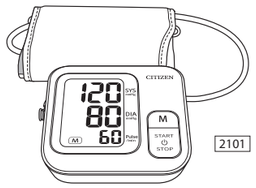
# INSTRUCTION MANUAL FOR CITIZEN DIGITAL BLOOD PRESSURE MONITOR CHU306

CITIZEN

Thank you very much for purchasing CITIZEN product. This device is a non-invasive blood pressure monitor by oscillometric method and is intended to be used for home use. It can measure the systolic blood pressure (SYS), the diastolic blood pressure (DIA) and the pulse rate.




Date of issue: 2021-04-01

- Please read all of the information in this instruction manual before operating the device.
- Be sure to have this instruction manual to hand during use.

## SYMBOL EXPLANATIONS

: Type BF applied part

: Keep dry

: Warning

: Caution

: Refer to instruction manual before use.

: Waste electrical products should not be disposed of with household waste. Please recycle where facilities exist. Check with your local authority or retailer for recycling advice.

To protect the environment, dispose of empty batteries at your retail store or at appropriate collection sites according to national or local regulations.

: Manufacturer
Name : CITIZEN SYSTEMS JAPAN CO., LTD.
Address : 6-1-12, Tanashi-cho, Nishi-Tokyo-shi, Tokyo 188-8511, Japan

**Factory**
Name : CITIZEN SYSTEMS (JIANGMEN) CO., LTD.
Address : Building 6, 399 Jinxing Road, Jianghai District, Jiangmen, Guangdong, China

EC REP : European representative
Name : EMERGO EUROPE
Address : Prinsessegracht 20, 2514 AP The Hague, The Netherlands

CE 2797 : The CE marking indicates the conformity of the product with the Union legislation applying to the product and providing for CE marking.

## SAFETY PRECAUTIONS

Be sure to read the following instructions before using the device.

| | |
|---|---|
| ⚠ | Warning indicates a potentially hazardous situation which it may result in death or serious injury. |
| ⚠ | Caution indicates a potentially hazardous situation which it may result in injury or property damage. The property damage refers to consequential damage to buildings, household, belongings, livestock, and pets. |

| | |
|---|---|
| ⚠ | Consult your physician before using the device if you have following conditions such as heart disease, cardiovascular disease, common arrhythmias, such as atrial or ventricular premature beats or atrial fibrillation, arterial sclerosis, poor perfusion, diabetes, pregnancy, preeclampsia, renal disease, weak pulse, experiencing mastectomy, other blood circulatory diseases, or if you use a cardiac pacemaker. |
| | Do not use measurement results for self-diagnosis and self-treatment. Always consult your physician. |
| | If the battery fluid gets in your eyes or on your skin, rinse it off with water immediately and then receive treatment from your physician. |
| | Do not use the device on the injured arm or the arm under medical treatment. |
| | Do not attach the cuff on the arm while on an intravenous drip or blood transfusion. |
| | Do not share the cuff with other infective person to avoid cross-infection. |
| | Do not use the device in the vicinity of flammable gases such as those used for anesthesia. It could ignite the gases and cause an explosion. |
| | Do not use the device in enriched oxygen environments such as a hospital's hyperbaric chamber or oxygen tent. It could ignite the oxygen and cause a fire. |
| | The air hose of the cuff may cause accidental strangulation in infants. |
| | Caution<br>If you find any serious incident that has occurred in relation to the device, please report to the manufacturer and the competent authority of the Member State. |
| ⚠ | Do not use the device for any purpose other than measuring blood pressure. |
| | Do not attempt to disassemble, repair or modify the device or the cuff. |
| | Do not use the device for infants or persons who cannot express their intentions. |
| | Do not measure your blood pressure consecutively or frequently. It causes blood congestion and you will not get a correct reading. Wait at least a few minutes before measuring again. |
| | If you feel there is something abnormal with your body or you start to feel unwell during measurement, discontinue use and consult your physician. |
| | If the irregular heartbeat indicator appears frequently, consult your physician about your health. |
| | Press the "START/STOP" button to reduce the pressure immediately or remove the cuff if it does not start deflating during the measurement. |
| | Do not use device near a mobile phone, other devices that emit electromagnetic fields or in high electromagnetic environment. This could cause malfunction. |

## GENERAL REMARKS

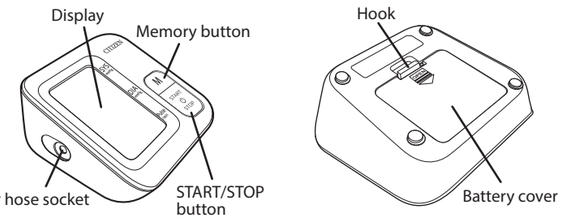
- Be sure that the cuff size is appropriate to your arm circumference before attaching the cuff. Refer to the "SPECIFICATIONS" for the size.
- If you feel urinate, do so before measuring your blood pressure.
- Take five or six deep breaths and then relax before measuring your blood pressure. If you are tense when taking measurement, you will not get a correct reading.
- Your blood pressure will be elevated if you are anxious or irritated, suffering from lack of sleep or constipation, or have just taken some exercise or eaten a meal.
- Do not measure your blood pressure after smoking, bathing or drinking alcohol, coffee or tea.
- Measure your blood pressure where the room temperature is around 68°F/20°C. Do not measure your blood pressure when it is below 50°F/10°C or above 104°F/40°C in the room.
- Measure your blood pressure when you are relaxed and still. Keep the cuff at the height of your heart and do not move your arm and talk.
- Analyzing blood pressure data gathered over a long period is more important than just checking one measurement. Choose the time of day that you are most likely to be able to maintain taking measurements and try to measure your blood pressure at the same time every day.

## NAMES OF PARTS

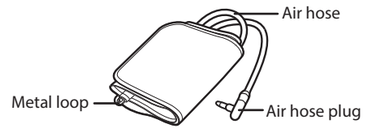
**The device and its accessories**

Make sure that the package contains all the following items.
- Blood pressure monitor unit
- Instruction manual and EMC technical data
- 4 AAA-size batteries for demonstration purpose only
- Cuff (model: SCN-003/SCN-003C) 22 cm – 32 cm (8-3/4" – 12-1/2")
- [Option] Large Cuff (model: SCL-005) 32 cm – 42 cm (12-1/2" – 16-1/2")

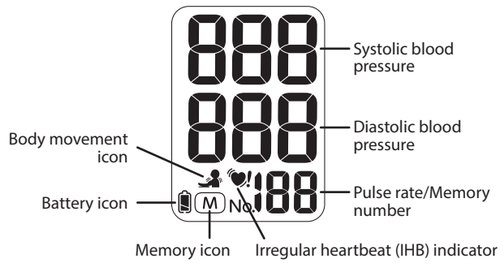
**Main unit**




**Cuff**




**Display**




## INSERT THE BATTERIES

**– USING BATTERIES –**

**1 Remove the battery cover.**
Place a finger on the hook, and pull the cover toward you to open.

**2 Insert the batteries.**
Be sure to insert the batteries into the negative ⊖ side with the protruding springs first so as not to mix up the positive ⊕ and negative ⊖ terminals.

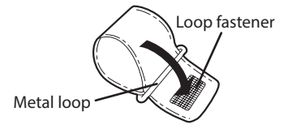
**3 Close the battery cover.**
Fit the lugs into the recesses and close the battery cover until you hear a click.

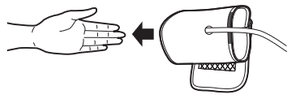
* When the battery icon or is displayed, or nothing appears in the display, replace all 4 batteries with new ones at once.
* Do not use any other kind of battery other than that alkaline, manganese, and do not mix them up.
* The memory is erased if the batteries are removed for replacement. It is recommended to make note of the data stored in memory prior to changing batteries.
* Dispose of used batteries properly according to the rules of your local municipality.

## ATTACH THE CUFF

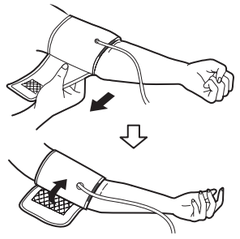
**1 Insert the air hose plug into the main unit.**
* Do not bend the air hose during measurement, which may cause inflation error or harmful injury due to continuous cuff pressure.

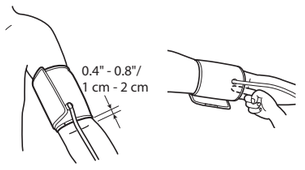

**2 Attach the cuff.**
Unroll the cuff and put the end of the cuff through the metal loop so that the side with the hook and loop fastener is on the outside.
* Be sure that the cuff size is appropriate to your arm circumference before attaching the cuff.
* Attach the cuff over a bare arm or a thin sleeve.
* If you roll up your sleeve, your upper arm will be constricted and this affects your result.
* The blood pressure value is likely to differ between the right arm and left arm. Measure your blood pressure with the same arm each day.



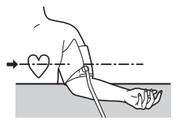



(1) Attach the cuff around your arm so that the blue marker comes to the palm side and center of your arm. Adjust the position where the hem of the cuff is 0.4" - 0.8"/ 1 cm - 2 cm above your elbow.
(2) Pull the end of the cuff outwards so that the cuff is snug around your arm and then secure it with the hook and loop fastener. The appropriate tightness of attaching cuff is that if you can readily slide a finger between the cuff and your arm.



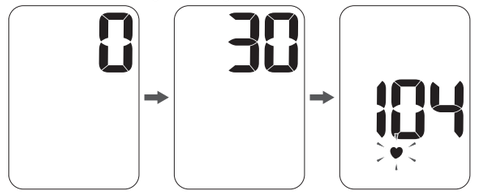



**3 Adjust your posture.**
- Seat comfortably with your feet flat on the floor and do not cross your legs.
- Place your arm on a table or similar surface with your forearm extended.
- Position your arm so that the cuff is at the same height as your heart.
- Place your hand so that your palm is facing upward and your fingers are relaxed.
- Do not move your body or talk during the measurement.
- When measuring your blood pressure while lying down, lie face up, straighten your arm and relax.



## MEASURE YOUR BLOOD PRESSURE

**1 Press the "START/STOP" button to start measurement.**
All digits are displayed. Then the cuff begins pressurizing automatically.
* The icon that displays when all digits are displayed is not a battery replacement notification.
* indicator will begin flashing when a pulse is detected.




* If you feel abnormal, or when you want to stop measurement, press "START/STOP" button, then the cuff will deflate and measurement stops.
* If pressing the "START/STOP" button does not release the air, unplug the air hose plug from the main unit and remove the cuff from the arm.
* **Pressurization in manual mode:** Press and hold the "START/STOP" button and release it at the pressure value where you want to stop (about 40 mmHg higher than the maximum blood pressure) to stop the pressure at that pressure. The pressure upper limit is 280 mmHg.

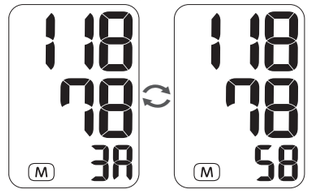
**2 The measurement result is displayed.**
Once measurement is completed, the cuff deflates and the measurement result is displayed. If there is no error in the measurement result, the device stores the result automatically.
* If the icon displays, the measurement result is not included in the average value calculation.
* If the or indicator displays in the measurement result, please refer to "INDICATORS".


**3 Finishing measurement.**
Press "START/STOP" button to turn the device off or it will turn off automatically after approximately 3 minutes.

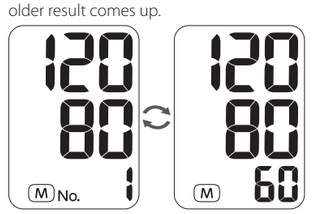
## CALL THE MEASUREMENT RESULTS

90 measurement results can be stored in memory. The average value is calculated automatically to help you for managing your daily health.

**1 Average value**
Press the "Memory" button. "3A" and the average value display. "3A" and the average value do not display if there are less 3 measurements stored in memory. "3A" and pulse are alternately displayed.




**2 Past result**
Press the "Memory" button repeatedly to see your past results. After memory number appears, result is displayed. Each time you press the "Memory" button, an older result comes up.




* Press and hold the "Memory" button, memory number can be fast-forward. Press the "START/STOP" button to finish memory mode.

**3 Delete result**
To erase all the data, remove the batteries. Then, all the stored data is erased.

## INDICATORS

**1 Irregular heartbeat (IHB) indicator**

The irregular heartbeat (IHB) indicator is displayed after measurement ends if an irregular heartbeat is detected during measurement.
Correct measurement may not be possible if your heartbeat fluctuates greatly during measurement. If the irregular heartbeat indicator is displayed, measure your blood pressure again while relaxed and still.
If the irregular heartbeat indicator appears frequently, consult your physician about your health.

**2 Body movement icon**

If a large pressure change is detected due to movement of the body or arm during measurement, it will be displayed after the measurement is completed.

## STORAGE, CLEANING AND MAINTENANCE

- Do not store the product in locations exposed to direct sunlight, high temperatures, low temperatures, high relative humidity or excessive amounts of dust. Refer to the "SPECIFICATIONS" for the detailed storage conditions.
- Make sure to store the product where children, pets cannot reach and or pests are not there.
- Do not drop the device or the cuff and give any shocks or vibrations.
- Do not bend the cuff or the air hose excessively. The pressurization failure may result.
- Remove the batteries if the product will be left unused for a long period of time. There is a risk of failure due to fluid leaking from the batteries.
- Do not wash or get wet the cuff as well as avoid to get water into the air hose. The failure may result.
- Do not clean the device or the cuff with alcohol, thinners or benzine, as this could damage the product.
- In case the device or the cuff gets dirty, wipe off the dirt with cloth moistened with a neutral detergent, then wipe it with a dry cloth.
- It is recommended that the product is inspected every two years to ensure proper function and performance.

## DISPOSING

- When disposing of the device and cuff, do so properly in accordance with the local rules and regulations for where you live.
- When disposing the battery, please help to protect natural environment by respecting national and/or local recycling regulations.

## TROUBLESHOOTING

**Troubleshooting 1**

| Display | Possible cause | Solution |
|---|---|---|
| No response when you press button or load battery. | Incorrect operation or strong electromagnetic interference. | Take out batteries, and insert all batteries in correct direction again. |
| | Low battery | Change the batteries. |
| Unable to take measurement | The cuff position was not correct or it was not properly tightened. | Attach the cuff correctly and try again. |
| | Pulse is not detected. | |
| | Speaking, arm or body movement, angry, excited or nervous during measurement. | Try again when calm and without speaking or moving during measurement. |
| | The device may not be able to measure the pulse of persons with an extremely weak pulse or persons with arrhythmia. | Consult your physician. |

**Troubleshooting 2**

| Display | Possible cause | Solution |
|---|---|---|
|  | The cuff is not properly tightened. | Attach the cuff correctly and try again. |
|  | The pulse cannot be detected because the cuff is not fitted properly. | |
|  | Measurement cannot be performed because there is excessive pressure on the sensor. | |

| | | |
|---|---|---|
|  | Cuff pressure above 281 mmHg. | If the pressure does not fall automatically during measurement, press the "START/STOP" button to stop the measurement and remove the cuff. |
|  | Low battery | Change the batteries. |
|  | Pulse rate is out of measurement range. The pulse was (39 bpm or less, or 181 bpm or more). | Attach the cuff correctly and take a deep breath and relax to take measurement again. |
|  | The device is not working properly. | Please contact the local distributor. |

## SPECIFICATIONS

| | | |
|---|---|---|
| **Model number** | | CHU306 |
| **Measurement system** | | Oscillometric method |
| **Display** | | Digital display type |
| **Measurement localization** | | Upper arm |
| **Cuff** | | Soft cuff (SCN-003/SCN-003C) |
| **Cuff circumference range** | | 22 cm – 32 cm (8-3/4" – 12-1/2") |
| **Measurement range** | **Pressure** | 0 – 280 mmHg |
| | **Pulse** | 40 – 180 pulse/min |
| **Accuracy** | **Pressure** | ±3 mmHg |
| | **Pulse** | ±5% of reading |
| **Inflation** | | Automatic inflation by internal pump |
| **Deflation** | | Automatic speed deflation system |
| **Rated voltage** | | 6V DC ⎓ (⎓ : direct current) |
| **Exhaust** | | Electromagnetic quick exhaust valve |
| **Power supply** | | 4 × 1.5 V ⎓ SIZE AAA batteries (R03, LR03) |
| **Battery duration** | | Approx. 300 times (Alkaline), Approx. 150 times (Manganese) |
| **Automatic power off function** | | Approx. 3 mins. (after activated) |
| **Main unit dimensions** | | 110 (W) × 47 (H) × 104 (D) mm |
| **Weight** | **Unit** | Approx. 210 g w/o batteries |
| | **Cuff** | Approx. 130 g |
| **Operating conditions** | **Temperature** | 10°C – 40°C |
| | **Humidity** | 15% – 85%RH |
| | **Barometric pressure** | 700 hPa – 1060 hPa |
| **Storage conditions** | **Temperature** | -20°C – 60°C |
| | **Humidity** | 10% – 95%RH |
| **Electric shock protection** | | Internal power unit |
| **Applied part** | | Type BF (Cuff) |
| **Mode of operation** | | Continuous operation |
| **Memory** | | 1 × 90 readings, Average of last 3 readings |
| **Service Life** | | 5 years |
| **Cuff's Life** | | Approx. 2000 times |
| **Protection against ingress of water** | | IPX0 |
| **Accessories** | | Cuff, 4 AAA batteries for demonstration purpose, and Instruction manual |
| **Optional Accessory** | | Large Cuff (model: SCL-005) 32 cm – 42 cm (12-1/2"-16-1/2") |

* This device corresponds to the below standards: IEC 60601-1/EN 60601-1 (Medical electrical equipment – Part 1), IEC 60601-1-2/EN 60601-1-2 (Medical electrical equipment – Part 1-2), EN 1060-3 (Non-invasive sphygmomanometers – Part 3).

IMPORTER
CITIZEN SYSTEMS EUROPE (Company name)
Otto-Hirsch-Brücken 17 70329 Stuttgart, Germany (Address)



**CITIZEN SYSTEMS JAPAN CO., LTD.**
6-1-12, Tanashi-cho, Nishi-Tokyo- shi,
Tokyo 188-8511, Japan
E-mail: sales-oe@systems.citizen.co.jp
http://www.citizen-systems.co.jp/

## ELECTROMAGNETIC COMPATIBILITY INFORMATION FOR BATTERY POWERED BLOOD PRESSURE MONITOR

**WARNING**
- Portable RF communications equipment should be used no closer than 30 cm (12 inches) to any part of the [CITIZEN DIGITAL BLOOD PRESSURE MONITOR (abbr. "BPM")], including cables specified.
- Use of this equipment adjacent to or stacked with other equipment should be avoided.
- Use of accessories and options other than those specified (other than CITIZEN original parts) could result in increased electromagnetic emissions or decreased electromagnetic immunity of this equipment.

**Guidance and manufacturer's declaration - electromagnetic emissions**

The [BPM] is intended for use in the electromagnetic environment specified below. The customer or the user of the [BPM] should assure that it is used in such an environment.

| Emissions test | Compliance | Electromagnetic environment - guidance |
|---|---|---|
| RF emissions CISPR 11 | Group 1 | The [BPM] uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment. |
| RF emissions CISPR 11 | Class B | The [BPM] is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes. |
| Harmonic emissions IEC 61000-3-2 | N/A | |
| Voltage fluctuations/ flicker emissions IEC 61000-3-3 | N/A | |

**Guidance and manufacturer's declaration - electromagnetic immunity**

The [BPM] is intended for use in the electromagnetic environment specified below. The customer or the user of the [BPM] should assure that it is used in such an environment.

| Immunity test | IEC 60601 test level | Compliance level | Electromagnetic environment - guidance |
|---|---|---|---|
| Electrostatic discharge (ESD) IEC 61000-4-2 | ±8 kV contact<br>±15 kV air | ±8 kV contact<br>±15 kV air | Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%. |
| Electrical fast transient/burst IEC 61000-4-4 | ±2 kV for power supply lines<br>±1 kV for input/output lines | N/A | N/A |
| Surge IEC 61000-4-5 | ±1 kV<br>line to line<br>±2 kV<br>line to earth | N/A | N/A |
| Voltage dips, short interruptions and voltage variations on power supply IEC 61000-4-11 | 0% $U_T$<br>0.5 cycle | N/A | N/A |
| | 0% $U_T$<br>1 cycle | | |
| | 70% $U_T$<br>25/30 cycle | | |
| | 0% $U_T$<br>250/300 cycle | | |
| Power frequency (50/60 Hz) magnetic field IEC 61000-4-8 | 30 A/m | 30 A/m | Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment. |

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

**Guidance and manufacturer's declaration - electromagnetic immunity**

The [BPM] is intended for use in the electromagnetic environment specified below. The customer or the user of the [BPM] should assure that it is used in such an environment.

| | | | |
|---|---|---|---|
| | | | Portable and mobile RF communications equipment should be used no closer to any part of the [BPM], including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.<br>**Recommended separation distance** |
| Conducted RF IEC 61000-4-6 | 3 Vrms, 6 Vrms<br>150 kHz<br>to<br>80 MHz | N/A | N/A |
| Radiated RF IEC 61000-4-3 | 10 V/m<br>80 MHz<br>to<br>2.7 GHz | 10 V/m | $d = 1.2\sqrt{P}$ 80 MHz to 800 MHz<br>$d = 2.3\sqrt{P}$ 800 MHz to 2.7 GHz<br>where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in meters (m).<br>Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey,[a] should be less than the compliance level in each frequency range.[b]<br>Interference may occur in the vicinity of equipment marked with the following symbol: |

NOTE 1 At 80 MHz and 800 MHz, the higher frequency range applies.
NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

a). Field strengths from fixed transmitters, such as base stations for radio (cellular/ cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the [BPM] is used exceeds the applicable RF compliance level above, the [BPM] should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the [BPM].
b). Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.

**Recommended separation distances between portable and mobile RF communications equipment and the [BPM]**

The [BPM] is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the [BPM] can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and [BPM] as recommended below, according to the maximum output power of the communications equipment.

| Rated maximum output power of transmitter (W) | Separation distance according to frequency of transmitter (m) | | | |
|---|---|---|---|---|
| | 150 kHz to 80 MHz N/A | 150 kHz to 80 MHz N/A | 80 MHz to 800 MHz $d = 1.2\sqrt{P}$ | 800 MHz to 2.7 GHz $d = 2.3\sqrt{P}$ |
| 0.01 | N/A | N/A | 0.12 | 0.23 |
| 0.1 | N/A | N/A | 0.38 | 0.73 |
| 1 | N/A | N/A | 1.2 | 2.3 |
| 10 | N/A | N/A | 3.8 | 7.3 |
| 100 | N/A | N/A | 12 | 23 |

For transmitters rated at a maximum output power not listed above, the recommended separation distance d in meters (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.
NOTE 1 At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.
NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

**Guidance and manufacturer's declaration - electromagnetic immunity**

The [BPM] is intended for use in the electromagnetic environment specified below. The customer or the user of the [BPM] should assure that it is used in such an environment.

| Immunity to proximity fields from RF wireless communications equipment IEC 61000-4-3 | Test Frequncy (MHz) | Band a) (MHz) | Service a) | Modulation b) | Maximum power (W) | Distance (m) | IMMUNITY TEST LEVEL (V/m) |
|---|---|---|---|---|---|---|---|
| | 385 | 380-390 | TETRA 400 | Pulse modulation b) 18 Hz | 1.8 | 0.3 | 27 |
| | 450 | 430-470 | GMRS 460, FRS 460 | FM c) ± 5 kHz deviation 1 kHz sine | 2 | 0.3 | 28 |
| | 710<br>745<br>780 | 704-787 | LTE Band 13, 17 | Pulse modulation b) 217 Hz | 0.2 | 0.3 | 9 |
| | 810<br>870<br>930 | 800-960 | GSM 800/900, TETRA 800, iDEN 820, CDMA 850, LTE Band 5 | Pulse modulation b) 18 Hz | 2 | 0.3 | 28 |
| | 1720<br>1845<br>1970 | 1700-1900 | GSM 1800; CDMA 1900; GSM 1900; DECT; LTE Band 1, 3, 4, 25; UMTS | Pulse modulation b) 217 Hz | 2 | 0.3 | 28 |
| | 2450 | 2400-2570 | Bluetooth, WLAN, 802.11 b/g/n, RFID 2450, LTE Band 7 | Pulse modulation b) 217 Hz | 2 | 0.3 | 28 |
| | 5240<br>5500<br>5785 | 5100-5800 | WLAN 802.11 a/n | Pulse modulation b) 217 Hz | 0.2 | 0.3 | 9 |

NOTE If necessary to achieve the IMMUNITY TEST LEVEL, the distance between the transmitting antenna and the [BPM] may be reduced to 1 m. The 1 m test distance is permitted by IEC 61000-4-3.

a). For some services, only the uplink frequencies are included.
b). The carrier shall be modulated using a 50 % duty cycle square wave signal.
c). As an alternative to FM modulation, 50 % pulse modulation at 18 Hz may be used because while it does not represent actual modulation, it would be worst case.