

# Verification setup for field sensors

Pulsed electromagnetic field tests are carried out in order to estimate the susceptibility of electronic equipment to NEMP (nuclear electromagnetic pulses), for instance. The test installation usually consists of a high voltage pulse generator, a radiating structure and electromagnetic field sensors (D-dot, B-dot, ...etc). These electromagnetic sensors and the associated integrator must be periodically verified.

The verification test set-up consists of a high voltage step generator, a TEM cell, an attenuator and an oscilloscope. Each part of the installation is carefully calibrated and a detailed verification procedure is provided with the hardware. The proposed material and method give the most precise results concerning the verification of pulse sensors. The test set-up can also be optionally used for CW verifications.

Different TEM cell sizes are selected depending on the maximum frequency and on the size of the sensor. For large electromagnetic sensors and especially for frequency exceeding 1 GHz, another test set-up is proposed (see data sheet "calibration set-up - substitution method").



## SPECIFICATIONS

Type	CALTEM220	CALTEM500	CALTEM1000
Maximum frequency	220 MHz	500 MHz	1 GHz
Height under plate	33.3 cm	14.7 cm	7.4 cm
Maximum height of the sensor	11 cm	4.9 cm	2.5 cm
Maximum field	3.7 kV/m	8.5 kV/m	17 kV/m
Precision	< 5 %		
Rise time	≤ 700 ps		
Duration of the pulse	30 ns		
Charging voltage	0.1 - 5 kV		
Output voltage (on 50 Ω)	0.05 – 2.5 kV		
Control interfaces	RS232 / USB		