http://www.areasx.com

SMS Machine HTTP PUSH

Gateway LAN – SMS with WAP Push Technology

User Manual

Firmware Version 1.0.9

Congratulation for choosing SMS Machine!

Area SX srl thanks You for the preference you gave us by choosing an SMS Machine device and is always available for any commercial or technical information.

Contacts

Updated information about SMS Machine devices and latest software release are available on our Web Site at the address http://www.areasx.com.

http://www.areasx.com

It's also possible to contact us at the following:

Phone: +39 06.57.17.26.90 and +39 06.57.17.26.79
Fax: +39 06.57.17.26.95
E-mail: info@areasx.com

Warnings

Contents and copyright

Information belonging to this manual may be changed or updated without any warning.

Some terms used throughout this document may be other company registered trademark. They are mentioned only with explanation aim and the intention of respecting authorized owner rights.

Area SX srl will not be considered responsible for eventual damages or losses deriving from this document wrong information.

Safety information

SMS Machine/HTTP PUSH usage may disturb or damage some nearest electronic equipments operations.

So it is recommended to avoid SMS Machine/HTTP PUSH installation close to:

- Biomedical electronic devices
- Aircraft onboard equipments
- Security devices
- Audio, radio and television systems

A complete Dual Band GSM Modem is part of SMS Machine/HTTP PUSH.

This device has the same technical characteristics as normal Dual Band cellular phone, so it is recommended the same usage precautions.

In particular it is recommended not to use SMS Machine/HTTP PUSH wherever it is explicitly forbidden the use of cellular phone or generic telecommunication equipment.

Introduction to this manual

This manual is intended for users who have to manage the following kind of SMS Machine:

- SMS Machine/HTTP PUSH

Basic knowledge of computer science, in particular TCP/IP network, is necessary to read this manual.

Updated versions of this manual may be freely downloaded from our web site at the address http://www.areasx.com.

Table of contents

Product description

SMS Machine/HTTP PUSH is a telecommunication device that allows your Web applications to be quickly integrated with SMS messaging over GSM network.

The new of this updated version is the deployment of WAP PUSH technology that allows sending not only ordinary SMS text messages but also **active** SMS.

In fact the Push mode allows sending SMS messages formatted so they can directly interact with destination mobile device. In particular it is the parameter called **Destination Port** that determines the action to be taken on the terminal.

A typical example is that regarding the hyperlinks sending. An SMS text message containing a link causes on destination terminal only visualization (only few devices can recognize the link), but an SMS Push allows notifying directly the information with the option of immediate connection (if this option is enabled).

Another example needs a further and deeper level of interaction with terminals supporting Java J2ME applications. In this case, the SMS Push message can be handled directly by the application running and listening on a specific port so that a related action, according to the message content, may be executed. For example remote control applications, chat, games, etc.

SMS Machine/HTTP PUSH

In a 125x175x45 mm case, SMS Machine/HTTP PUSH encloses a Quad Band GSM modem, capable of receiving and sending SMS messages over GSM network, and a network processor with Ethernet connection, capable of internetworking with Web applications on every platform.

In order to work properly, SMS Machine/HTTP PUSH needs an ordinary SIM card, belonging to any mobile operator that is qualified to send and receive SMS messages.

On reception: SMS Machine/HTTP PUSH receives SMS on the SIM card inserted in the modem and it forwards the messages contents towards any Web script (.asp, .php,.pl, .cgi, .jsp, etc..) with an HTTP POST transaction. Some HTTP parameters will contain the message sender phone number, the message sending date and text.

On transmission: SMS Machine/HTTP PUSH accepts HTTP transactions in POST mode, it extracts message text and addressee phone number from HTTP parameters and sends the SMS on GSM network. Of course among these needed parameters, there is also the port related to the SMS that determines if it is text message or Wap Push message.

Connections between SMS Machine/HTTP PUSH and Web Server

Using SMS Machine/HTTP PUSH, there's no need of serial RS232 modem or managing applications that run apart the Web Server, but you need only to write simple interface scripts, maybe in the same programming language you use for the rest of your Web site or application.

SMS Machine/HTTP PUSH installation

Package description

SMS Machine/HTTP PUSH is delivered inside its cardboard box, well protected from mechanical shocks that may occur during transport.

Once you opened the package, you will find the following:

1. SMS Machine/HTTP PUSH
2. A set of screws to lock SMS Machine/HTTP PUSH case after SIM insertion in the GSM modem
3. User documentation both the paper one and over a CD
4. A GSM antenna with magnetic base and 2.5m cable
5. A power adapter

SMS Machine/HTTP PUSH package

Each component has been accurately checked before delivering SMS Machine/HTTP PUSH, as testified by the technical certificate given with the device.

Please avoid using third party components that may damage SMS Machine/HTTP PUSH inner devices!

Installation requirements

To succeed in SMS Machine/HTTP PUSH installation, you need:

1. **A SIM card** belonging to any mobile operator, both prepaid or not. Before inserting the SIM card into SMS Machine/HTTP PUSH, you should try it with an ordinary mobile phone to verify that it is able to send and receive SMS and PIN is disabled. You have also to cancel the mobile operator Service Centre number from the SIM: you will choose it during configuration.
2. **A good GSM field level**. Before inserting the SIM card into SMS Machine/HTTP PUSH, you should use it with an ordinary mobile phone to verify that there is a good GSM field level where you will place the antenna. The provided antenna can be positioned up to 2.5m far from the device so a better signal coverage can be obtained for a regular operation.
3. **Ethernet connection**. SMS Machine/HTTP PUSH has a 10Mbit Ethernet socket to be connected on your LAN by an Hub/Switch. Please be sure that the Hub/Switch socket is 10Mbit or 10/100Mbit. Beyond physical connection to your network, you need some information about it (IP addresses, Netmask, Gateway, DNS Server) to configure SMS Machine/HTTP PUSH. So you may need to refer to your network administrator to collect this kind of information.
4. A 220 VAC power supply.

SIM card insertion

To protect SIM card by accidental removing from the modem during operation, its socket is inside SMS Machine/HTTP PUSH aluminium case. So to reach SIM card socket, unlock the four screws using a crossed screwdriver and make the case cover slide ahead as you can see in the next figure.

SMS Machine/HTTP PUSH case opening

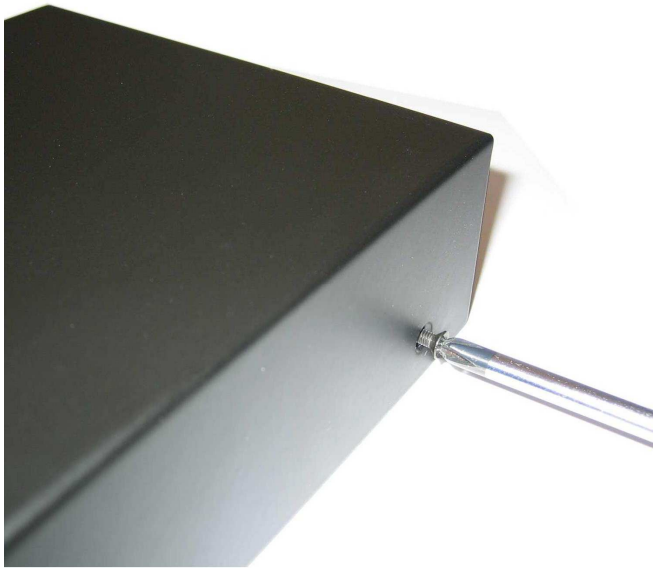
Once you opened the case, find the GSM modem and insert the SIM card in its socket with the golden electric contacts turned towards the bottom and the cut corner ahead, as showed by the sketch on the modem itself or by the next figure.

SIM card insertion

Push the SIM card to the bottom of its socket until you will feel a little leap which means it is locked.

When it is necessary to unlock the SIM and release it, you need to slightly push on its edge in the same direction of insertion. An inner spring will push the SIM card outside enough to grab it.

To close the case, make its cover slide backward paying attention to the signalling LEDs: they must be correctly aligned to their front panel holes. Now you need to lock the case with the provided four screws, as shown by the next figure.



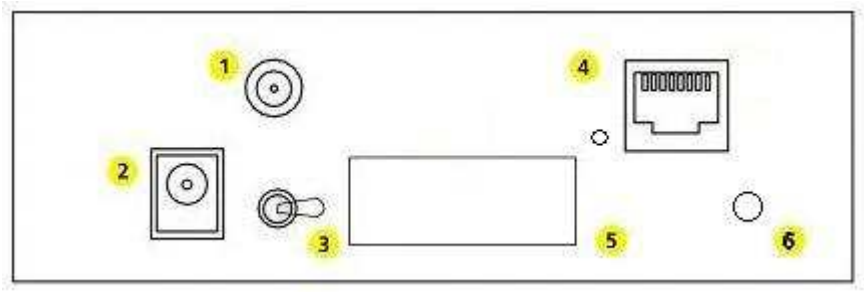
SMS Machine/HTTP PUSH case locking

Connections

Rear panel

Next figure shows a sketch of SMS Machine/HTTP PUSH rear panel. Here the description:

1. **FME socket for GSM antenna**. In order to protect GSM modem from damage, avoid carefully turning on SMS Machine/HTTP PUSH without having already connected antenna cable to this socket.
2. **Power supply.** Use only the provided power adapter to protect SMS Machine/HTTP PUSH inner device from damage due to third party component.
3. **Power switch**
4. **Ethernet RJ45 socket** for LAN connection, pin hole for link LEDs status checking
5. Entry for optional expansions
6. Button for factory configuration restore



SMS Machine/HTTP PUSH rear panel

GSM antenna connection

Free the provided GSM antenna cable and insert the FME connector into the socket on SMS Machine/HTTP PUSH rear panel as previously described. This connector has a threaded metal ring that has to be screwed till the end without forcing.

GSM antenna connection

Attention!! Avoid absolutely turning on SMS Machine/HTTP PUSH without having already connected the antenna. Otherwise irreparable damage may occur to the inner GSM modem.

Power supply connection

Insert the power adapter connector on SMS Machine/HTTP PUSH rear panel, then plug it into a power supply socket. Turn on the switch and check if the green LED on front panel is correctly lit.

Power supply connection

Ethernet network connection

Use an ordinary UTP cable with RJ45 plug to connect SMS Machine/HTTP PUSH to a network Hub/Switch. Be sure that Hub/Switch socket supports 10Mbit Ethernet devices. After turning on SMS Machine/HTTP PUSH check if the link LED next the socket is correctly lit. You can see it through the pin hole next the Ethernet socket on the rear panel.

Network connection

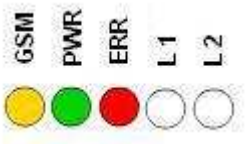
SMS Machine/HTTP turning on

Once all the connections are realized as previously described, you may turn on SMS Machine/HTTP PUSH using the switch on the rear panel.

Front panel

On front panel you would be able to see signalling LEDs as the following:

- **GSM LED** (yellow) Blinking
- **PWR LED** (green) Turned on
- **ERR LED** (red) Turned on
- **L 1 and L 2 LED** (green) Turned off



After about 30 seconds, ERR red LED has to turn off to showing modem registration over GSM network and firmware correct operating status. If it doesn't happen, try to move GSM antenna and turn on SMS Machine/HTTP PUSH again.

If it doesn't happen again, be sure you have done the following:

- Disabled SIM card PIN request, using an ordinary mobile phone
- Checked that SIM card is qualified
- Checked that there is good GSM field level where you placed the antenna

Front panel LEDs meaning

GSM yellow LED

This LED shows GSM modem operation. A fast blinking means that the modem is attempting to register over GSM network. When blinking becomes slower, it means modem is registered and SMS Machine/HTTP PUSH is ready.

PWR green LED

This LED shows a correct power supply status.

ERR red LED

This LED is on when SMS Machine/HTTP PUSH microprocessor encounters an error. It is also on when you have just turned on SMS Machine/HTTP PUSH until the modem is registered over GSM network, then it turns off.

L 1 green LED

This LED shows that SMS Machine/HTTP PUSH is sending or receiving a massage over GSM network. If L1 and ERR are on together, it means that SIM card is missing or it haven't been correctly inserted in the modem.

L 2 green LED

When this LED is turned on, it means that the Web Server for incoming SMS receipt, is unreachable on the network.

SMS Machine/HTTP PUSH configuration

Network configuration

First of all, you need to configure SMS Machine/HTTP PUSH with right IP address and netmask in order to connect it to your network.

SMS Machine/HTTP PUSH has a default network configuration with IP address **192.168.0.101** and netmask **255.255.0.0**.

Be sure that SMS Machine/HTTP PUSH is connected to your LAN through an 10/100Mb Hub/Switch and your PC IP address is between 192.168.0.1 and 192.168.0.254, except obviously 192.168.0.101, and netmask is 255.255.0.0.

You may connect your PC and SMS Machine/HTTP PUSH not only through an Hub/Switch, but also directly with a network crossed cable (CROSS-OVER).

Once your PC is under this condition, you would have to reach SMS Machine/HTTP PUSH by a simple *ping* towards its default address 192.168.0.101.

To execute a *ping* towards SMS Machine/HTTP PUSH, you have to launch a DOS command prompt and type:

C:>ping 192.168.0.101

If the *ping* answer is correct, you may go ahead to configuration step.

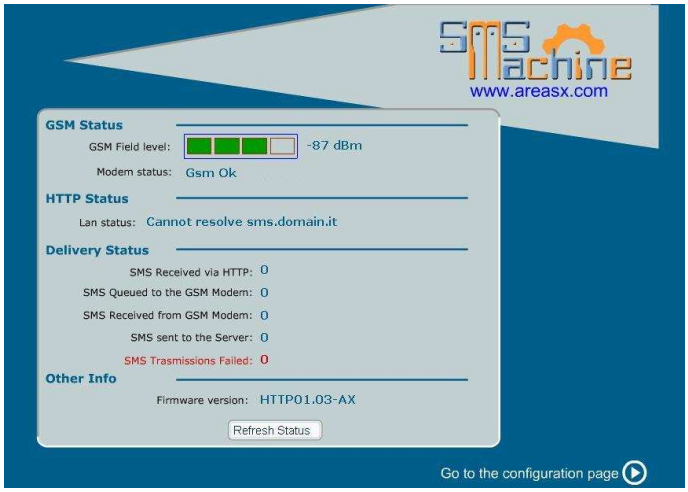
Configuration WEB interface

Of course, in order to work properly, SMS Machine/HTTP PUSH must be configured as a first step.

This operation is very simple in the current firmware version, since no additional software is needed. In fact the machine supports a micro web server with a front page developed in Macromedia Flesh, so you have just to use your favourite browser from a PC and link it toward the machine default IP address:

http://192.168.0.101

The accessed main page is shown in next picture. No operation is possible yet at this step, but only status monitor is allowed. In fact the home page summarizes the status of the SMS Machine/HTTP PUSH and all the displayed parameters will be analyzed in the following sections.



Home page of the SMS Machine web interface

It is now important to remind that the browser you use must support an appropriate Flash Player.

From the home page you may enter the login page, that is needed to actually execute configuration operation, simply by clicking on **Go to configuration page**.

The login page is shown in the following picture, the default password to type in is SMS1234 and then just clock on **Login** button.

Login page

If the login is successful, you will enter the functions menu page that you can see in the following picture. If it is not the case, then check the password or the network settings as described in the previous section.

Functions menu

Starting from this menu, it possible to access the configuration of all the SMS Machine/HTTP PUSH parameters. Each configuration interface has a button labeled **SAVE**, to actually load SMS Machine/HTTP PUSH with new parameters. Please note that if this buttons is not clicked, SMS Machine/HTTP PUSH will not be updated with the changes you made.

Machine ID Number window allows SMS Machine/HTTP PUSH identification with its Mac Address.

Each function and configuration parameter description follows.

Get ID Number

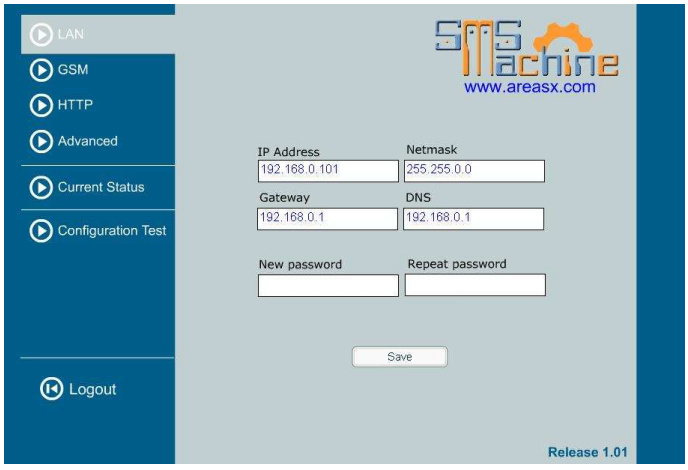
As soon as you logged, SMS Machine/HTTP PUSH identifier is not yet available, as shown in the windows in the middle of the interface. Clicking on **Get ID Number** button, it is retrieved with a request to the SMS Machine/HTTP PUSH. The ID is the Mac Address itself.

To come back to this function, you need to **logout** and **login** once again.

SMS Machine/HTTP PUSH ID Number

LAN

This interface allows the configuration of all parameters related to SMS Machine/HTTP PUSH networking. Be careful in configuring correctly these parameters: in case of mistake, you would not be able to reach SMS Machine/HTTP PUSH on your network anymore. If it happens, you may follow the procedure described ahead for factory configuration restoring.



LAN: network parameters configurations

IP Address

It is the new IP address you eventually want to assign to SMS Machine/HTTP PUSH. In fact, if default IP address **192.168.0.101** doesn't fit to your network, you may chose whichever other address to assign to SMS Machine/HTTP PUSH.

Attention: once changed the IP address or other network parameters, see also next sections, SMS Machine/HTTP PUSH notifies with a popup that configuration has changed and it reboots network interface. So it doesn't respond anymore to menu commands, except for the information stored in browser cache memory. For this reason you have to **logut** and link the browser to the new address assigned to the SMS Machine/HTTP PUSH.

Netmask

It is the netmask of the network where you want to use SMS Machine/HTTP PUSH. Default value is 255.255.0.0. As said before, changing the netmask you need to **login** once again.

Gateway

It is the IP address of a server able to route on the outside network all the packets not addressed to local network machines. This parameter must be configured only if SMS Machine/HTTP PUSH needs to reach a server outside from the local network (e.g. on the Internet).

DNS

It is the IP address of an effective DNS server. This parameter must be configured only if server names are used instead of their IP address.

New password – Repeat password

These two fields have to be filled with the same string, if it is desired to change SMS Machine/HTTP PUSH access password. If you forget this password, you may follow the procedure described ahead for factory configuration restoring.

GSM

This page allows configuring the Service Centre of the Mobile Operator to which belongs the SIM card used in the SMS Machine/HTTP PUSH.SIM card parameters configuration.

GSM: Service Centre configuration

Message service center number

It is the Service Centre number for SMS sending and it is different from one Mobile Operator to another. Clicking one of the three major mobile operator logos, you will automatically fill this field. Please remember to cancel this information from the SIM card, with an ordinary mobile phone, before using it on SMS Machine/HTTP PUSH.

HTTP

When an SMS is received, SMS Machine/HTTP PUSH sends its information (message text, sending number, sending date and optionally an authentication code) to a web server script and cancels it from the SIM card memory. In other words, the machine works as a browser does when it sends to a web script some data inserted in a form. So the Machine executes an HTTP/POST request and the parameters of this page define this communication mode.

HTTP: SMS receipt script configuration

Destination server Address

This parameter must be configured with the IP address or name of the web server where the SMS Machine/HTTP PUSH sends the received SMS. Please note it must be typed without the http:// protocol, e.g**. www.areasx.com** or **192.168.0.1**.

Destination server Page

This parameter must be configured with the complete path and the name of the script listening on the Web Server where the SMS Machine/HTTP PUSH sends the received SMS. Please note it must be typed with an initial slash / and with the classical nested path, e.g. /SMS_Machine/Received_SMS/rxsms.php.

In other words the two previous parameters joined together form the complete URL used by the SMS Machine/HTTP PUSH at SMS messages reception.

TCP Port number

It is the port number on which the HTTP request is sent. Default value is 80, “HTTP well kwon port”.

Security code

It is the key word that SMS Machine/HTTP PUSH may use for its authentication to the reception web script. Of course this value must match the one used by the web script itself.

Use HTTP HEAD for script checking

SMS Machine/HTTP PUSH checks for the availability of the web script destination of the received SMS, configured as described above. In fact, if the script were unavailable then it would be useless to start http transaction engaging the microprocessor and its network interface.

This control may be carried out in two ways, depending on this parameter setting.

If this box is unchecked, then SMS Machine/HTTP PUSH executes the control simply opening and closing a TCP/IP connection toward the server and its port, configured as described above. On the contrary if the box is checked, then the script control is deeper and it is carried out using an HTTP/HEAD request.

Please note that for some web server implementation, this request causes the response of just the script header without the complete script code execution. For other versions this request may cause the complete script code execution, so you have to keep in mind and/or verify this aspect when the option is used.

Enable TCP Server checking

Sometimes it may be useful disabling completely this check, in one of the two ways just described. To do so, just keep the checkbox not flagged.

Please note that in this case the SMS Machine/HTTP PUSH will always try to send to the Server the received messages.

Send a POST when a RING is received

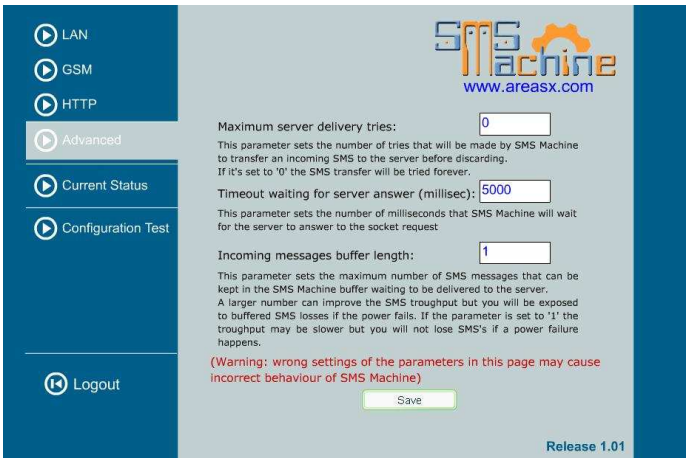
The SMS Machine/HTTP PUSH can manage also an incoming call, if the used SIM card is enabled for voice traffic.

The behaviour of the machine, in case of incoming call, is very similar to that when an SMS is received. For this reason, please see the next section dedicated to this function for further details.

At this moment, just note that the incoming call managing function is enabled or disabled according to the selection of this checkbox.

Advanced

Even if the parameters, configured as described in the above sections, are sufficient to let the SMS Machine/HTTP PUSH work properly, there are also other advanced parameters under the user control designed to optimized the http communication with the destination script. In this section they will be described in detail reminding also their default value.



Advanced: advanced parameters of http communication

Maximum server delivery tries

This parameter means the maximum number of attempts that SMS Machine/HTTP PUSH executes for transmitting the received SMS data toward the destination script. In fact, it is not ensured that the transaction is successful at the first attempt, for example for a temporary unavailability of the server, network traffic or, simply, because the script is not correctly configured. In these cases, the machine

will discard the SMS message, after the number of attempts configured, and passes to manage next message.

On the contrary, if this parameter is set to 0, the default value, then the SMS Machine/HTTP PUSH will never discard the message and try forever the transmission to the reception script.

So it is evident that in the first condition an higher speed in transmission of received SMS to the script can be obtained, but the risk is SMS messages lost in case of discarding for any transient reason of failed attempts. In the second case, no message will be lost, but the communication could slow down in difficult condition, for example for exceeding network traffic.

An extreme case is the definite unavailability of the reception script that can cause the overflow of SIM card memory reserved for received SMS. Then the Service Centre of the Mobile Operator will cease new delivery attempts, waiting for SIM card memory emptying by the SMS Machine/HTTP PUSH, and store the exceeding messages for hours, as configured in mobile phone settings typically from 24h to 72h.

Timeout waiting for server answer

This parameter means the maximum time that can pass between an HTTP/POST request, carried out by the SMS Machine/HTTP PUSH toward the reception script, and the related response with a 200OK. Once this timeout has expired, the machine assumes the transaction failed and executes the configured operations as described in previous section: so it tries a new attempt or discards the SMS message cancelling it from SIM card memory. The unit is millisecond and the default value is 5000 ms (5 sec).

The criterion in choosing this parameter needs the knowledge of the reception script behaviour in normal condition (e.g. elaboration delay, delay for database access, etc.) and the network traffic or the routing delay (e.g. over LAN to Internet).

In fact you have to note that low values for this timeout may speed up the communication, but the risk is that SMS Machine/HTTP POST assumes as failed simply a slow transaction so causing useless new transmission attempts. Vice versa, high values for this timeout may slow down the communication since it takes much time in recognizing the failed ones, but on the other hand prevent from useless retransmission in case of elaboration/routing delay.

Incoming messages buffer length

The SMS Machine/HTTP PUSH can search for new SMS messages received on the SIM card one by one or more. In this second case, they will be temporarily stored in a buffer waiting to be forwarded to the reception script. This parameter just defines the buffer length, default value is 1 and maximum value is 10.

A larger buffer can speed up reception operations since fewer accesses to SIM card memory are needed, but on the other hand the risk is messages lost since the buffer memory is cancelled, for example, if the machine is turned off. On the contrary buffer length value to 1 prevents from messages lost even in case of accidental machine power down, since they are stored in SIM card memory, but it could slow down reception operations.

Now it is clear that the reception operations may be speeded up or slowed down rather they may be more or less reliable, in terms of SMS lost, according to the modulation of three parameters described above. For this reason it is highly recommended their accurate evaluation according to the condition of the network where the SMS Machine/HTTP PUSH will work and the service reliability features.

Communication parameters name

Even though the communication http interface used by the Machine will be described in appendix A, by now it can be already useful to describe, with a certain level of details, the http parameters for the communication between the Machine and the external application, both for sending and receiving SMS.

Anyway, please refer to the Appendix for all the details about the new functions: the reception of extended SMS (also know as chained message, with more than 160 chars), transmission of SMS with

delivery notification request.

- Ordinary SMS reception (up to 160 chars)

Web script invoked by SMS Machine/HTTP PUSH must manage four parameters for each received SMS, using POST method. Name and meaning of these parameters are the following:

- **sms_num** is the sending phone number
- **sms_text** is the message text
- **sms_date** is the date and time of SMS registration on GSM network (i.e. transmission date) in format YYYY-MM-DD HH:MM:SS +GMT:XX where
  - YYYY-MM-DD is the date in format year, month, day
  - HH:MM:SS is the time in format hour, minute, second
  - +GMT:XX is the offset from Greenwich time. Sometimes this information is not correctly managed by mobile operators
- **sms_code** may contain the key word for SMS Machine/HTTP PUSH authentication upon the web script

- Incoming call reception

As briefly described in a previous section, when an incoming call is received by the SMS Machine/HTTP PUSH then it hangs up and executes the same Http Post request toward the configured web script and sending the same parameters. Some further details is needed.

- **sms_num** is the calling phone number
- **sms_text** has always the content “INCOMING CALL RECEIVED”
- **sms_date** has always a null date as “00-00-00 00:00:00 +GMT:00”
- **sms_code** may contain the key word for SMS Machine/HTTP PUSH authentication upon the web script

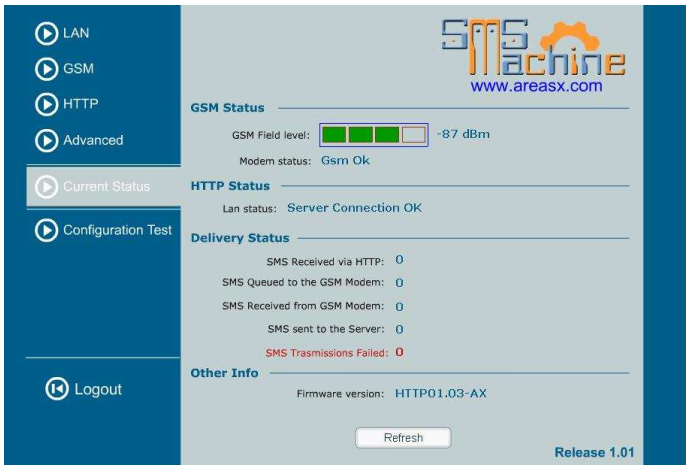
- Ordinary and extended SMS transmission (up to 300 chars)

For SMS sending, SMS Machine/HTTP PUSH acts like Web server using its **smssend.cgi** inner script that accepts four parameters delivered in an HTTP POST transaction. Name and values of these parameters are the following:

- **num** is the addressee phone number
- **text** is the message text. 160 chars are available for ordinary SMS, up to 300 for extended SMS (or chained SMS). The exceeding chars are ignored.
- **Push** defines if the SMS message is the normal kind (Push=0) or Wap Push (Push=1 or other value different form 0). Wap Push kind messages are able to interact with the destination mobile phone, as already described in previous section. In particular with the value Push=1, the SMS delivers a hyperlink while different values can interact with J2ME application, for example. See following sections for the exact message format description when the SMS Wap Push kind is used
- **Pwd** is the script access password and it is the same you use with the login

Current Status

This interface shows some information about SMS Machine/HTTP PUSH current operation status. **Refresh** button reloads this information.



Operation status

GSM Status

- **GSM Field Level**

It is an indicator of GSM field just found by SMS Machine/HTTP PUSH modem. This value is measured in dBm but also a graphical representation is shown.

- **Modem Status**

It is a message sent by the modem and it describes the modem status on GSM network.

HTTP Status

- **Lan Status**

It is a message that describes SMS Machine/HTTP PUSH status on the local network and the availability of the destination script.

Delivery Status

In this section you find some counters related to SMS transmission and reception. All these parameters are not permanent, it means they are set to zero when the SMS Machine is turned off.

- **SMS Received via HTTP**

It is a counter of messages sent to the SMS Machine by mean of HTTP POST requests and accepted in the Microcontroller sending queue.

- **SMS Queued to GSM Modem**

It is a counter of SMS messages that the SMS Machine actually sends to its modem, ready to be transmitted by the SIM card.

- **SMS Received from GSM Modem**

It is a counter of messages received by the SIM card inside the SMS Machine/HTTP PUSH modem.

- **SMS sent to the Server**

It is a counter of messages received by the SMS Machine and forwarded through HTTP POST requests to the configured script.

- **SMS Transmissions failed**

It is a counter of SMS messages that the SMS Machine wasn't actually able to delivery to the GSM

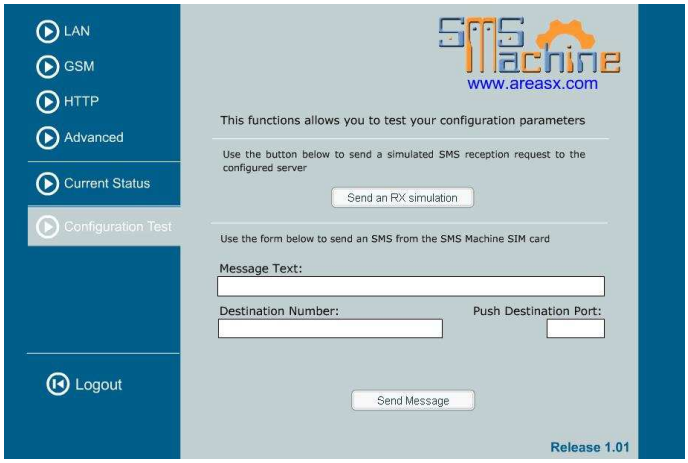
network, for example because of no credit, wrong SMS Center or low field. These messages, after the sending attempts, are discarded from the queue.

Other Info

It is the firmware version stored in SMS Machine/HTTP PUSH memory.

Configuration test

This page allows you to test SMS Machine/HTTP PUSH settings, both for sending and receiving messages.



Configuration test page

Send an RX simulation

This is the button to emulate SMS reception and it allows easy checking of HTTP configuration. In fact SMS Machine makes an HTTP request to the web server and the script you set in HTTP page, using default parameters.

Send Message

This is the button to make the SMS Machine send a message and so it allows easy checking of the correct modem working, of the SIM card and of the mobile operator Service Centre setting.

- **Message Text**

If you want to send an ordinary SMS, then this field has to be filled with the message text, up to 160 chars available. The Push Destination Port parameter must be left blank or equal to 0 (see also next items).

If you want to send a Push SMS containing a web-link to the destination mobile phone, then this field has to be filled with the following format:

www.areasx.com*This is a link to Area SX web site

It means that the format must contain the destination URL (without the http:// protocol) and the text displayed in the SMS, joined together by the character * without any space. Please note that the Push Destination Port parameter must be set to 1 (see also next item).

Finally, if you want to send a SMS formatted on a different destination port, then the text will be composed according with the specific features of the application that will manage it.

- **Destination number**

It is the SMS addressee phone number.

- **Push Destination Port**

It is the option indicating the SMS message transmission mode.

If this parameter is set to 0 or it is missing (since 0 is the default value), then a ordinary text SMS will be sent.

If this parameter is set to 1, then a WAP PUSH SMS message will be sent, driving a hyperlink on the destination mobile terminal. Of course the text field has to be configured as described above.

Finally, if this parameter is set to other values, then you have to know first that just this port number is used by the application running on the mobile terminal (typically J2ME) and responsible for management of SMS messages sent with this format.

Logout

It is the configuration interface exit and then the main page will be shown.

Factory configuration restoring

Whenever you want, it is possible to restore SMS Machine/HTTP PUSH factory default configuration.

This operation may be useful when it is impossible to access to SMS Machine/HTTP PUSH because, for example, you forgot IP address or password.

In order to complete this operation follow this procedure:

- Turn off SMS Machine/HTTP PUSH
- Find the reset button on the rear panel, as shown in next figure
- Press this button and keep on pressing it while you turn on SMS Machine/HTTP PUSH again
- Keep on pressing the button and wait until ERR and L2 LEDs are lit at the same time.

This way SMS Machine/HTTP PUSH will restart with all parameters default configuration, in particular you will access it again using IP address 192.168.0.101 (netmask 255.255.0.0) and password SMS1234.

Button for factory default configuration restoring

Technical characteristics

Performances

- Transmission top speed: 300 SMS per hour
- Reception top speed: 300 SMS per hour

GSM modem characteristics

- GSM Modem Telit GM862 Quad band

Network microprocessor characteristic

- Core module Rabbit Semiconductor RCM3700 16 bit 22Mhz
- 512Kb SRAM memory, 512Kb FLASH memory
- Ethernet RJ45 10Base-T socket on board

Power adapter electrical characteristics

- Wall plug
- Input voltage 230 Volt AC 50-60Hz
- Output voltage 12 Volt CC/DC 500mA

SMS Machine/http electrical characteristics

- Average current consumption 300mA
- SMS Machine/HTTP PUSH operating temperature: 0 – 55 ℃

Technical support

SMS Machine Home Page

At the URL http://www.smsmachine.it you will find all SMS Machine products official home page.

Starting from this page it is possible retrieve the following information:

- SMS Machine new version announcement
- Updated version of user documentation
- Detailed technical documentation
- PHP, ASP and Visual Basic using examples
- Support software

If you have any technical or commercial question, you may contact us by mail, phone or fax. Our references are shown throughout this manual.

Firmware update

SMS Machine/HTTP PUSH firmware is periodically updated by Area SX srl technical staff in order to improve performances and functionalities.

SMS Machine/HTTP PUSH firmware update availability is announced on the official SMS Machine home page at the URL www.smsmachine.it or on our company web site www.areasx.com.

For firmware updating, you need optional Rabbit programming cable **R101-0542** and its managing software. These products are available on the same web sites. This cable will be connected, on one side, to a RS232 serial port of a Windows PC and, on the other side, to the core module **Rabbit 3700**. The managing software will download new SMS Machine/HTTP PUSH firmware.

An alternative and easier way to execute firmware update is over the LAN. Contact Area SX for detailed information.

Further information about Rabbit 3700 Network Processor, that are used on SMS Machine products are available on web site http://www.rabbitsemiconductor.it

Appendix A) HTTP interface

In this section all the cgi scripts supported by the SMS Machine/HTTP PUSH will be described in detail when it acts like an http server, but also its behaviour as an http client. Please note that in the following sections the device will be simply called with the name SMS Machine.

SMS Machine identification

SMS Machine is identified not only by its IP address, that can be changed as you want, but also by its Mac Address that cannot be changed. Mac Address is a twelve hexadecimal character string that can be retrieved by calling an SMS Machine inner CGI script with an http post request as in the following example:

```
http://smsmachine_address/queryid.cgi
```

and sending the parameter

- **Pwd** password that allows SMS Machine to accept the transaction

The SMS Machine answers with a string, without any HTML tag but however displayable by a browser, that contains some pairs of parameter "**name=value**" tied together by the character **&**, as in the following example :

```
errno=0&desc=Machine ID Reported&MachineId=0090C2D3505A
```

- **errno** is the error code for the transaction, values are 0 if it is OK or 1 for wrong password
- **desc** describes shortly the transacion result, for example "**Access denied**"
- **MachineId** (e.g. MachineId = 0090c2c68ab5) is the Mac Address that identifies definitively SMS Machine

SMS reception

When SMS Machine receives an SMS, message data are sent towards a Web script in an HTTP POST transaction. This means that SMS Machine emulates a Web browser behaviour when the user fills a form and submits the data, as already shown in the configuration section dedicated to the HTTP setting. For example, if you use the following script:

```
http://www.areasx.com/smstest/rxmsg.php
```

for each incoming SMS, SMS Machine/HTTP will call **rxmsg.php** script inside the **smstest** folder of **www.areasx.com** Web server sending four parameters:

- **sms_num** SMS sender phone number
- **sms_date** SMS sending date with the format YYYY-MM-DD HH:MM:SS +GMT:00
- **sms_text** message text
- **sms_code** Web script key code (if set during configuration)

SMS Machine/HTTP waits for the standard success answer from the Web server:

```
HTTP 200 OK
```

In other cases HTTP transaction is considered incomplete and SMS Machine will act as defined in the configurations section dedicated to **Advanced** parameters. Please refer to that section for details.

Extended SMS reception

The new version of SMS Machine is able to receive also extended messages, also know as chained, that means SMS with more than 160 chars allowed by the standard.

Anyway, each extended SMS message is actually divided in so much different SMS parts as needed to fit the whole transmitted text. So the SMS Machine treats all the parts as single messages, executing an http post for each of them. Obviously new parameters are needed for the original message "reconstruction".

Therefore in the HTTP POST request, not only the former parameters just described are sent, but also the new ones used to identify and reconstruct the extended SMS starting from its component parts:

- **sms_id** identification number for the extended SMS
- **sms_totparts** number of the extended SMS component parts
- **sms_thispart** identification number for the current SMS part

Delivery notification SMS reception

The new version of SMS Machine can also send SMS message requesting the notification of delivery to the addressee. For this function please see next section. In this section, the reception of the notification itself will be described.

The reception of a delivery notification is treated as a normal SMS, but its message text will be always "STATUS REPORT". Anyway also in this case, new parameters are needed within the HTTP POST request, in particular:

- **sms_id** identification number equal to the index retrieved with the SMS transmission (see also next section)
- **sms_status** status code returned by the GSM network

The expected value for this last parameter is **0x00** that means the status of "**SMS delivered**".

Also other values for different network conditions are possible, the most common are the following ones:

0x00 Short message delivered successfully

0x01 Forwarded, but status unknown

0x20 Congestion, still trying

0x21 Recipient busy, still trying

0x22 No response recipient, still trying

0x23 Service rejected, still trying

0x24 QOS not available, still trying

0x25 Recipient error, still trying

0x42 Connection rejected

0x45 No internetworking available

0x46 Message expired

0x48 Message deleted by SMSC

SMS transmission

When transmitting messages, SMS Machine emulates a Web server behaviour listening on port 80, while your application has to emulate a Web browser behaviour calling a SMS Machine embedded CGI. This is the request:

```
http://smsmachine_address/smssend.cgi
```

This request must be carried out in POST mode for sending SMS message parameters which are:

- **Pwd** password that allows SMS Machine/HTTP to accept the transaction
- **Push** destination port, 0 text SMS (default value if missing), 1 Wap Push, other values to be specified. Please refer to the section dedicated to SMS sending
- **num** SMS addressee phone number
- **text** SMS message text. 160 chars are available, up to 300 chars for extended SMS (also known as chained). The exceeding chars are ignored.

SMS Machine answers with a string, without any HTML tag but however displayable by a browser, that contains two parameters and their values. The first parameter is **errno**, followed by its description, and its values are:

- **errno=0&desc=SMS queued** (SMS successfully put in sending queue)
- **errno=1&desc=Access denied** (Wrong password)
- **errno=2&desc=Destination number missing** (SMS addressee phone number is missing)
- **errno=3&desc=SMS refused** (SMS refused because the sending queue is full)

The second parameter is **SmsIndex** and it is a progressive index that identifies the SMS successfully put in sending queue.

To verify if the message has been sent by SMS Machine, you may check the **SMS sent** counters increment on the Status page. Alternatively you may check the TxGsmCounter and TxServerCounter parameters retrieved with the getstatus.cgi (see later section).

Delivery notification request

The new version of SMS Machine can also send SMS message requesting the notification of delivery to the addressee, as mentioned in the previous section. In this case, the HTTP POST request to the smssend.cgi script must be modified adding the optional parameter:

- **notify** values 1 to enable the notification function, 0 or missing for ordinary SMS

SMS unsuccessful transmission

Messages that SMS Machine is not able to send (no GSM field, wrong addressee phone number, etc) are cancelled from its queue to avoid a blocking status. The **SmsIndex** parameter allows having trace of these missing messages by calling an SMS Machine CGI. This is the request:

```
http://smsmachine_address/smserror.cgi
```

This request must be carried out in POST mode for sending the following parameter which is:

- **Pwd** password that allows SMS Machine to accept the transaction

SMS Machine answers with a string, without any HTML tag but however displayable by a browser, that looks like the following:

```
errno=0&Desc=Queue Transimitted&SmsTxErrIdx=2.0.0.0.0.
```

This string contains the following parameters:

- **Errno**, its values are **0** for successful request and **1&desc=Access denied** for wrong password
- **SmsTxErrIdx** is the dotted list of last five failed SMS index

Configuration

Also for parameters configuration and for some other support functions, SMS Machine offers some **cgi** scripts to be requested by an HTTP client on port 80. These scripts are the same used by the configuration web interface, developed in Macromedia Flash MX, that is just an HTTP client communicating with the SMS Machine.

Note that configuration scripts may be useful if you want to integrate SMS Machine configuration features in your own Web application. In all other cases it is sufficient to use the web interface.

Configuration script is available at the URL:

```
http://smsmachine_address/setconfig.cgi
```

Parameters name to send in HTTP POST mode are:

- **Pwd** password that allows SMS Machine to accept the transaction, default SMS1234
- **IpAddress** IP address to assign to SMS Machine
- **Netmask** SMS Machine subnet mask
- **Gateway** gateway IP address
- **Nameserver** DNS server IP address
- **NewPwd** new password to assign to SMS Machine
- **Servicecenter** number of the Service Centre for SMS sending
- **ServerAddress** IP address or name of the destination server for received SMS
- **ServerPage** path of the destination script for received SMS, starting form the server root
- **ServerPort** port for HTTP transaction, default value 80
- **ServerCode** key code that SMS Machine will use for authentication to Web script
- **ScriptCheck** control of the reception script or server, value 1 enables HTTP HEAD request on the script and value 0 only control on the TCP socket
- **InBufferLen** number of SMS in the buffer for transaction to the reception script, default value 1
- **ServerTimeout** timeout of the HTTP/TCP connection to the script/server in millisecond, default value 5000ms
- **MaxFailureIn** maximum number of attempts for received SMS forwarding to the script/server, default value 0 means endless attempts

SMS Machine answers with a string, without any HTML tag but however displayable by a browser, that contains **errno** parameter and its description, which values are:

- **errno=0&desc=Configuration_Accepted** (Configuration change OK)
- **errno=1&desc=Access denied** (wrong password)

Operation status request

SMS Machine supports also a **cgi** script to retrieve information about its general operating status, at the following URL:

```
http://smsmachine_address/getstatus.cgi
```

This request must be carried out in HTTP POST mode sending the following parameter:

- **Pwd** password that allows SMS Machine to accept the transaction

SMS Machine answers with a string, without any HTML tag but however displayable by a browser, that is composed by the concatenation of pairs: 'parameter name'='value'. Parameters are:

- **errno=0&desc=Configuration Sent** (Communication OK) or **errno=1&desc=Access denied** (wrong password)
- **GsmFieldLevel** GSM field level in dBm
- **LastGsmError** modem status or last revealed error
- **TxGsmCounter** number of SMS in transmission queued into the modem
- **RxGsmCounter** number of SMS in reception received by the modem
- **TxServerCounter** number of SMS in transmission queued into the processor
- **RxServerCounter** number of SMS in reception forwarded to the server
- **ServerStatus** status of the reception script/server
- **Fversion** firmware version
- **FailedCounter** number of SMS not transmitted by the modem

Network error information coded by the ServerStatus parameter is also shown by the green LED L2 on front panel.

Failed GSM network registration information coded by the LastGsmError is shown by the long lighting of red LED ERR on front panel.

The information about failed SMS coded also by the FailedCounter parameter is shown by the simultaneous blinking of red LED ERR and the green one L1, for some seconds and for each message.

Network and configuration parameters request

It is possible to retrieve configuration parameters current values by requesting this **cgi** script:

```
http://smsmachine_address/queryconfig.cgi
```

It is also the script used at the login in web interface in order to load all the current parameters. An HTTP POST request must be used sending the following parameter:

- **Pwd** password that allows SMS Machine to accept the transaction

SMS Machine answers with a string, without any HTML tag but however displayable by a browser, that is composed by the concatenation of pairs: 'parameter name'='value'. Parameters are:

- **errno=0&desc=Configuration Sent** (correct parameter loading) or **errno=1&desc=Access denied** (wrong password)
- **IpAddress** current IP address of the SMS Machine
- **Netmask** SMS Machine subnet mask
- **Gateway** gateway IP address
- **Nameserver** DNS server IP address
- **Fversion** firmware version
- **Servicecenter** number of the Service Centre for SMS sending
- **ServerAddress** IP address or name of the destination server for received SMS
- **ServerPort** port for HTTP transaction, default value 80
- **ServerPage** path of the destination script for received SMS, starting form the server root

- **MaxFailureIn** maximum number of attempts for received SMS forwarding to the script/server, default value 0 means endless attempts
- **ServerTimeout** timeout of the HTTP/TCP connection to the script/server in millisecond, default value 5000ms
- **InBufferLen** number of SMS in the buffer for transaction to the reception script, default value 1
- **ServerCode** key code that SMS Machine will use for authentication to Web script
- **ScriptCheck** control of the reception script or server, value 1 enables HTTP HEAD request on the script and value 0 only control on the TCP socket

SMS reception emulation

It is also available a **cgi** script that makes SMS Machine emulate SMS reception. This function may be very useful because it allows checking server configuration without sending any actual SMS. In fact SMS Machine makes an HTTP request to the web script, you set in HTTP web page, using default parameters.

This is the URL for the request:

```
http://smsmachine_address/srvtest.cgi
```

The parameter to be sent with an HTTP POST request is:

- **Pwd** password that allows SMS Machine/HTTP to accept the transaction

Possible SMS Machine responses are:

- **errno=0&desc=SMS queued** (emulated SMS successfully queued)
- **errno=1&desc=Access denied** (Wrong password)

SMS Machine/HTTP PUSH is produced by:

AREA SX SRL
INFORMATICA & MICROELETTRONICA

Via Stefano Longanesi, 25
00146 Roma – ITALIA

Tel. +39 06.99.33.02.57 – Fax +39 06.62.20.27.85
info@areasx.com - http://www.areasx.com