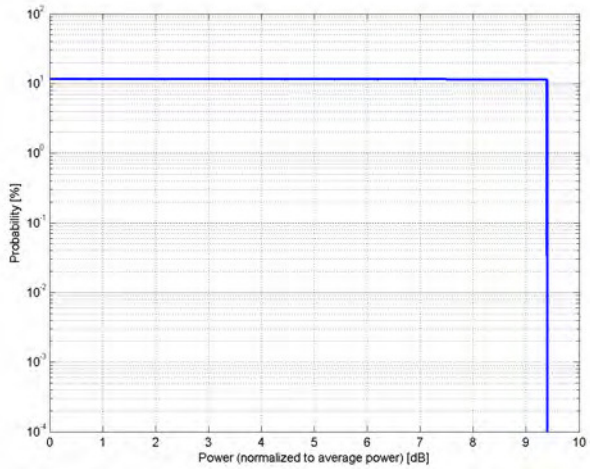
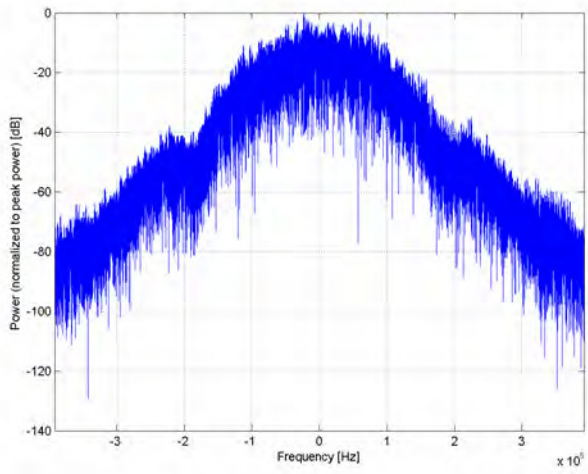
Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

Name:	**GSM-FDD (TDMA, GMSK)**
Group:	GSM
UID:	10021-DAB
PAR: [1]	**9.39 dB**
MIF: [2]	**3.63 dB**
Standard Reference:	ETSI TS 100 909 V8.9.0 (2005-01) FCC OET KDB 941225, D03 and D04
Category:	Periodic pulsed modulation
Modulation:	GMSK
Frequency Band:	GSM 450 (450.4-457.6 MHz, 20016) GSM 480 (478.8-486.0 MHz, 20017) GSM 710 (698.0-716.0 MHz, 20018) GSM 750 (747.0-763.0 MHz, 20019) GSM 850 (824.0-849.0 MHz, 20021) P-GSM 900 (890.0-915.0 MHz, 20022) E-GSM 900 (880.0-915.0 MHz, 20023) R-GSM 900 (876.0-915.0 MHz, 20024) DCS 1800 (1710.0-1785.0 MHz, 20026) PCS 1900 (1850.0-1910.0 MHz, 20027) ER-GSM 900 (873.0-915.0 MHz, 20221)
Detailed Specification:	Active Slot: TN0 Data: PN9 continuous Frame: composed out of 8 Slots Multiframe: 26th (IDLE) Frame set blank Slottype & -timing: Normal burst for GMSK
Bandwidth:	0.4 MHz
Integration Time:	120.0 ms

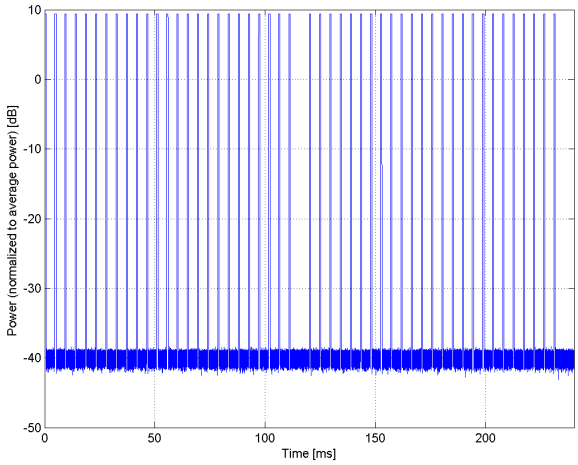
[1] PAR (0.1%) in accordance with FCC KDB 971168, Section 6.0 "'Measurement of the Peak-to-Average Power Ratio (PAPR)'"
[2] Modulation Interference Factor (MIF) value valid only in conjunction with advanced probe response linearization calibration for the same communication system (same UID and version).



Complementary Cumulative Distribution Function (CCDF)



Frequency Domain

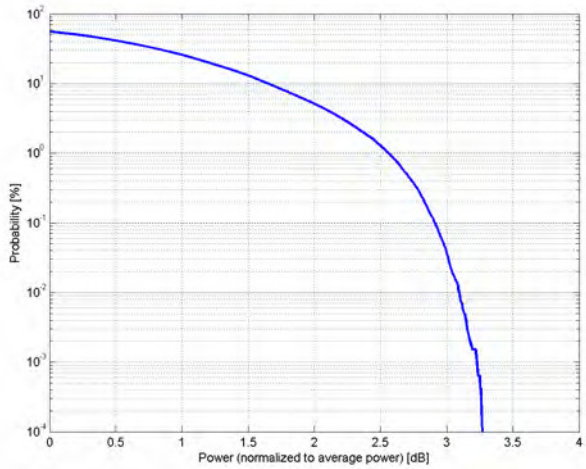


Time Domain

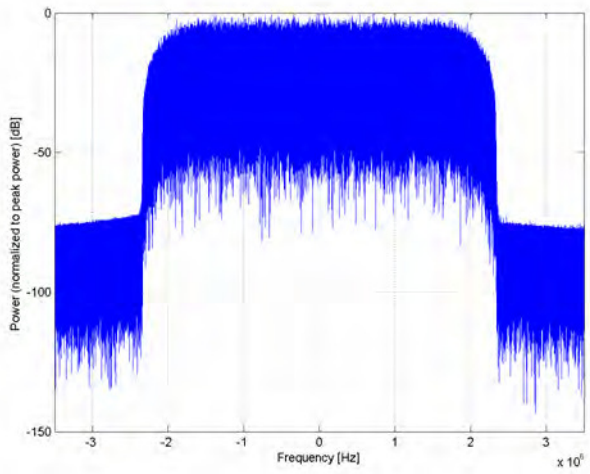
Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

Name:	**UMTS-FDD (WCDMA)**
Group:	WCDMA
UID:	10011-CAB
PAR: [1]	**2.91 dB**
MIF: [2]	**-27.23 dB**
Standard Reference:	3GPP TS 25.141 Annex A FCC OET KDB 941225 D01 SAR test for 3G devices v02
Category:	Random amplitude modulation
Modulation:	QPSK
Frequency Band:	Band 1, UTRA/FDD (1920.0-1980.0 MHz, 20000) Band 2, UTRA/FDD (1850.0-1910.0 MHz, 20001) Band 3, UTRA/FDD (1710.0-1785.0 MHz, 20002) Band 4, UTRA/FDD (1710.0-1755.0 MHz, 20003) Band 5, UTRA/FDD (824.0-849.0 MHz, 20004) Band 6, UTRA/FDD (830.0-840.0 MHz, 20005) Band 7, UTRA/FDD (2500.0-2570.0 MHz, 20006) Band 8, UTRA/FDD (880.0-915.0 MHz, 20007) Band 9, UTRA/FDD (1749.9-1784.9 MHz, 20008) Band 10, UTRA/FDD (1710.0-1770.0 MHz, 20009) Band 11, UTRA/FDD (1427.9-1452.9 MHz, 20010) Band 12, UTRA/FDD (698.0-716.0 MHz, 20011) Band 13, UTRA/FDD (777.0-787.0 MHz, 20012) Band 14, UTRA/FDD (788.0-798.0 MHz, 20013) Band 19, UTRA/FDD (830.0-845.0 MHz, 20130) Band 20, UTRA/FDD (832.0-862.0 MHz, 20131) Band 21, UTRA/FDD (1447.9-1462.9 MHz, 20132) Band 22, UTRA/FDD (3410.0-3490.0 MHz, 20217) Band 25, UTRA/FDD (1850.0-1915.0 MHz, 20218) Band 26, UTRA/FDD (814.0-849.0 MHz, 20219)
Detailed Specification:	Dedicated Channel Type: RMC Bitrate: 12.2 kbps DPDCH: 60 kbps DPCCH: 15 kbps DPCCH/DPDCH power ratio: -5.46 dB
Bandwidth:	5.0 MHz
Integration Time:	100.0 ms

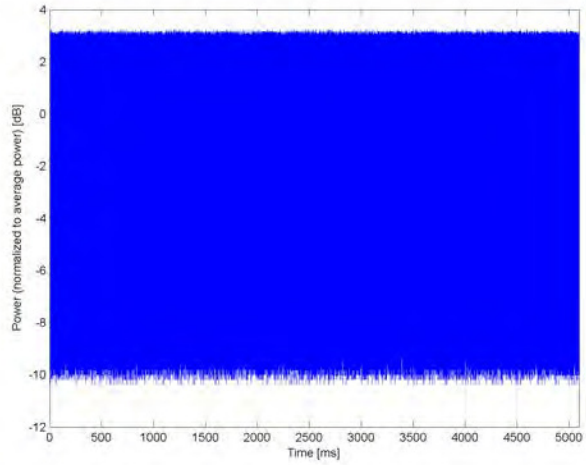
[1] PAR (0.1%) in accordance with FCC KDB 971168, Section 6.0 "'Measurement of the Peak-to-Average Power Ratio (PAPR)'"
[2] Modulation Interference Factor (MIF) value valid only in conjunction with advanced probe response linearization calibration for the same communication system (same UID and version).



Complementary Cumulative Distribution Function (CCDF)



Frequency Domain

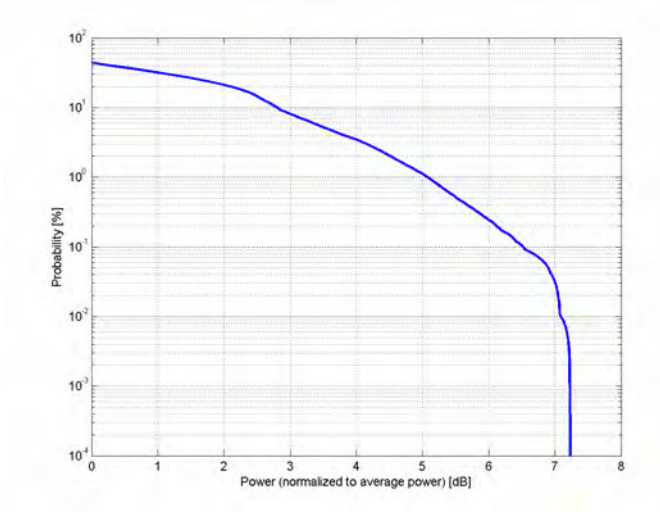


Time Domain

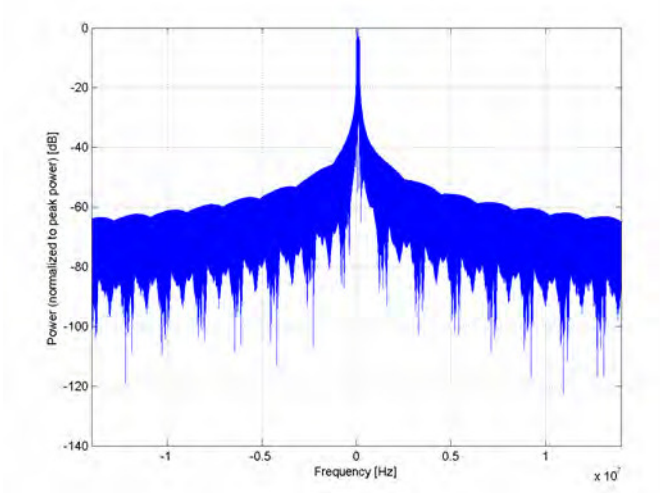
Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

Name:	**LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)**
Group:	LTE-FDD
UID:	10170-CAB
PAR: [1]	**6.52 dB**
MIF: [2]	**-9.76 dB**
Standard Reference:	3GPP / ETSI TS 136.101 V8.4.0 3GPP / ETSI TS 136.213 V8.4.0 FCC OET KDB 941225 D05 SAR for LTE Devices v01
Category:	Random amplitude modulation
Modulation:	16-QAM
Frequency Band:	Band 1, E-UTRA/FDD (1920.0-1980.0 MHz, 20133) Band 2, E-UTRA/FDD (1850.0-1910.0 MHz, 20134) Band 3, E-UTRA/FDD (1710.0-1785.0 MHz, 20135) Band 4, E-UTRA/FDD (1710.0-1755.0 MHz, 20136) Band 7, E-UTRA/FDD (2500.0-2570.0 MHz, 20139) Band 9, E-UTRA/FDD (1749.9-1784.9 MHz, 20141) Band 10, E-UTRA/FDD (1710.0-1770.0 MHz, 20142) Band 20, E-UTRA/FDD (832.0-862.0 MHz, 20159) Band 22, E-UTRA/FDD (3410.0-3490.0 MHz, 20190) Band 23, E-UTRA/FDD (2000.0-2020.0 MHz, 20164) Band 25, E-UTRA/FDD (1850.0-1915.0 MHz, 20166) Band 28 E-UTRA/FDD (703.0-748.0 MHz, 20213)
Detailed Specification:	Modulation Scheme: SC-FDMA Number of PUSCHs: 1 Settings for Subframe #0 to #9: Modulation Scheme: 16QAM Data Type: UL-SCH Number RB: 1 Transport Block Size: 256 TBS Index: 14 MCS Index: 15 Data Type: PN9
Bandwidth:	20.0 MHz
Integration Time:	10.0 ms

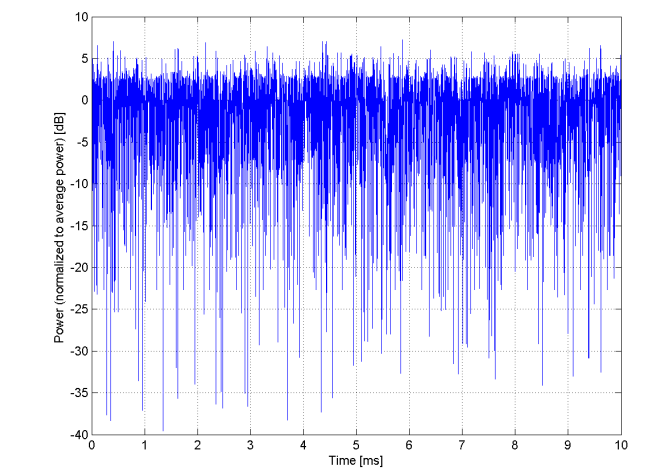
[1] PAR (0.1%) in accordance with FCC KDB 971168, Section 6.0 "'Measurement of the Peak-to-Average Power Ratio (PAPR)'"
[2] Modulation Interference Factor (MIF) value valid only in conjunction with advanced probe response linearization calibration for the same communication system (same UID and version).



Complementary Cumulative Distribution Function (CCDF)



Frequency Domain

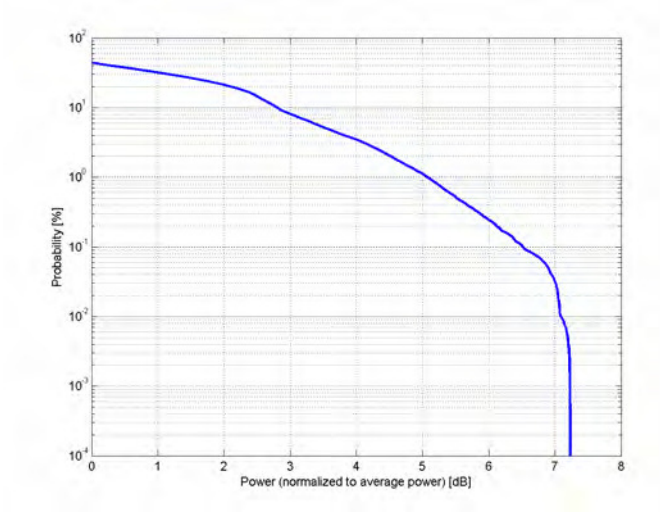


Time Domain

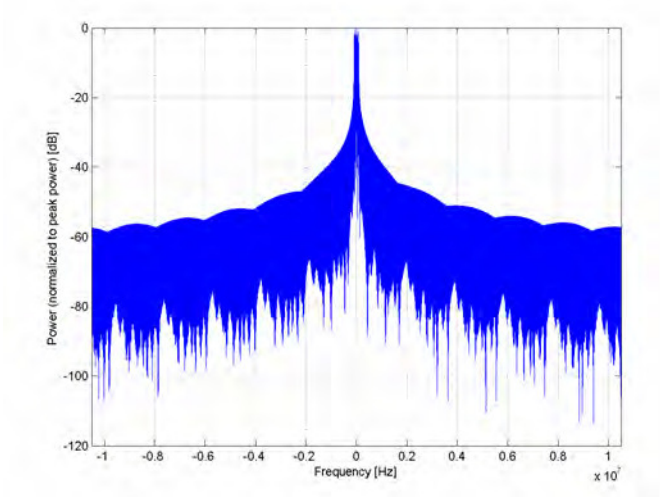
Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

Name:	**LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)**
Group:	LTE-FDD
UID:	10182-CAB
PAR: [1]	**6.52 dB**
MIF: [2]	**-9.76 dB**
Standard Reference:	3GPP / ETSI TS 136.101 V8.4.0 3GPP / ETSI TS 136.213 V8.4.0 FCC OET KDB 941225 D05 SAR for LTE Devices v01
Category:	Random amplitude modulation
Modulation:	16-QAM
Frequency Band:	Band 1, E-UTRA/FDD (1920.0-1980.0 MHz, 20133) Band 2, E-UTRA/FDD (1850.0-1910.0 MHz, 20134) Band 3, E-UTRA/FDD (1710.0-1785.0 MHz, 20135) Band 4, E-UTRA/FDD (1710.0-1755.0 MHz, 20136) Band 7, E-UTRA/FDD (2500.0-2570.0 MHz, 20139) Band 9, E-UTRA/FDD (1749.9-1784.9 MHz, 20141) Band 10, E-UTRA/FDD (1710.0-1770.0 MHz, 20142) Band 18, E-UTRA/FDD (815.0-830.0 MHz, 20157) Band 19, E-UTRA/FDD (830.0-845.0 MHz, 20158) Band 20, E-UTRA/FDD (832.0-862.0 MHz, 20159) Band 21, E-UTRA/FDD (1447.9-1462.9 MHz, 20160) Band 22, E-UTRA/FDD (3410.0-3490.0 MHz, 20190) Band 23, E-UTRA/FDD (2000.0-2020.0 MHz, 20164) Band 25, E-UTRA/FDD (1850.0-1915.0 MHz, 20166) Band 26 E-UTRA/FDD (814.0-849.0 MHz, 20211) Band 28 E-UTRA/FDD (703.0-748.0 MHz, 20213)
Detailed Specification:	Modulation Scheme: SC-FDMA Number of PUSCHs: 1 Settings for Subframe #0 to #9: Modulation Scheme: 16QAM Data Type: UL-SCH Number RB: 1 Transport Block Size: 256 TBS Index: 14 MCS Index: 15 Data Type: PN9
Bandwidth:	15.0 MHz
Integration Time:	10.0 ms

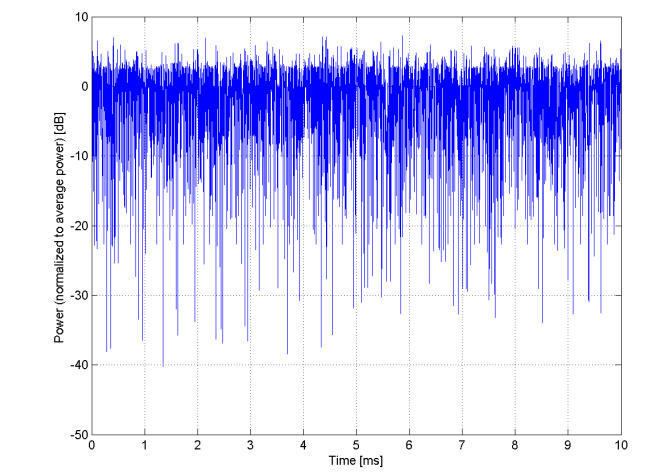
[1] PAR (0.1%) in accordance with FCC KDB 971168, Section 6.0 "'Measurement of the Peak-to-Average Power Ratio (PAPR)'"
[2] Modulation Interference Factor (MIF) value valid only in conjunction with advanced probe response linearization calibration for the same communication system (same UID and version).



Complementary Cumulative Distribution Function (CCDF)



Frequency Domain

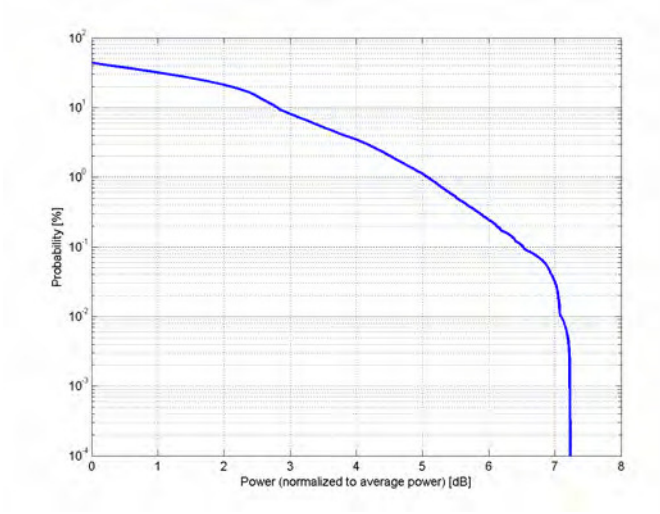


Time Domain

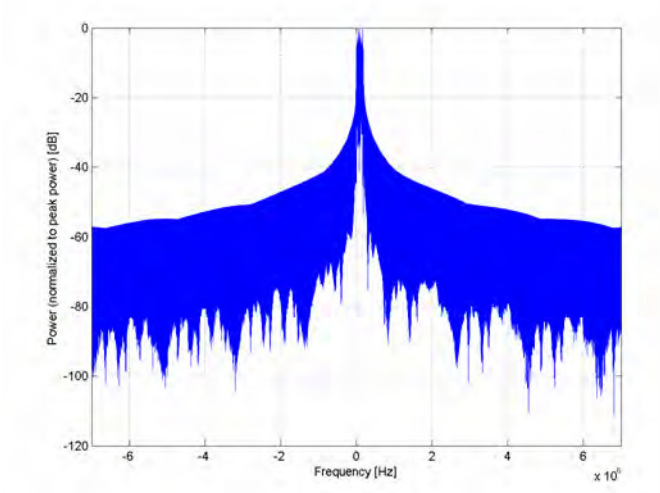
Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

Name:	**LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)**
Group:	LTE-FDD
UID:	10176-CAB
PAR: [1]	**6.52 dB**
MIF: [2]	**-9.76 dB**
Standard Reference:	3GPP / ETSI TS 136.101 V8.4.0 3GPP / ETSI TS 136.213 V8.4.0 FCC OET KDB 941225 D05 SAR for LTE Devices v01
Category:	Random amplitude modulation
Modulation:	16-QAM
Frequency Band:	Band 1, E-UTRA/FDD (1920.0-1980.0 MHz, 20133) Band 2, E-UTRA/FDD (1850.0-1910.0 MHz, 20134) Band 3, E-UTRA/FDD (1710.0-1785.0 MHz, 20135) Band 4, E-UTRA/FDD (1710.0-1755.0 MHz, 20136) Band 5, E-UTRA/FDD (824.0-849.0 MHz, 20137) Band 6, E-UTRA/FDD (830.0-840.0 MHz, 20138) Band 7, E-UTRA/FDD (2500.0-2570.0 MHz, 20139) Band 8, E-UTRA/FDD (880.0-915.0 MHz, 20140) Band 9, E-UTRA/FDD (1749.9-1784.9 MHz, 20141) Band 10, E-UTRA/FDD (1710.0-1770.0 MHz, 20142) Band 11, E-UTRA/FDD (1427.9-1447.9 MHz, 20209) Band 12, E-UTRA/FDD (699.0-716.0 MHz, 20210) Band 13, E-UTRA/FDD (777.0-787.0 MHz, 20145) Band 14, E-UTRA/FDD (788.0-798.0 MHz, 20146) Band 17, E-UTRA/FDD (704.0-716.0 MHz, 20147) Band 18, E-UTRA/FDD (815.0-830.0 MHz, 20157) Band 19, E-UTRA/FDD (830.0-845.0 MHz, 20158) Band 20, E-UTRA/FDD (832.0-862.0 MHz, 20159) Band 21, E-UTRA/FDD (1447.9-1462.9 MHz, 20160) Band 22, E-UTRA/FDD (3410.0-3490.0 MHz, 20190) Band 23, E-UTRA/FDD (2000.0-2020.0 MHz, 20164) Band 24, E-UTRA/FDD (1626.5-1660.5 MHz, 20165) Band 25, E-UTRA/FDD (1850.0-1915.0 MHz, 20166) Band 26 E-UTRA/FDD (814.0-849.0 MHz, 20211) Band 27 E-UTRA/FDD (807.0-824.0 MHz, 20212) Band 28 E-UTRA/FDD (703.0-748.0 MHz, 20213)
Detailed Specification:	Modulation Scheme: SC-FDMA Number of PUSCHs: 1 Settings for Subframe # 0 to # 9: Modulation Scheme: QPSK Data Type: UL-SCH Number RB: 1 Transport Block Size: 256 TBS Index: 14 MCS Index: 15 Data Type: PN9
Bandwidth:	10.0 MHz
Integration Time:	10.0 ms

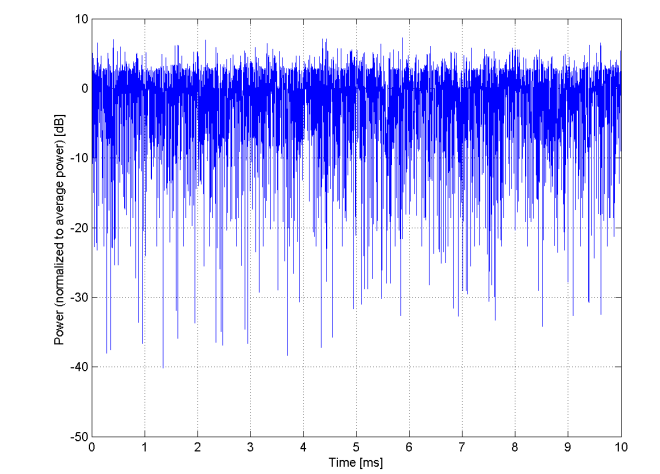
[1] PAR (0.1%) in accordance with FCC KDB 971168, Section 6.0 "'Measurement of the Peak-to-Average Power Ratio (PAPR)'"
[2] Modulation Interference Factor (MIF) value valid only in conjunction with advanced probe response linearization calibration for the same communication system (same UID and version).



Complementary Cumulative Distribution Function (CCDF)



Frequency Domain

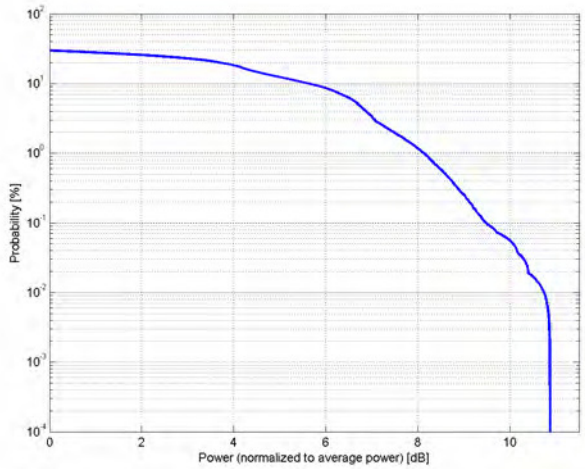


Time Domain

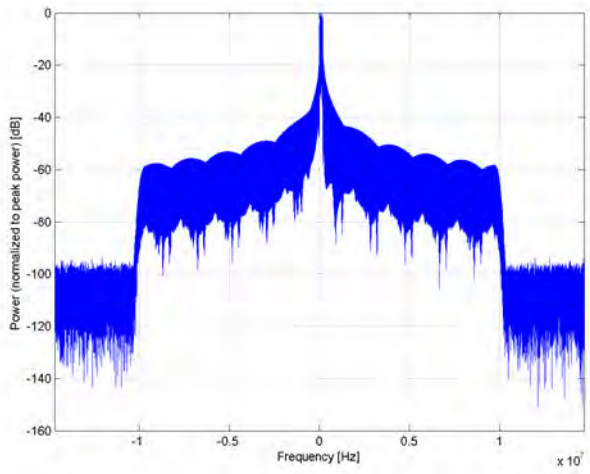
Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

Name:	**LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)**
Group:	LTE-TDD
UID:	10173-CAB
PAR: [1]	**9.48 dB**
MIF: [2]	**-1.44 dB**
Standard Reference:	3GPP / ETSI TS 136.101 V8.4.0 3GPP / ETSI TS 136.213 V8.4.0 FCC OET KDB 941225 D05 SAR for LTE Devices v02
Category:	Random amplitude modulation
Modulation:	16-QAM
Frequency Band:	Band 33, E-UTRA/TDD (1900.0-1920.0 MHz, 20148) Band 35, E-UTRA/TDD (1850.0-1910.0 MHz, 20150) Band 36, E-UTRA/TDD (1930.0-1990.0 MHz, 20151) Band 37, E-UTRA/TDD (1910.0-1930.0 MHz, 20152) Band 38, E-UTRA/TDD (2570.0-2620.0 MHz, 20153) Band 39, E-UTRA/TDD (1880.0-1920.0 MHz, 20154) Band 40, E-UTRA/TDD (2300.0-2400.0 MHz, 20155) Band 41, E-UTRA/TDD (2496.0-2690.0 MHz, 20167) Band 42, E-UTRA/TDD (3400.0-3600.0 MHz, 20168) Band 43, E-UTRA/TDD (3600.0-3800.0 MHz, 20169) Band 44, E-UTRA/TDD (703.0-803.0 MHz, 20214)
Detailed Specification:	Modulation Scheme: SC-FDMA Uplink-downlink configuration: 1 Special Subframe configuration: 4 Number of Frames: 1 Settings for UL Subframe 2,3,7,8: Number of PUSCHs: 1 Modulation Scheme: 16QAM Allocated RB: 1 Start Number of RB: 50 Data Type: PN9fix
Bandwidth:	20.0 MHz
Integration Time:	6.0 ms

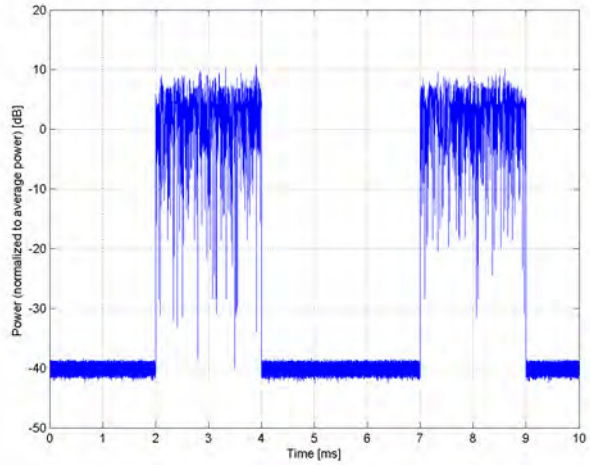
[1] PAR (0.1%) in accordance with FCC KDB 971168, Section 6.0 "'Measurement of the Peak-to-Average Power Ratio (PAPR)'"
[2] Modulation Interference Factor (MIF) value valid only in conjunction with advanced probe response linearization calibration for the same communication system (same UID and version).



Complementary Cumulative Distribution Function (CCDF)



Frequency Domain

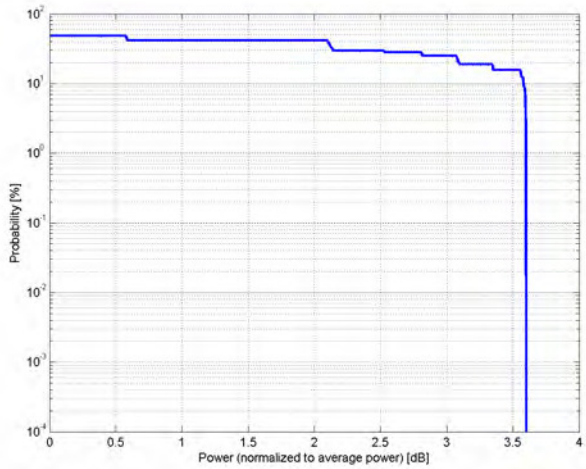


Time Domain

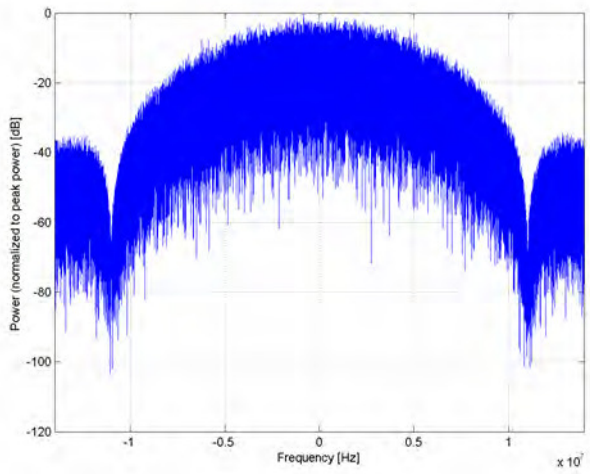
Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

Name:	**IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps)**
Group:	WLAN
UID:	10061-CAA
PAR: [1]	**3.60 dB**
MIF: [2]	**-2.02 dB**
Standard Reference:	IEEE 802.11b-1999 , Part 11, FCC SAR meas for 802 11 a b g v01r02 (248227 D01)
Category:	Random amplitude modulation
Modulation:	DQPSK
Frequency Band:	ISM 2.4 GHz Band, World but Japan (2401.5-2482.5 MHz, 20028) ISM 2.4 GHz-Band, Japan (2472.5-2495.5 MHz, 20030)
Detailed Specification:	Data Rate: 11 Mbps Spreading, Coding: CCK PPDU format: Long Preamble & Heading PSDU Length: 1024 PSDU Data: PN9
Bandwidth:	20.0 MHz
Integration Time:	1.5 ms

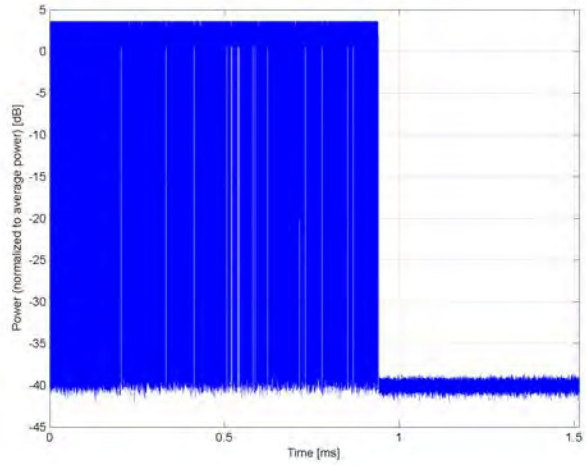
[1] PAR (0.1%) in accordance with FCC KDB 971168, Section 6.0 "'Measurement of the Peak-to-Average Power Ratio (PAPR)'"
[2] Modulation Interference Factor (MIF) value valid only in conjunction with advanced probe response linearization calibration for the same communication system (same UID and version).



Complementary Cumulative Distribution Function (CCDF)



Frequency Domain

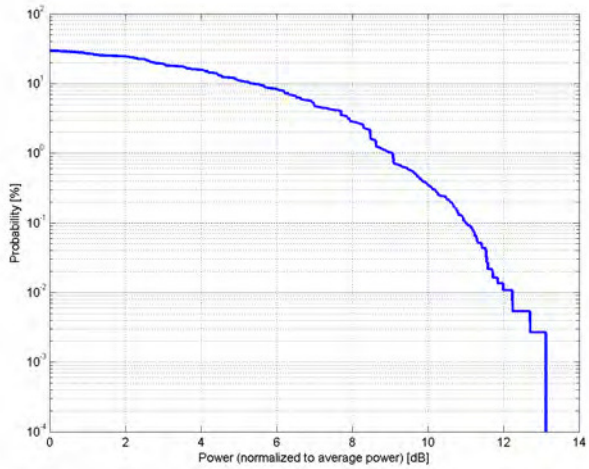


Time Domain

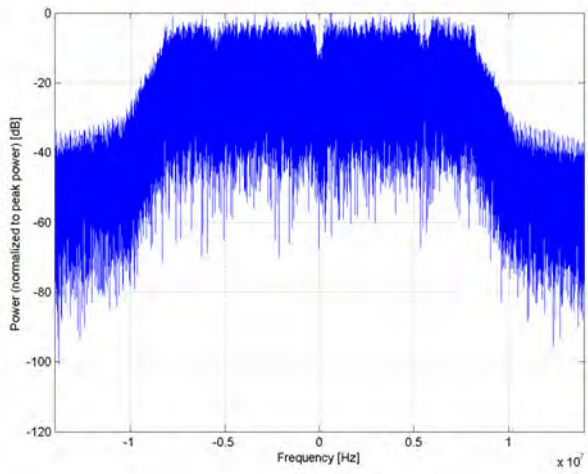
Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

Name:	**IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 54 Mbps)**
Group:	WLAN
UID:	10077-CAA
PAR: [1]	**11.00 dB**
MIF: [2]	**0.12 dB**
Standard Reference:	IEEE 802.11g-2003 , Part 11 FCC SAR meas for 802 11 a b g v01r02 (248227 D01)
Category:	Random amplitude modulation
Modulation:	64-QAM
Frequency Band:	ISM 2.4 GHz Band, World but Japan (2401.5-2482.5 MHz, 20028) ISM 2.4 GHz-Band, Japan (2472.5-2495.5 MHz, 20030)
Detailed Specification:	Data Rate: 54 Mbps Coding Rate: 3/4 Coded bits per subcarrier: 6 Coded bits per OFDM symbol: 288 Data bits per OFDM symbol: 216 PSDU Length: 1000 Bytes PSDU Data: PN9
Bandwidth:	20.0 MHz
Integration Time:	0.9 ms

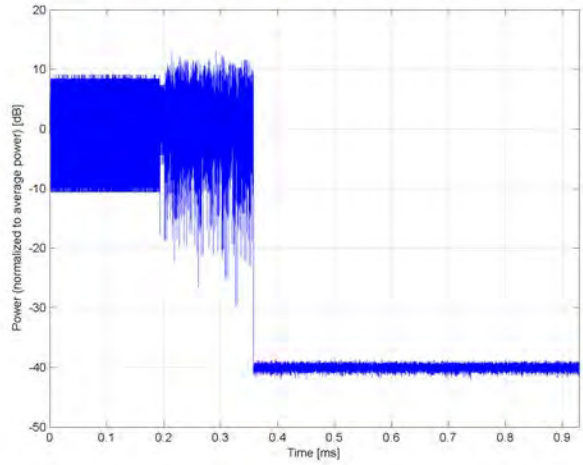
[1] PAR (0.1%) in accordance with FCC KDB 971168, Section 6.0 "'Measurement of the Peak-to-Average Power Ratio (PAPR)'"
[2] Modulation Interference Factor (MIF) value valid only in conjunction with advanced probe response linearization calibration for the same communication system (same UID and version).



Complementary Cumulative Distribution Function (CCDF)



Frequency Domain

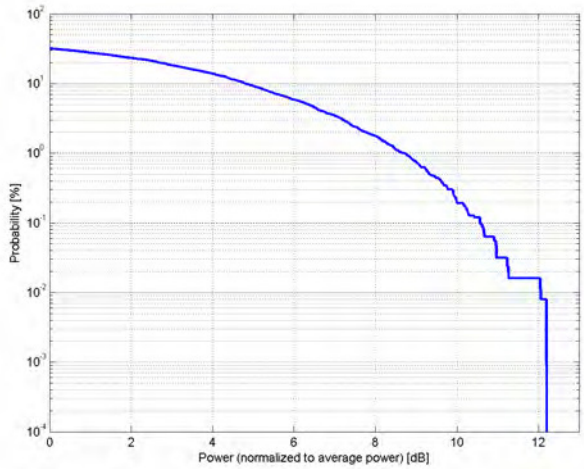


Time Domain

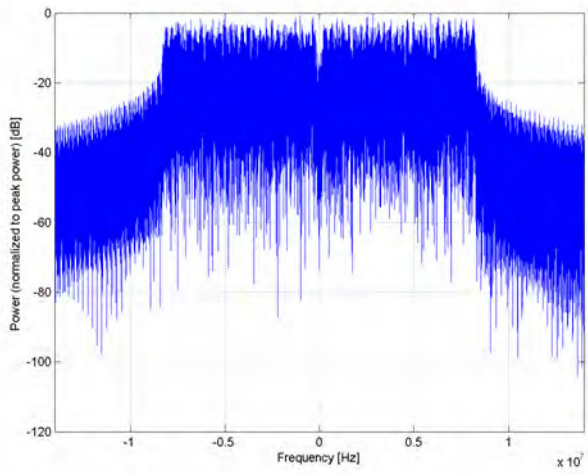
Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

Name:	**IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps)**
Group:	WLAN
UID:	10069-CAA
PAR: [1]	**10.56 dB**
MIF: [2]	**-3.15 dB**
Standard Reference:	IEEE 802.11a-1999 (R2003) , Part 11 IEEE 802.11h-2003 , Part 11 FCC SAR meas for 802 11 a b g v01r02 (248227 D01)
Category:	Random amplitude modulation
Modulation:	64-QAM
Frequency Band:	5 GHz Band (5030.0-5825.0 MHz, 20053)
Detailed Specification:	Data Rate: 54 Mbps Coding Rate: 3/4 Coded bits per subcarrier: 6 Coded bits per OFDM symbol: 288 Data bits per OFDM symbol: 216 PSDU Length: 1000 Bytes PSDU Data: PN9
Bandwidth:	20.0 MHz
Integration Time:	0.3 ms

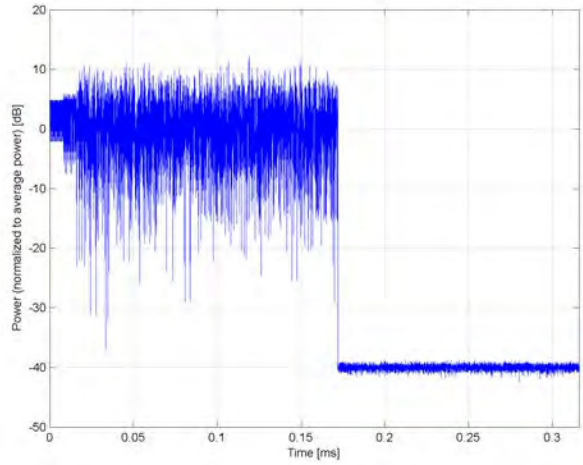
[1] PAR (0.1%) in accordance with FCC KDB 971168, Section 6.0 "'Measurement of the Peak-to-Average Power Ratio (PAPR)'"
[2] Modulation Interference Factor (MIF) value valid only in conjunction with advanced probe response linearization calibration for the same communication system (same UID and version).



Complementary Cumulative Distribution Function (CCDF)



Frequency Domain



Time Domain