

# RECOVERYPUMP USER GUIDE



## RecoveryPump<sup>TM</sup>

## **Massage System**

# Model 701RA User Manual



Recovery Pump LLC

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## 1. Important Safety Information

Read all instructions before using the RecoveryPump<sup>TM</sup> system for the first time.



#### Warning:

- This device is intended for use by people in good health. This
  device is not recommended for people who have heart problems, or
  vascular problems, have a condition requiring the use of any
  medical device, or have any condition that might affect their
  normal well being.
- If you are, or may be, pregnant, consult with your physician before use.
- Do not use this device over insensitive or numb areas, or in the
  presence of poor circulation. Do not use if you have been
  diagnosed with blood clots, deep vein thrombosis or phlebitis. This
  device should not be used over swollen or inflamed areas or skin
  eruptions. Do not use in the presence of unexplained calf pain.
- Consult your physician prior to use.



## When using an electrical appliance, basic safety precautions should always be followed, including the following:

**DANGER** - This product contains electronic components.

## WARNING - To reduce the risk of burns, fire, electric shock, or injury to persons:

- 1. Always unplug this product from the electrical outlet immediately after use.
- 2. Use this product only for its intended use as described in this manual.
- 3. Do not use with any accessories not recommended by the Manufacturer.
- 4. Never use pins or other metallic fasteners with this product.
- 5. Never operate this product if it has a damaged cord or plug, if it is not working properly, if it has been dropped or damaged in any manner, or dropped into water, or if the product shows any sign of damage or deterioration, such as cracks or worn parts. Call Recovery Pump LLC for examination and repair.
- 6. Do not operate console on a soft surface such as a pillow or mattress, or under a blanket or other covering.
- 7. Keep this product out of reach of children and pets.
- 8. Keep the equipment dry. Do not operate while bathing, in a shower, in or around water, or in a wet or moist condition.
- 9. Do not reach for the product if it has fallen into water. Unplug immediately.
- 10. Do not carry this product by the power cord or use the cord as a handle.
- 11. Keep the cord away from heated surfaces.
- 12. Do not use where aerosol (spray) products are being used or oxygen is being administered.
- 13. To disconnect, turn the ON/OFF switch to the OFF position, then remove the plug from the wall outlet.

## 2. RecoveryPump<sup>TM</sup> Specifications and Dimensions

Specifications				
Model	701RA			
Catalog No.	L10000RA			
Class	I			
Pressure Range	20 - 80 mmHg			
Voltage	115V~ 60 Hz			
Power Consumption	22W			
Fuses Rating	2x 2A			

Dimensions			
Height	3.9 inches		
Length	10.2 inches		
Width	5.1 inches		
Net Weight	5.1 lb.		

## 3. Key to Symbols

Symbol	Explanation	Location
$\bigcirc$	Caution! Read instructions carefully before use	On bottom of console
<b>i</b>	Consult instructions before use	On garment label
*	Level of protection - type BF equipment	On bottom of console
1	Temperature limitations for storage and/or transport of the device	On carton box
2007	Date of manufacture	On bottom of console
	Accompanied by the name and the address of the manufacturer	On bottom of console and on garment label

## 4. Safety Features

#### In Case of Power Failure

If a power outage occurs during use, the RecoveryPump<sup>™</sup> console will deflate the air from the garments.

#### **One-way Hose Connection**

To ensure the air chambers will fill in the correct sequence, the RecoveryPump<sup>TM</sup> has one-way connection features and color coded connections.

The connector on the hose can be inserted into the console in one orientation only: with the logo facing up.

The hose end fittings (on the garment side of the hose bundle) are color coded and are numbered from 1 to 4, indicating the order in which they are to be connected to the matching, color coded and numbered air inlets on the garment.

#### **Overload Protection Fuses**

The RecoveryPump<sup>™</sup> is equipped with two overload fuses, on each of the power lines ("~" and "0").

#### "Lock" Knob

The Lock knob locks the pressure adjustment knob in place, preventing the pressure knob from being moved inadvertently.

#### 5. Indications for Use

The RecoveryPump<sup>™</sup> powered inflatable tube massager is indicated for the temporary relief of minor muscle aches and pains, and for temporary increase in circulation to the treated areas in people who are in good health. The RecoveryPump<sup>™</sup> simulates kneading and stroking of tissues by using an inflatable garment.

## 6. About RecoveryPump<sup>TM</sup>

RecoveryPump<sup>TM</sup> is a massage system intended for use by people in good health. As noted above, RecoveryPump<sup>TM</sup> simulates the kneading and stroking action of manual massage by use of an inflatable garment that fills and deflates, applying a directional compress-and-release massage. This soothing massage action temporarily increases circulation in the areas to which the garment is applied, and temporarily relieves muscle aches and pain caused by fatigue or overexertion.

## The RecoveryPump<sup>TM</sup> Massage Cycle

The RecoveryPump<sup>TM</sup> takes air from the room environment and sends it through hoses into four individual air chambers inside the RecoveryPump<sup>TM</sup> garment.

The RecoveryPump<sup>TM</sup> fills the four chambers with air, one after the other, moving the massage wave up the treated area, from the base of the leg or arm towards the torso.

After all the chambers have been filled with air, the RecoveryPump<sup>TM</sup> deflates the garment for a brief pause. Then the massage wave repeats.

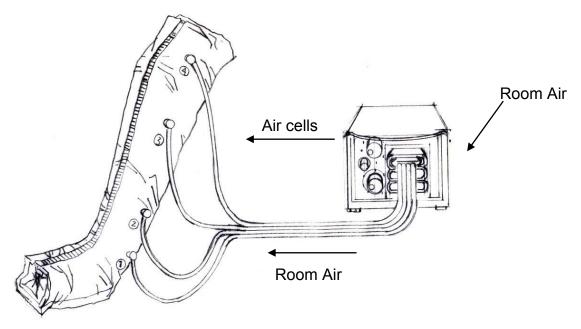


Figure 1 - The RecoveryPump™ System

The air chambers in the RecoveryPump<sup>TM</sup> garment are specially designed to overlap each other, for fluent, comfortable massage, without gaps. You can adjust both the pressure level of the massage and the pause time in between inflation cycles.

The RecoveryPump<sup>TM</sup> console can operate one or two garments simultaneously, so you can use it on both your legs at the same time, for a relaxing massage.

Recovery Pump LLC

## 7. Components of the RecoveryPump<sup>TM</sup> System

#### The RecoveryPump<sup>TM</sup> Console

(See Figure 2 - a)

The RecoveryPump<sup>™</sup> is powered by electricity. You will need to plug it into a wall outlet with a grounding connection.

The console takes air from the room environment, and sends it to the individual air chambers in the garment in a sequence that starts from the base of the garment and continues to the top. The console then vents the air from the garments, there is a brief pause, and the massage cycle repeats.

#### **Hose Bundle**

(See Figure 2 - b)

The hose bundle transfers the air from the console to the RecoveryBoots<sup>TM</sup> garments. It includes four hoses, a connector that attaches to either of the air sockets on the front of the console, and four numbered and color-coded end fittings that attach to the corresponding air inlets on the RecoveryBoots<sup>TM</sup>.

## **Prong Plug**

(See Figure 2 - c)

If you are using only one garment, insert this plug into the unused air outlet on the front of the RecoveryPump<sup>TM</sup> console, to seal it off and prevent air from escaping. When not in use, store the plug in the storage socket on the front of the console (see Figure 7).

## The RecoveryBoots<sup>TM</sup> Garment

(See Figure 2 - d & e)

Each zippered RecoveryBoots<sup>TM</sup> garment has four air chambers. These garments are available in a range of sizes.

## RecoveryBoots<sup>TM</sup> Expanders

If needed, a zippered expander may be added between the two sides of the zipper to increase the garment's circumference. Contact Recovery Pump LLC with requirements.



a. RecoveryPump<sup>TM</sup> Console

b. Hose Bundle



c. Prong Plug



d. RecoveryBoots<sup>TM</sup> Leg Garment



Leg Garment e. RecoveryBoots<sup>TM</sup> Arm/Shoulder Garment Figure 2 - RecoveryPump<sup>TM</sup> Components

## 8. How to Operate the RecoveryPump<sup>TM</sup> System

## Step 1: Set up the RecoveryPump<sup>TM</sup> Console

- a. Place the RecoveryPump<sup>TM</sup> on a flat table surface or suspend it on the end of a bed with the attached hooks.
  - You should be able to reach it easily and operate all the controls from your relaxed treatment position.
- b. Make sure the console is securely positioned, so that it will not slip or fall.
- c. Connect the power cord to an electrical outlet.

## Step 2: Attach the Air Hoses to the RecoveryBoots<sup>TM</sup> Garment

a. Attach the air hoses to the garment by inserting each hose into its air inlet, matching the color and number on each end fitting of each hose to the corresponding color and number on the air inlets on the garment (see Figure 3).



Figure 3 - Attaching Hoses to Garment

b. Make sure the same color hose end fitting is inserted into the same color air inlet. Air inlet number 1 is always the farthest one from the body.

#### **Step 3: Dress Appropriately**

- Always wear light clothing underneath the RecoveryBoots<sup>TM</sup> garment, for hygienic reasons, to avoid irritation and to absorb perspiration.
- Do not wear the RecoveryBoots<sup>TM</sup> garment directly over bare skin.
- Clothing should be unrestrictive and absorbent, and free of zippers, buttons or other items that could rub and chafe under the massage.
- We recommend wearing cotton clothes such as sweat pants or leggings, along with cotton socks, underneath the RecoveryBoots<sup>TM</sup> leg garment, or a long sleeve t-shirt under the RecoveryBoots<sup>TM</sup> arm garment.

#### Step 4: Put on the RecoveryBoots<sup>TM</sup> Garment

#### For Leg Garment

- a. Zip the leg garment closed at least part of the way up before inserting your leg
- b. Insert your foot into the garment (see Figure 4). Pull the top of the garment towards your torso, extending the garment to its maximum length.
- c. Close the zipper all the way up.
- d. Repeat for other leg, if desired. The RecoveryBoots<sup>TM</sup> leg garment is designed to fit on either the right or left leg.



Figure 4 - Putting on the RecoveryPump™ Garment

#### For Arm/Shoulder Garment

- a. Zip the arm garment closed at least part of the way up before inserting your arm.
- b. Insert your arm into the arm garment, pulling it over your shoulder. Make sure the zipper is facing up, and that the cutout area is under your armpit.
- c. Close the zipper all the way up. Support your arm on an armrest or a pillow during the massage treatment. Supporting the arm in a horizontal position allows the garment to cover the shoulder area.
- d. If the garment tends to slide down, use the optional belt. To use the belt, attach one end of the belt to the snap closure at the back of the garment, then pull on the sleeve, zip it closed, pull the belt around your body under the opposite arm and fasten it to the other snap closure at the front. When correctly fastened, the belt should cross from the shoulder of the arm, across the chest and under the opposite arm. Tighten the belt just enough to keep the sleeve from slipping down.

#### For all Garments

The garment should not fit too tightly; you should be able to insert three fingers into the garment when it is zipped closed before inflation. If the garment is too tight, you will need a larger size. Contact your RecoveryPump<sup>TM</sup> dealer.

Make sure the garment is zipped completely closed before turning on the RecoveryPump<sup>TM</sup>, and leave it closed for the duration of the treatment. At the end of treatment, the garment will deflate within a short time, allowing it to be removed easily. You should be able to slip the garment off and pull it on again for each use without completely unzipping the garment.



#### Note:

Do not use any garment other than the **RecoveryBoots<sup>TM</sup> Garment** with the RecoveryPump<sup>TM</sup> console.

## Step 5: Connect the Air Hoses to the RecoveryPump<sup>TM</sup> Console

a. Securely insert the hose bundle connector, with the logo facing up, into one of the air sockets on the console (see Figure 5).

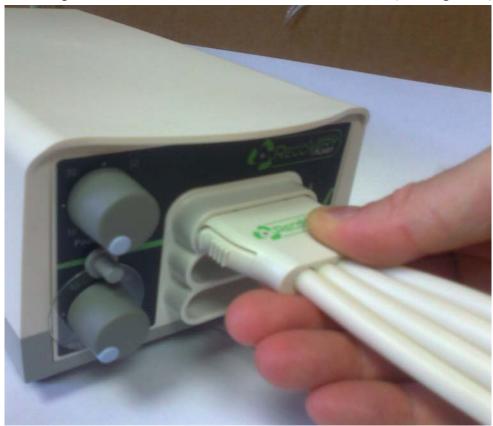


Figure 5 - Connecting the Air Hoses to the RecoveryPump<sup>TM</sup> Console

b. If you are using only one garment, insert the Prong Plug into the unused air outlet This will prevent air from escaping through the unused air outlet (see Figure 6).



Figure 6 - Inserting the Prong Plug to Block The Unused Air Outlet for Single Garment Use

c. Make sure the air hoses are not bent, kinked or pinched.



#### Note:

When only one garment is used, the second outlet must be plugged with the Prong Plug. Otherwise the console will stop working and the alarm buzzer will beep.

#### **Step 6: Select Pressure Level**

a. The first time you use the RecoveryPump<sup>TM</sup>, set the **Pressure Knob** and the **Pause Knob** to their minimum settings (see Figure 7).



Figure 7 - General View of the RecoveryPump™ Front Panel

b. Turn On the RecoveryPump<sup>TM</sup> by pressing the ON/OFF switch at the bottom right side of the console to the ON position (see Figure 8).



Figure 8 - The ON/OFF Switch

- c. Wait for a few cycles to become accustomed to the treatment sensations. Note that the first inflation cycle may take a longer time to fill, especially if you are using two garments.
- d. Set the pressure level (see Figure 9) and pause time (see Figure 10) to your comfort, according to the guidelines below.

#### **Guidelines for Selecting Pressure**

Changing the pressure level will change the intensity of the massage by increasing the amount of air pushed into each air chamber.

A lower pressure setting will apply a lighter massage; while a higher pressure setting will apply a more intense massage (see Table 1 as a guide for pressure selection). If the massage is too intense, lower the pressure. You may also increase the pause time (see Step 8, below).

**Table 1 - Guideline for Pressure Selection** 

Massage Intensity	Pressure Setting (mmHg)
Light	20 - 30
Medium	40 - 60
Intense	70 - 80

### **Step 7: Lock the Pressure Knob**

After you have selected the pressure, lock the Pressure Knob by turning the **Lock Knob** clockwise until you feel the knob tighten closed (see Figure 9).

This will prevent an inadvertent change in the pressure settings. If you want to change the pressure, simply loosen the Lock Knob, change the pressure settings, and re-tighten the Lock Knob. (You may wait to lock the pressure settings until after you have tried your first session, so that you can adjust the pressure easily during your first massage session.)



Figure 9 - Locking the Pressure Knob

#### **Step 8: Set the Pause Time**

"Pause" is the time that the garments deflate and remain relaxed between each massage cycle. Select this time by turning the Pause Knob (see Figure 10).

Changing the pause time allows you to modify the massage by increasing the pause interval in between massage waves.

Standard setting for pause time is 10 to 15 seconds.

Pause Knob: Turn to select Pause Time



Figure 10 - Setting the Pause Time

#### **Considerations for Choosing Pause Time**

Changing the pause time adjusts the length of the time the garments are deflated in between each massage wave. If you would like a more rapid massage pace, select a shorter pause interval. If you want to slow down the massage pace, select a longer pause interval (see Table 2).

**Table 2 - Guideline for Pause Time Selection** 

Pause Duration	Pause Time (seconds)
Short Pause Interval	10 - 20
Medium Pause Interval	30 - 50
Long Pause Interval	60 - 70

If you experience tingling or numbness during the massage treatment anywhere in the treated area, increase the pause time to 30 to 45 seconds or more. If this sensation persists after increasing the pause time, reduce the pressure. If this sensation continues, stop using the system immediately and consult your physician.

When using two large garments, a longer pause time may be necessary to ensure that all the air deflates from the garments in between massage cycles. The RecoveryPump<sup>TM</sup> will not inflate the garments if the air from the previous cycle has not adequately emptied. If the pause time you selected is too short for adequate deflation, the console will automatically double the pause time. If this is bothersome, increase the pause time slightly and try again.

## **Step 9: Continue the Massage Session**

Continue the massage session for the length of time you desire, for up to 45 minutes per massage session.

Using RecoveryPump<sup>TM</sup> as a relaxing, invigorating massage before you exercise will increase circulation and can help to get you into the workout more quickly. Suggested treatment time is 15 to 30 minutes before your workout. Or, use RecoveryPump<sup>TM</sup> for a relaxing massage at the end of the day, or after exercise, to relax and soothe tired, aching muscles. Generally, we recommend 30-45 minutes after working out or in the evening after going about your daily activities.

#### Warning:



The massage sensation should be pleasant and comfortable. If you experience pain or discomfort during or after the massage treatment, discontinue use and consult your physician.

#### **Step 10: Ending the Massage Session**

To end treatment, shut OFF the RecoveryPump™ using the ON/OFF switch. Remove the garments. Unplug the console from the wall socket.

We recommend that you **do not** disconnect the hoses from the garment. If you need to disconnect the hoses from the garment, do this by gently working the end fitting free from the air inlet using a twisting/pulling motion.



#### Note:

If the RecoveryPump<sup>TM</sup> stops working and the warning signal beeps, it means that the time needed to fill up the garment is too long. Usually this is due to air leakage because the air hoses are not properly connected, or because one of the air outlets on the console is unplugged.

If this happens, turn Off the console at the ON/OFF switch, and then:

- 1. Check that all the hose ends are correctly inserted into the air inlets.
- 2. Check that the hose connectors are properly connected to the air outlets on the console.
- 3. If using only one garment, make sure that the unused outlet is plugged with the Prong Plug.

If all the connections are OK and the problem persists, contact Recovery Pump LLC.

#### In the case of a power failure or malfunction:

- 1. Turn Off the console at the ON/OFF switch.
- 2. Take off the garment(s)
- 3. Remove the electrical cord from the wall outlet.
- 4. If the system has malfunctioned, contact Recovery Pump LLC.

For more details, see Section 10 - Troubleshooting.

## 9. Maintenance and Storage



#### Warnings:

- Only an authorized technician may open the console.
- Before cleaning the console, disconnect the power cord from the electrical wall outlet.

## Cleaning the RecoveryPump<sup>TM</sup> Console

- Gently wipe the outside of the console using a nonabrasive cloth.
- Do not spill any liquids on the console.

## Cleaning the RecoveryBoots<sup>TM</sup> Garments

Never submerge the garments in liquid. They are cleanable by surface wiping only. Gently wipe the inner and outer surfaces of the garment using a soft cloth moistened with warm water (not exceeding 100°F / 40°C) and a mild detergent. Do not allow water to enter the air inlets of the garment at any time. If needed, a soft brush can be used to remove stubborn dirt. Then towel dry and surface wipe again with a soft cloth moistened in water to remove all detergent residue, again taking care not to allow liquid to enter the air inlets. Towel dry and then allow the garment to air dry completely before use.

If desired, the inner and outer surfaces of the garment may be wiped down with a cloth or wipe moistened with a small quantity of 50% alcohol. Work in a well-ventilated area, and wear gloves. Allow the garment to air dry completely before use.



#### Warnings:

- Clean only according to instructions.
- Do not hand or machine wash, dry clean, hand or power wring, iron, tumble or force heat dry.
- Surface wipe only!
- Do not use bleach!

#### **Storage**

- a. Store in a dry, shaded place at temperatures between -4°F to 158°F.
- b. Roll up the power cord neatly before storing the console. Do not bend or kink the cord.
- c. Since the garment is inflated by air, it must remain airtight. Therefore, avoid contact with pins, needles and any other sharp objects or instruments. If one of the inflatable chambers is damaged, the garment must be replaced.
- d. The hoses should be kept untwisted and unfolded. Roll them up neatly.

### **Transport**

Transport in original packaging or in luggage with padding.

It is easier to check the console in baggage than to carry-on the console for air travel.

## 10. Troubleshooting



## **Note:**

Before continuing, check all accessories visually for any defects.

**Table 3 - Troubleshooting Guide** 

Symptom	Possible Cause	Corrective Action
The console is not working.	No electricity.	Check the electrical wall outlet.
	Power cord.	Check the power cord visually for any defects.
	Fuses.	Check the fuses and replace if necessary.
		If they burn out again, contact Recovery Pump LLC.
The console starts working and stops immediately.	The air cannot move through the hose bundle.	Check hose bundles for kinks, twists and folds.
One garment inflates but the second one does not.	The second garment does not receive air.	Check its hose bundle for kinks, twists and folds.
The console stops working and buzzer beeps.	Hose bundle is not connected properly to garment or console, or Prong Plug is not inserted into unused air outlet.	Check and fasten all air connections. If treating only one limb, make sure the unused air outlet is plugged with the prong plug provided with the console. If all air connections are OK and problem persists, contact Recovery Pump LLC.
The console works at a	Defective garment	Replace garment and check again.
very low pressure, regardless of the pressure set by the user.	An internal problem	Contact Recovery Pump LLC.
An irregular noise.	Console transferring vibrations to a surface	Make sure the console is standing evenly on all four of its bumpers, or is hung properly on its hooks while supported by the two rear bumpers.
	An internal problem.	Contact Recovery Pump LLC.

## 11. Warranty and Contact Information

#### **Manufacturer Address**

Mego Afek AC Ltd., Kibbutz Afek, 30042 Israel

## Warranty

- Mego Afek AC Ltd. warrants the RecoveryPump<sup>TM</sup> Model 701RA and RecoveryPump<sup>TM</sup> garments to be free of defects in materials and workmanship.
- This warranty applies as follows:
  - RecoveryPump<sup>TM</sup> console: for a period of twelve (12) months from date of purchase.
  - RecoveryPump<sup>TM</sup> garments: for a period of six (6) months from date of purchase.
- This warranty does not include or cover malfunctions caused by unreasonable use, noncompliance with user and maintenance instructions, or damage caused by unauthorized or unqualified repairs.

## Imported to the USA by:

Lympha Press USA, Ltd. Manalapan, NJ 07726, USA

#### Distributor in the USA

Recovery Pump LLC

9 La Crue St. Suite 2

Concordville, PA 19331

Toll Free: 855-732-7867

## 12. EMC Manufacturer Declarations

#### Model 701RA - electromagnetic emissions - manufacturer declaration

The Model 701RA is intended for use in the electromagnetic environment specified below. The customer or the user of the Model 701RA should assure that it is used in such an environment.

<b>Emissions Test</b>	Compliance	Electromagnetic environment - guidance		
RF emissions CISPR 11	Group 1	The <b>Model 701RA</b> 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			
Harmonic emissions IEC 61000-3-2	Not applicable	The <b>Model 701RA</b> is suitable for use in all establishments, including dome establishments and those directly connected to the public low voltage power supply network that supplies buildings used for domestic purposes.		
Voltage fluctuations/flicker emissions IEC 61000-3-3	Not applicable			

#### Model 701RA - electromagnetic immunity - manufacturer declaration

The Model 701RA is intended for use in the electromagnetic environment specified below. The customer or the user of the Model 701RA 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	±6 kV contact ±8 kV air	Complies	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	Complies	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	±1 kV line to line ±2 kV line to erth	Complies	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	$>95\%$ dip in $U_{\rm T}$ for 10ms $60\%$ dip in $U_{\rm T}$ for 100ms $30\%$ dip in $U_{\rm T}$ for 500ms $>95\%$ dip in $U_{\rm T}$ for 5000ms	Complies	Mains power quality should be that of a typical commercial or hospital environment. If the user of the <b>Model 701RA</b> requires continued operation during power mains interruptions, it is recommended that the <b>Model 701RA</b> be powered from an uninterruptible power supply or a UPS.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	3 A/m	Complies	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.

**NOTE:**  $U_{\rm T}$  is the a.c. mains voltage prior to application of the test level.

#### Model 701RA - electromagnetic immunity - manufacturer's declaration

The Model 701RA is intended for use in the electromagnetic environment specified below. The customer or the user of the Model 701RA should assure that it is used in such an environment.

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment - guidance
			Portable and mobile RF communications equipment should be used no closer to any part of the <b>Model 701RA</b> , including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.  Recommended separation distance
Conducted RF IEC 61000-4-6	3 Vrms 150 kHz to 80 MHz	3 Vrms	$d = 1, 2\sqrt{P}$
Radiated RF IEC 61000-4-3	3 V/m 80 MHz to 2,5 GHz	3 V/m	$d = 1.2 \sqrt{P}$ 80 MHz to 800 MHz $d = 2.3 \sqrt{P}$ 800 MHz to 2.5 GHz
			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).
			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.
			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 **Model 701RA** is used exceeds the applicable RF compliance level above, the **Model 701RA** should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating the **Model 701RA**.
- 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 Model 701RA

The Model 701RA is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the Model 701RA can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the Model 701RA as recommended below, according to the maximum output power of the communications equipment.

Rated maximum output power	Separation distance according to frequency of transmitter			
of transmitter W	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 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.