Dear Customer,

Thank you for purchasing this unit from Medizintechnik Gulden.

This technical documentation is an integral part of the product, and it should be kept in the vicinity of the Periotest M unit.

Please take care when reading the instructions contained in this manual to familiarise yourself with your Periotest M.

Only by consulting the information contained in the manual will it be possible for you to familiarise yourself with the correct method of using the unit. You will then require no further instruction or training measures.

Should you fail to comply with the instructions or subject to the unit to any other use other than that for which it is intended, this shall be deemed to be improper use.

Should you at any time require any information that you have been unable to locate in this manual, please do not hesitate to contact your local Dental Depot. You can also contact Medizintechnik Gulden directly.
## Contents

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Intended and Proper Use

This device is intended for use in dental practices.

Your Periotest M unit complies with the latest regulations laid down in line with current technical developments. According to these regulations, this product may only be used for the purpose described here and may only be operated by trained personnel working in compliance with applicable occupational safety regulations, accident prevention measures and these operating instructions.

Trained personnel are dentists and dental assistants in possession of the appropriate qualifications. Dentists or dental assistants who are still undergoing training are only permitted to use the device when accompanied by another person who is in possession of the required qualifications.

In accordance with these regulations, users undertake to use only materials which are free of defects, to ensure that the equipment is only used for the purpose for which it is intended and to protect themselves, their patients and third parties against any dangers.

The unit is not designed for use in areas in which there is a risk of explosion. For this reason, this unit must never be used in the presence of flammable anaesthetics or gases.

General Safety Information

As manufacturers of dental equipment, we urge you to ensure, in the interest of the operational safety of your unit, that any maintenance or repair work that may be necessary is performed either by us or by duly authorised repair centres. Should any components malfunction, they should only be replaced with original spare parts.

In the event of such repair work, we recommend that you request certification stating the type and extent of the work performed, including information on any modifications made to the rated parameters or the operating ranges (if applicable), plus the date of the repair, name of the company, and the signature of the party effecting the repair.

Any modifications to this system which might compromise the safety of the system owner, his patients or any other persons are prohibited by law!

For reasons of product safety, only original Medizintechnik Gulden accessories or accessories from third parties approved by Medizintechnik Gulden may be used with this product. The user is responsible for any damage resulting from the use of non-approved accessories.
It is not permitted to modify the design or construction of the unit. The system owner is obliged to use only products which are free of technical defects. Please ensure that the unit is functioning properly before putting it into operation.

If the unit is dropped, it must be subjected to a check by qualified technical personnel.

The unit should always be shipped in its original packaging.

The unit is not sterile.

**Interference to Dental Equipment Caused By Mobile Phones**

To ensure the operational safety of medical equipment, the use of mobile telephones in dental practices or hospital environments is prohibited.

**Highlighting of Warning and Safety Information**

To avoid personal injury or damage to property, all further hazard warning and safety information set out in the present operating instructions must also be complied with. Such items are highlighted by use of the headings: NOTE, CAUTION and WARNING.

**Key to Symbols**

- ![i](image) See accompanying documents.
- ![ce](image) This product bears the CE label in accordance with the provisions of Council Directive 93/42/EEC of June 14, 1993 for medical products.

**Disposal**

- ![x](image) Your product is marked with the symbol illustrated here. To comply with the objectives of environmentally sound refuse recycling and disposal, this product should not be disposed of with domestic refuse. The black bar underneath the 'dustbin' symbol means that this product was put into circulation after August 13, 2005 (see EN 50419:2005). Please note that this product is subject to Council Directive 2002/96/EU (WEEE) and the applicable national law of your country and must be recycled or disposed of in an environmentally sound manner. Please contact your dealer or directly Medizintechnik Gulden if final disposal of your product is required.
Technical Specifications

**Model**
HAND UNIT
Voltage rating
Current rating

**PROTECTION RATING**
Degree of protection against electric shock
Protection rating of casing

**CHARGER UNIT**
Voltage rating
Current rating
Protection rating
Protection rating of casing

**MAINS POWER SUPPLY**
Model
Voltage rating
Current rating
Protection rating
Protection rating of casing

**OPERATING CONDITIONS**
Ambient temperature
Relative humidity
Air pressure

**TRANSPORT AND STORAGE CONDITIONS**
Temperature
Relative humidity
Air pressure

**MODE OF OPERATION**
Continuous operation

**DIMENSIONS**
Hand unit standing in charger:
Height: 197 mm; Width: 70 mm; Depth: 105 mm

**WEIGHT**
Hand unit: 150 g
Charger unit: 80 g

**YEAR OF MANUFACTURE**
See capital letter after the serial number:
“A” refers to year of manufacture 2007,
“B” refers to year of manufacture 2008, etc.

---

**Periotest M, model 3218**

7.4 V DC Li-Polymer rechargeable battery, capacity 230 mAh
50 mA

Device with internal power supply
Type B applied parts
IP 20

Input 1.2 V DC, Output 8.4 V DC
Max. 800 mA
Protection rating II
IP 20

Ansmann APS 1612T, Art. No. BC94006/02
Input 100 - 240 V AC 50/60 Hz
Output 12 V DC
Max. 800 mA
Protection rating II
IP20

-20°C bis +45°C (-4°F bis 113°F)
10 % - 95 %
500 hPa - 1060 hPa
Following a substantial change in temperature, allow unit sufficient time to adapt to ambient conditions.
How the Unit Works

The Periotest M is a measuring device for use in dental practices and is designed for the following range of applications:

– Assessment of the osseointegration of dental implants
– Diagnosis and assessment of periodontopathies. The Periotest M measures the damping characteristics of the periodontium and, indirectly, tooth mobility, which it outputs in the form of a Periotest value.
– Assessment of the occlusal load
– Control of the treatment’s progress

The unit’s scale ranges from -0.8 bis +5.0.

The measuring procedure is electromechanical. An electrically driven and electronically monitored tapping head percusses the test object (tooth or implant) 16 times. The entire measuring procedure requires approx. 4 seconds. The tapping head is pressure sensitive and records the duration of contact with the test object. Loose teeth or implants display a longer contact time and the Periotest values are correspondingly higher, while sturdy teeth and implants have a short contact time and result in low Periotest values.

Contraindications

The Periotest M should not be applied in the following cases:
– all types of acute apical periodontitis
– acute trauma (dislocation, root fracture, alveolar process fracture).
Operating Controls

1 – Power supply
2 – Battery charger
3 – Periotest M unit
4 – Test sleeve
5 – Cleaning brush

6 – Tip of the measuring unit
7 – Mounting ring
8 – Start button
9 – LCD display
Preparing for First Use

Installing and Connecting the Charger Unit

The unit should be located in a place where it is not exposed to direct sunlight. The charger unit should be placed on a level and sturdy surface. Ensure that the unit is in a secure position.

Plug the supplied test sleeve into its holder on the rear of the charger.

Connect the plug-in power supply to the charger. Then plug the power supply into a mains socket. The LED on the charger unit will light up green.

CAUTION: Only use the unit together with the plug-in power supply included with the unit!

CAUTION: The charger unit must not be placed in the vicinity of the patient during the charging process.

Placing the Periotest M in the Charger

Place the Periotest M hand unit into the charger vertically from above. The LED on the charger can be either red or green. If it is red, it indicates that the Periotest M’s internal battery is charging. The charging time to full capacity of an empty battery is approximately two hours. Once the battery is fully charged, the LED changes from red to green. Green indicates that the battery is now fully charged.

CAUTION: Before putting your Periotest M to use, it must be cleaned (see ‘Cleaning and Maintenance’).
Functional Test

Take the Periotest M out of the charger.

Press the Start button. All the segments of the display will light up together for about two seconds. The display then changes to - - - and the Periotest M is now ready to take measurements.

The functional test involves measuring the supplied test sleeve. First remove this from its holder at the rear of the charger.

Plug the test sleeve onto the tip of the hand unit, twisting it slightly to the right as you do so, until it is positioned firmly. Hold the Periotest M horizontally and press the Start button.

Once the measurement sequence has completed (after about four seconds), a measurement value is indicated in the display. The value shown must correspond to that stated on the test sleeve, to within +/- 2 Periotest units. Should you notice a discrepancy of more than two whole Periotest units, it is an indication of a functional fault. You should first attempt to solve the problem by cleaning the tip of the measuring unit (see Cleaning and Maintenance), but if this should prove ineffective, please call your customer service.

To remove the test sleeve from the measuring tip, twist it slightly towards the right, as before.
Taking Measurements with the Periotest M

Sitting Posture and Patient Posture

The most favourable treatment position is to have the patient sit upright so that the implants/teeth also adopt a vertical orientation. It is however also possible to conduct measurements with the patient in a recumbent position.

The teeth of the patient’s upper and lower jaws must not be allowed to come into contact with each other. However, keep the dimension of the mouth opening to a minimum to simply the measurements in the molar area.

Point of Contact with the Test object

Measurements are always taken labially or buccally.

Positioning the Periotest M

To ensure that the measurement is valid and meaningful, it is important to ensure that the Periotest M is positioned correctly with respect to the test object. The device itself provides assistance by monitoring all sixteen impulses and emanating control signals as appropriate. A low-pitched tone indicates that the position was correct whereas a high-pitched tone means that the position was incorrect. It is also possible to correct the position while in the process of taking a measurement.

The measurement you take can only be deemed valid and meaningful when the following conditions have been adhered to:

(see pages 11 to 14)

Distance from the Test object

You require a distance of 0.6 to 2.0 mm between the tip of the measuring unit and the object to be measured. If this distance is too small or too large, you will hear a high-pitched control signal, and any measurements you obtain will be invalid.
The Periotest M (Vertically) Perpendicular to the Test object

The tapping head of the Periotest M must come into contact with the test object at right angles. For instance, when the patient is sitting upright, with teeth/implants in a corresponding vertical position, the Periotest M should be held horizontally.

Upright Position of the Periotest M

Hold the Periotest M in a horizontal position. Deviations of up to +/- 20° from the horizontal are permissible. Any further deviation from this orientation will lead to erroneous measurements, which are indicated as such with a high-pitched control signal.

If you incline the Periotest M upwards or downwards, please ensure that the patient also moves his head accordingly, to ensure that the tapping head always retains its position perpendicular to the test object. If necessary, correct his sitting position or head orientation.

The Periotest M (Horizontally) Perpendicular to the Test object

If you are measuring natural teeth or implants with a completed prosthetic, it is important that the horizontal contact of the Periotest M tapping head is also at right angles to the test object. In the molar region, this is not always possible. However, in this case, deviations of up to 45° from the right angle are permissible, although a certain deviation in Periotest readout values (+/- 1) may occur.

CAUTION: Since the Periotest M cannot itself discern whether it is within the admissible range of +/- 45°, it is up to you to ensure that you remain within the permitted working angular ranges. Should you be working outside of this range, you may receive results that are medically unsuitable.
Comparability of Measurements

You will obtain the best possible reproducibility and comparability of your measurement results if you always position the Periotest M in the same manner with respect to the test object.

Note on Measuring Implants

You may take measurements at all stages of implantological care. This is typically done:

- Directly following the placement of the implant in the jaw (to measure primary stability),
- At the end of the healing phase of the implant
- On the finished prosthetic.

Please do not conduct measurements directly on the implant but only on the gingival former, the abutment or the finished prosthetic.

Note on Measuring Occlusal Load

When measuring occlusal load, the patient should press his teeth together as if swallowing (to attain maximum intercuspidation). The measurement can then be taken on the upper jaw with the teeth rows closed. To check occlusal adjustment, it is also possible to take measurements on the lower jaw.
Taking a Measurement with the Periotest M

Remove the Periotest M from the charger and switch it on. All the segments in the display light up briefly and then a short melody plays, indicating the device is ready for measuring. The display now shows - - -.

NOTE: You can also remove the Periotest M from the charger before it has finished charging (i.e. the LED on the charger is red) and use it as normal. It will continue to charge once you have replaced it in the charger.

Initiate the measurement by pressing the Start button. The measurement process runs automatically. The tapping head attached to the measuring unit percusses the test object a total of 16 times. A low-pitched audible control signal is emitted for each valid impulse received and each invalid impulse is indicated by a high-pitched tone.

As long as at least four of the 16 individual measurement impulses received are valid, the device is able to calculate a valid Periotest value (in the format: +/- XX.X). If the number of valid impulses is smaller, the overall measurement is cancelled.

In this case, press the Start button again to begin a new measurement.

If you do not wish to take another measurement at this stage, please replace the Periotest M in its charger. After a few minutes, the Periotest M will switch itself off automatically.
Interpreting the Readout Values of the Periotest

**General**

The range of the Periotest values is from -8 to +50. The smaller the Periotest value, the greater is the stability/damping of the test object.

**Measuring Natural Teeth**

<table>
<thead>
<tr>
<th>Clinical degree of tooth loosening</th>
<th>Periotest Value Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>-08 bis +09</td>
</tr>
<tr>
<td>I</td>
<td>+10 bis +19</td>
</tr>
<tr>
<td>II</td>
<td>+20 bis +29</td>
</tr>
<tr>
<td>III</td>
<td>+30 bis +50</td>
</tr>
</tbody>
</table>

There are also tables for use with natural teeth, that indicate which Periotest values can be expected for a healthy periodontium. Please see the relevant professional literature for further information.

**Measuring Dental Implants**

Nowadays there are many implant systems which are in use. The Periotest M unit is able to take measurements on all of them. Moreover, measurements can be made at all stages of the implant process: directly after implantation, to measure primary stability, following the healing phase to determine that the required degree of osseointegration has taken place to enable pressure to be applied to the implant, and following completion of the prosthetic, to enable any negative developments to be recognised at an early stage. As a result of the different implant systems and the existence of varying clinical conditions with individual patients, it is only possible to present guide values here. These show which Periotest value indicate good osseointegration and which are insufficient for withstanding pressure on the implant.

<table>
<thead>
<tr>
<th>Periotest Value Range</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>-8 to 0</td>
<td>Good osseointegration; the implant is well integrated and pressure can be applied to it.</td>
</tr>
<tr>
<td>+1 to +9</td>
<td>A clinical examination is required: the application of pressure on the implant is generally not (yet) possible</td>
</tr>
<tr>
<td>+10 to +50</td>
<td>Osseointegration is insufficient and no pressure may be allowed to act on the implant</td>
</tr>
</tbody>
</table>

On the whole, implants lose a certain amount of stability in the first 14 days following implantation, and this is reflected by an increase in the Periotest values of one to two units. However, once the healing phase is over, the Periotest values obtained will be similar to those immediately following implantation (primary stability). Significantly greater increases in Periotest values, even a number of years after implantation, are an indication that the implant has become unstable, one of its screws has loosened, or it has excess pressure or has become infected (e.g. periimplantitis). It is therefore advisable to record all measurements to allow monitoring checks to be conducted over time.
Charging the Battery

The battery in the Periotest M begins to charge whenever it is placed in the charger. When the LED in the charger unit is red, it indicates that the battery is currently being charged. When the LED is green, the battery is fully charged.

The charging process takes about two hours for an empty battery.

When the battery is fully charged, it is possible to take an average of 100 measurements.

The battery voltage of the Periotest M is constantly monitored during use. If the battery voltage sinks below a certain value, the display shows the code word ‘LOBAT’ in the top left. You will then still be able to continue using the Periotest M to take measurements for a short time, but you will need to charge the battery as soon as possible. If the battery voltage then falls below a second threshold value, it will switch itself automatically to protect the battery. Should this occur, replace the Periotest M immediately in the charger, to avoid the onset of total discharge.

If the battery quickly becomes discharged and the code word LOBAT is shown in the display, even though the battery was recently fully charged, it has come to the end of its useful life and needs to be replaced. As the battery is built into the Periotest M unit itself, it will be necessary to return it to the manufacturer for battery replacement. Please send your unit either to your Dental Depot or directly to the manufacturer.
Cleaning and Maintenance

CAUTION: The measuring unit is the only part of the Periotest M which can be sterilised. None of the other parts can be sterilised!

Disinfecting and Cleaning

Cleaning the Surfaces

The Periotest M must be disinfected or sterilised following each application.

The surfaces can be disinfected either by wiping or spraying using surface disinfectant. Only those disinfectants may be used which have been tested for their bactericidal, fungicidal and virucidal properties in accordance with national regulations or in an otherwise demonstrable manner and have been awarded appropriate certification. Remove any residual soiling or disinfectant on a regular basis using standard cleaning agents. For cleaning and disinfecting purposes, we recommend the alcohol-free PlastiSept disinfectant and cleaning foam manufactured by Alpro Dental-Produkte GmbH in St. Georgen.

Cleaning the Tapping Head

To disinfect the tapping head of the measuring unit, unscrew the tip of the measuring unit and disinfectant either by spraying or wiping. The tapping head should only be sprayed from the side or wiped clean.

Cleaning the Tip

The tip of the measuring unit should be kept clean at all times, both on the inside and the outside. To clean it, unscrew the tip and clean it with disinfectant. You can also use the cleaning brush supplied.
WARNING: It is essential that you avoid exposing your Periotest M to the following:

Do not allow any cleaning fluid to penetrate to the inside of the Periotest M or into the measuring unit. Under no circumstances should you spray disinfectant into the measuring unit, either from the front or from the back. Similarly, under no circumstances should you allow disinfectant to be sprayed or otherwise run into the Periotest M when the measuring unit is removed. The internal components may be damaged or even destroyed.

Please also ensure that no fluid is allowed to penetrate into the interior of the charger or the plug-in power supply.
Sterilising the Measuring Unit

The measuring unit may only removed from the Periotest M when it is necessary for it to be sterilised. To do this, unscrew the mounting ring and remove the unit.

CAUTION: Only perform sterilisation in autoclaves at 135°C and 2.1 bar. Other apparatus (e.g. chemiclaves) is not suitable for sterilising the measuring unit and can damage it.

Once sterilisation is complete, the measuring unit can be replaced inside the Periotest M. Slide the unit all the way into the housing as far as it will go. Then twist the unit to the right until it drops a little further into the housing. Then replace the mounting ring.

CAUTION: Do not use any tools to tighten the mounting ring (e.g. pliers). The ring should only be tightened with the hand.
Electromagnetic Compatibility Information

**Technical Guidelines and Manufacturer’s Declaration – Electromagnetic Emissions**

The Periotest M Model 3218 is designed for operation in an electromagnetic environment as described below.

The customer or user of the Periotest M Model 3218 is to ensure that it is used in such an environment.

<table>
<thead>
<tr>
<th>Measured Emission</th>
<th>Compliance</th>
<th>Electromagnetic Environmental Guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>HF emissions as per CISPR 11</td>
<td>Groupe 1</td>
<td>The Periotest M Model 3218 uses HF energy for its internal functioning only. The level of external HF emission is therefore very low and it is unlikely to be sufficient to interfere with other electronic devices in its vicinity.</td>
</tr>
<tr>
<td>HF emissions as per CISPR 11</td>
<td>Class B</td>
<td>The Periotest M Model 3218 is designed for use in all types of premises, including residential rooms and those that are connected directly to a public supply network which also supplies buildings that are used for residential purposes.</td>
</tr>
<tr>
<td>Harmonic radiation as per IEC 61000-3-2</td>
<td>Class A</td>
<td></td>
</tr>
<tr>
<td>Voltage fluctuations/flicker as per IEC 61000-3-3</td>
<td>Fulfilled</td>
<td></td>
</tr>
</tbody>
</table>

**Recommended safe distances between portable and mobile HF communications equipment and the Periotest M Model 3218**

The Periotest M Model 3218 is designed for operation in an electromagnetic environment, in which radiated HF interference is controlled. The customer or user of the Periotest M Model 3218 is able to assist in preventing electromagnetic interference by maintaining minimum distances between portable and mobile HF communications equipment (transmitters) and the Periotest M Model 3218, as recommended below in accordance with the maximum power output of the communications device.

<table>
<thead>
<tr>
<th>Nominal power of the transmitter</th>
<th>Safe distance (in m) according to transmission frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>W 150 kHz to 80 MHz</td>
<td>80 MHz to 800 MHz</td>
</tr>
<tr>
<td>0.01</td>
<td>d=([1.2] P)</td>
</tr>
<tr>
<td>0.1</td>
<td>0.12</td>
</tr>
<tr>
<td>1</td>
<td>0.38</td>
</tr>
<tr>
<td>10</td>
<td>12</td>
</tr>
<tr>
<td>100</td>
<td>12</td>
</tr>
</tbody>
</table>

For transmitters whose nominal power output is not covered by the table, the safe distance can be calculated using the formula given in the respective column, whereby P is the nominal power output of the transmitters in Watts (W) as per the information given by the manufacturer of the transmitter.

**Note 1** To calculate the recommended safe distance of transmitters in the frequency range 80 MHz to 2.5 GHz, an additional factor of 10/3 has been applied to reduce the probability of disturbance from a mobile/portable communications device which is inadvertently brought within the patient area.

**Note 2** It is possible that these guidelines may not be applicable in all cases. The emanation of electromagnetic variables is affected by absorption and reflection by walls, objects and persons in the vicinity.
### Technical Guidelines and Manufacturer’s Declaration – Susceptibility Tests

The Periotest M Model 3218 is designed for operation in an electromagnetic environment as described below.

The customer or user of the Periotest M Model 3218 must ensure that it is used in such an environment.

<table>
<thead>
<tr>
<th>Interference Susceptibility Tests</th>
<th>IEC 60601-1-2 Test Voltages</th>
<th>Compliance Voltages</th>
<th>Electromagnetic Environmental Guidelines</th>
</tr>
</thead>
</table>
| Electrostatic discharge (ESD)    | ± 6 kV Contact                | ± 6 kV Contact      | Flooring made of wood, concrete or ceramic tiles. If the flooring includes a synthetic material, the relative humidity must be at least 30%.
|                                  | ± 8 kV Air                    | ± 8 kV Air          |                                           |

| Rapid transient electrical interference (bursts) as per IEC 61000-4-4 | ± 1 kV for input and output lines | ± 1 kV for input and output lines | The quality of the supply voltage should comply with that which is typical for a hospital or business environment. |
|                                                                       | ± 2 kV for network lines         | ± 2 kV for network lines         |                                           |

| Voltage surges as per IEC 61000-4-5 | ± 1 kV Normal mode voltage | ± 1 kV Normal mode voltage | The quality of the supply voltage should comply with that which is typical for a hospital or business environment. |
|                                      | ± 2 kV Common mode voltage  | ± 2 kV Common mode voltage  |                                           |

| Voltage drops, intermittent power loss and fluctuations in supply voltage as per IEC 61000-4-11 | <5 % U, for ½ period (>95 % drop) | <5 % U, for ½ period (>95 % drop) | The quality of the supply voltage should comply with that which is typical for a hospital or business environment. |
|                                                                                     | 40 % U, for 5 periods (60 % drop) | 40 % U, for 5 periods (60 % drop) |                                           |
|                                                                                     | 70 % U, for 25 periods (30 % drop) | 70 % U, for 25 periods (30 % drop) |                                           |
|                                                                                     | <5 % U, for 5 seconds (>95 % drop) | <5 % U, for 5 seconds (>95 % drop) |                                           |

<table>
<thead>
<tr>
<th>Magnetic field at supply frequencies (50/60 Hz) as per IEC 61000-4-8</th>
<th>3 A/m</th>
<th>3 A/m</th>
<th>Magnetic field strengths at power supply frequency should comply with the values which are typical for a hospital or business environment.</th>
</tr>
</thead>
</table>

**Note:** Uₜ is the AC supply voltage before application of the test voltage.
## Operational Guidelines and Manufacturer’s Declaration – Susceptibility Tests

The Periotest M Model 3218 is designed for operation in an electromagnetic environment as described below.

The customer or user of the Periotest M Model 3218 is to ensure that it is used in such an environment.

<table>
<thead>
<tr>
<th>Interference Susceptibility Tests</th>
<th>IEC 60601-1-2 Test Voltages</th>
<th>Compliance Voltages</th>
<th>Electromagnetic Environmental Guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conduction-induced HF interference as per IEC 61000-4-6</td>
<td>3 V/m 150 kHz to 80 MHz</td>
<td>3 ( V_{\text{eff}} )</td>
<td>Portable and mobile radio devices are not to be used at a distance to the Periotest M Model 3218 including supply lines which is lower than the recommended safe distance calculated for the applicable transmission frequency using the appropriate formula. Recommended safe distance: ( d = [1.2 \sqrt{P} \right) )</td>
</tr>
<tr>
<td>Radiation-induced HF interference as per IEC 61000-4-3</td>
<td>3 V/m 80 MHz to 800 MHz 3 V/m 800 MHz to 2.5 GHz</td>
<td>3 ( V_{\text{eff}} ) 3 ( V_{\text{eff}} )</td>
<td>( d = [1.2 \sqrt{P} \right) ) at 80 MHz to 800 MHz ( d = [1.3 \sqrt{P} \right) ) at 800 MHz to 2.5 GHz</td>
</tr>
</tbody>
</table>

where \( P \) is the nominal power output of the transmitter in Watt (W) according to the manufacturer’s information and \( d \) is the recommended safe distance in metres (m).

The field strength of stationary radio transmitters should be no higher than the compliance level** for all frequencies as per local site examination*). Interference is possible in the vicinity of equipment bearing the following symbol.

**Note 1** At 80 MHz and 800 MHz, the higher value applies.

**Note 2** It is possible that these guidelines may not be applicable in all cases. The emanation of electromagnetic variables is affected by absorption and reflection by walls, objects and persons in the vicinity.

*) Theoretically, the field strength of stationary transmitters such as base stations for radio telephones and mobile telephony systems, amateur radio transmitters, AM and FM radio and television transmitters cannot be precisely predetermined.

In order to determine the electromagnetic environment arising as a result of HF transmitters in the vicinity, it is recommended that an examination of the site is conducted. If the field strength at the place in which the Periotest M Model 3218 is to be used is found to exceed the compliance level stated above, it will be necessary to monitor the Periotest M Model 3218 wherever it is used, to ensure that it is functioning properly.

Should it be seen to display unusual operational behaviour, it may be necessary to adopt additional measures, such as changing the orientation or the position of the Periotest M Model 3218.

**) Over the frequency range of 150 kHz to 80 MHz, the field strength is less than 3 V/m
Subject to change to reflect technical developments.