

Date of issue: 2018-06-13

Example for the calculation of spurious emissions above 40 GHz

Date: 2017-09-07

Created: P9 Controlled: P4 Released: P1 m. dudde hochfrequenz-technik GmbH & Co. KG **Rottland 5a** D-51429 Bergisch Gladbach/ Germany Tel: +49 2207-96890

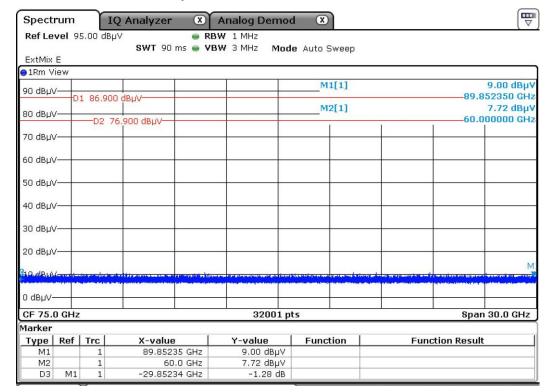
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Plot 1 (noise floor without any corrections)



Plot 2 (noise floor with all corrections)

| Spect | um | | IQ Analyzer | × | Analog Demod | × | | | | | |
|--|-------------------------|---------------------------------------|--|------------------|--|---------------------------|----------------|--|---|-------------------------------|--|
| Ref Le | vel 9 | 5.00 de | AND STREET OF STREET AND | | RBW 1 MHz | | | | | | |
| TDF Ex | tMix E | | SWT 9 | O ms 👄 | VBW 3 MHz Mo | ode Auto S | weep | | | | |
| ⊖1Rm M | ax 🛛 2 | Rm Clrv | W | | 16.0 | | | | | | |
| 90 dBµV/m D1 86.900 dBµ\ | | | | | M1[1] | | | | 56.36 dBµV/m 89.986410 GHz 49.51 dBµV/m | | |
| | | | DO dBµV/m | | | M2[1] | | | | | |
| 80 dBµV/m | | | 76.900 dBµV/m- | | | HZ[1] | | | 49.51 dBpv/m 60.000000 GHz | | |
| | | UZ | 70.900 dbpv/m | | | 1 | | 1 | | | |
| 70 dBµV | /m+ | | | | | | | | | | |
| 60 dBµV | /m- | | | | | | | | | M | |
| | | | | | | | | a sheet a be a supported | | | |
| ALIAP OF | Vm | and a stand | والمرجع والمرجع والمرجع والمراجع والمرجع | to last sector | יזירוןי ביירייביין ויייקאראיר איי | Harrid and a state of the | | in a full for the second s | and All and a | | |
| | ا ه. <i>ا بو بلو را</i> | ا ف _{مر} دد بص <u>وا</u> لوا | ببريان راقان براطئ البرعيل يعلى بالمن ع | a fordadi and co | | an aakat kabutu | بالأنيب والنار | | ples production (teaching) | مطافية فيزور أرباقه للعراب أأ | |
| When the solution of the second s | u pin | And dialo | et to disput in and third. | in h Allifa and | and a line of the second second second | Late - It als have | 111 | | | | |
| 30 dBµV | /m | . 1 | lice in the late the | | | | | | | | |
| | | | | | | | | | | | |
| 20 dBµV | /m+- | | | | | | | | | | |
| | | | | | | | | | | | |
| 10 dBµV | /m+ | | | | | | | | | | |
| 0 dBµV/ | m | | _ | | | | | | | | |
| CF 75.0 | | | | | 32001 pt | | | | 0 | 1 30.0 GHz | |
| Marker | GHZ | | | | 32001 pt | 2 | | | spar | 1 30.0 GHZ | |
| Type | | | X-value | | Y-value | Function | | Euro | Function Result | | |
| M1 | Ner | 1 | 89.9864 | 1 GHz | 56.36 dBµV/m | i unotion | | Fun | T directori Result | | |
| M2 | | 1 | | 0 GHz | 49.51 dBµV/m | | | | | | |
| D3 | M1 | 1 | -29.986 | 4 GHz | -6.85 dB | | | | | | |

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Example: Calculation for 90 GHz:

corrected level = measuring level + antenna conversion + mixer conversion - distance factor

in which

measuring level at 90 GHz = noise level (see Plot 1) = 9 dB μ V antenna conversion = antenna conversion factor in at 90 GHz = 41.5 dB/m mixer conversion = mixer conversion factor at 90 GHz = 21.6 dB distance factor = distance extrapolation factor for measurement at 0.5 m instead of 3 m = 15.6 dB corrected level = measuring level with all corrections (see Plot 2)

corrected level = 9.0 dB μ V + 41.5 dB/m + 21.6 dB - 15.6 dB = 56.5 dB μ V/m