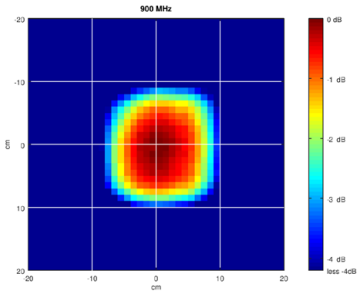
TEM HORN
FOR IEC / EN 61000-4-39

TEM horn in typical application

The basic EMC publication IEC / EN 61000-4-39 „Electromagnetic Compatibility (EMC) - Part 4-39: Testing and measurement techniques - Radiated fields in close proximity - Immunity test" describes test methods unique to the situation in which the transmitter is used in close proximity to the EUT. The Teseq TEM horn generates homogeneous fields in the large frequency range from 600 MHz to 6 GHz. Two optional available matching network adapters allow to extend the frequency range for the TETRA 400 and GMRS 460 / FRS 460 applications. Using the adapters means one TEM horn for all the bands.
The mounting fixture allows easy adjustment for vertical, horizontal polarizations, and has a standard camera thread (1/4" X 20) hole that allows fitting to many support structures including all Teseq tripods (note Teseq adapters may be required). The combination TEM horn with dipole tube BAA 6001 is recommended for mounting the TEM horn to ∅ 22 mm mast / tripod holder.

- **TEM horn for IEC / EN 61000-4-39**
- **One TEM horn for the frequency range 600 MHz to 6 GHz**
- **Extendable with matching networks for the TETRA 400 and GMRS 460 / FRS 460 applications**
- **High efficiency**



Example field homogeneity at 900 MHz with TEM horn in 10 cm distance

Technical specifications

Application:	IEC / EN 61000-4-39
Frequency range:	600 MHz to 6 GHz (usable from 380 MHz)
RF input power, max.:	250 W (70 W with MNW 400 and MNW 460)
Typically power requirement:	15 to 250 W for 300 V/m at 0.1 m distance (see curve)
Field homogeneity:	0 to -4 dB min: 100 cm² typical: 250 cm²
Max. insertion loss:	-6 dB
RF input connector:	N, female
Impedance (nominal):	50 Ω
Fixture:	2x thread 1/4" x 20 for horizontal and vertical mounting
Recommended tripods:	Camera tripod with thread 1/4" x 20 or BTP 6020A plus adapter CHA 9435 or CTP 6099 plus adapter CHA 9443
Recommended dipol tube:	BAA 6001 (allows connection to ∅ 22 mm mast / tripod holder)
Size (W x H x D in mm):	approx. 160 x 175 x 210 approx. 282 x 175 x 210 with fixture approx. 320 x 175 x 210 with fixture and MNW 400 approx. 290 x 175 x 210 with fixture and MNW 460
Weight:	approx. 0.5 kg with fixture

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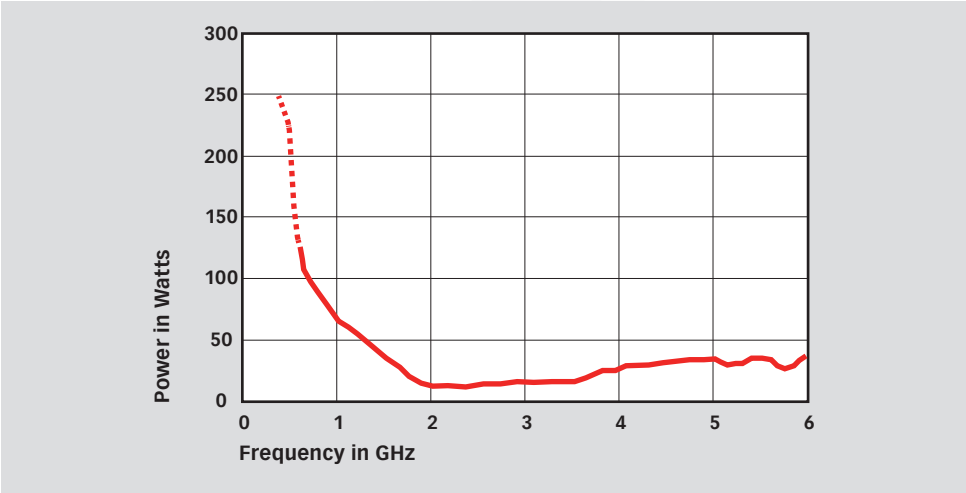
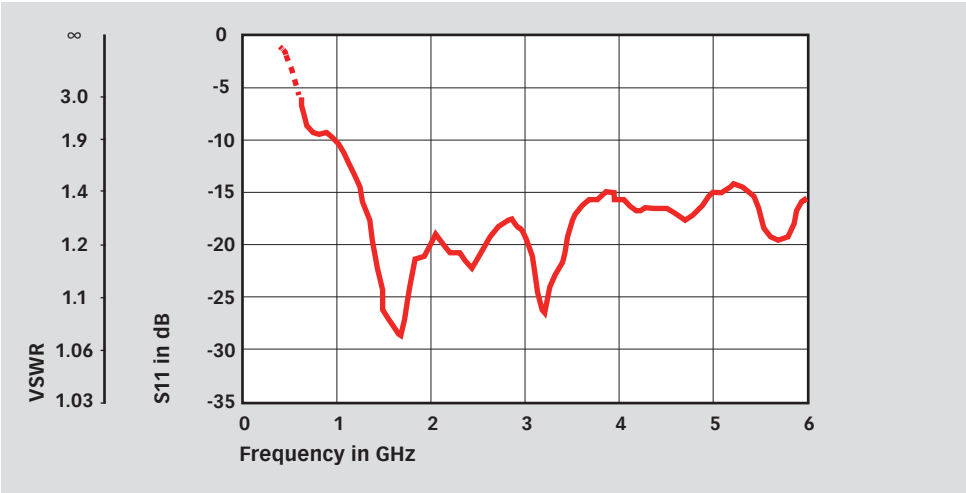
Typical drive power for 300 V/m at 0.1 m, — Range >600 MHz, - - - Range <600 MHz



Typical S11, — Range >600 MHz, - - - Range <600 MHz



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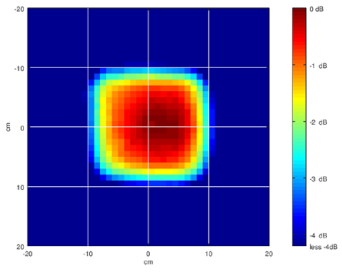
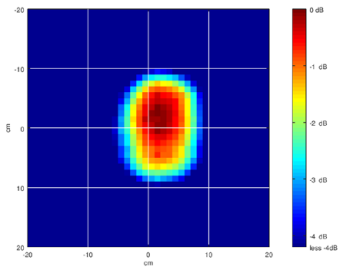
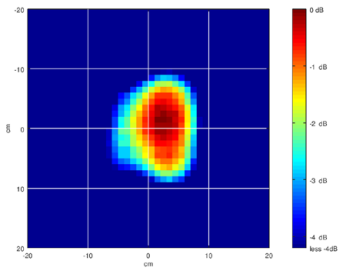
Field homogeneity with TEM horn in 10 cm distance for different bands



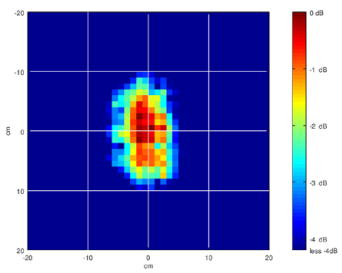
Example at 750 MHz, LTE (13, 17)



Example at 1800 MHz, LTE (1, 3, 4, 25)

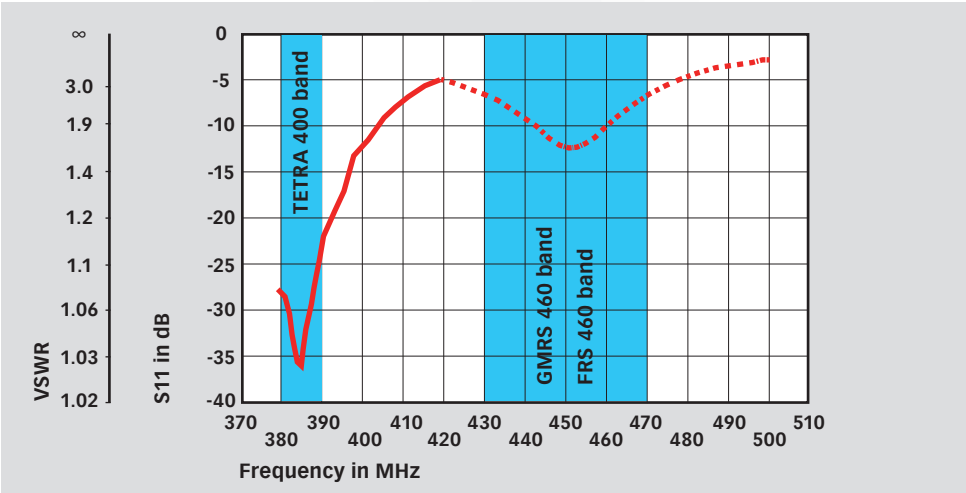


Example at 2450 MHz, WLAN



Example at 5800 MHz, WLAN

Typical S11 with matching network, — MNW 400, - - - MNW 460



Frequency band in MHz	Service	Teseq solution
380 to 390	TETRA 400	TEM horn + MNW 400
430 to 470	GMRS 460, FRS 460	TEM horn + MNW 460
704 to 787	LTE Band 13, 17	TEM horn
800 to 960	GSM 800/900, TETRA 800, iDEN 820, CDMA 850, LTE Band 5	TEM horn
1447.9 to 1462.9	LTE Band 21	TEM horn
1700 to 1990	GSM 1800, CDMA 1900, GSM 1900, DECT, LTE Band (1, 3, 4, 25), UMTS	TEM horn
2400 to 2570	Bluetooth, WLAN, 802.11 b/g/n, RFID 2450, LTE Band 7	TEM horn
5100 to 5800	WLAN 802.11 a/n	TEM horn

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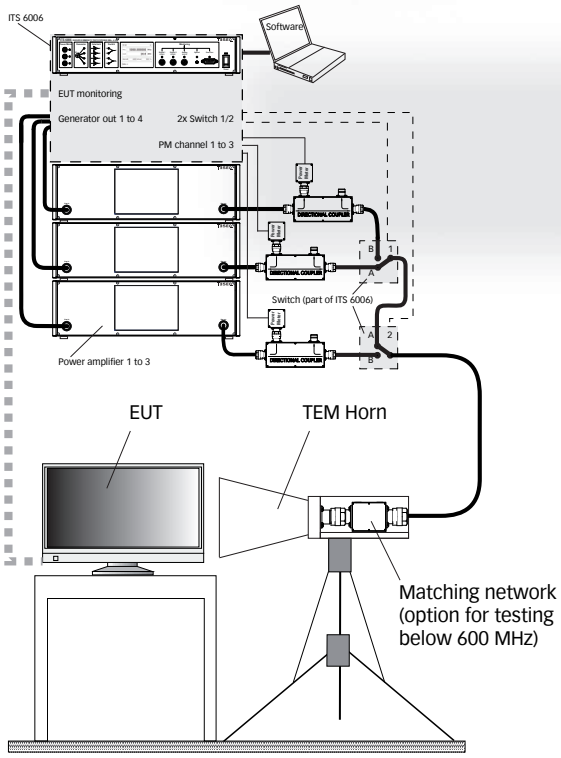
Example set-up for IEC / EN 61000-4-39 testing from 380 MHz to 6 GHz



Model No. and options

Part number	Description
257200	TEM horn TEM horn accord. IEC / EN 61000-4-39, frequency range 600 MHz to 6 GHz, max. input power of 250 Watts
97-257200	TEM horn-TC Traceable calibration (ISO17025), order only with TEM horn
257229	MNW 400 Matching network for TETRA 400 application with TEM horn
257230	MNW 460 Matching network for GMRS 460 and FRS 460 application with TEM horn

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82-257200 E01 March 2017

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