

The test instrument FMH1 allows non-destructive testing of devices made from electrically non-conducting materials. These include

- plastics
- glass
- glass-fibre reinforced plastics GFRP
- natural-fibre reinforced plastics NFRP
- foams
- ceramics
- wood
- enamel

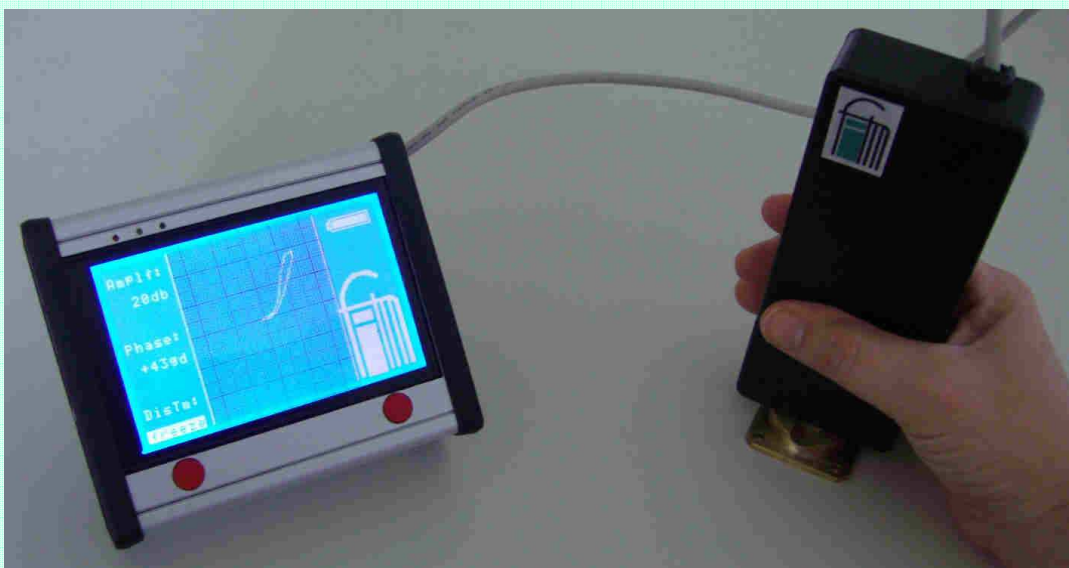
and composites based on these materials.

The FMH1 uses low power microwaves with the frequency of 5.8 GHz. For optimum spatial resolution and optimum observation depth various applicators are available.

The FMH1 is a stand-alone instrument. It includes a microwave module as well as a control and display module. Therefore, in basic functions it can be used without additional instruments. For detailed user-specific evaluations and for the documentation of test results an analogue interface and an interface for standard eddy-current systems are available. When using this last mentioned option the FMH1 acts like a normal eddy-current sensor for the eddy-current system. In this way all the control and evaluation functions of the standard eddy-current system can be used when performing microwave non-destructive testing.

The FMH1 is a test instrument for use

- as a handheld device
- in a fixed position, or
- installed in moving scan equipment



Technical specifications of the FMH1:

- Test signal
 - frequency: 5.8 GHz
 - output power: < 30 mW
- Control functions
 - amplification: 0 to 40 dB in steps of 5 dB
 - phase angle: 0° to 360°
 - persistence of LCD display: 0.2 s to 5 s
 - freezing of current image
- Analogue output : x and y, each +/- 5 V
- Power supply : 230 V AC, 50 Hz¹⁾ or using the included rechargeable accumulator
- Included in the scope of delivery : applicator with iris 10 mm x 3 mm and fixed microwave impedance transformer for typical isolating materials, i.e. for dielectric constants between 2 and 10. Further applicators on request.
- Meets requirements on emitted radiation according to EN 55011, table 4, and on voltage according to EN 55011, table 2b, as well as on susceptibility according to EN 61000-4-3.
- **Option EC:** interface to eddy-current system:
 - Input of the FMH1: $f_{in} = 100 \text{ kHz}$ ¹⁾, sinusoidal oscillation; nominal voltage $U_{PP, in} = 15 \text{ V}$ ¹⁾, max. 30 V. $Z_{in} = 600 \Omega$ @ $f = f_{in}$. $Z_{in} = 3 \text{ k}\Omega$ @ DC.
 - Output of the FMH1: $f_{out} = f_{in}$, sinusoidal oscillation; $U_{PP, out} \leq 0,5 \text{ V}$ @ $U_{PP, in} = 15 \text{ V}$.
 $Z_{out} = 100 \Omega$
 - Input and output with connector D-SUB 26 pole. Other connectors on request.

¹⁾ Other values on request.

FI Test- und Messtechnik GmbH
Breitscheidstrasse 17
D-39114 Magdeburg, Germany
<http://www.fitm.DE>

Telephone: +49 391 8868 129
Telefax: +49 391 8868 130
Mobile.: +49 171 205 3208
Email: info@fitm.DE