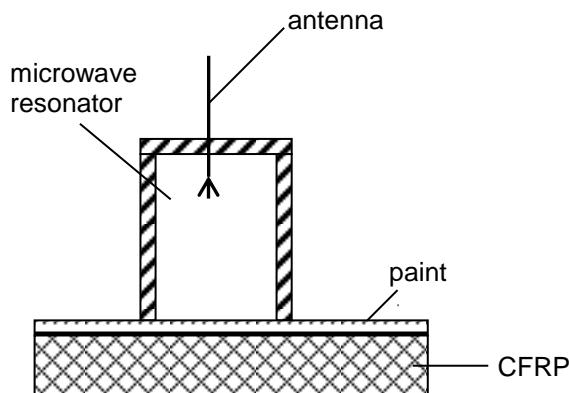


The FSC1/7 and FSC1000 are suitable to measure the paint thickness (dielectric layer) on CFRP with and without lightning protection as well as on metal.

The system consists of a sensor module (Sensor) and a control and display module (Controller).

The Sensor includes microwave circuit 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 resonant cavity having a rotationally symmetrical 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 resonance frequency of the resonant cavity. The device operates in "frequency stepped continuous wave" (FSCW) mode. The measurements of all individual frequency steps are performed under steady state conditions. At the measurements no intermediate frequencies are generated. The receiver output signal is a dc signal at each individual frequency point.
- The Transceiver is driven in a way that frequencies only in the range from 24.010 to 24.240 GHz are adjustable.
- The output power of the transceiver is less than -15dBm. The output signal of the internal generator is only active during the measurement process, after that it is turned off.
- A processor connected to said reflection meter and adapted to determine the resonance frequency of the resonant cavity.