



# Cellulink Smartcell 111L

Cellular Gateway  
for a Single Analog Line

## User's Guide

[www.quasar.biz](http://www.quasar.biz)

## Version

We thank you for purchasing the “SmartCell 111L”. “SmartCell 111L” is a member of Quasar’s family of state of the art gateways.

This manual is applicable to Quasar 111L with software versions 0205 and 0206. These apply to units with part number Q11-111093 (900/1800MHz) and Q11-111083 (850/1900MHz) and version numbers: A1, A2, A3, A4P. The part number and version number are marked on a sticker located in the bottom or the side of the unit (see section 1.3 – product identification). Other versions may slightly differ in some aspects.

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## Registration and Type Approval

Smartcell 111L carries CE Certification.

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# ***1 Introduction***

## ***1.1 Overview***

The Smartcell 111L gateway enables direct connection of an organization's internal telephony system to any commercial cellular network, via an already existing Private Automatic Branch Exchange (PABX) system.

The Smartcell 111L interfaces with a regular two-wire analogue line interface and a GSM cellular network to create a cellular gateway. Smartcell 111L operates via dual band GSM cellular networks (900/1800MHz). A special version operates in 900/1900MHz.

The functionality of the Smartcell 111L is usually transparent to users when used with a PABX with LCR (Least Cost Routing) capability. The PABX recognizes Smartcell 111L as a trunk interface and the routing is done in the PABX itself. In a PABX with no LCR capability, the user selects the proper trunk for the call. In this case, the user has to know when to use the trunk with the 111L and when to use other trunks.

The Smartcell 111L can be used with a plain analog telephone as well. In this case, every time you go off-hook the 111L will send you a dial tone. You can use this configuration as a replacement for a fixed line telephone.

The Smartcell 111L can be used to send and receive SMS, fax and data transmissions. (These features are optional; contact your technical support for further information).

## ***1.2 Packing List***

The Smartcell 111L is shipped with the following components:

- Smartcell 111L unit
- An antenna with a 3-meter long cable.
- Power supply (AC adaptor with rated output 9VDC, 1A)
- A set of 3 screws
- This user manual

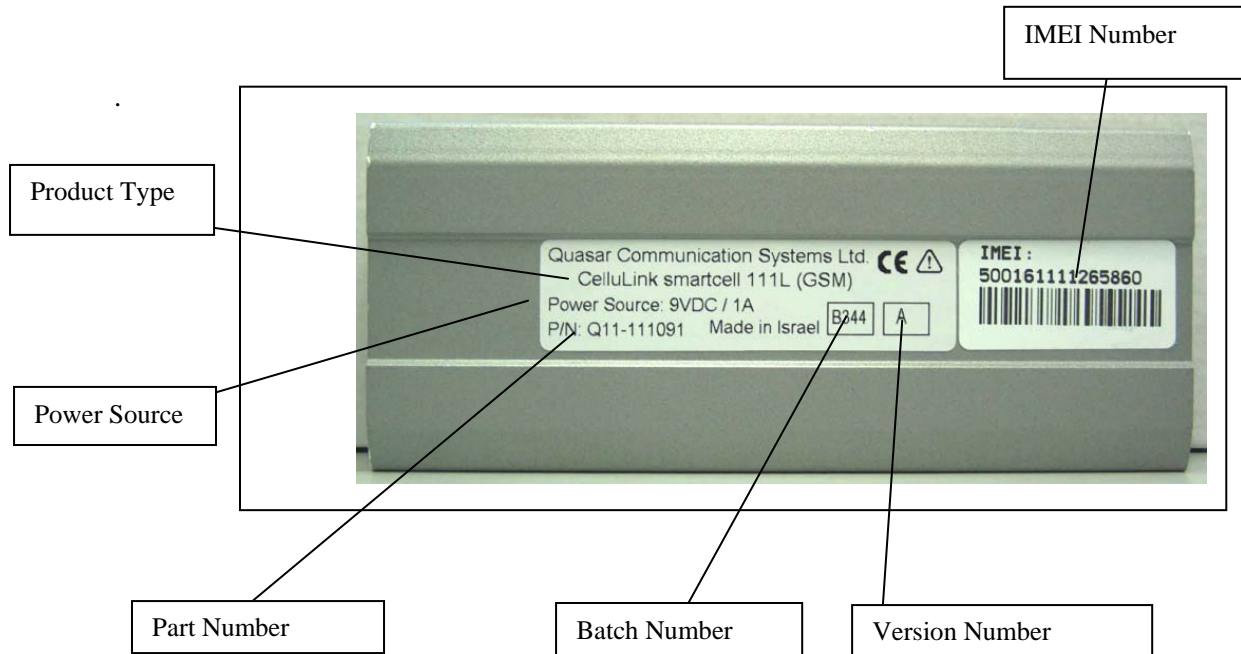
### **Optional items**

The following items may be supplied on a separate order

- Data cable for fax and SMS
- An antenna with a 15-meter long cable.

### 1.3 Product Identification

The product can be easily identified by the info on the sticker found on the bottom side:

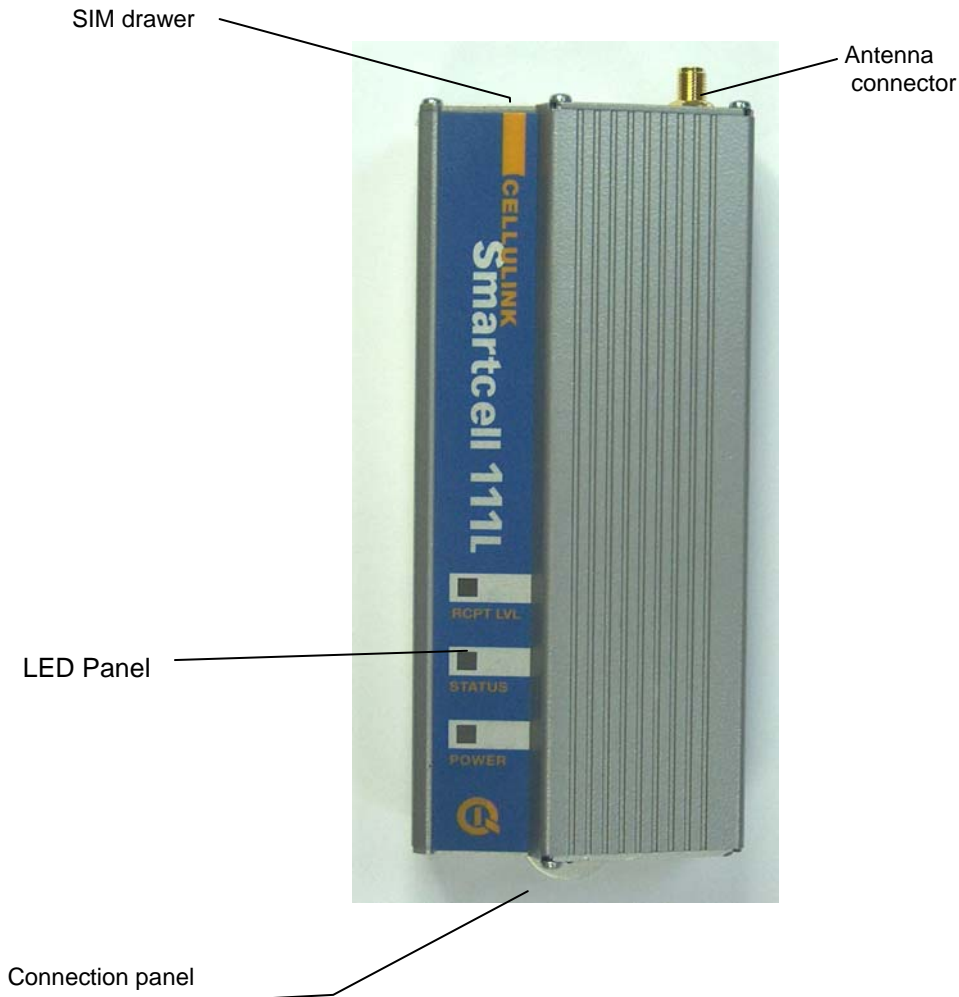


## 2 *Product Description*

### 2.1 Main Components

Figure 2-1 outlines the main components of the Smartcell 111L.

***Figure 2-1: RJ-11 Connector pin layout***



### 2.2 LED Indications

The LEDs on the front panel of the unit provide indications to the operation status of the unit, as described in Table 2-1.

**Table 2-1. LED Indications**

<b>LED</b>	<b>Description</b>	<b>Operation</b>
RCPT.LVL (RECEPTION LEVEL)	Indicates the reception level of the Smartcell 111L.	<p><b>Green</b> - High reception.  <b>Orange</b> - Medium reception  <b>Red</b> - Low reception  <b>Off</b> - Very low reception or no reception at all</p> <p>Note: to indicate proper activity of the unit in idle (no call), the LED will turn off for a few seconds every 15 seconds of operation. During a call the indication is frozen to the one that existed when the call had started.</p>
STATUS	Indicates the Smartcell 111L operational status.	<p><b>On</b>—the Smartcell 111L is handling a call.  <b>Blinking</b> (0.2S on, 0.2S off) – During ringing  <b>Off</b>—the Smartcell 111L is idle and no calls are being handled.</p> <p><b>Indications</b></p> <ul style="list-style-type: none"> <li>• <b>Slow blinking (0.5S on, 0.5S off)</b>—the Smartcell 111L is initializing following power up.</li> <li>• <b>Fast blinking (0.1S on, 0.1S off)</b> No SIM card or an error has occurred in the PIN code entry. The PIN code must be disabled or the default PIN code 1234 must be entered.</li> <li>• <b>Mostly on (0.5S on, 0.1S off)</b> – Toll restriction is activated</li> </ul> <p><b>Special Indications:</b></p> <ul style="list-style-type: none"> <li>• <b>Blinking (0.3S on, 0.3S off)</b> – During DTMF programming session</li> <li>• <b>Blinking (0.2S on, 1S off)</b> – During local PC session</li> </ul>
POWER	Indicates the status of the power connection.	<p><b>On</b>—the Smartcell 111L is powered on.  <b>Off</b>—the Smartcell 111L is powered off.</p>

## **3 Installation**

### **3.1 Physical Installation**

Select a location for the Smartcell 111L that is indoors and in the proximity of a power socket and near a proper location for the antenna.

#### **3.1.1 Main unit**

Drill holes in the wall to match the wall mounting brackets of the Smartcell 111L and screw the unit onto the wall. The unit must be placed in the orientation shown in Figure 2-1, with the antenna socket pointing upward and the connection panel pointing downward.

#### **3.1.2 Antenna**

Connect the antenna provided with the Smartcell 111L to the antenna connector located on top of the unit. Place the antenna at least one meter away from Smartcell 111L, in an upright position. The antenna should be placed on a metal plate. If you install more than one unit, each antenna should be on a separate plate – minimum distance of 30cm between the antennas. The antenna base is magnetic, so an iron plate will be the best choice.

#### **3.1.3 SIM card**

The next step is to insert the SIM card into the unit. Before you do it, make sure you have the right SIM. It is easier to use a SIM with no PIN code. If you want to use the PIN code, start with a SIM that has 1234 as a PIN code. (You can program it with any mobile phone). You can then use the default PIN or change it to any other PIN you like, using the DTMF programming process. It is very important to save the PIN code in a secure place.

The SIM card should normally be with no call waiting and no voice mail. If needed – use a mobile phone to define the message-center for SMS transmission.

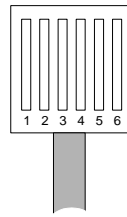
To insert the SIM card into the SIM drawer located on top of the unit - open the SIM drawer by inserting a dull, thin object into the appropriate slot. Place the SIM card in the tray making sure that the SIM card contacts are away from you. Close the SIM card tray.

#### **3.1.4 Connection to PABX**

Connect a routed trunk port from the PABX to the LINE port (shown in Fig 3-2). The routed trunk port is a trunk interface that was pre-programmed in the PABX to deliver cellular calls.

#### **3.1.5 RJ-11 Connector Pin Layout**

Figure 3-1 illustrates the pin layout of the RJ-11 line connector. Table 3-1 details the pin-to-wire layout of the RJ-11 connector. One end of the cable is connected to the (FXS) Line interface of the Smartcell 111L and the other end is connected to the (FXO) trunk interface of the PABX.

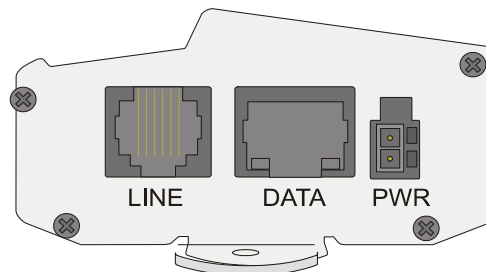
***Figure 3-1: RJ-11 Connector pin layout******Table 3-1: RJ-11 Connector Pin Layout***

PIN #	FUNCTION
1	Reserved
2	Tip
3	Tip
4	Ring
5	Ring
6	Reserved

**Warning:** Do not use the reserved pins.

**Note:** The line can use either pins 3 and 4 or pins 2 and 5.

### ***3.1.6 Connection Panel***

***Figure 3-2. Smartcell 111L Connector Panel***

### ***3.1.7 Power Connection***

Connect the power supply, supplied with the Smartcell 111L, to the PWR port (shown in Fig 3-2) and to a power source.

### 3.2 Configuration of the PABX

The PABX connected to a Cellulink device must be properly configured in order to operate. [Table 3-2](#) describes the configurations. For detailed information regarding the programming of the PABX, please contact your PABX tech support.

**Table 3-2: PABX Trunk Definitions**

	<b>DESCRIPTION</b>	<b>Comment</b>
1	Set the trunk dialing method for standard DTMF (dual tone multi frequency). Pulse dialing is not supported.	
2	Include all trunks connected to the Smartcell 111L devices serving the same cellular network, in a new trunk group. You may create several groups, serving several networks.	
3	On PABX's with LCR (Least Cost Routing), set the PABX routing tables to properly route the calls to the trunk groups you defined. This is done by selecting the cellular prefixes to direct the routing. Calls that should not be made on the 111L devices can be blocked by using the Toll Restriction feature (as explained later).	Calls will be automatically routed to the 111L by the PABX. You may use (or prevent) overflow traffic from the 111L trunk to other trunks.
4	On PABX's with no LCR, make sure you tell the users how to select the right trunk for the cellular calls (see section 3.5).	After making the selection they will hear a second dial tone (coming from the 111L).

### 3.3 Getting Started

The POWER LED has to be ON. If it is not, make sure that the power supply is properly connected to the unit and to the AC mains.

During the first few seconds after powering up the unit, the STATUS LED will start blinking, indicating unit initialization. Once the SIM card has been registered and is operational, the STATUS LED stops blinking. In certain cases, the LED may continue to blink, to indicate some features, as will be explained later.

Verify that the RCPT. LVL LED is green, indicating high reception level. (Reception levels are described in [Table 3-3](#).) To improve the reception level - move the antenna to a different location with a better reception and/or place the antenna on a bigger metal plate (about 30 x 30cm.). If the reception level is not satisfactory – consult your technical support.

**Table 3-3. Reception Level Indications**

<b>RCPT. LED</b>	<b>LVL</b>	<b>Reception Level</b>	
Green		High reception	-75dBm to – 51dBm
Orange		Medium reception	-87dBm to –77dBm
Red		Low reception	-101dBm to –89dBm
Off		Very low reception or no reception at all	-113dBm to –103dBm

### **3.4 Post-Installation Tests**

After installation and power up, perform the following steps to verify that the unit is operational.

Disconnect the PABX from the LINE connector and connect an analog telephone to the LINE connector. Pick up the handset. You should hear a normal dial tone. If there is no dial tone, go to section 6 – trouble shooting.

Dial out to a known cellular telephone number. The ring-back tone is heard. When the called party answers, make sure that you have a clear bi-directional voice path and the STATUS LED lights red. Make sure that the number you dial does not conflict with the toll restriction rules, if activated.

- If there is no ring-back tone, make sure that the number dialed is a valid number.
- If there is a ring-back tone, but no connection, try dialing another number.

To check incoming calls, use another phone and dial the phone number of the SIM card inserted in the Smartcell 111L. On hearing a ring, pick up the handset (of the analog telephone) and make sure that you have a clear bi-directional voice path.

- If there is no response from the Smartcell 111L, make sure that the number that you are dialing is the correct number for the SIM card.
- To verify a SIM card number: remove the SIM card from the Smartcell 111L and insert it in a cellular phone. Dial out to another phone with a display to verify the number or use the number identification (CLIP) feature of the cellular phone.
- If the number is correct and incoming-calls are still not received, contact technical support.

Once you are satisfied that the unit is working properly, restore the connections to the PABX.

You may now proceed to programming the unit, as explained later.

If the unit does not function properly - contact your technical support.

### **3.5 User Guidance**

It is recommended to guide and inform the users about the best ways to utilize the gateways:

- Do not wait more than 3 seconds between the digits of the dialed number.
- For PABX's without LCR: Explain how to select the proper gateway, what prefix to dial (for example: 81 for network A, 82 for network B).
- If Toll Restriction is active in PABX without LCR: some destinations will not be reachable (the call will be too expensive). Use the proper prefix.
- If Call Duration Limit is active: Calls longer than the time limit will be cut.
- Dialing the # sign at the end of the number will shorten the post dialing delay.

## 4 *Features and Programming Instructions*

### 4.1 General

This section lists the various Smartcell 111L features, which can be programmed by the user. Section 4.10, has a concise summary of the programming details.

During programming,

- 3 short beeps indicate positive confirmation (confirmation tone).
- 2 short beeps indicate rejection or inability to perform the command (rejection tone).

The DTMF programming is done with a DTMF telephone connected to the 111L or by dialing through the PABX to the 111L unit. The parameters are entered into the unit with unique DTMF tones, as explained later. To start the process you have to enter the sequence **\*\*1343\*\*#** and the 111L will respond with 3 short beeps to confirm it. If the code was wrong you will hear the error tone, meaning that the command was not accepted (probably because you entered it wrong). The commands are in effect immediately after you dial their codes. You may leave the programming mode at any time by simply going on-hook. It is recommended to check the function of every feature you program and write it down, as there is no simple way to know what was programmed into the unit. If in doubt – reprogram the unit.

Each parameter programmed into the unit is kept in the permanent memory of the unit. The parameters will not be “forgotten” in case of power failure.

Each feature has a default value that is set during the production of the unit (Factory default). If you made a lot of changes and want to start from fresh, or you want to delete all the programming changes made to the unit – use the “Restore Factory Default” feature.

### 4.2 Audio Gain

#### 4.2.1 *Feature description*

In some cases, you may find that the voice level during the conversation is not optimal (either too loud or too soft). You can change it to better suit you and the other users. The level can be changed in each direction independently of the other direction. The level may change in every new call you make, so before you make a change - be sure that most of the users in the system feel that the level needs to be changed.

#### 4.2.2 *Feature Programming*

Enter programming mode by dialing **\*\*1343\*\*#[hear a confirmation tone]**.

Enter ‘change Rx/Tx gain’ mode by dialing **\*5580\*#[hear a confirmation tone]**. Dial to a cellular phone (must have at least 3 digits), add # at the end [hear a confirmation tone] and wait until the call is answered.

Dial **\*70\*#[hear a confirmation tone]** for Tx gain or **\*71\*#[hear a confirmation tone]** for Rx gain.

Change the gain by using the following keys on the DTMF key pad:

Key 2#[hear a confirmation tone] - Increase gain

Key 8#[hear a confirmation tone] - Decrease gain

**Note:** in Tx the keys were interchanged by mistake (will be corrected in the next release)

Key 6#[hear a confirmation tone] - Go back to default

Key 4#[hear a confirmation tone] - Go back to the gain before you started

Key 5#[hear a confirmation tone] - Save changes

You should hear a confirmation tone after each command. When you reach the end of the gain scale, you will get the rejection tone (2 beeps) instead of confirmation tone.

Make sure to push the 5 key to save the changes after you are satisfied with the level.

## **4.3 Immediate Dialing**

### ***4.3.1 Feature description***

The 111L will collect the digits sent to it and will start the cellular call when one of the following events will occur:

- 3 seconds passed after a digit. The 111L assumes this is the last digit. Slow or indeterminate users, who wait more than 3 seconds before the next digit, will encounter error situations, as the unit will initiate a cellular call without all the required digits.
- The # key was used to indicate the end of the dialed number. The unit will not send the # to the cellular network.
- When enough digits have been dialed and the Immediate Dialing feature is activated.

When the unit is installed in a network where all the cellular phones have the same number of digits, you can set the immediate dialing length to that number of digits. Doing so will save you the delay after the last digit. The minimum number of digits is 2 and the maximum is 20 digits. When you set the number of digits to the network-standard (for example - 9) you can still dial shorter numbers but they will be sent to the cellular network after the preset delay or after a #.

### ***4.3.2 Feature Programming***

Dial \*\*1343\*\*#[hear a confirmation tone] to enter programming mode.

Dial \*3210\*#[hear a confirmation tone] followed by the number length, followed by #. For example: \*3210\*#[hear a confirmation tone]10#[hear a confirmation tone] to start dialing immediately after 10 digits have been received.

To disable this feature enter 0 as the number of digits – dial \*3210\*#[hear a confirmation tone]0#[hear a confirmation tone].

## **4.4 Calling Number Identification Restriction (CLIR)**

### ***4.4.1 Feature description***

You can enable or disable the unit from sending its SIM number to the called party. This is usually done to keep your number undisclosed to others, particularly if you want to discourage incoming calls to the 111L unit.

### ***4.4.2 Feature Programming***

Dial \*\*1343\*\*#[hear a confirmation tone] to enter programming mode.

Dial \*8200\*#[hear a confirmation tone] to allow the presentation of the unit number in the called phones.

Dial \*8201\*#[hear a confirmation tone] to disable the presentation of the unit number in the called phones.

## **4.5 PIN Code Programming**

### ***4.5.1 Feature description***

Some countries require that every SIM card will have a PIN code in order to protect against unauthorized use. A protected SIM card will not be usable without the PIN code. If you want to use a PIN-code protected SIM-card, you have to activate it and insert it into the 111L. Every time the unit powers up, it will deliver the stored PIN code to the SIM card. If the code matches – the 111L will work normally. If the code is wrong the 111L will lock itself: the unit will not function and the STATUS LED will blink. (This is done in order to prevent the SIM card from locking after 3 trials with wrong codes. Once the SIM card is locked, you can only unlock it with the PUK number). To clear the 111L from lock after a wrong PIN - you have to dial the special code for it.

The 111L PIN code protection can be used in several ways:

- With no PIN Code protection. Every SIM, programmed to function without PIN code, can be used.
- With the default PIN code of 1234. The Smartcell 111L is preprogrammed with this code. You have to use a SIM card, programmed to require the code 1234.
- With a different PIN code. You have to have a SIM card with a known PIN code and to enter the code into the 111L.

If the STATUS LED is fast blinking, there is an error with the PIN code entry. To resolve this, program the SIM card not to require the PIN code or change its code to the same code of the 111L. (To program the SIM card put it in a regular mobile phone and follow the menu). After the insertion of the SIM card into the 111L, clear the 'Wrong PIN Flag' with the DTMF command.

### ***4.5.2 Feature Programming***

Dial \*\*1343\*#[hear a confirmation tone] to enter to programming mode.

To enable the feature with the existing PIN Code of the SIM card:

Dial \*6100\*#[hear a confirmation tone], XXXX#[hear a confirmation tone] to enable the PIN code request feature on the SIM. The existing PIN code of the SIM card (XXXX) will be stored in the 111L and will be transferred to the SIM card every time it is initiated.

To enable the feature with a PIN code different from the existing PIN Code of the SIM card:

Dial \*6100\*#[hear a confirmation tone], XXXX\*[hear a single tone],YYYY\*[hear a single tone], YYYY#[hear a confirmation tone] to enable the new PIN code (YYYY) and to store it in the 111L, instead of the existing PIN code of the SIM card (XXXX).

To disable the feature:

Dial \*\*1343\*#[hear a confirmation tone] to enter to programming mode.

Dial \*6101\*#, [hear a confirmation tone], XXXX# [hear a confirmation tone] to disable the PIN code request feature on the SIM. The PIN code of the SIM card (XXXX) and the one stored in the 111L will remain unchanged.

To clear the 111L from lock:

Dial \*\*1343\*\*#[hear a confirmation tone] to enter to programming mode.

Dial \*6122\*#[hear a confirmation tone] to clear the locking of the 111L. Note that 3 wrong attempts will put the SIM card itself into locking.

## 4.6 Toll Restriction

### 4.6.1 *Feature description*

When the Toll Restriction feature is enabled, the Smartcell 111L allows only calls to numbers that start with the prefixes that were programmed (white list). Attempts to call numbers starting with other prefixes will fail and the caller will hear an error tone. Numbers of 4 digits or less, including those starting with \*, are never blocked (to allow calls to emergency and other special services). The list of allowed prefixes can include up to 10 entries. The minimum length of a prefix to enter the table is two digits and the maximum number is 4 digits.

There is no way to read the prefixes stored in the table. If you are in doubt about a specific prefix – reenter it or delete it.

### 4.6.2 *Feature Programming*

Dial \*\*1343\*\*#[hear a confirmation tone] to enter to programming mode.

Dial \*9194\*#[hear a confirmation tone] followed by a list of prefixes, separated by # to add entries to the table (see the following example).

Dial \*9190\*#[hear a confirmation tone] to Enable the Toll Restriction feature. You can enable the feature only if there is at least one entry in the table (otherwise you will hear a rejection tone).

Dial \*9193\*#[hear a confirmation tone] to Disable the Toll Restriction feature. This does not erase the entries in the table.

Dial \*9195\*# [hear a confirmation tone] and then dial the prefix you want to delete followed by a # to erase a specific entry. If the prefix was erased - you will hear a confirmation tone. If the prefix was not found in the table – you will hear a rejection tone. When the last prefix is erased the 111L will disable the Toll Restriction feature.

Dial \*5351\*#[hear a confirmation tone] to completely erase all the Toll Restriction entries.

Note: The prefix numbers do not include the prefix digit used to exit the PABX environment to the public network (usually “9” or “0”).

In case of an error, an error tone is heard. Replace the handset and start the procedure again.

#### **Example – limit the gateway to dial to the following prefixes only: 061, 063, 064**

Dial \*9194\*#[hear a confirmation tone]and the list of prefixes: 061#[hear a confirmation tone]063#[hear a confirmation tone]064#[hear a confirmation tone]. Dial \*9190\*#[hear a confirmation tone] to Enable the feature. Go on-hook and try the feature.

## 4.7 Call Duration Limit

### 4.7.1 *Feature description*

The calls (incoming and outgoing) can be limited to a certain time. This time can vary from 1 minute to 254 minutes. If the call duration exceeds this limit, the call will be stopped and the user will hear an error tone. To continue the call, the user will have to dial again.

This feature is useful in saving the cost of too-long calls and increasing the availability of the gateway to other users.

The default value for the feature is: unlimited.

#### **4.7.2 Feature Programming**

Dial **\*\*1343\*\*#[hear a confirmation tone]** to enter to programming mode.

Dial **\*6133\*#[hear a confirmation tone]** followed by the maximum allowed time, in minutes. Any number between 254 and 999 will be accepted as 254. Any number over 999 will be rejected.

Example: to limit the calls to 60 minutes dial **\*6133\*#[hear a confirmation tone]60#[hear a confirmation tone]**.

Dial **\*6133\*0#[hear a confirmation tone]** to disable this feature – the calls will not be limited and can last forever.

### **4.8 Network-Lock**

#### **4.8.1 Feature description**

The Network-lock feature is designed to prevent the use of an unauthorized SIM card in the Smartcell 111L. Once the Network-lock feature is enabled and an unauthorized SIM card is used, the Smartcell 111L will not be able to handle any incoming or outgoing calls. It will generate an error tone on outgoing calls and will reject incoming calls.

#### **4.8.2 Feature Programming**

The Network-lock feature may be disabled or enabled when you get the unit. In some cases you may be able to change it. If you want to change it - call your technical support.

### **4.9 Restore Factory Default**

#### **4.9.1 Feature description**

This feature is useful if you get a unit that was previously programmed with unknown parameters and you want to bring it back to the same parameters it had when it was shipped from the factory.

**Note:** the PIN code of the 111L will be restored to its default value. The PIN code of the SIM card will not be changed. It is recommended to change the PIN code of the SIM card to 1234 before this operation or else the 111L will start with “wrong PIN code” status.

#### **4.9.2 Feature Programming**

Make sure you know the PIN Code of the SIM and the unit.

Dial **\*\*1343\*\*#[hear a confirmation tone]** to enter to programming mode.

Dial **\*5470\*#[hear a confirmation tone]**

Power down the unit and reconnect it to the power supply. The unit is now ready to be reprogrammed from fresh, same as it was when shipped from factory.

#### 4.10 DTMF Programming Summary

No	Code	Function	Remarks
4.1	**1343**#	Enter programming mode	To exit programming mode – go on-hook.
4.2	*5580*#	Change Rx/Tx audio gain	This is followed by *70* for TX and *71* for Rx. Actual changes with telephone keypad keys
4.3	*3210*#	Update immediate dialling length The 111L will start dialling immediately after receiving this number of digits	This is followed by the required number of digits for immediate dialling and then by #. Enter 0 length to deactivate immediate dialling.
4.4	*8200*#	Enable CLIR	Enable display of GW number on remote called phone
	*8201*#	Disable CLIR	Disable display of GW number on remote called phone
4.5	*6100*#	Enable SIM PIN code feature	This activates the SIM PIN code request on the SIM
	*6101*#	Disable SIM PIN code Feature	This de-activates the SIM PIN code request on the SIM
	*6110*#	Change SIM PIN code	This is followed by the old PIN and twice the new PIN
	*6122*#	Clear unit lock after wrong PIN	This clears the unit's lock after using one time a wrong PIN of a SIM to prevent PUK situation
4.6	*5351*#	Erase toll restriction table	
	*9190*#	Activate toll restriction feature	
	*9193*#	De-activate toll restriction feature	
	*9194*#	Add toll restriction content mode	Add # after each allowed number you want to add to the table (white list)
	*9195*#	Remove entry from toll restriction table mode	Add # after each number you want to remove from the table
4.7	*6133*#	Call duration limit	Enables to limit the length of calls. Insert 0 for no limit (default value is 0)
4.8		Network-lock This feature can be changed only by tech support	
4.9	*5470*#	Restore Factory Default	Make sure you have a record of the parameters, especially the PIN code. For the back to default to take place, you need to reset the unit after this command.

#### 4.11 Default Values of Features

- No toll restriction table (hence toll restriction is inactive)
- Network lock inactive or active (depends on the version)
- Rx gain – -8db, Tx gain – +36db
- CLIR enabled (the network defines whether to send or block CLI)
- SIM PIN code request disabled. Default PIN code is 1234

- Immediate dialing length is 0 (disabled)
- Maximum call duration is not limited.

#### **4.12 Call Progress tones**

<b>Type</b>	<b>ON cadence</b>	<b>OFF cadence</b>	<b>Remarks</b>
Dial tone	Continuous		
Busy tone	0.5 Sec	0.5 Sec	
Error tone	0.2 Sec	0.2 Sec	
Distinctive tone	0.2 Sec	0.1 Sec	Incoming ring in off-hook, before dialling started
Confirmation tone (for programming)	0.4 Sec	0.1 Sec	3 beeps
Rejection tone (for programming)	0.4 Sec	0.1 Sec	2 beeps

## 5 *Trouble Shooting*

<b>No</b>	<b>Problem</b>	<b>Indications</b>	<b>Solution</b>
1	Unit does not respond	None of the LEDs is on, no dial tone	- Reconnect the power supply - Replace the power supply
2	Unit does not respond	Status LED does not stop blinking	- Reconnect the power supply
3	Unit does not respond	Status LED blinks fast	- Replace the SIM with a good SIM that does not require PIN code - Insert a SIM of another network
4	Bad or no audio	Reception LED red	- Wait few minutes and try again - - Replace antenna to a better location - Replace antenna with another antenna
5	No dial tone	No dial tone	- Check telephony cable - Try using another phone
6	Dial tone does not stop	Dial tone continues after dialling first digit	- Use a different phone - Reset the unit (reconnect power supply)
7	Can not connect to a destination	The unit responds with an error tone after dialling	- Verify that you have a valid SIM card - Check that the destination does not conflict with the toll restriction table - Disable toll restriction table - Try using a SIM without PIN
8	Can not connect to a destination	The network sends an error message	Check that the number dialled is not longer than specified by immediate dialling
9	Voice level is too low or too high		Reprogram the voice levels
10	Calls longer than a certain time are cut	Call is cut before on hook	Check that call duration is not too short

## 6 Specifications

<b>General Specifications</b>	
Main Supply Voltage	100-240 VAC, 50-60 Hz
Supply Voltage	9 VDC
Current Consumption	1 A max
Operating temperature	0 °C to 40 °C
Physical dimensions	165x64x33.4 (LxWxH [mm])
Standards	Full CE
<b>Line Specifications</b>	
Line loop current	40 mA max
Line supply voltage	- 48 VDC $\pm$ 10%
Line impedance	600 Ohm
Dial tone	400 Hz $\pm$ 1%
Ring generator	42 Vrms/25 Hz
Line signaling	DTMF
Line connector (2W TIP/RING)	RJ11-C (pin 2, 3- TIP, pin 4, 5- RING)
<b>Data Port Specifications</b>	
Interface port	RS232
Protocol	AT Command Compatible
<b>GSM Channel Specifications</b>	
Dual band GSM	900/1800Mhz
Standards	Type Approval CE mark.
GSM module	WaveCOM Wismo 2D
<b>Optional Features</b>	
Fax	Requires a data connection between the Smartcell 111L and a PC with Winfax version 10 and up.
SMS	Requires a data connection between the Smartcell 111L and a PC running an SMS application that supports WaveCOM module.
<b>Safety Standards</b>	
N°QUAEMC_EN.15242C	Conforms to the EMS requirements of: EN 301 489-7 V1.1.1:2000, AS/NZS 3548: 1995 with Amendments 1 & 2:1997
N°QUASAF_EN.15242C	Conforms to the Safety requirements of: IEC 60950: 1999, EN 60950: 2000, AS/NZS 60950:2000 and ACA TS 001:1997 standards

\*Specifications are subject to change without notice