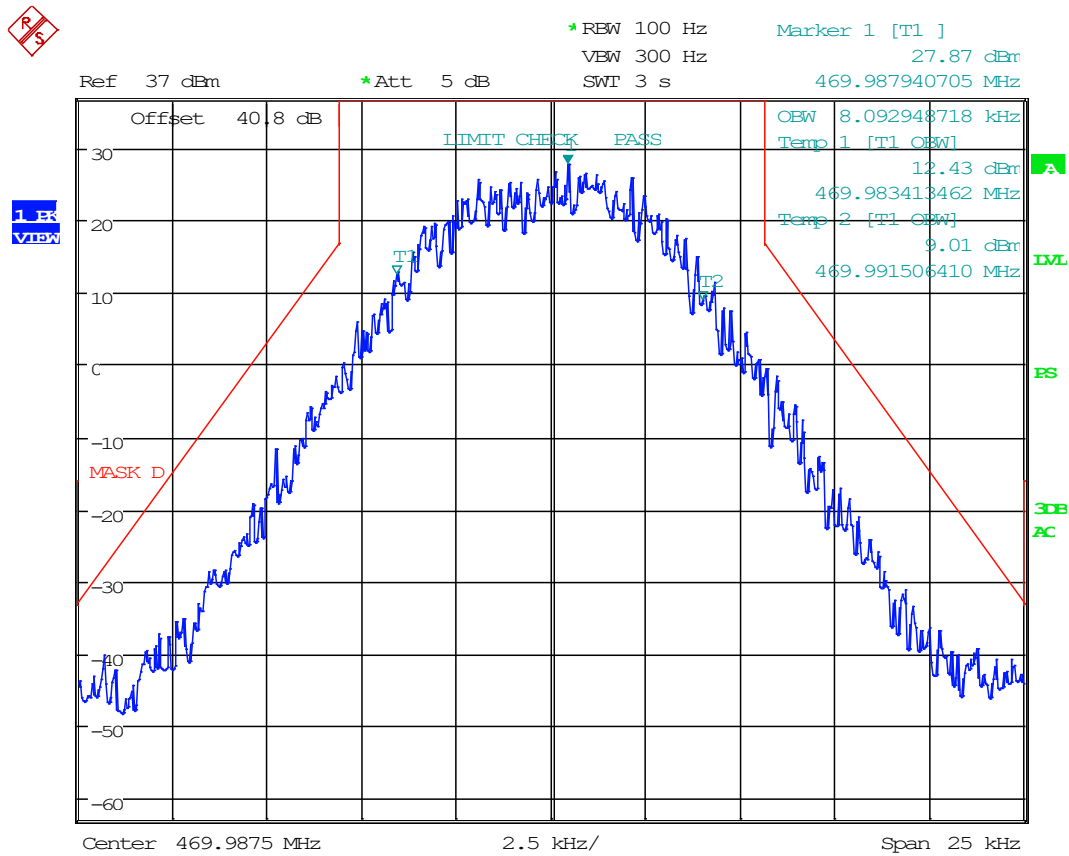


Date: 27.JUL.2020 13:01:36

Comparison to Input: Complies with Standards

EMISSION MASK & IVO

469.9875 MHz, Downlink, H-CPM, AT AGC

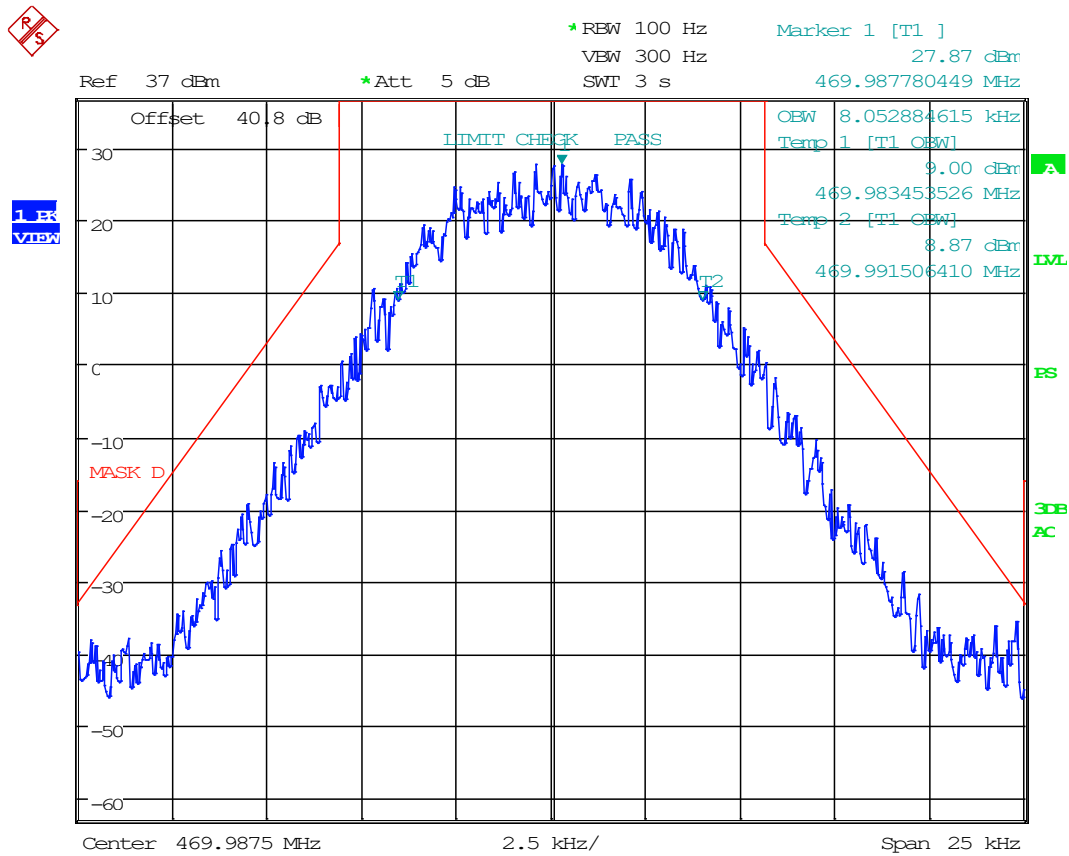


Date: 27.JUL.2020 13:00:31

Comparison to Input: Complies with Standards

EMISSION MASK & IVO

469.9875 MHz, Downlink, H-CPM, AT AGC +3 DB

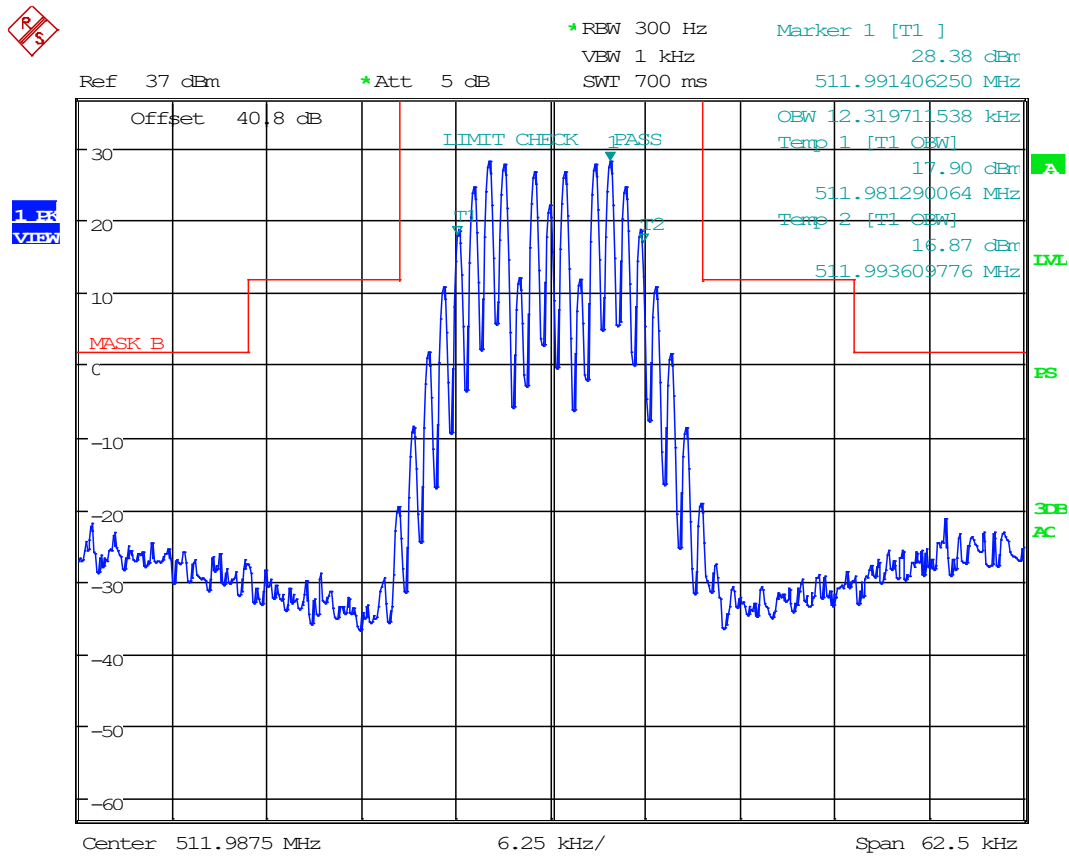


Date: 27.JUL.2020 12:59:52

Comparison to Input: Complies with Standards

EMISSION MASK & IVO

511.9875 MHz, Downlink, 25k FM, At AGC

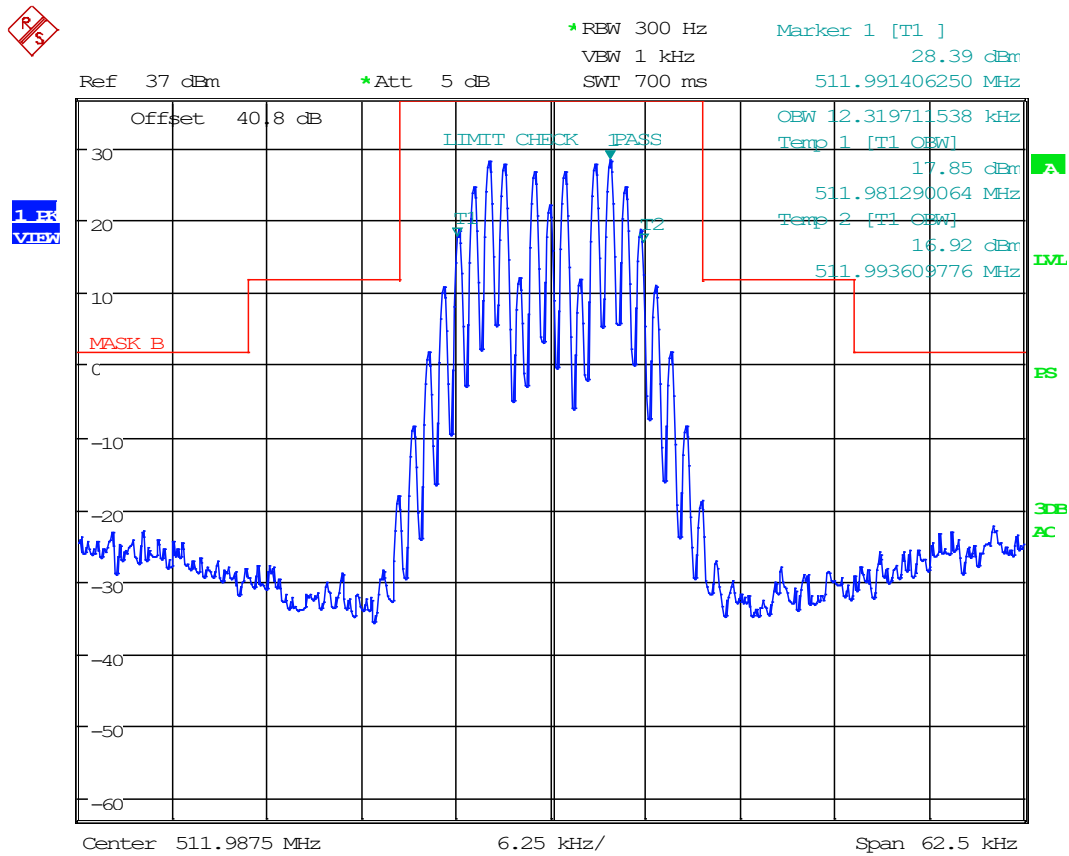


Date: 27.JUL.2020 19:04:30

Comparison to Input: Complies with Standards

EMISSION MASK & IVO

511.9875 MHz, Downlink, 25k FM, At AGC +3 dB

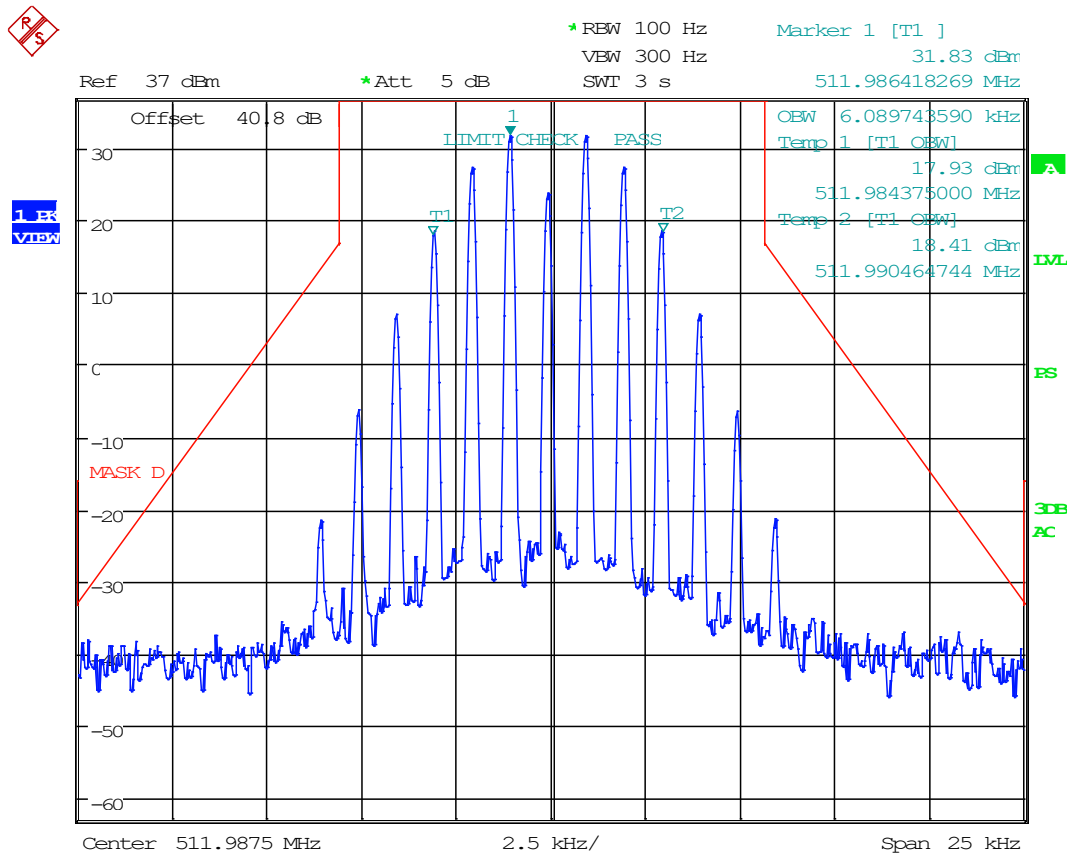


Date: 27.JUL.2020 19:05:23

Comparison to Input: Complies with Standards

EMISSION MASK & IVO

511.9875 MHz, Downlink, 12.5k FM, At AGC

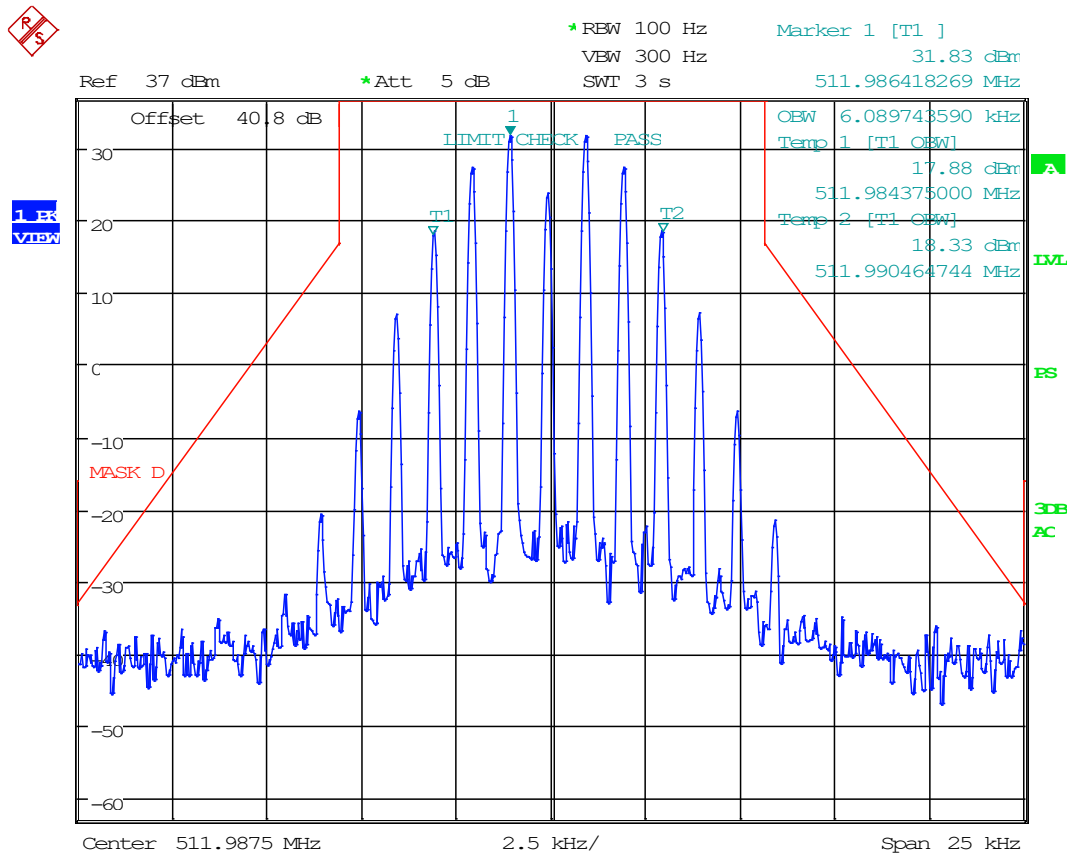


Date: 27.JUL.2020 18:45:40

Comparison to Input: Complies with Standards

EMISSION MASK & IVO

511.9875 MHz, Downlink, 12.5k FM, At AGC +3 dB

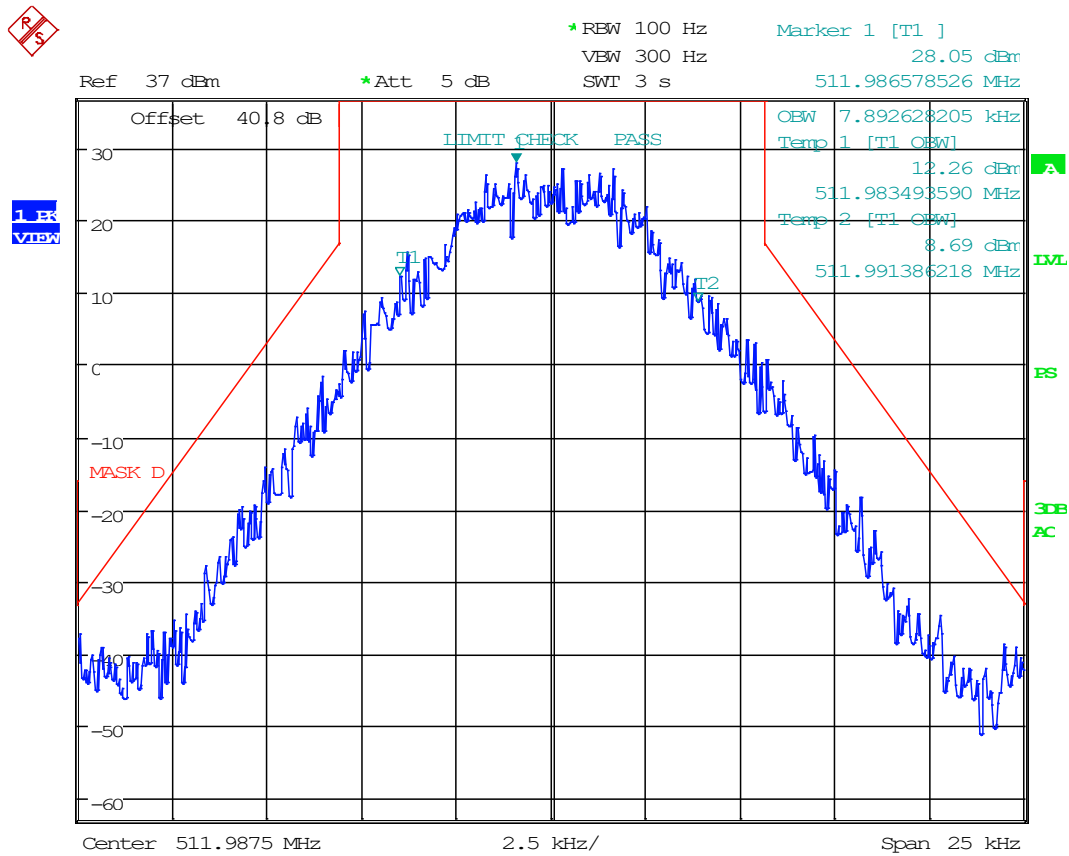


Date: 27.JUL.2020 18:46:32

Comparison to Input: Complies with Standards

EMISSION MASK & IVO

511.9875 MHz, Downlink, C4FM, At AGC

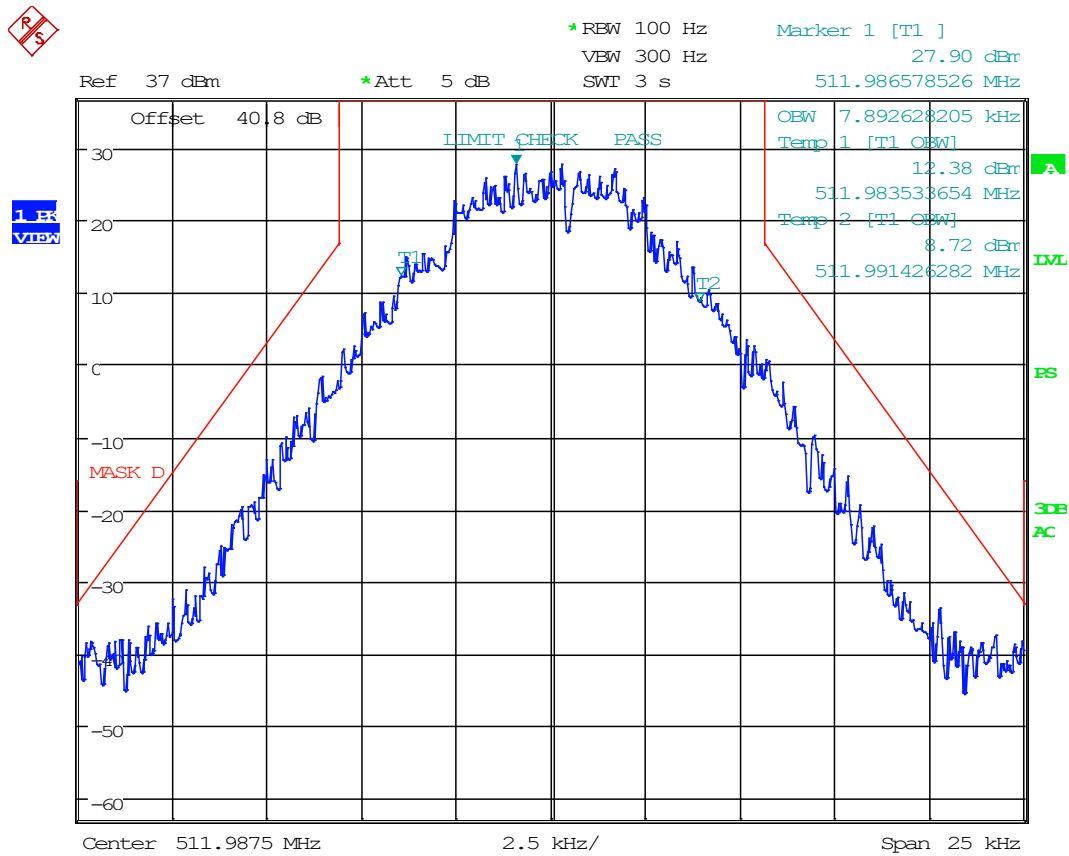


Date: 27.JUL.2020 18:57:51

Comparison to Input: Complies with Standards

EMISSION MASK & IVO

511.9875 MHz, Downlink, C4FM, At AGC +3 dB

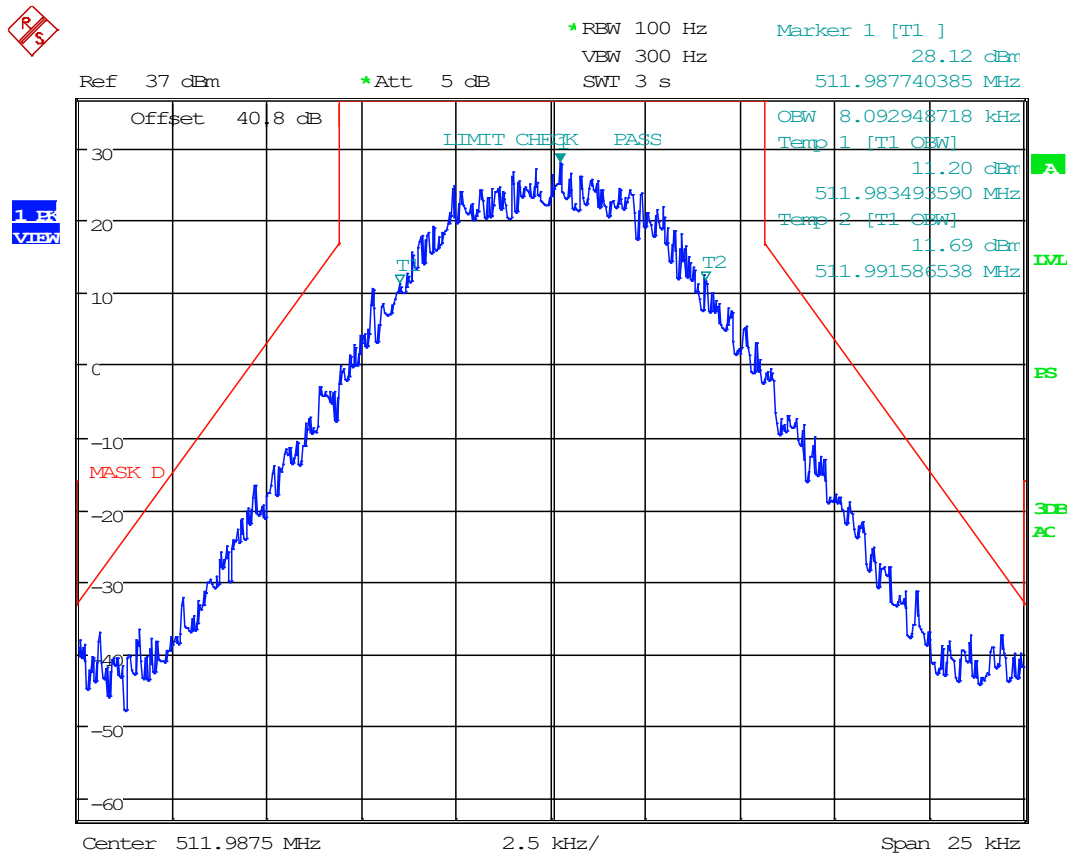


Date: 27.JUL.2020 18:58:46

Comparison to Input: Complies with Standards

EMISSION MASK & IVO

511.9875 MHz, Downlink, H-CPM, AT AGC

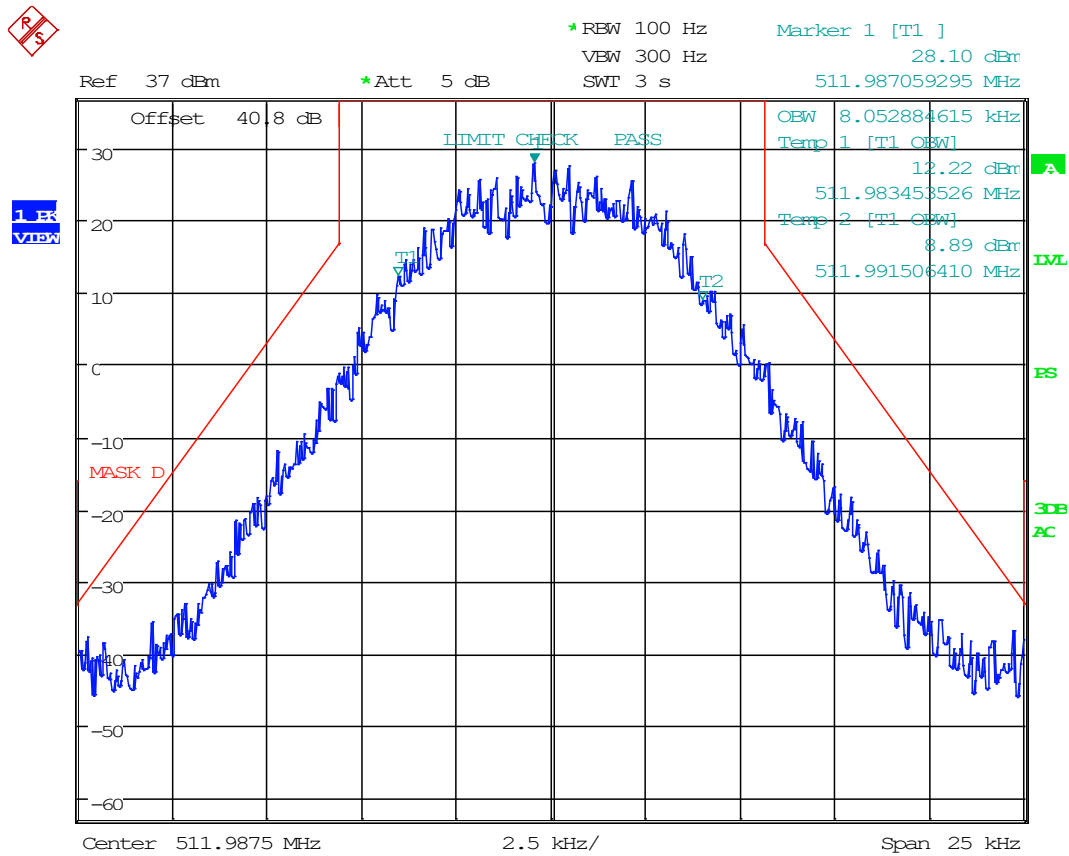


Date: 27.JUL.2020 18:59:32

Comparison to Input: Complies with Standards

EMISSION MASK & IVO

511.9875 MHz, Downlink, H-CPM, AT AGC +3 DB



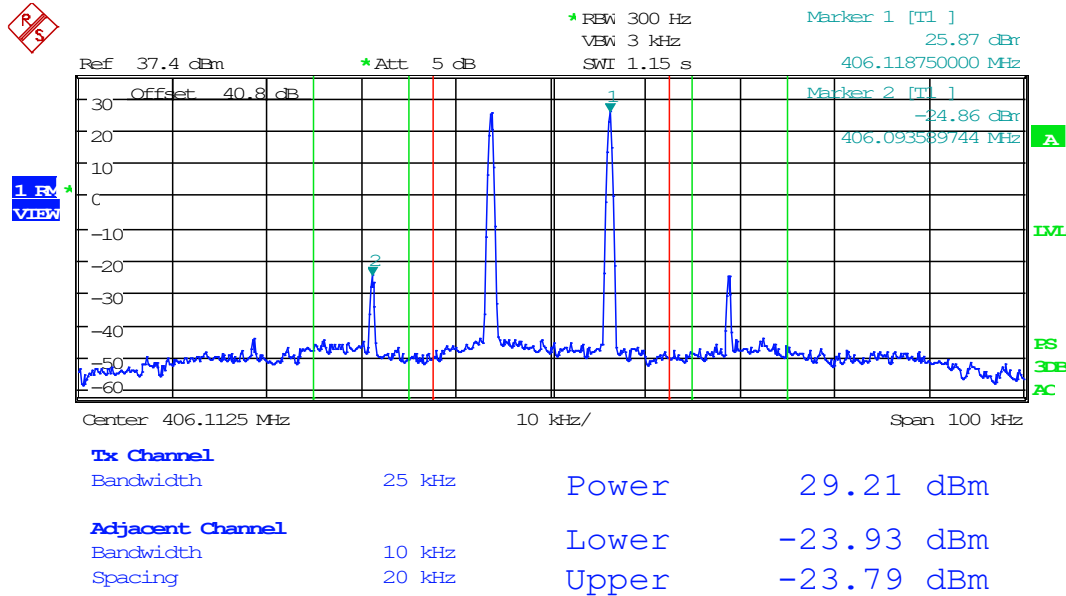
Date: 27.JUL.2020 19:00:06

Comparison to Input: Complies with Standards

KDB 935210 4.7.2 INTERMODULATION

Test Engineer: FR
 Test Date: JUL 27, 2020

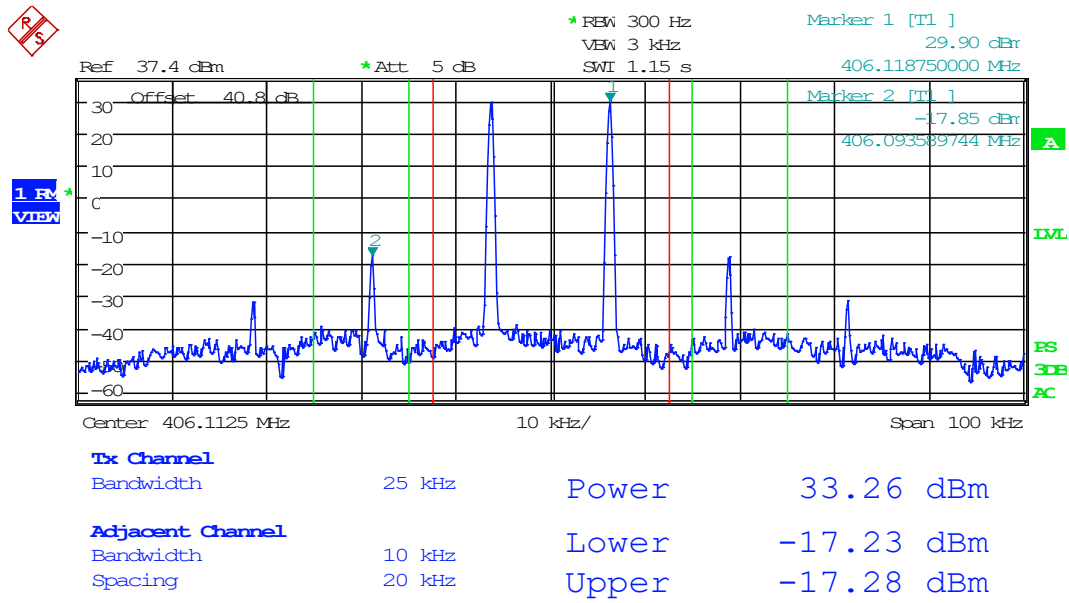
406.1125 MHz, Uplink, 12.5k, At AGC



Date: 27.JUL.2020 18:07:59

INTERMODULATION

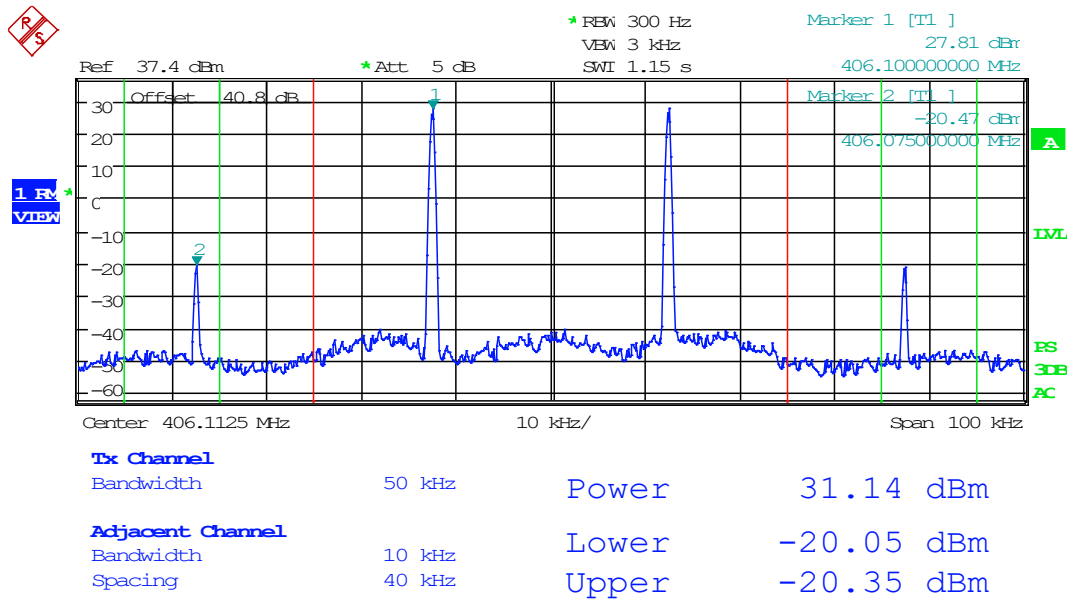
406.1125 MHz, Uplink, 12.5k, At AGC +3 dB



Date: 27.JUL.2020 18:09:10

INTERMODULATION

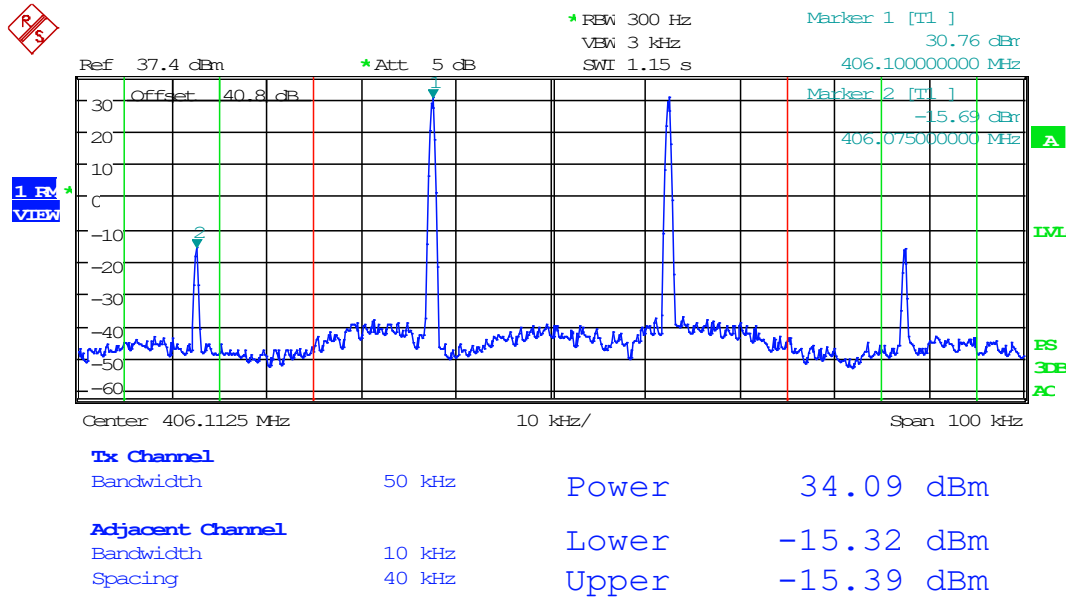
406.1125 MHz, Uplink, 25K, At AGC



Date: 27.JUL.2020 18:12:00

INTERMODULATION

406.1125 MHz, Uplink, 25K, At AGC +3 dB

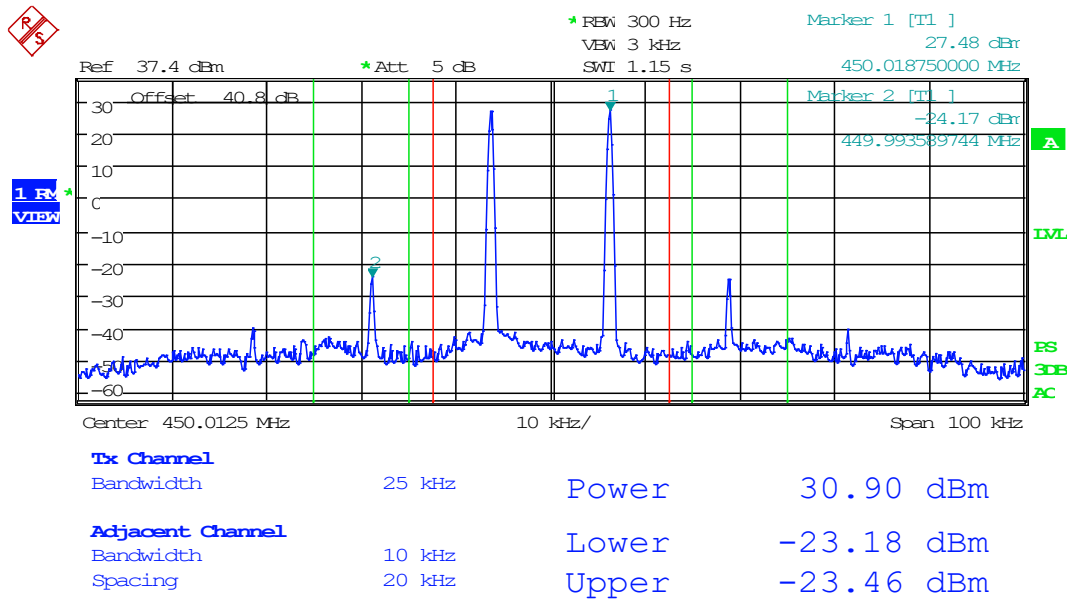


Date: 27.JUL.2020 18:16:33



INTERMODULATION

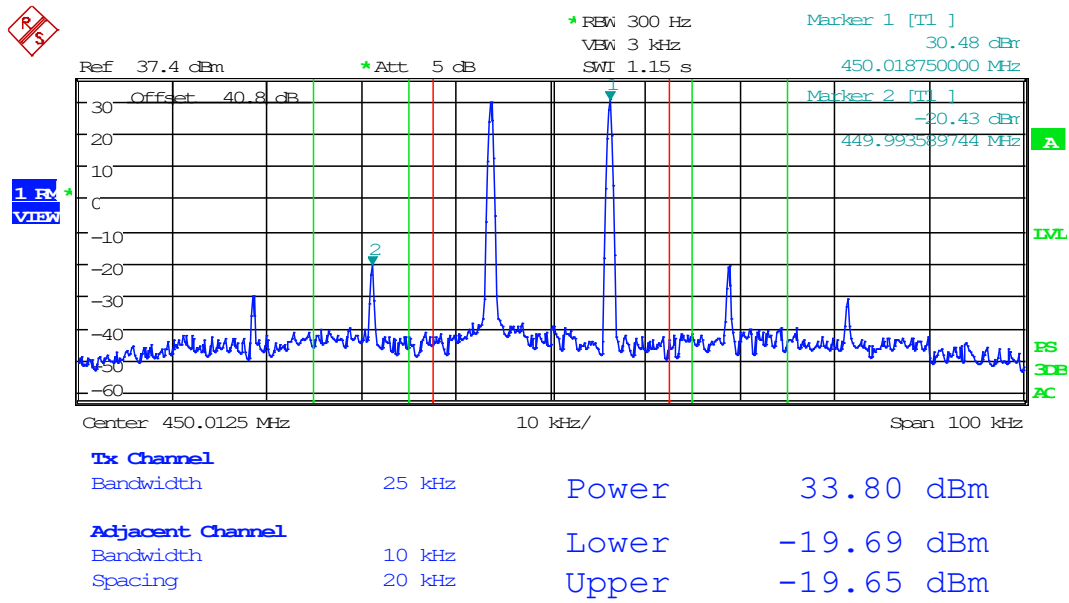
450.0125 MHz, Uplink, 12.5k, At AGC



Date: 27.JUL.2020 12:10:19

INTERMODULATION

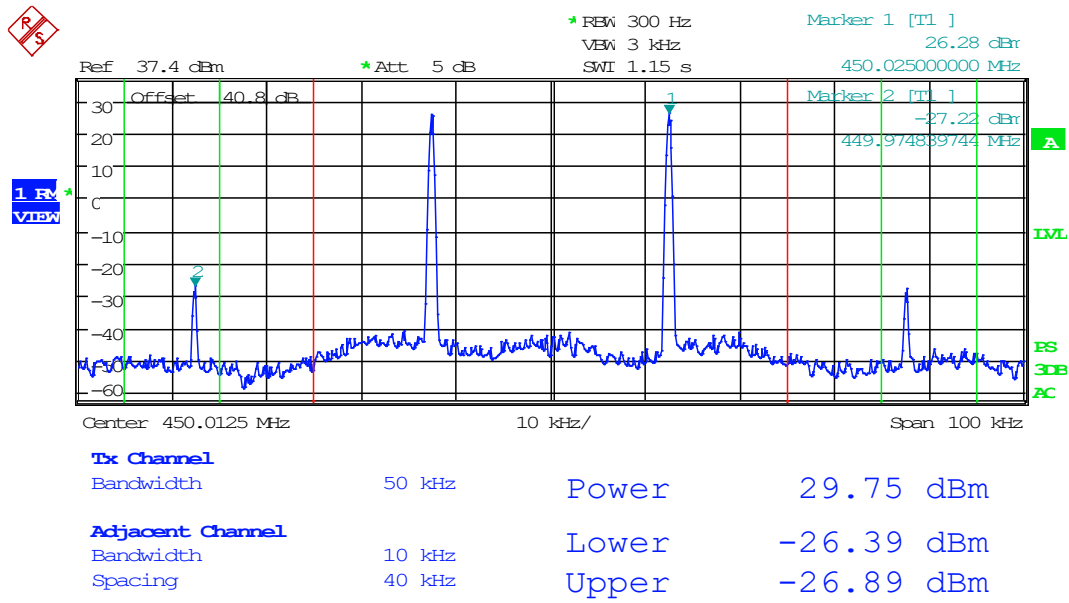
450.0125 MHz, Uplink, 12.5k, At AGC +3 dB



Date: 27.JUL.2020 12:09:40

INTERMODULATION

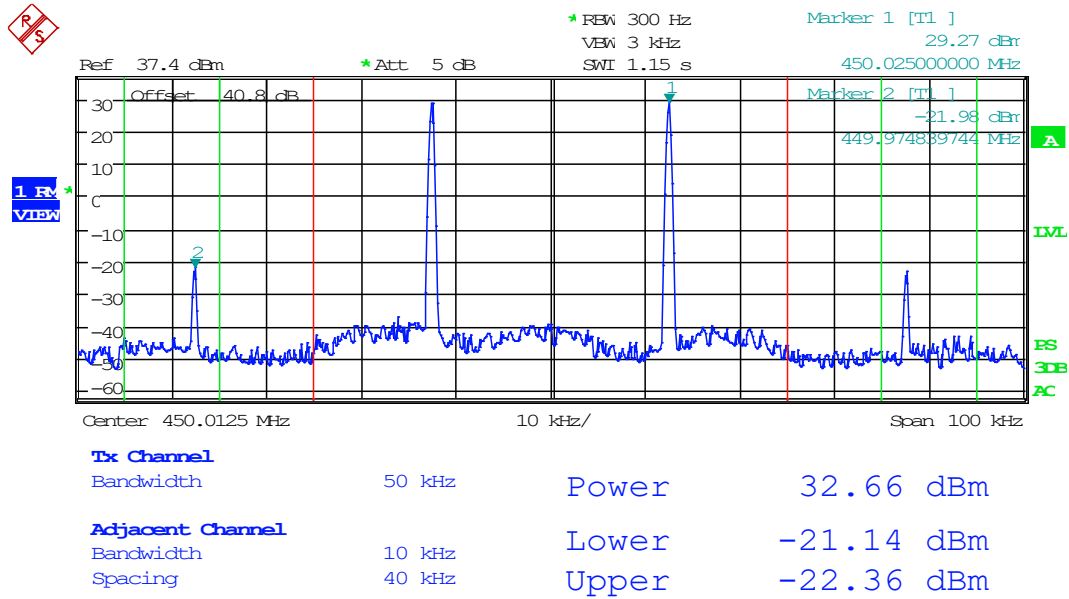
450.0125 MHz, Uplink, 25K, At AGC



Date: 27.JUL.2020 12:12:38

INTERMODULATION

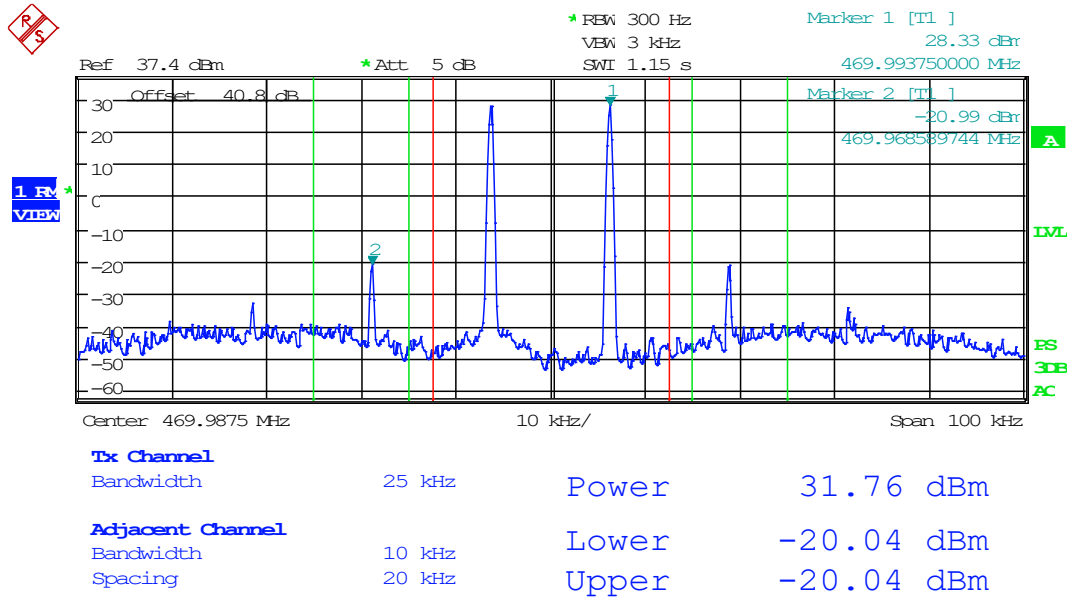
450.0125 MHz, Uplink, 25K, At AGC +3 dB



Date: 27.JUL.2020 12:13:41

INTERMODULATION

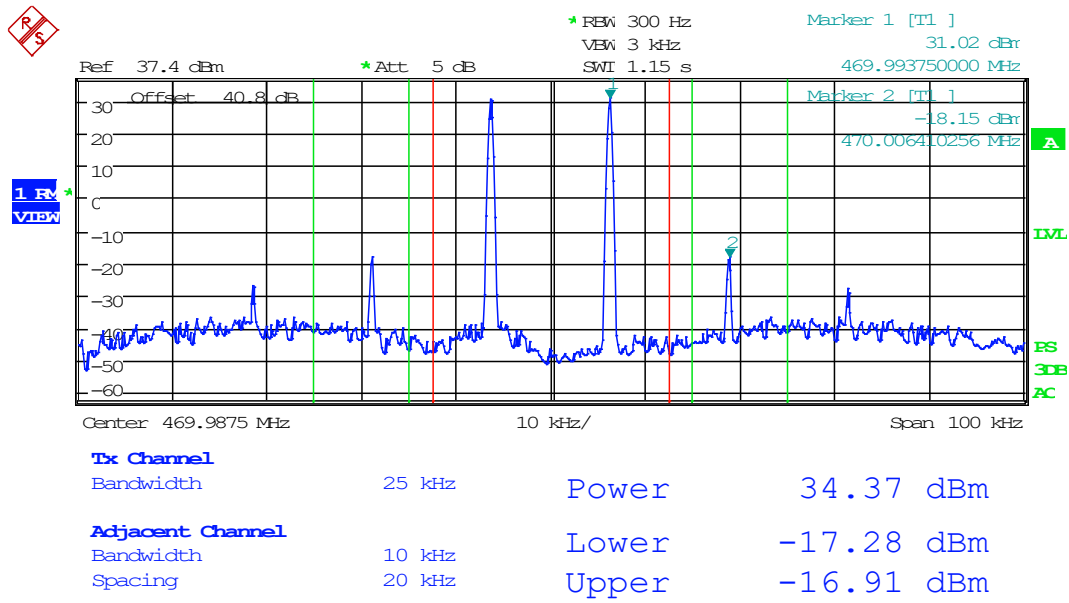
469.9875 MHz, Downlink, 12.5k, At AGC



Date: 27.JUL.2020 12:36:32

INTERMODULATION

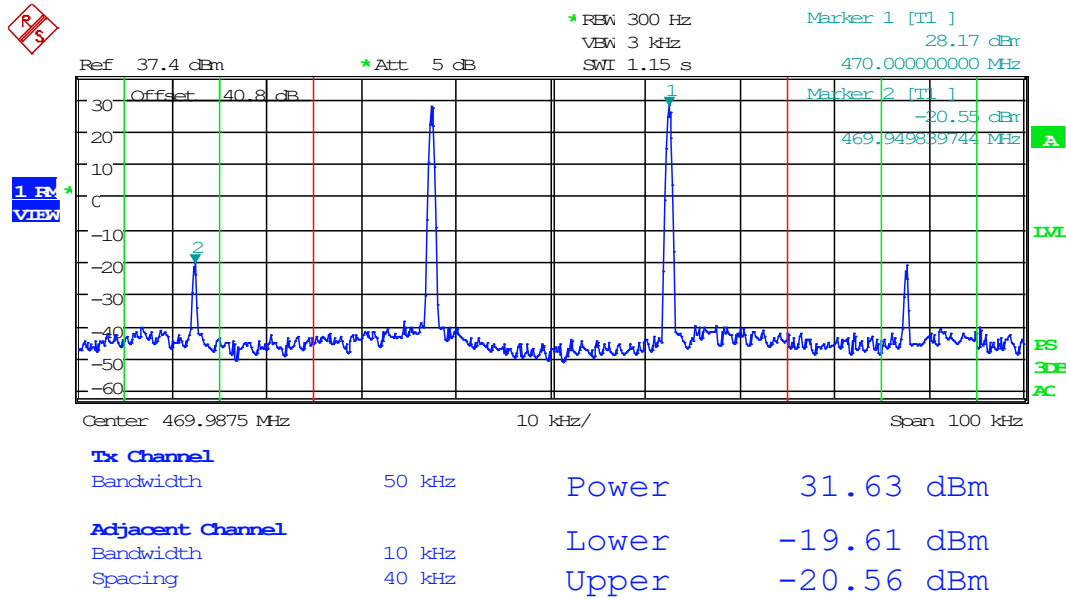
469.9875 MHz, Downlink, 12.5k, At AGC +3 dB



Date: 27.JUL.2020 12:37:15

INTERMODULATION

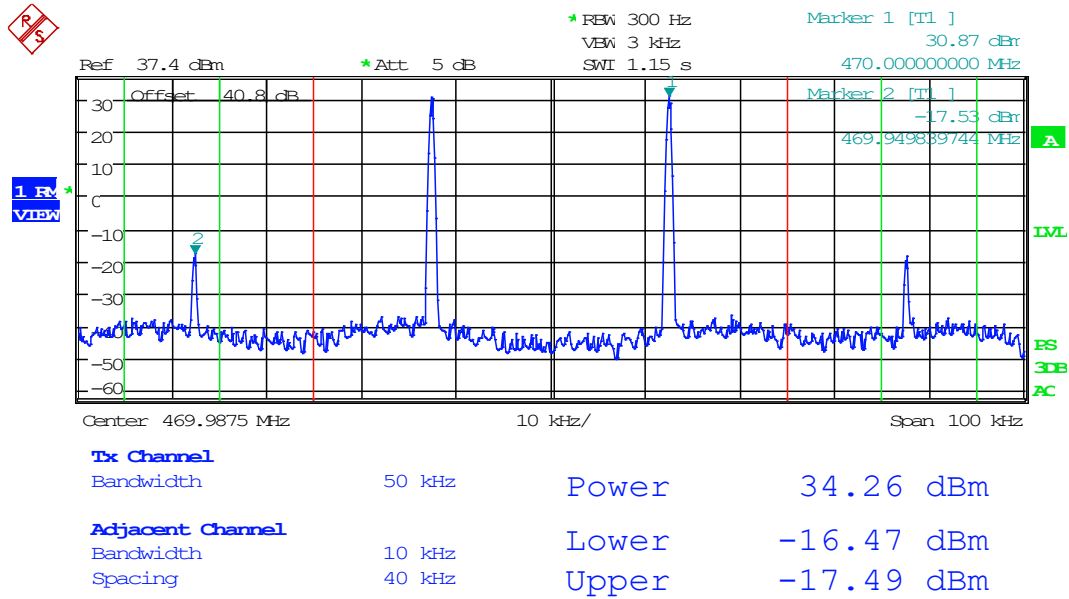
469.9875 MHz, Downlink, 25K, At AGC



Date: 27.JUL.2020 12:24:34

INTERMODULATION

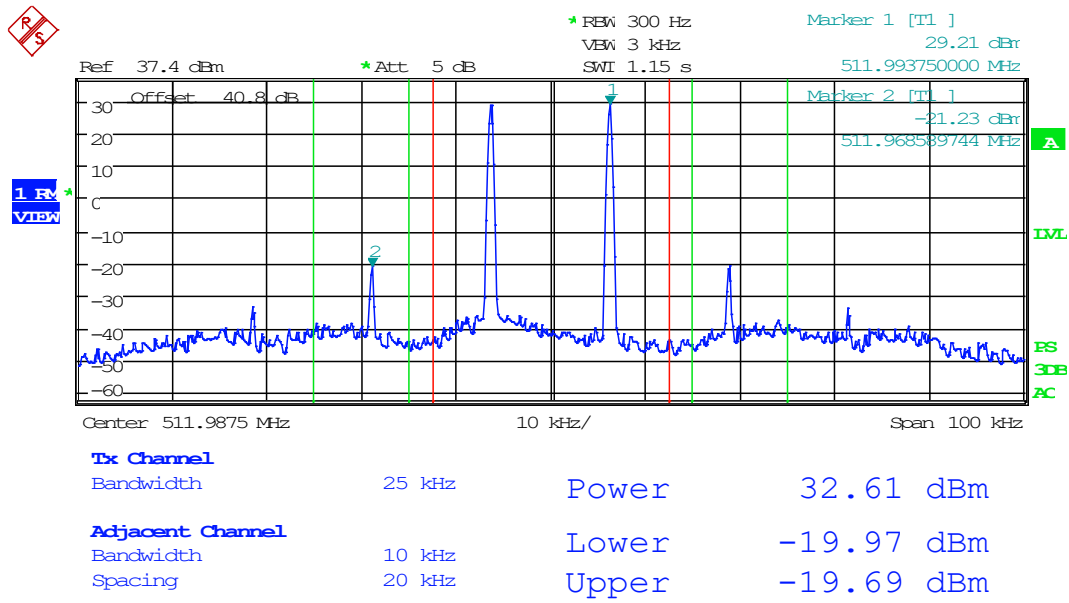
469.9875 MHz, Downlink, 25K, At AGC +3 dB



Date: 27.JUL.2020 12:25:08

INTERMODULATION

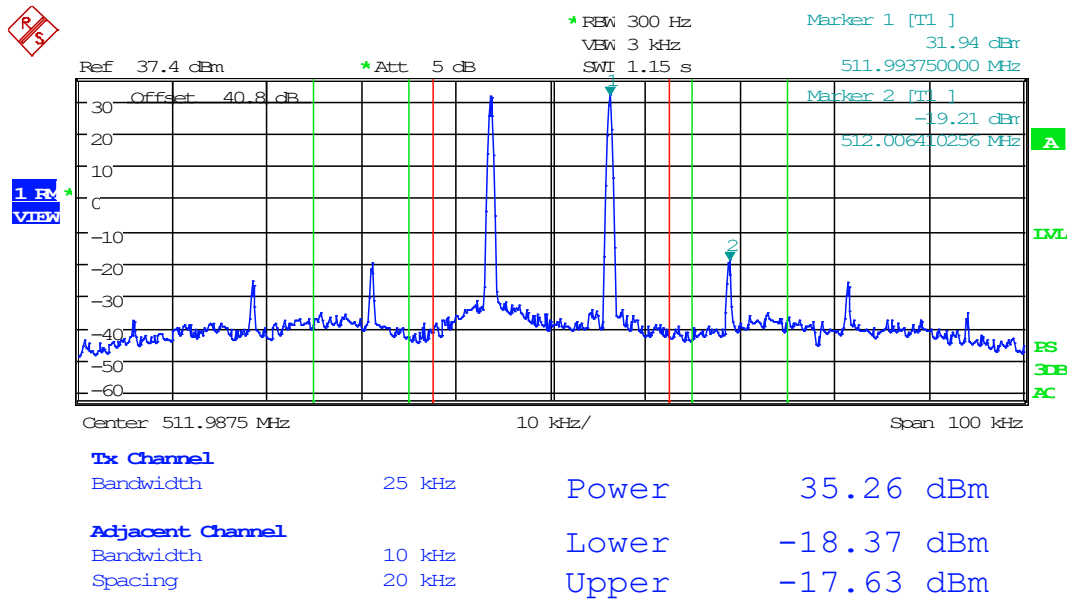
511.9875 MHz, Downlink, 12.5k, At AGC



Date: 27.JUL.2020 19:16:31

INTERMODULATION

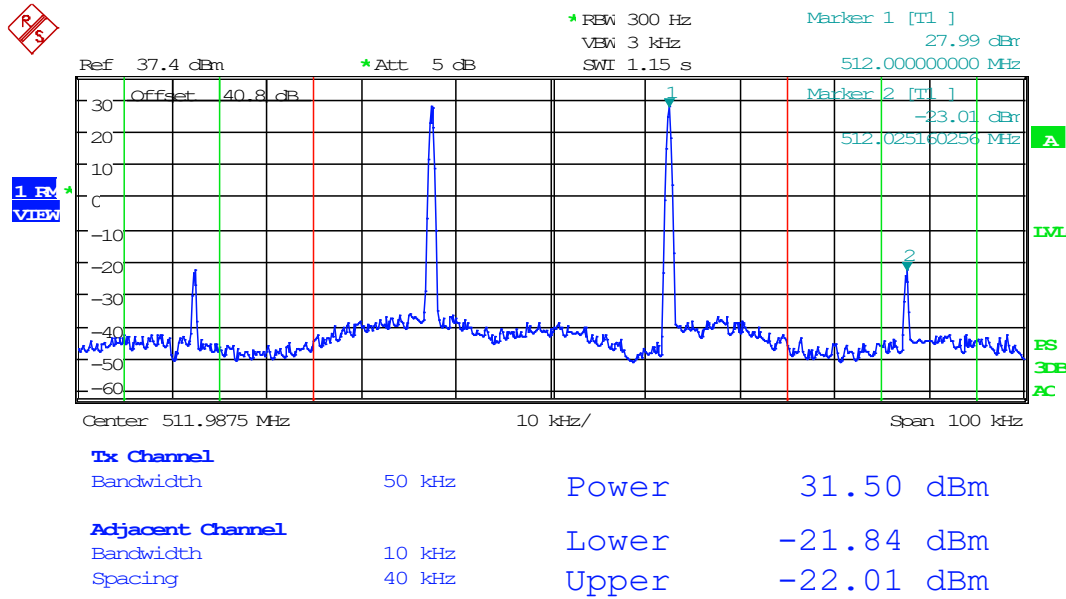
511.9875 MHz, Downlink, 12.5k, At AGC +3 dB



Date: 27.JUL.2020 19:17:22

INTERMODULATION

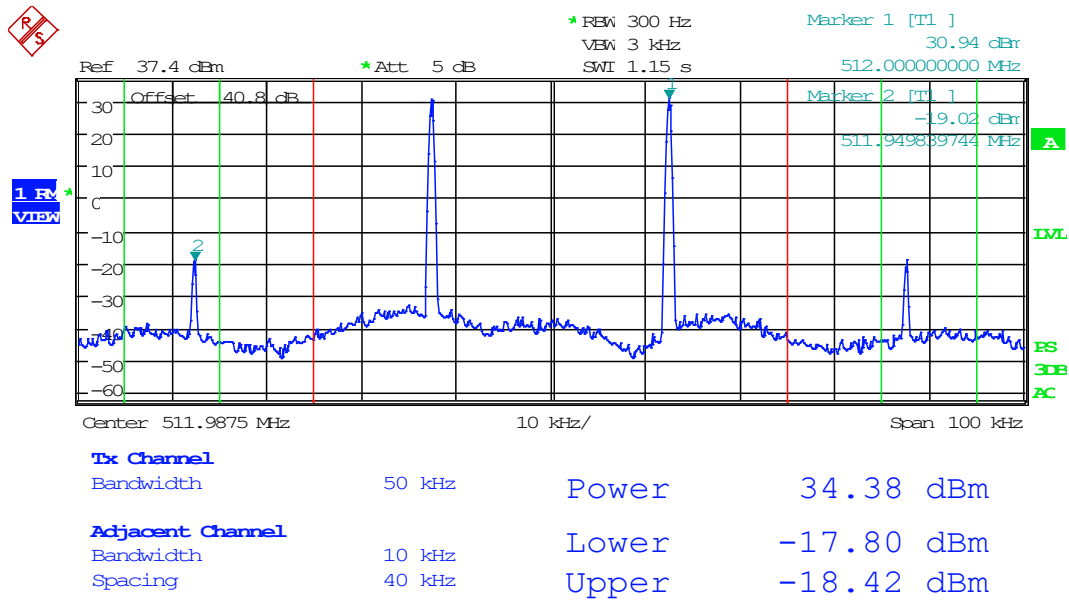
511.9875 MHz, Downlink, 25K, At AGC



Date: 27.JUL.2020 19:18:56

INTERMODULATION

511.9875 MHz, Downlink, 25K, At AGC +3 dB



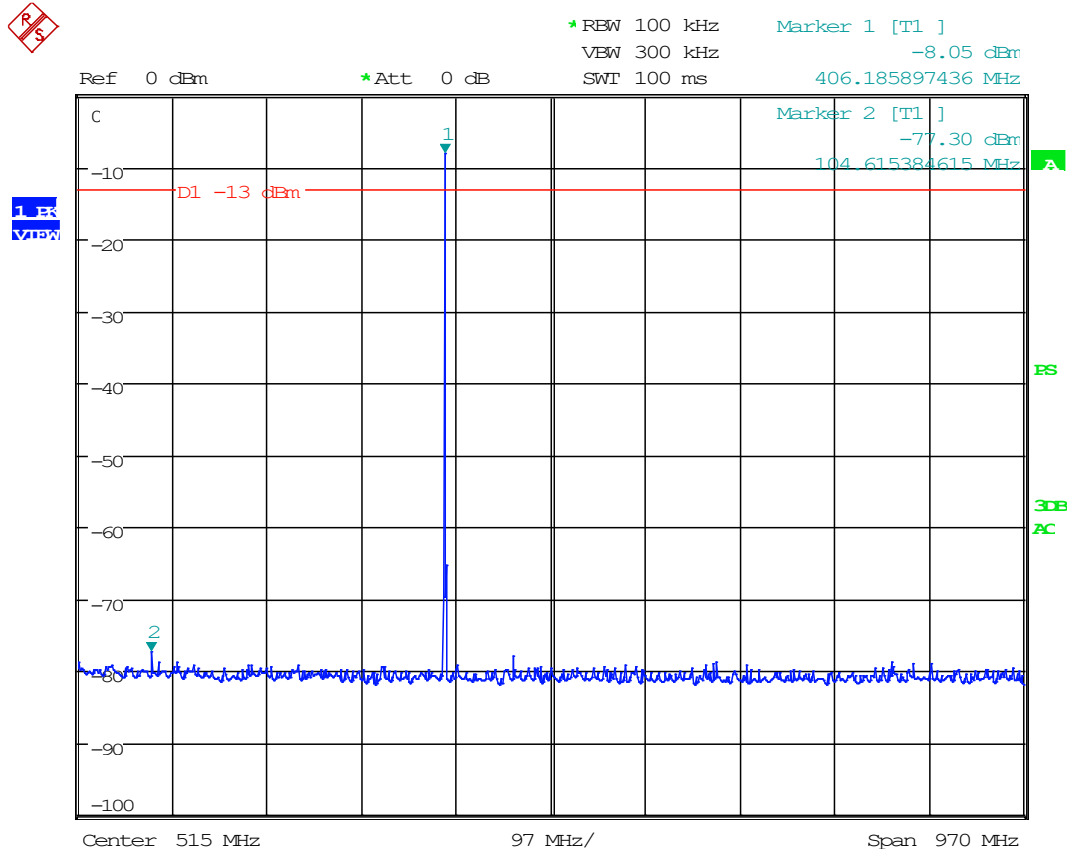
Date: 27.JUL.2020 19:19:49

2.1051 CONDUCTED SPURIOUS EMISSIONS

KDB 935210 4.7.3 CONDUCTED SPURIOUS EMISSIONS

Test Engineer: FR
 Test Date: JUL 28, 2020

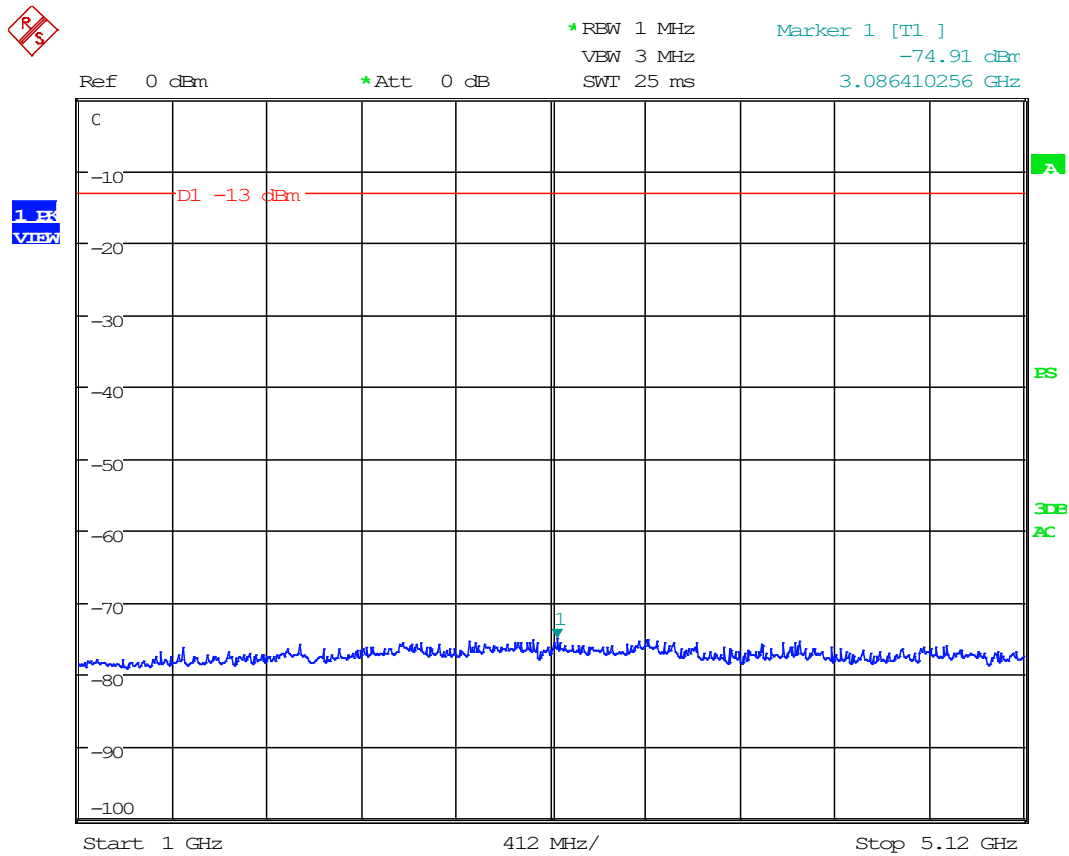
406.1125 MHz, Uplink, Below 1 GHz



Date: 28.JUL.2020 13:01:31

Conducted Spurious Emissions

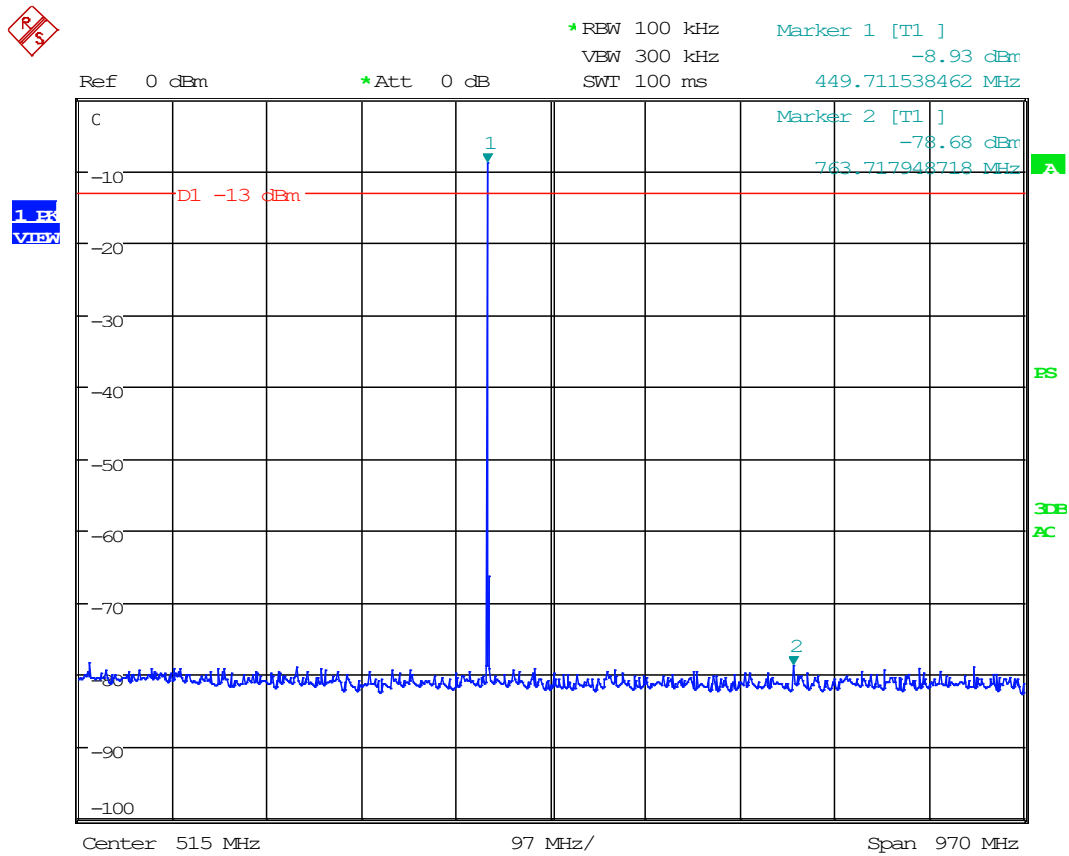
406.1125 MHz, Uplink, Above 1 GHz



Date: 28.JUL.2020 13:02:46

Conducted Spurious Emissions

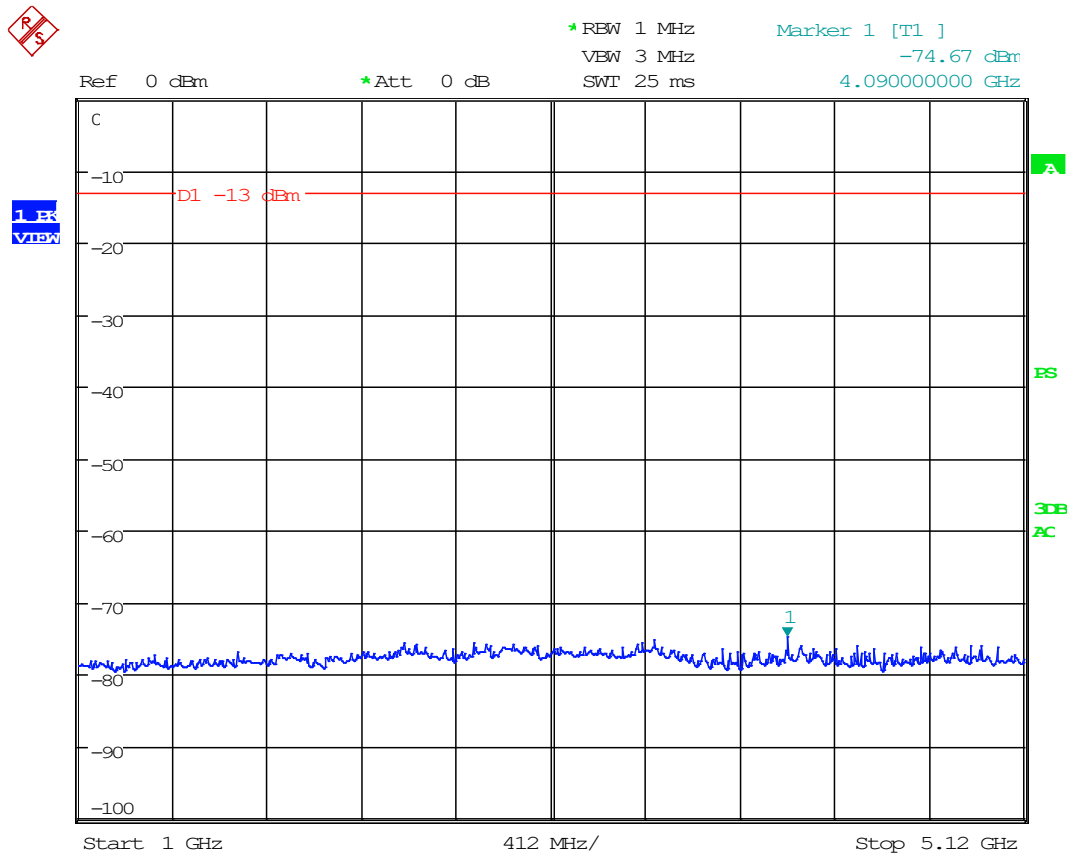
450.0125 MHz, Uplink, Below 1 GHz



Date: 28.JUL.2020 13:41:00

Conducted Spurious Emissions

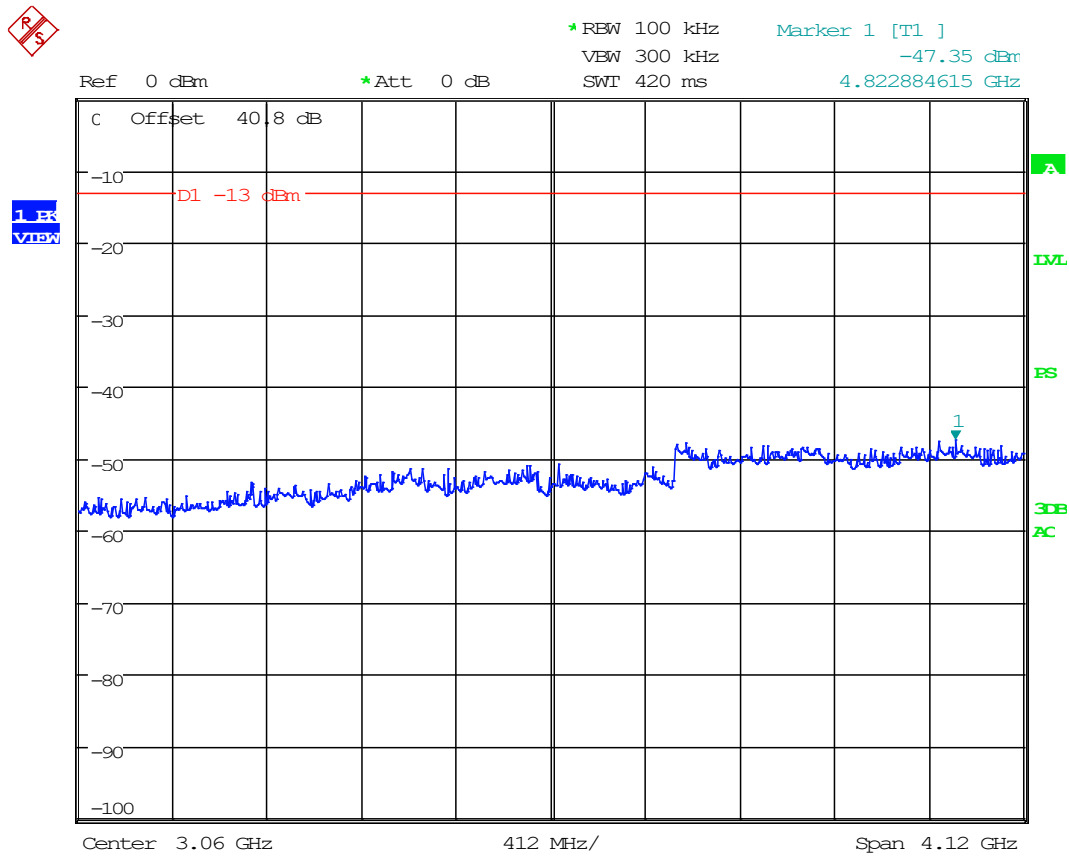
450.0125 MHz, Uplink, Above 1 GHz



Date: 28.JUL.2020 13:42:19

Conducted Spurious Emissions

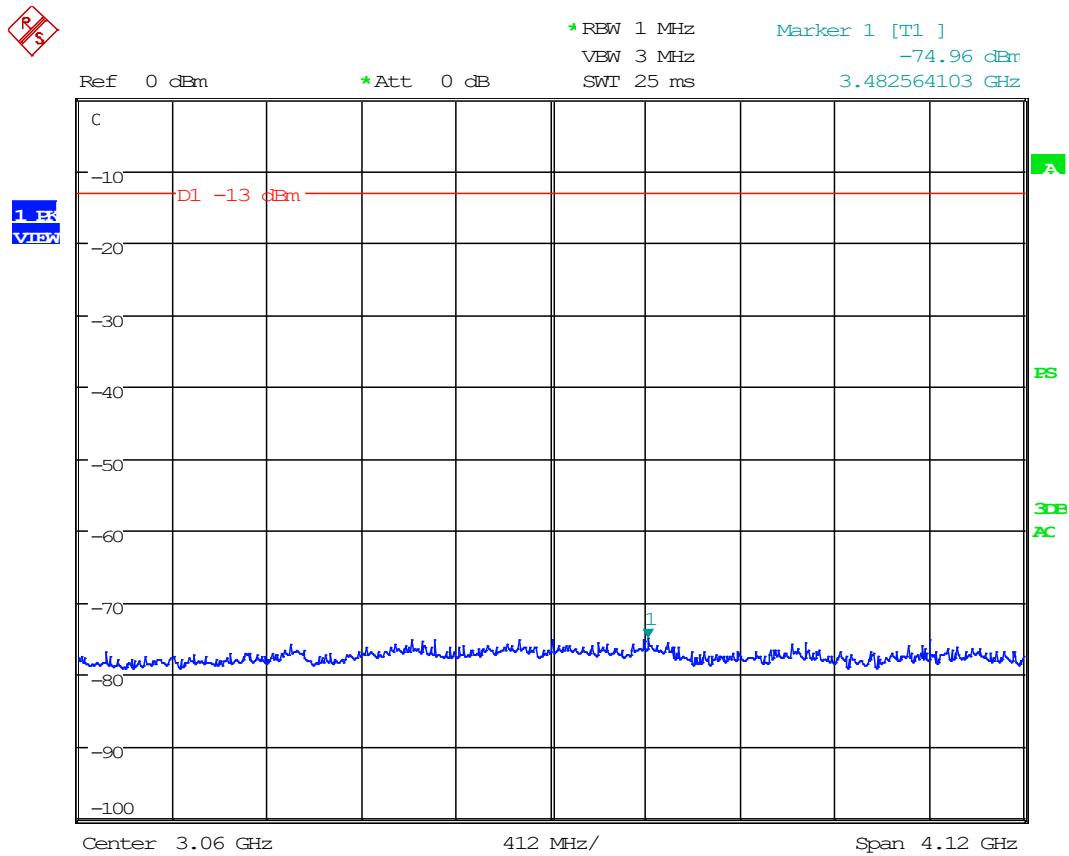
469.9875 MHz, Downlink, Above 1 GHz



Date: 29.JUL.2020 19:57:25

Conducted Spurious Emissions

511.9875 MHz, Downlink, Above 1 GHz



Date: 28.JUL.2020 12:51:45

2.1053 FIELD STRENGTH OF SPURIOUS EMISSIONS

KDB 935210 4.9 FIELD STRENGTH OF SPURIOUS EMISSIONS

Test Engineer: FR, TR
 Test Date: JUL 30, 2020

Subharmonics, all frequencies

Emission Frequency (MHz)	Detector	Meter Reading (dBm)	Antenna Polarity	Coax Loss (dB)	Antenna Correction Factor (dB/m)	Distance (m)	Field Strength (dBµV/m)	ERP (dBm)	Spurious Limit (dBm)	Margin (dBm)
343.59	PK	56.56	H	2.12	13.70	3.00	72.38	-25.00	-13.00	12.00
350.00	PK	54.81	V	2.11	14.00	3.00	70.92	-26.46	-13.00	13.46
273.08	PK	54.58	H	2.06	12.41	3.00	69.05	-28.33	-13.00	15.33
71.96	PK	59.47	V	1.01	6.29	3.00	66.77	-30.61	-13.00	17.61
139.79	PK	41.89	H	1.34	15.18	3.00	58.41	-38.97	-13.00	25.97
189.10	PK	42.62	H	1.59	13.72	3.00	57.93	-39.45	-13.00	26.45

406.1125 MHz, Uplink

Tuned Frequency (MHz)	Emission Frequency (MHz)	Detector	Meter Reading (dBm)	Antenna Polarity	Coax Loss (dB)	Antenna Correction Factor (dB/m)	Distance (m)	Field Strength (dBµV/m)	ERP (dBm)	Spurious Limit (dBm)	Margin (dBm)
406.11	2842.79	PK	14.31	H	6.20	32.34	3.00	52.86	-44.52	-13.00	31.52
406.11	3248.90	PK	12.82	V	6.65	32.68	3.00	52.15	-45.23	-13.00	32.23
406.11	3655.01	PK	11.63	H	6.62	33.20	3.00	51.45	-45.93	-13.00	32.93
406.11	2842.79	PK	12.64	V	6.20	32.34	3.00	51.19	-46.19	-13.00	33.19
406.11	3248.90	PK	11.79	H	6.65	32.68	3.00	51.12	-46.26	-13.00	33.26
406.11	4061.13	PK	9.71	V	7.17	33.38	3.00	50.26	-47.11	-13.00	34.11

450.0125 MHz, Uplink

Tuned Frequency (MHz)	Emission Frequency (MHz)	Detector	Meter Reading (dBm)	Antenna Polarity	Coax Loss (dB)	Antenna Correction Factor (dB/m)	Distance (m)	Field Strength (dBµV/m)	ERP (dBm)	Spurious Limit (dBm)	Margin (dBm)
450.01	2250.06	PK	24.90	H	5.43	31.23	3.00	61.56	-35.82	-13.00	22.82
450.01	2250.06	PK	24.60	V	5.43	31.23	3.00	61.26	-36.12	-13.00	23.12
450.01	1800.05	PK	22.90	H	4.90	30.29	3.00	58.09	-39.29	-13.00	26.29
450.01	1800.05	PK	22.90	V	4.90	30.29	3.00	58.09	-39.29	-13.00	26.29
450.01	1350.04	PK	23.00	H	4.26	28.76	3.00	56.02	-41.36	-13.00	28.36
450.01	1350.04	PK	21.80	V	4.26	28.76	3.00	54.82	-42.56	-13.00	29.56

469.9875 MHz, Downlink

Tuned Frequency (MHz)	Emission Frequency (MHz)	Detector	Meter Reading (dBm)	Antenna Polarity	Coax Loss (dB)	Antenna Correction Factor (dB/m)	Distance (m)	Field Strength (dBµV/m)	ERP (dBm)	Spurious Limit (dBm)	Margin (dBm)
469.99	2349.94	PK	26.10	V	5.58	31.93	3.00	63.60	-33.78	-13.00	20.78
469.99	2349.94	PK	25.20	H	5.58	31.93	3.00	62.70	-34.68	-13.00	21.68
469.99	1879.95	PK	23.60	H	5.03	30.94	3.00	59.57	-37.80	-13.00	24.80
469.99	1879.95	PK	23.50	V	5.03	30.94	3.00	59.47	-37.90	-13.00	24.90
469.99	1409.96	PK	21.80	H	4.31	28.39	3.00	54.50	-42.88	-13.00	29.88
469.99	1409.96	PK	21.80	V	4.31	28.39	3.00	54.50	-42.88	-13.00	29.88

511.9875 MHz, Downlink

Tuned Frequency (MHz)	Emission Frequency (MHz)	Detector	Meter Reading (dBm)	Antenna Polarity	Coax Loss (dB)	Antenna Correction Factor (dB/m)	Distance (m)	Field Strength (dBµV/m)	ERP (dBm)	Spurious Limit (dBm)	Margin (dBm)
511.99	3583.91	PK	13.66	H	6.70	33.06	3.00	53.42	-43.96	-13.00	30.96
511.99	3071.93	PK	13.63	V	6.43	32.69	3.00	52.75	-44.63	-13.00	31.63
511.99	3583.91	PK	12.93	V	6.70	33.06	3.00	52.69	-44.69	-13.00	31.69
511.99	5119.88	PK	10.70	V	7.87	34.09	3.00	52.66	-44.72	-13.00	31.72
511.99	2559.94	PK	14.33	H	5.71	32.57	3.00	52.61	-44.77	-13.00	31.77
511.99	4095.90	PK	11.13	H	7.12	33.40	3.00	51.65	-45.73	-13.00	32.73

For all measurements greater than 20 dB below limits, the 6 highest emissions were shown.



2.1055 FREQUENCY STABILITY

KDB 935210 4.8 FREQUENCY STABILITY

90.213 FREQUENCY STABILITY

Test Engineer: _____
Test Date: _____

N/A. Device does not use a frequency determining element and is exempt.



90.214 TRANSIENT FREQUENCY RESPONSE

Test Engineer: _____
Test Date: _____

N/A. Device does not key on or off, and does not exhibit transients.

END OF TEST REPORT