



TEM HORN FOR IEC / EN 61000-4-39



TEM horn in typical application

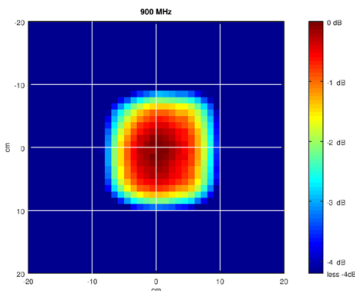
- TEM horn for IEC/EN 61000-4-39
- One TEM horn for the frequency range 600 MHz to 6 GHz
- Extendable with matching networks for the TETRA 400 and GMRS 460/FRS 460 applications
- High efficiency

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 Ø 22 mm mast/tripod holder.

Technical specifications

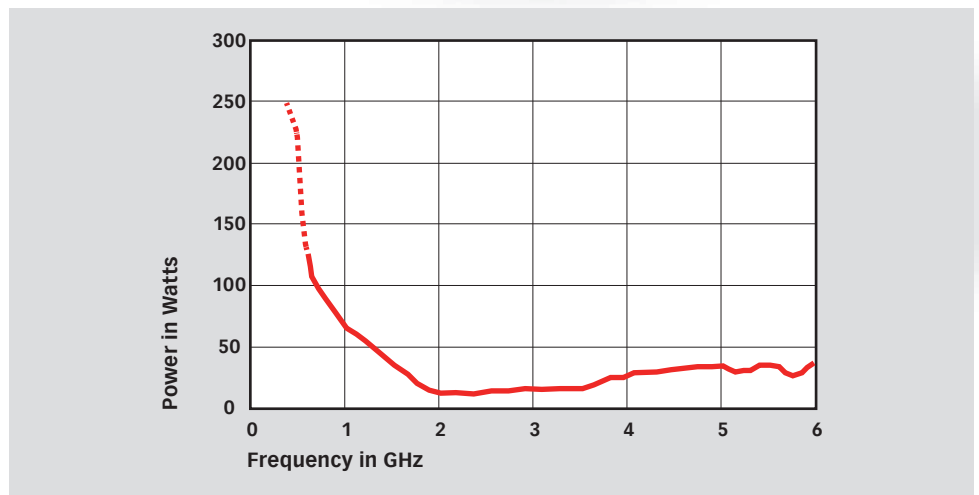
| | |
|------------------------------|---|
| Application: | IEC/EN 61000-4-39 |
| Frequency range: | 600 MHz to 6 GHz (usable from 380 MHz) |
| RF input power, max.: | 250 W (70 W with MNW 400 and MNW 460) |
| Typically power requirement: | 15 to 250 W for 300 V/m at 0.1 m distance (see curve) |
| Field homogeneity: | 0 to -4 dB min: 100 cm ² typical: 250 cm ² |
| 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 dipole tube: | BAA 6001 (allows connection to Ø 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 |



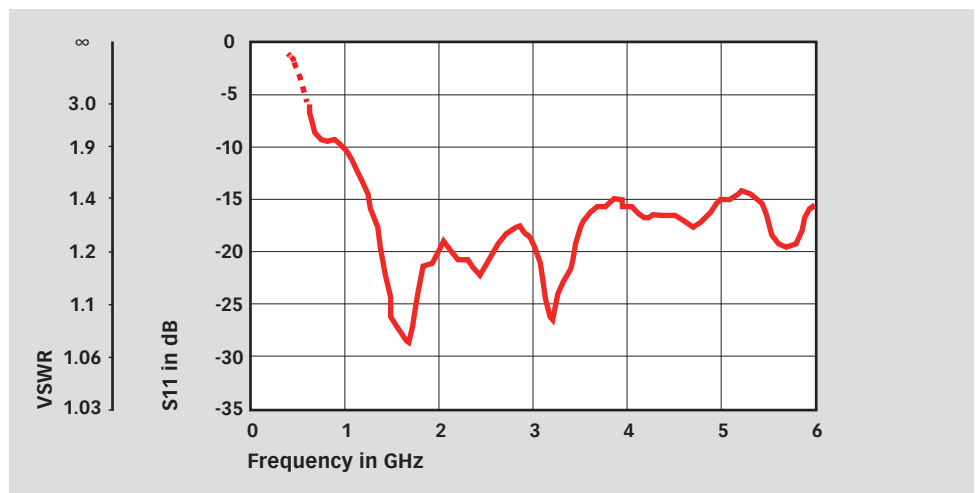
Example field homogeneity at 900 MHz with TEM horn in 10 cm distance

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

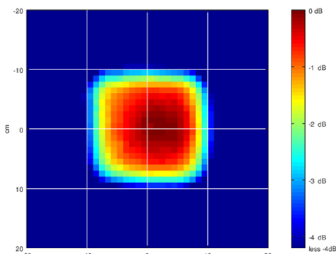


Typical S11, — Range >600 MHz, - - - Range <600 MHz

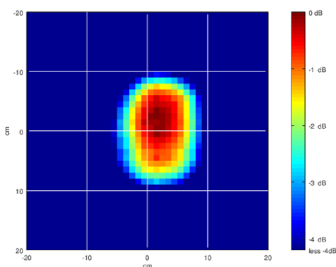


TEM HORN FOR IEC / EN 61000-4-39

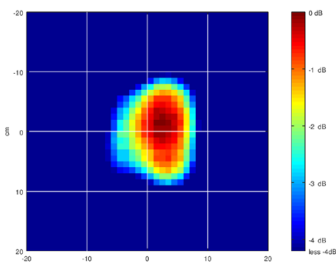
Field homogeneity with TEM horn in 10 cm distance for different bands



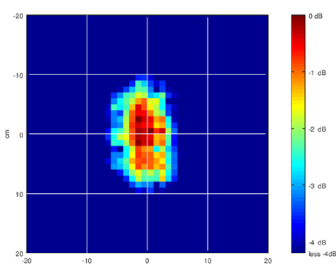
Example at 750 MHz, LTE (13, 17)



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

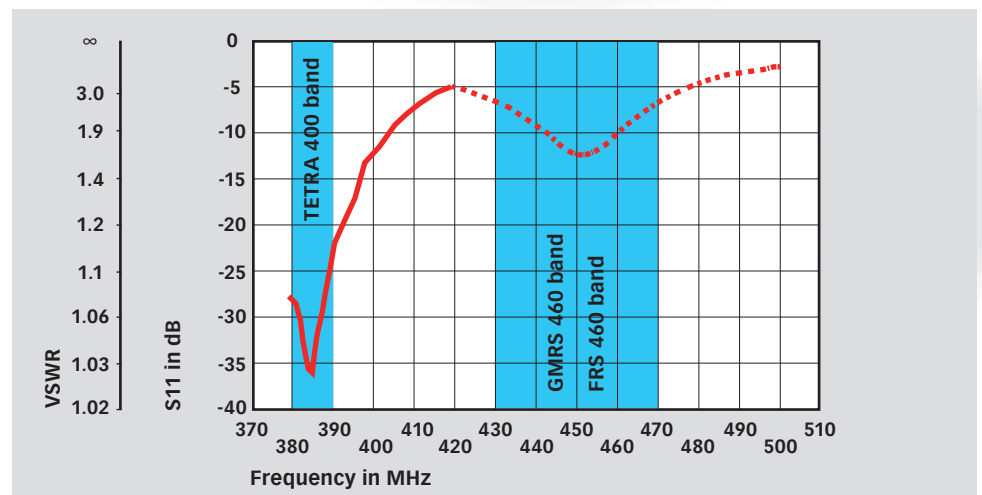


Example at 2450 MHz, WLAN



Example at 5800 MHz, WLAN

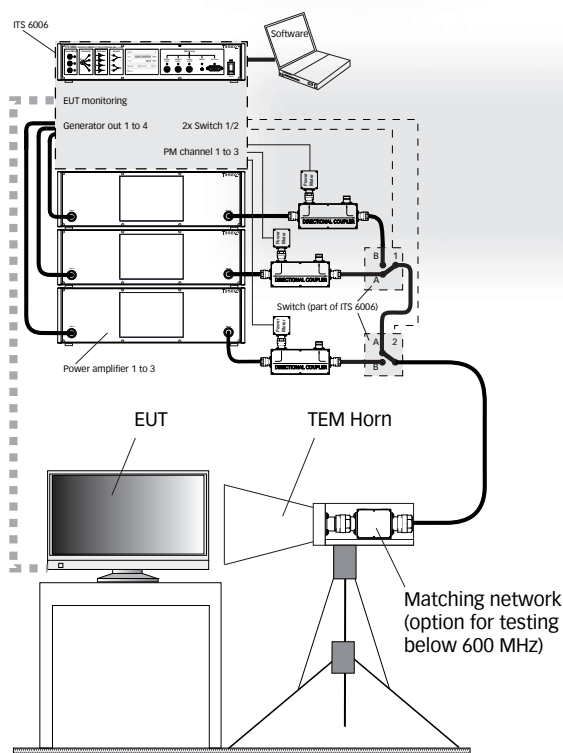
Typical S11 with matching network, — MNW 400, - - - MNW 460



| 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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