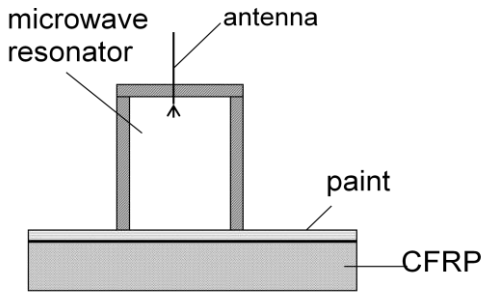
The FSC1/7 is suitable to measure the paint thickness (dielectric layer) on CFRP with and without lightning protection as well as on metal.

The system consists of a hand-held module and a control and display module (e.g. Laptop or similar device).

The hand-held module includes the microwave components. It is intended for measuring a resonant frequency which is determined by a dielectric layer on a base substrate. The main part of the measure system, the resonator, and its application is shown in the picture below.



- A cylindrical resonant cavity having a circular cylindrical wall and a plane wall on one end thereof, wherein the opposite end is open to be placed up on the dielectric layer on the substrate to form a wall of the resonant cavity on the opposite end.
- An antenna located within said resonant cavity and adapted to excite an electromagnetic field in the resonant cavity.
- A reflection meter connected to said antenna and adapted to measure the resonant frequency of the resonant cavity. In this case, the reflection meter is a FMCW Transceiver. The FMCW Transceiver is driven, that only frequencies in the range from 24.005 to 24.245 GHz are adjustable.
- The Output-Power from the FMCW Transceiver is 10mW.
- A processor connected to said reflection meter and adapted to determine the resonant frequency of the resonant cavity.

The FMCW Transceiver is on constantly whilst power is supplied.