



# GIMA

PROFESSIONAL MEDICAL PRODUCTS

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## **MISURATORE DI PRESSIONE AUTOMATICO WIDE WIDE AUTOMATIC BLOOD PRESSURE MONITOR TENSIOMÈTRE AUTOMATIQUE LARGE TENSÍÓMETRO AUTOMÁTICO ANCHO MONITOR DE PRESSÃO ARTERIAL AUTOMÁTICO LARGO WEITES AUTOMATISCHES BLUTDRUCKMESSGERÄT ΕΥΡΕΙΑ ΟΘΟΝΗ ΑΥΤΟΜΑΤΗΣ ΜΕΤΡΗΣΗΣ ΑΡΤΗΡΙΑΚΗΣ ΠΙΕΣΗΣ**

جهاز قياس ضغط الدم الإلكتروني ذو الشاشة الكبيرة

Manuale d'uso - User manual - Manuel de l'utilisateur  
Guía de Uso - Guia para utilização - Gebrauchsanweisung  
Οδηγίες χρήσης - دليل الإستعمال والرعاية



**ATTENZIONE:** Gli operatori devono leggere e capire completamente questo manuale prima di utilizzare il prodotto.

**ATTENTION:** The operators must carefully read and completely understand the present manual before using the product.

**AVIS:** Les opérateurs doivent lire et bien comprendre ce manuel avant d'utiliser le produit.

**ATENCIÓN:** Los operadores tienen que leer y entender completamente este manual antes de utilizar el producto.

**ATENÇÃO:** Os operadores devem ler e entender completamente este manual antes de usar o produto.

**ACHTUNG:** Die Bediener müssen vorher dieses Handbuch gelesen und verstanden haben, bevor sie das Produkt benutzen.

**ΠΡΟΣΟΧΗ:** Οι χειριστές αυτού του προϊόντος πρέπει να διαβάσουν και να καταλάβουν πλήρως τις οδηγίες του εγχειριδίου πριν από την χρήση του.

**الحذر:** على العمال قراءة وفهم هذا الدليل بكامله قبل البدء باستخدام المنتج.

REF

32947 / KN-520



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Made in P.R.C.

CE0197

EC REP

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## **IMPORTANT INFORMATION**

### **Normal blood pressure fluctuation**

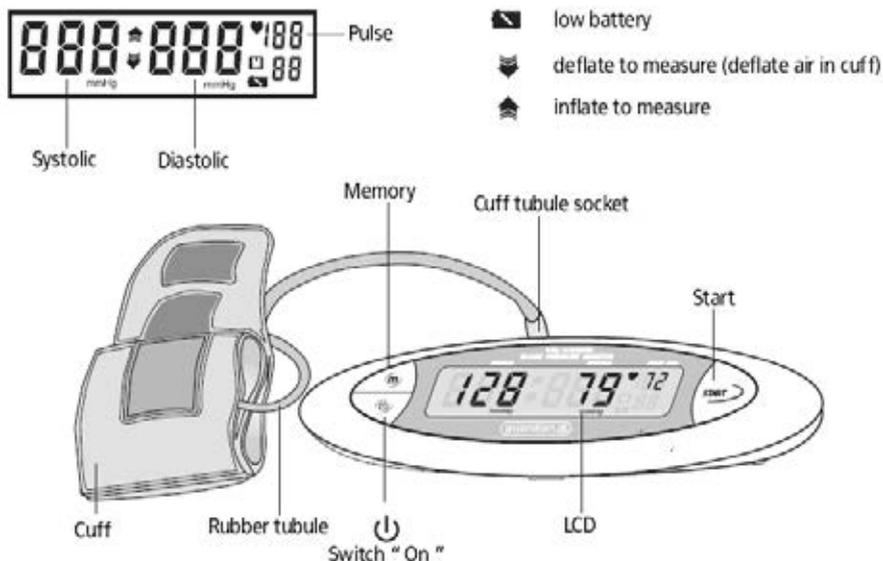
All physical activity, excitement, stress, eating, drinking, smoking, body posture and many other activities or factors (including taking a blood pressure measurement) will influence blood pressure value. Because of this, it is mostly unusual to obtain identical multiple blood pressure readings.

Blood pressure fluctuates continually ----- day and night. The highest value usually appears in the daytime and lowest one usually at midnight. Typically, the value begins to increase at around 3:00AM, and reaches to highest level in the daytime while most people are awake and active.

Considering the above information, it is recommended that you measure your blood pressure at approximately the same time each day.

Too frequent measurements may cause injury due to blood flow interference, please always relax a minimum of 1 to 1.5 minutes between measurements to allow the blood circulation in your arm to recover. It is rare that you obtain identical blood pressure readings each time.

## **CONTENTS AND DISPLAY INDICATORS**



## **INTENDED USE**

Fully Automatic Electronic Sphygmomanometer is for use by medical professionals or at home and is a non-invasive blood pressure measurement system intended to measure the diastolic and systolic blood pressures and pulse rate of an adult individual by using a non-invasive technique in which an inflatable cuff is wrapped around the upper arm. The cuff circumference is limited to 22cm-48cm (approx. 8 21/32"~18 29/32").

## **CONTRAINDICATION**

It is inappropriate for people with serious arrhythmia to use this Electronic Sphygmomanometer.

## **PRODUCT DESCRIPTION**

Based on Oscillometric methodology and silicon integrated pressure sensor, blood pressure and pulse rate can be measured automatically and non-invasively. The LCD display will show blood pressure and pulse rate. The most recent 60 measurements can be stored in the memory. The Electronic Sphygmomanometers corresponds to the below standards: IEC 60601-1:2005/EN 60601-1:2006/AC:2010 (Medical electrical equipment -- Part 1: General requirements for basic safety and essential performance), IEC60601-1-2:2007/EN 60601-1-2:2007 /AC:2010 (Medical electrical equipment -- Part 1-2: General requirements for basic safety and essential performance - Collateral standard: Electromagnetic compatibility - Requirements and tests), EN 1060-1: 1995 + A1: 2002 + A2: 2009 (Non-invasive sphygmomanometers - Part 1: General requirements), EN 1060-3: 1997 + A1: 2005 + A2: 2009 (Non-invasive sphygmomanometers - Part 3: Supplementary requirements for electro-mechanical blood pressure measuring systems), ANSI/AAMI SP-10:2002+A1:2003+A2:2006.

## **SPECIFICATIONS**

1. Product name: Blood Pressure Monitor
2. Model: KN-520
3. Classification: Internally powered, Type BF applied part, IPX0, No AP or APG, Continuous operation
4. Machine size: Approx. 220mm × 66mm × 43mm (8 21/32" x 2 19/32" x 1 11/16")
5. Cuff circumference: 22cm-30cm (8 21/32"-11 13/16"), 30cm-42cm (11 13/16"-16 17/32") (Optional), 42cm-48cm (16 17/32"-18 29/32") (Optional)
6. Weight: Approx. 231g (8 5/32oz.) (exclude batteries)

7. Measuring method: Oscillometric method, automatic inflation and measurement
8. Memory volume: 60 times
9. Power source: DC: 6V  600mA, batteries: 4 ×1.5V  SIZE AAA
10. Measurement range:
  - Cuff pressure: 0-300mmHg
  - Systolic: 60-260mmHg
  - Diastolic: 40-199mmHg
  - Pulse rate: 40-180 beats/minute
11. Accuracy:
  - Pressure: ±3mmHg
  - Pulse rate: ±5%
12. Environmental temperature for operation: 10°C~40°C (50°F~104°F)
13. Environmental humidity for operation: ≤90%RH
14. Environmental temperature for storage and transport: -20°C~55°C (-4°F~131°F)
15. Environmental humidity for storage and transport: ≤90%RH
16. Environmental pressure: 80kPa-105kPa
17. Battery life: Approx 360 times
18. A list of all components belonging to the pressure measuring system, including accessories: Pump, Valve, LCD, Cuff, Sensor

**Note:** These specifications are subject to change without notice.

## **NOTICE**

1. Read all of the information in the operation guide and any other literature in the box before operating the unit.
2. Stay still, calm and rest for 5 minutes before blood pressure measurement.
3. The cuff should be placed at the same level as your heart.
4. During measurement, neither speak nor move your body and arm.
5. Measuring on same arm for each measurement.
6. Please always relax at least 1 or 1.5 minutes between measurements to allow the blood circulation in your arm to recover. Prolonged over-inflation (cuff pressure exceed 300 mmHg or maintained above 15 mmHg for longer than 3 minutes) of the bladder may cause ecchymoma of your arm.
7. Consult your physician if you have any doubt about below cases:
  - 1) The application of the cuff over a wound or inflammation diseases;
  - 2) The application of the cuff on any limb where intravascular access or therapy, or an arterio-venous (A-V) shunt, is present;
  - 3) The application of the cuff on the arm on the side of a mastectomy;
  - 4) Simultaneously used with other monitoring medical equipments on the same limb;

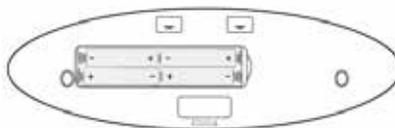
- 5) Need to check the blood circulation of the user.
8.  This Electronic Sphygmomanometers is designed for adults and should never be used on infants or young children. Consult your physician or other health care professionals before use on older children.
9. Do not use this unit in a moving vehicle, This may result in erroneous measurement.
10. Blood pressure measurements determined by this monitor are equivalent to those obtained by a trained observer using the cuff/stethoscope auscultation method, within the limits prescribed by the American National Standard Institute, Electronic or automated sphygmomanometers.
11. Information regarding potential electromagnetic or other interference between the blood pressure monitor and other devices together with advice regarding avoidance of such interference please see part ELECTROMAGNETIC COMPATIBILITY INFORMATION.
12. If Irregular Heartbeat (IHB) is detected in the procedure of blood pressure measurement, the electronic blood pressure monitor can keep function, but the results may not be accurate, it's suggested that you consult with your physician for accurate assessment.
13. Please do not use the cuff other than supplied by the manufacturer, otherwise it may bring biocompatible hazard and might result in measurement error.
14.  The monitor might not meet its performance specifications or cause safety hazard if stored or used outside the specified temperature and humidity ranges in specifications.
15.  Please do not share the cuff with other infective person to avoid cross-infection.
16. Medical AC adapter which output is DC 6.0V 600mA and complied with IEC 60601-1/EN 60601-1/UL 60601-1 and IEC 60601-1-2/EN 60601-1-2/UL 60601-1-2 is suitable for this monitor, such as ETS TH0051 or (input: 230V~; output: DC 6V, 600mA). Please note that the monitor jack size: hole  $\varnothing$  5.2mm, center pin  $\varnothing$  1.65mm. Please pay attention to polarity.
17. This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
  - Increase the separation between the equipment and receiver.
  - Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
  - Consult the dealer or an experienced radio/TV technician for help.
18. This blood pressure monitor is verified by auscultatory method. It is recommended that you check annex B of ANSI/AAMI SP-10:2002+A1:2003+A2:2006 for details of verification method if you need.

## **SETUP AND OPERATING PROCEDURES**

### **1. Battery loading and ac adapter loading**

- a. Open battery cover at the back of the monitor.
- b. Load four “AAA” size batteries. Please pay attention to polarity.
- c. Close the battery cover.



When LCD shows battery symbol  , replace all batteries with new ones.

Rechargeable batteries are not suitable for this monitor.

Remove the batteries if the monitor will not be used for a month or more to avoid relevant damage of battery leakage.

Avoid the battery fluid to get in your eyes. If it should get in your eyes, immediately rinse with plenty of clean water and contact a physician.

- d. If you use the AC adapter, please make sure the monitor turn off or no batteries. Put the connector plug of the adapter into the socket as the picture, Then plug the adapter to AC outlet. When disconnect the AC Adapter:

Remove the AC Adapter from the electrical outlet;

Remove the AC Adapter plug from the monitor socket.

 Do not plug or unplug the power cord into the electrical outlet with wet hands.

 Do not overload power outlets. Plug the device into the appropriate voltage outlet.

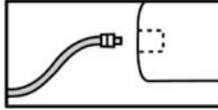
 If the AC adapter is abnormal, please change the adapter.

 Do not pull out the adapter when you are using the monitor.  
Do not use any other type of AC adapter as it may harm the monitor.

 The monitor, the batteries and the cuff, must be disposed of according to local regulations at the end of their usage.

## 2. Connecting the cuff to the monitor

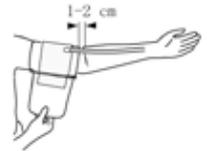
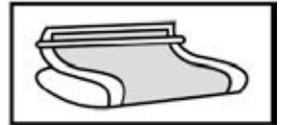
Insert the cuff tubing connector into the socket in the left side of the monitor. Make certain that the connector is completely inserted to avoid air leakage during blood pressure measurements



**!** Avoid compression or restriction of the connection tubing during measurement which may cause inflation error, or harmful injury due to continuous cuff pressure.

## 3. Applying the cuff

- Pulling the cuff end through the medial loop (the cuff is packaged like this already), turn it outward (away from your body) and tighten it and close the Velcro fastener.
- Place the cuff around a bare arm 1-2cm above the elbow joint.
- While seated, place palm upside in front of you on a flat surface such as a desk or table. Position the air tube in the middle of your arm in line with your middle finger.
- The cuff should fit comfortably, yet snugly around your arm. You should be able to insert one finger between your arm and the cuff.



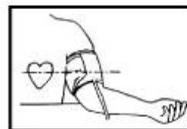
### Note:

- Please refer to the cuff circumference range in “SPECIFICATIONS” to make sure that the appropriate cuff is used.
- Measuring on same arm each time.
- Do not move your arm, body, or the monitor and do not move the rubber tube during measurement.
- Stay quiet, calm for 5 minutes before blood pressure measurement.
- Please keep the cuff clean. If the cuff becomes dirty, remove it from the monitor and clear it by hand in a mild detergent, then rinse it thoroughly in cold water. Never dry the cuff in clothes dryer or iron it. Clean the cuff after the usage of every 200 times is recommended.

## 4. Body posture during measurement

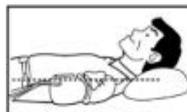
### Sitting Comfortably Measurement

- Be seated with your feet flat on the floor, and don't cross your legs.
- Place palm upside in front of you on a flat surface such as a desk or table.
- The middle of the cuff should be at the level of the right atrium of the heart.



### Lying Down Measurement

- Lie on your back.
- Place your arm straight along your side with your palm upside.
- The cuff should be placed at the same level as your heart.



## 5. Taking your blood pressure reading

- After applying the cuff and your body is in a comfortable position, press the “” button. A beep is heard and all display characters are shown for self-test. You can check the LCD display according to the right picture. Please contact the service center if segment is missing.



- After examining itself, LCD will show “0” mmHg that indicate it is ready to inflate.



- Press the “START” button, the monitor inflates the cuff until sufficient pressure has built up for a measurement. Then the monitor slowly releases air from the cuff and carries out the measurement. Finally the blood pressure and pulse rate will be calculated and displayed on the LCD screen. The result will be automatically stored in the monitor.

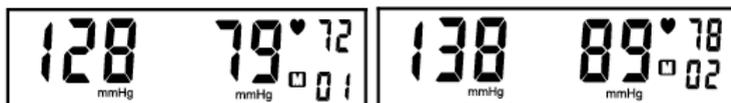


- d. If you want to measure again, just press the “START” button.
- e. After measurement, the monitor will turn off automatically after 2 minutes of no operation. Alternatively, you can press the “” button to turn off the monitor manually.
- f. During measurement, you can press the “” button to turn off the monitor manually.

**Note:** Please consult a health care professional for interpretation of pressure measurements.

## 6. Displaying stored results

- a. After power on by press the “” button, press “M” button, the last result will be displayed. Press “M” button repeatedly to review the results measured previously.



- b. When displaying the stored results, the monitor will turn off automatically after 2 minutes of no operation. You can also press the button “” to turn off the monitor manually.

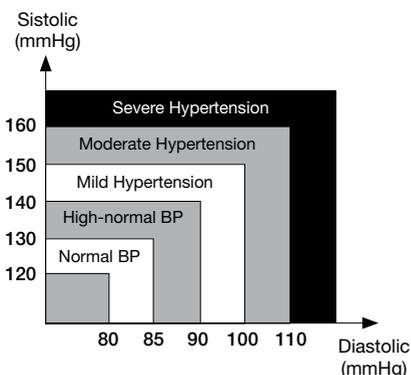
## 7. Deleting measurements from the memory

To delete a stored result, press “M” button until the desired result is displayed. When desired result is displayed on screen, hold down “M” for 3 seconds. The display will now show “dL” until you release the button. Once button is released, that result will be deleted.



## 8. Assessing high blood pressure for adults

The following guidelines for assessing high blood pressure (without regard to age or gender) have been established by the World Health Organization (WHO). Please note that other factors (e.g. diabetes, obesity, smoking, etc.) need to be taken into consideration. Consult with your physician for accurate assessment, and never change your treatment by yourself.



BLOOD PRESSURE CLASSIFICATION	SBP mmHg	DBP mmHg
Optimal	<120	<80
Normal	120-129	80-84
High-Normal	130-139	85-89
Grade 1 Hypertension	140-159	90-99
Grade 2 Hypertension	160-179	100-109
Grade 3 Hypertension	≥180	≥110

WHO/ISH Definitions and classification of blood pressure levels

## 9. Troubleshooting (1)

PROBLEM	POSSIBLE CAUSE	SOLUTION
LCD Display shows battery symbol	Low Battery	Change all the batteries
LCD Display shows "EE"	Arm or electronic blood pressure monitor was moved during testing	Re-test taking care to not move your arm or the electronic blood pressure monitor
	The cuff does not inflate properly or pressure falls quickly during testing	Make certain the rubber tube is fully inserted into the electronic blood pressure monitor
	Irregular heartbeat (arrhythmia)	It is inappropriate for people with serious arrhythmia to use this electronic blood pressure monitor

## 10. Troubleshooting (2)

PROBLEM	POSSIBLE CAUSE	SOLUTION
LCD Display shows "EE"	The cuff was not properly applied or the rubber tube was bent or pressed	Review the cuff applying and testing sections of the instructions and re-test
LCD Display shows abnormal result	The cuff position was not correct or it was not properly tightened	Apply the cuff correctly and try again
	Body posture was not correct during testing	Review the body posture and testing sections of the instructions and re-test
	Speaking, arm or body movement, angry, excited or nervous during testing	Re-test when calm and without speaking or moving during the test
No response when you press button or load battery	Incorrect operation, or strong electromagnetic interference	Take out batteries for five minutes, and then reinstall all batteries

## MAINTENANCE

- ⚠ Do not drop this monitor or subject it to strong impact.
- ⚠ Avoid high temperature and solarization. Do not immerse the monitor in water as this will result in damage to the monitor.
- If this monitor is stored near freezing, allow it to acclimate to room temperature before use.
- ⚠ Do not attempt to disassemble this monitor.
- If you do not use the monitor for a long time, please remove the batteries.
- It is recommended the performance should be checked every 2 years or after repair. Please contact the service center.
- Clean the monitor with a dry, soft cloth or a soft cloth squeezed well after moistened with water, diluted disinfectant alcohol, or diluted detergent.
- No component can be maintained by user in the monitor. The circuit diagrams, component part lists, descriptions, calibration instructions, or other information which will assist the user's appropriately qualified technical personnel to repair those parts of equipment which are designated repairably can be supplied.
- The monitor can maintain the safety and performance characteristics for a minimum of 10,000 measurements or three years, and the cuff can maintain the performance characteristics for a minimum of 1000 measurements.

10. It is recommended the cuff should be disinfected 2 times every week if needed (For example, in hospital or in clinique). Wipe the inner side (the side contacts skin) of the cuff by a soft cloth squeezed after moistened with Ethyl alcohol (75-90%), then dry the cuff by airing.

## **EXPLANATION OF SYMBOLS ON UNIT**



Symbol for “THE OPERATION GUIDE MUST BE READ”  
(The sign background colour: blue.The sign graphical symbol: white)



Symbol for “WARNING”



Symbol for “TYPE BF APPLIED PARTS”  
(The cuff is type BF applied part)



Symbol for “ENVIRONMENT PROTECTION – 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”.



Symbol for “MANUFACTURER”

CE197 Symbol for “COMPILES WITH MDD93/42/EEC REQUIREMENTS”



Symbol for “DATE OF MANUFACTURE”



Symbol for “EUROPEAN REPRESENTATION”



Symbol for “Polarity of d.c. power connector”

SN Symbol for “SERIAL NUMBER”



Symbol for “KEEP DRY”

## ***ELECTROMAGNETIC COMPATIBILITY INFORMATION***

**Table 1**

**For all ME EQUIPMENT and ME SYSTEMS**

<b>Guidance and manufacture's declaration - electromagnetic emissions</b>		
The [KN-520] is intended for use in the electromagnetic environment specified below. The customer or the user of the [KN-520] should assure that it is used in such an environment.		
<b>Emissions test</b>	<b>Compliance</b>	<b>Electromagnetic environment - guidance</b>
RF emissions CISPR 11	Group 1	The [KN-520] 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 [KN-520] 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	Class A	
Voltage fluctuations/ flicker emissions IEC 61000-3-3	Complies	

**Table 2**  
**For all ME EQUIPMENT and ME SYSTEMS**

<b>Guidance and manufacturer's declaration - electromagnetic immunity</b>			
The [KN-520] is intended for use in the electromagnetic environment specified below. The customer or the user of the [KN-520] should assure that it is used in such an environment.			
<b>IMMUNITY test</b>	<b>IEC 60601 test level</b>	<b>Compliance level</b>	<b>Electromagnetic environment - guidance</b>
Electrostatic discharge (ESD) IEC 61000-4-2	± 6 kV contact ± 8 kV air	± 6 kV contact ± 8 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 ± 1 kV for input/output lines	± 2 kV for power supply lines	Mains power quality should be that of a typical commercial or hospital environment
Surge IEC 61000-4-5	± 1 kV line(s) to line(s) ± 2 kV line(s) to earth	± 1 kV line(s) to line(s) ± 2 kV line(s) to earth	Mains power quality should be that of a typical commercial or hospital environment
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	<5% $U_T$ (>95% dip in $U_T$ ) for 0.5 cycle 40% $U_T$ (60% dip in $U_T$ ) for 5 cycles 70% $U_T$ (30% dip in $U_T$ ) for 25 cycles <5% $U_T$ (>95% dip in $U_T$ ) for 5 s	<5% $U_T$ (>95% dip in $U_T$ ) for 0.5 cycle 40% $U_T$ (60% dip in $U_T$ ) for 5 cycles 70% $U_T$ (30% dip in $U_T$ ) for 25 cycles <5% $U_T$ (>95% dip in $U_T$ ) for 5 s	Mains power quality should be that of a typical commercial or hospital environment. If the user of the [KN-520] requires continued operation during power mains interruptions, it is recommended that the [KN-520] be powered from an uninterruptible power supply or a battery
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	3 A/m	3 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.

**Table 3**  
**For ME EQUIPMENT and ME SYSTEMS that are not LIFE-SUPPORTING**

<b>Guidance and manufacturer's declaration - electromagnetic immunity</b>			
The [KN-520] is intended for use in the electromagnetic environment specified below. The customer or the user of the [KN-520] should assure that it is used in such an environment.			
<b>IMMUNITY test</b>	<b>IEC 60601test level</b>	<b>Compliance level</b>	<b>Electromagnetic environment - guidance</b>
<p>Conducted RF IEC 61000-4-6</p> <p>Radiated RF IEC 61000-4-3</p>	<p>3 Vrms 150 kHz to 80 MHz</p> <p>3 V/m 80 MHz to 2,5 GHz</p>	<p>3 Vrms</p> <p>3 V/m</p>	<p>Portable and mobile RF communications equipment should be used no closer to any part of the [KN-520], including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.</p> <p><b>Recommended separation distance:</b></p> $d = 1.2 \sqrt{P}$ $d = 1.2 \sqrt{P} \quad 80 \text{ MHz to } 800 \text{ MHz}$ $d = 2.3 \sqrt{P} \quad 800 \text{ MHz to } 2,5 \text{ GHz}$ <p>Where <math>P</math> is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and <math>d</math> is the recommended separation distance in meters (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey,<sup>a</sup> should be less than the compliance level in each frequency range.<sup>b</sup> Interference may occur in the vicinity of equipment marked with the following symbol:</p> 
<p><b>NOTE 1</b> At 80 MHz and 800 MHz, the higher frequency range applies.</p> <p><b>NOTE 2</b> These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.</p>			
<p><b>a</b> 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 [KN-520] is used exceeds the applicable RF compliance level above, the [KN-520] should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating the [KN-520].</p> <p><b>b</b> Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3V/m.</p>			

**Table 4**  
**For ME EQUIPMENT and ME SYSTEMS that are not LIFE-SUPPORTING**

**Recommended separation distances between portable and mobile RF communications equipment and the [KN-520]**

The [KN-520] is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the [KN-520] can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the [KN-520] 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 $d = 1.2 \sqrt{P}$	80 MHz to 800 MHz $d = 1.2 \sqrt{P}$	800 MHz to 2,5 GHz $d = 2.3 \sqrt{P}$
0,01	0,12	0,12	0,23
0,1	0,38	0,38	0,73
1	1,2	1,2	2,3
10	3,8	3,8	7,3
100	12	12	23

For transmitters rated at a maximum output power not listed above, the recommended separation distance  $d$  in meters (m) can be determined 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.



**Disposal:** *The product must not be disposed of along with other domestic waste. The users must dispose of this equipment by bringing it to a specific recycling point for electric and electronic equipment. For further information on recycling points contact the local authorities, the local recycling center or the shop where the product was purchased. If the equipment is not disposed of correctly, fines or penalties may be applied in accordance with the national legislation and regulations.*

## **GIMA WARRANTY CONDITIONS**

Congratulations for purchasing a GIMA product. This product meets high qualitative standards both as regards the material and the production. The warranty is valid for 12 months from the date of supply of GIMA. During the period of validity of the warranty, GIMA will repair and/or replace free of charge all the defected parts due to production reasons. Labor costs and personnel traveling expenses and packaging not included. All components subject to wear are not included in the warranty. The repair or replacement performed during the warranty period shall not extend the warranty. The warranty is void in the following cases: repairs performed by unauthorized personnel or with non-original spare parts, defects caused by negligence or incorrect use. GIMA cannot be held responsible for malfunctioning on electronic devices or software due to outside agents such as: voltage changes, electro-magnetic fields, radio interferences, etc. The warranty is void if the above regulations are not observed and if the serial code (if available) has been removed, cancelled or changed. The defected products must be returned only to the dealer the product was purchased from. Products sent to GIMA will be rejected.