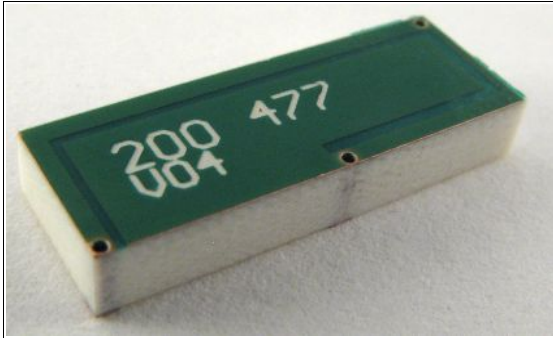


Embedded GSM Antenna ANT-GXE477

Miniature triband GSM antenna for applications like EPOS, remote metering and tracking devices



Technical data GSM

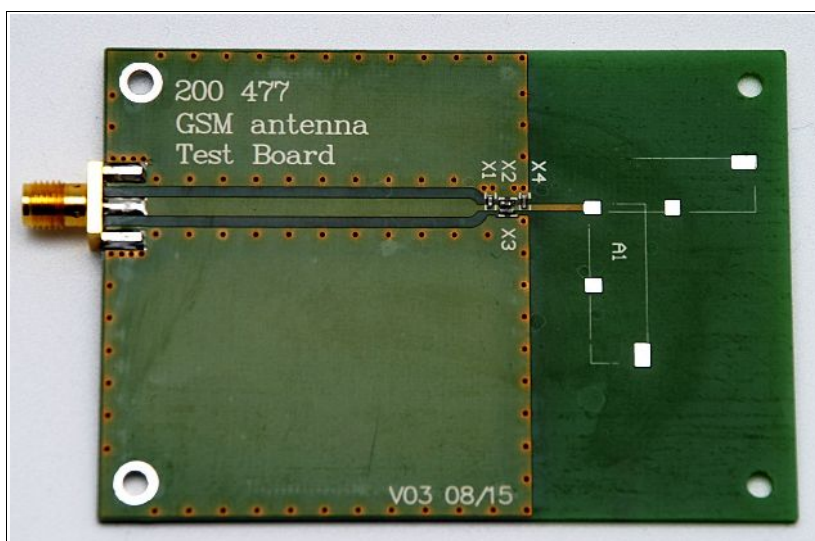
Frequency range:

- GSM 850: 824 – 894 MHz VSWR 2:1 Gain 0 dBi
- GSM 900: 880 – 960 MHz, VSWR 2:1 Gain 0 dBi
- GSM 1800: 1710 – 1880 MHz, VSWR 2:1, Gain 1 dBi
- GSM 1900: 1850 – 1990 MHz, VSWR 2:1, Gain 1 dBi
- Impedance: 50 Ohm
- Max power: 5 W
- Dimensions in mm: 20,5 x 7 x 3,2 mm

This SMT Antenna will be delivered "Tape and Reel".

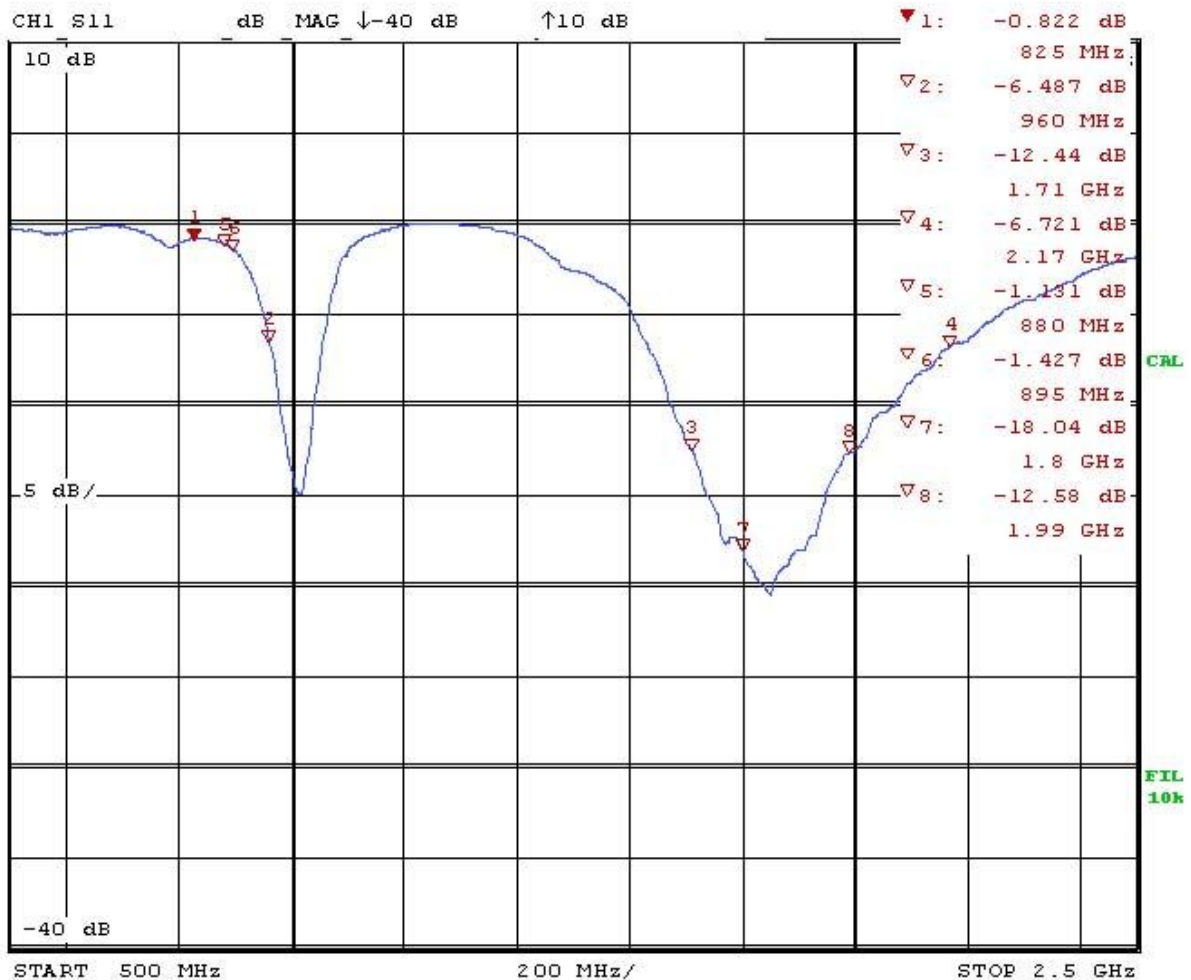
It can be used as a Triband GSM 900 / 1800 / 1900 or as a GSM 850 / 1800 / 1900 with matching circuit.

Starter kit board ANT-GXE477



Return Loss Measurements

All measurements were done using the evaluation board and the vertical assembled ANT-GXE477 as shown on the previous page.



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figure 1: return loss without matching circuit

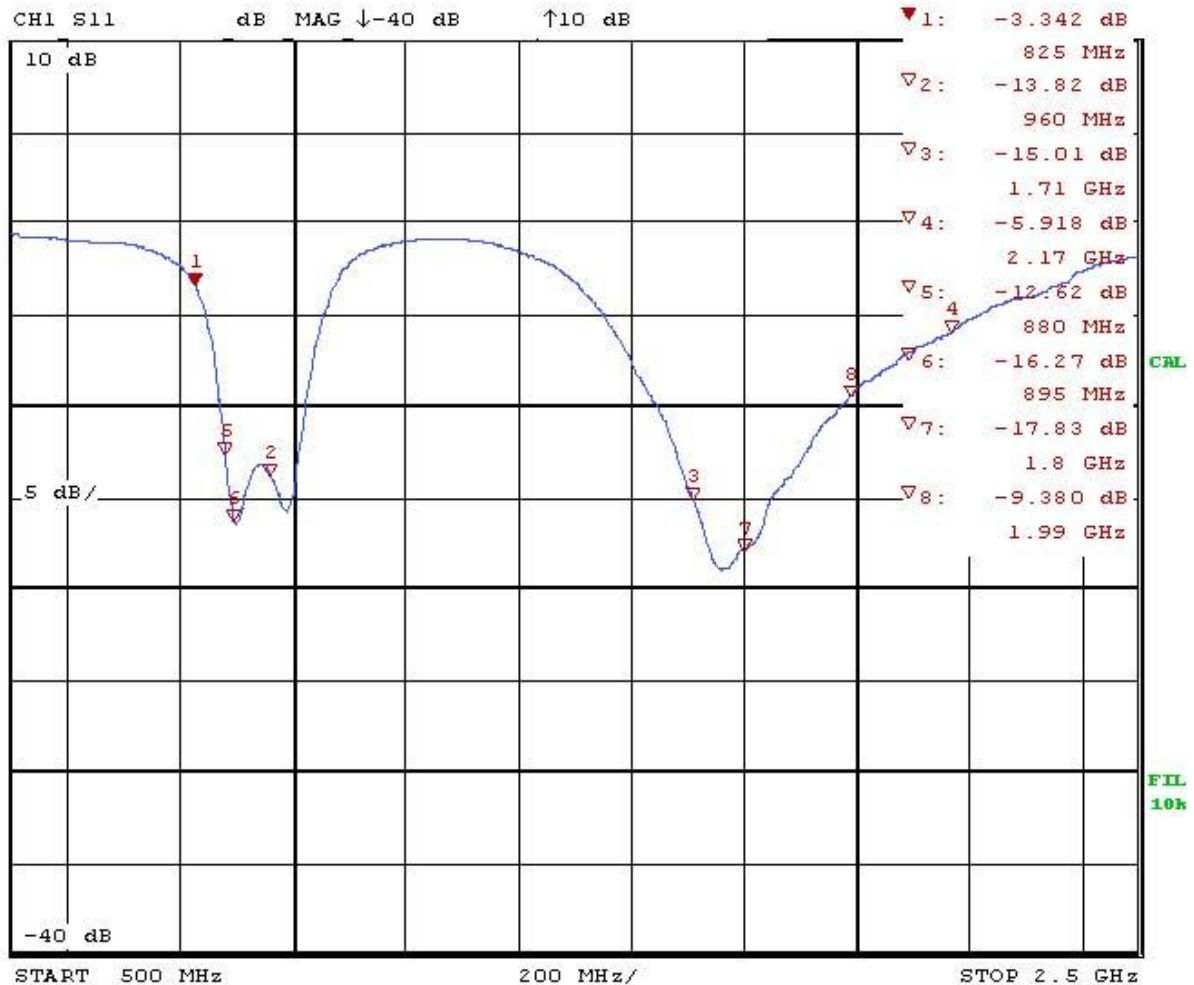
Matching circuit

To improve the performance of the antenna an exemplary matching circuit was calculated and implemented on the evaluation board. The number of its components, their type (inductor or capacitance) and their values depend on the configuration of the used PCB (alignment, size of groundplane, etc.) of the final device.

The matching circuit on the evaluation board can be used as default matching circuit and as starting point for own adjustments.

Matching circuit components

- Capacitor X1: 0.5pF (by Murata GRM),
- Capacitor X2: 12pF (by Murata GRM),
- Coil X3: 2.7 nH (by Würth WE-KI)
- Coil X4: 6.8 nH (by Würth WE-KI),



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figure 2: return loss with matching circuit

Further remarks:

The configuration of the ground plane, grounding and the alignment of the ANT-GXE477 influence mostly the lower frequency bands only. Assembling the antenna in horizontal alignment decreases its bandwidth. Thus further matching is recommend.

Antenna Footprint:

