

# OMRON Battery-operated / AC Adapter-operated (or rechargeable) Blood Pressure Monitor Information for Accompanying Documents in the Scope of IEC 60601-1-2:2014+A1:2020

## Important information regarding Electromagnetic Compatibility (EMC)

This blood pressure monitor manufactured by OMRON HEALTHCARE Co., Ltd. conforms to IEC 60601-1-2:2014+A1:2020 Electromagnetic Compatibility (EMC) standard. Nevertheless, special precautions need to be observed:

- The use of accessories and cables other than those specified or provided by OMRON could result in increased electromagnetic emission or decreased electromagnetic immunity of the monitor and result in improper operation.
- During measurement, the use of the monitor adjacent to or stacked with other device should be avoided because it could result in improper operation. In case such use is necessary, the monitor and other device should be observed to verify that they are operating normally.
- During measurement, portable RF communications device (including peripherals such as antenna cables and external antennas) should be used no closer than 12 inches (30 cm) to any part of the monitor, including cables specified by OMRON. Otherwise, degradation of the performance of the monitor could result.
- In environments that do not meet the electromagnetic immunity standards, the monitors performance (accuracy of pressure:  $\pm 3$  mmHg) may deteriorate and correct measurement results may not be obtained.

**Table 1 - EMISSION Limits and Compliance**

| Phenomenon                          | EMISSION Limits   | Compliance      |
|-------------------------------------|-------------------|-----------------|
| Conducted and radiated RF EMISSIONS | CISPR 11          | Group1, Class B |
| Voltage fluctuations and flicker    | See IEC 61000-3-3 | Complies        |
| Harmonic Emissions IEC 61000-3-2    | Not Applicable    | Not Applicable  |

**Table 2 - IMMUNITY TEST LEVELS**

| Phenomenon   | Basic EMC standard | IMMUNITY TEST LEVELS   |
|--|--------------------|--|
| Electrostatic discharge                                    | IEC 61000-4-2      | $\pm 8$ kV contact<br>$\pm 2$ kV, $\pm 4$ kV, $\pm 8$ kV, $\pm 15$ kV air<br>for enclosure port  |
| Radiated RF electromagnetic fields                         | IEC 61000-4-3      | 10 V/m<br>80 MHz to 2.7 GHz<br>80 % AM at 1 kHz<br>for enclosure port  |
| Proximity fields from RF wireless communications equipment | IEC 61000-4-3      | See table 3  |
| Electrical fast transients / bursts                        | IEC 61000-4-4      | $\pm 2$ kV for Input a.c. power port<br>100 kHz repetition frequency   |
| Surges<br>Line-to-line                                     | IEC 61000-4-5      | $\pm 0.5$ kV, $\pm 1$ kV<br>for Input a.c. power port  |
| Conducted disturbances induced by RF fields                | IEC 61000-4-6      | 3 Vrms<br>150 kHz to 80 MHz<br>6 Vrms in ISM and amateur radio bands<br>between 150 kHz and 80 MHz<br>80 % AM at 1 kHz<br>for Input a.c. power port  |
| Rated power frequency magnetic fields                      | IEC 61000-4-8      | 30 A/m<br>50 Hz and 60 Hz<br>for enclosure port  |
| Voltage dips   | IEC 61000-4-11     | 0 % $U_T$ ; 0.5 cycle<br>At 0°, 45°, 90°, 135°, 180°, 225°, 270° and 315°<br>for Input a.c. power port<br>0 % $U_T$ ; 1 cycle<br>and<br>70 % $U_T$ ; 25/30 cycles single phase: at 0°<br>for Input a.c. power port |
| Voltage interruptions                                      | IEC 61000-4-11     | 0 % $U_T$ ; 250/300 cycle<br>for Input a.c. power port   |
| Proximity magnetic fields                                  | IEC 61000-4-39     | See table 4  |

NOTE:  $U_T$  is the A.C. mains voltage prior to application of the test level.

**Table 3 - Test specifications for ENCLOSURE PORT IMMUNITY to RF wireless communications device**

| Test frequency (MHz) | Band (MHz)   | Service  | Modulation                                | Maximum power (W) | Distance (m) | IMMUNITY TEST LEVEL (V/m) |
|----------------------|--------------|--|---|-------------------|--------------|---------------------------|
| 385                  | 380 to 390   | TETRA 400  | Pulse modulation 18 Hz                    | 1.8               | 0.3          | 27                        |
| 450                  | 430 to 470   | GMRS 460,<br>FRS 460   | FM<br>$\pm 5$ kHz deviation<br>1 kHz sine | 2                 | 0.3          | 28                        |
| 656                  | 614 to 698   | 5G Band n71  | Pulse modulation 217 Hz                   | 0.2               | 0.3          | 9                         |
| 710                  | 704 to 787   | LTE Band 13, 17  | Pulse modulation 217 Hz                   | 0.2               | 0.3          | 9                         |
| 745                  |              |  |   |                   |              |                           |
| 780                  |              |  |   |                   |              |                           |
| 810                  | 800 to 960   | GSM 800/900,<br>TETRA 800,<br>iDEN 820,<br>CDMA 850,<br>LTE Band 5<br>WPT 920MHz | Pulse modulation 18 Hz                    | 2                 | 0.3          | 28                        |
| 870                  |              |  |   |                   |              |                           |
| 930                  |              |  |   |                   |              |                           |
| 1720                 | 1700 to 1990 | GSM 1800;<br>CDMA 1900;<br>GSM 1900;<br>DECT;<br>LTE Band 1, 3, 4, 25; UMTS      | Pulse modulation 217 Hz                   | 2                 | 0.3          | 28                        |
| 1845                 |              |  |   |                   |              |                           |
| 1970                 |              |  |   |                   |              |                           |
| 2450                 | 2400 to 2570 | Bluetooth, WLAN,<br>802.11 b/g/n, RFID 2450,<br>LTE Band 7<br>WPT 2.4GHz         | Pulse modulation 217 Hz                   | 2                 | 0.3          | 28                        |
| 2593                 | 2496 to 2690 | 5G Band n41  | Pulse modulation 217 Hz                   | 0.2               | 0.3          | 9                         |
| 3625                 | 3550 to 3700 | 5G Band n77  | Pulse modulation 217 Hz                   | 0.2               | 0.3          | 9                         |
| 3950                 | 3700 to 4200 | 5G Band n77  | Pulse modulation 217 Hz                   | 0.2               | 0.3          | 9                         |
| 5240                 | 5100 to 5800 | WLAN 802.11a<br>a/n  | Pulse modulation 217 Hz                   | 0.2               | 0.3          | 9                         |
| 5500                 |              |  |   |                   |              |                           |
| 5785                 |              |  |   |                   |              |                           |

**Table 4 - Test specifications for ENCLOSURE PORT IMMUNITY to proximity magnetic fields**

| Test frequency | Service                | Modulation               | IMMUNITY TEST LEVEL (A/m) |
|----------------|------------------------|--------------------------|---------------------------|
| 30 kHz         | IH (Induction Heating) | CW                       | 8                         |
| 134.2 kHz      | RFID                   | Pulse modulation 2.1 kHz | 65                        |
| 13.56 MHz      | WPT (Qi)               | Pulse modulation 50 kHz  | 7.5                       |

EMC tests have included the AC adapter.