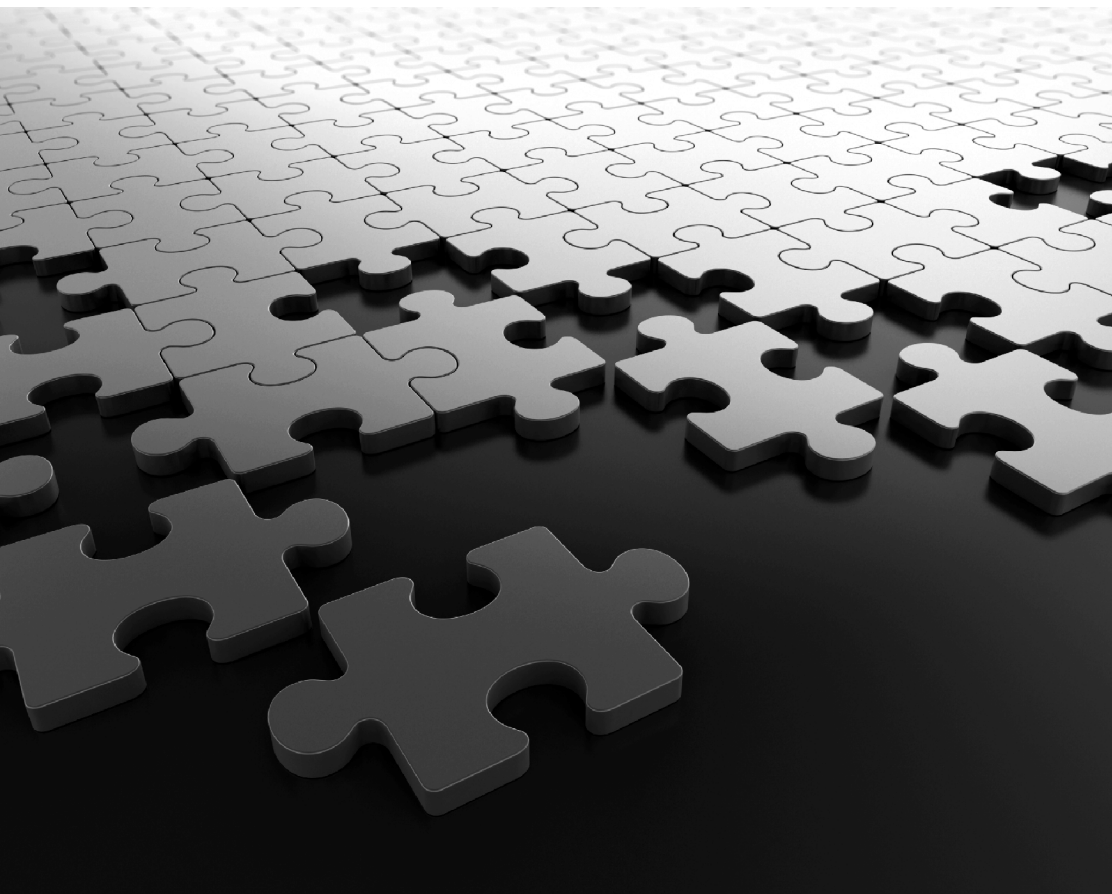


SETU VGRX

Quick Start



SETU VGRX

Radio-over-IP Gateway with Integrated GSM/CDMA Connectivity

Quick Start



Documentation Disclaimer

Matrix Comsec reserves the right to change, at any time, without prior notice, the product design, specifications, components, as engineering and manufacturing may warrant.

This is a general documentation for all models/configurations of the product. The product may not support some of the features/facilities described in this document.

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Version V1

Release date: August 1, 2018



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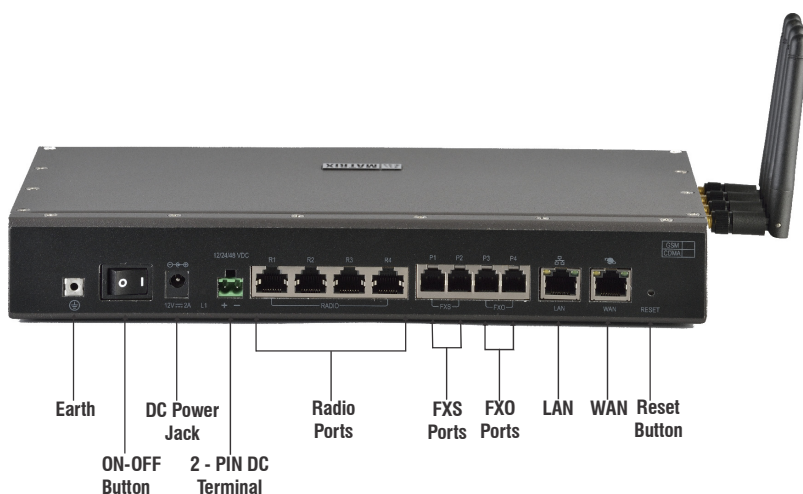
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Know Your SETU VGRX

Thank you for choosing the Matrix SETU VGRX. Please read the instructions in this Quick Start to install and operate the SETU VGRX.

This Quick Start is meant to help you install and configure the basic parameters of the system. For advanced configuration and feature description, please refer the System Manual. To download, click <https://www.matrixtelesol.com/product-manuals.html>


Overview



SETU VGRX is available in two configurations.

- **SETU VGRX (GSM)** with 9 SIP Trunks, 4 Radio Ports, 4 Mobile Ports, 2 FXO Ports and 2 FXS Ports.
- **SETU VGRX (CDMA)** with 9 SIP Trunks, 4 Radio Ports, 4 Mobile Ports, 2 FXO Ports and 2 FXS Ports.

Ports and Connectors

Port	Connector	Description
Earth	---	To connect the Telecom Earth.
On-Off Button	---	To On or Off the SETU VGRX.
12VDC-2A (Max)	DC Jack	To connect 12VDC, 2A Power Adapter.
12/24/48 VDC	2- PIN DC Terminal	To connect 12/24/48 VDC Battery to feed power.
L1	---	LED labeled as L1 will glow red when reverse voltage is detected on the Battery terminal.
R1 to R4 (Radio)	RJ45	To connect Radio devices such as Radio Handsets, Radio Base Stations.
P1 & P2 (FXS)	RJ11	To connect standard Telephone Instruments, or a Fax Machine or a PBX.
P3 & P4 (FXO)	RJ11	To connect PSTN lines or a PBX.
LAN Port	RJ45	To connect a computer or a LAN Switch.
WAN Port	RJ45	To connect to the IP network over a DSL Modem or Router or a LAN Switch.
	SMA (Female)	To connect the Antenna for the Mobile Ports.
MOB ^a	---	To connect to CDMA/GSM/UMTS network ^b .

a. The SIM Holder is located on the Main Board.

b. When the 3G module is installed in the system, you must disable Call Waiting on the SIM before inserting it into the system to prevent current calls from being disconnected.

LEDs

SETU VGRX has a Power LED, a Status LED (STS) and 12 port LEDs as shown below.

- The LEDs R1 to R4 are assigned to the Radio Ports.
- The LEDs P1 and P2 are assigned to the FXS Ports.
- The LEDs P3 and P4 are assigned to the FXO Ports.
- The LEDs M1 to M4 are assigned to the Mobile Ports.

The LEDs indicate the status of the ports and various events occurring on the ports, including errors.



SETU VGRX is easy to install and operate. The built-in web server, *Jeeves*, allows you to configure the system parameters and features on-site as well as from a remote location.

Installing SETU VGRX

Before You Start

Before you begin to install and set up the hardware of SETU VGRX, make sure you have the following ready:

- A suitable location to install SETU VGRX.
- Power supply.
- A SIP Account from an ITSP to test VoIP connectivity.
- A standalone computer or a computer connected in a LAN to access Jeeves, the web-based configuration tool of SETU VGRX.
- Appropriate cables and connectors to set up and test the WAN interface of SETU VGRX and the LAN connection.
- An Analog Trunk Line from the CO/PSTN to connect to the FXO Port.
- At least one standard telephone instrument to connect to the FXS Port. You can also connect a fax machine or a PBX.
- Necessary telecom wiring for the lines and devices to be connected to the FXS and FXO Ports.
- Standard, good quality, twisted pair telephone cables with 0.5mm conductor diameter and RJ11 plugs for the FXS and FXO Ports.
- A Radio device to check Radio connectivity.
- A SIM Card to test Mobile connectivity.



- Do not install this product near any area where,
 - it is exposed to direct sunlight, heat, excessive cold or humidity, dust, oil, corrosive fumes.
 - there is a water source (wash basin, tub, shower, pool, sprinkler, etc.)
 - there is source of electromagnetic noise such as radio equipment, heavy transformers, faulty electric chokes of tube-lights, device having a faulty coil.
- Ensure proper electrical earth and telecom earth for the safety of the product and persons handling it.
- Always wear an electro static discharge preventive wrist wrap or belt and use a grounding mat when handling the product and its parts.
- SETU VGRX contains a 3VDC/18mAh (Li-Al) alloy-Manganese Dioxide Coin Battery (ML 1220 - Rechargeable) of diameter 12.5mm and height 2.0mm. Battery should be replaced only by authorized dealers of Matrix. There is a risk of explosion if the Battery is replaced in an incorrect manner. Please dispose-off used Batteries.

Getting Started

- Select an appropriate site to install the SETU VGRX, considering the safety precautions listed earlier in this chapter.
- Unpack SETU VGRX and verify the package contents.
 - SETU VGRX Unit
 - Power Adapter - 12VDC, 2A (Country Specific)
 - Ethernet Cable (RJ45)
 - Cable with RJ45 connectors on both ends
 - Cable with RJ45 connector at one end and Amphenol Male connector on the other end
 - Two cables with RJ45 connector at one end and Amphenol Female connector on the other end
 - Cable with RJ45 connector at one end and the loose wires on the other end
 - Four Line Cords (RJ11)
 - Four GSM Antennas with SMA Connector
 - Screw M4/12 for Earthing
 - Two M5/25 Screws with grips
 - SETU VGRX Quick Start (printed copy)

- Wall Mounting Template
- Warranty Card set

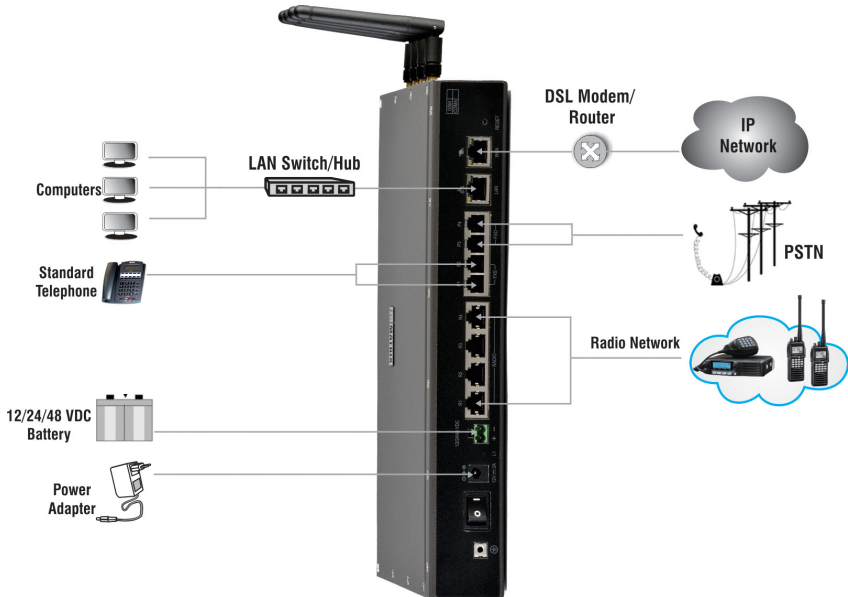
If any of these items is missing or damaged, please contact the dealer/reseller from whom you purchased the system.

- Place the system at the selected site.

If you are mounting the system on a wall, refer to the mechanical dimensions of the product and use the mounting template for drilling holes on the wall.

Connecting SETU VGRX

SETU VGRX has a WAN Port, a LAN Port, a Reset Button, 4 Radio Ports, 4 Mobile Ports, 2 FXO Ports, 2 FXS Ports, 9 SIP Trunks, a 12/24/48 VDC Battery Terminal, a Power Jack and 15 LEDs.

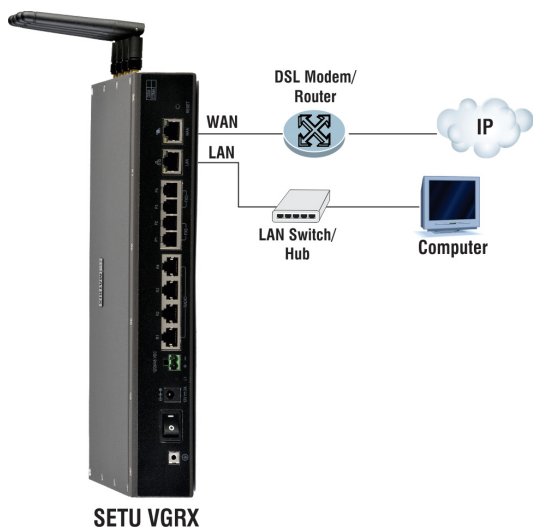


Connecting to the IP Network

- Connect the **WAN Port** of SETU VGRX to the IP Network—a DSL modem/router or a LAN Switch—using the Ethernet cable supplied for the port.

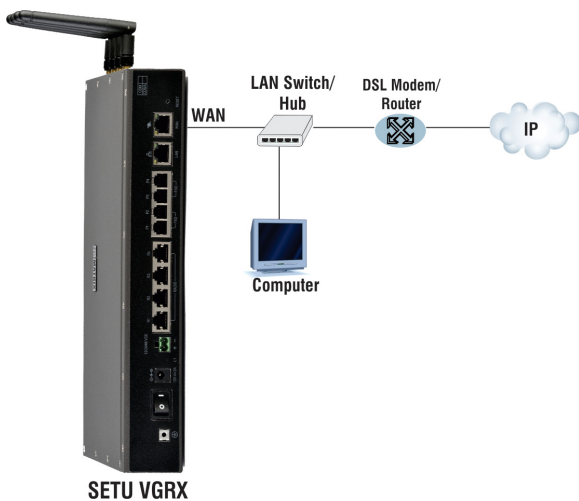
If connecting to the Public IP Network,

- Plug one end of the Ethernet cable into the WAN Port of SETU VGRX and the other end into the DSL modem/Router.



If connecting to a Private Network (Behind a NAT Router),

- Plug one end of the Ethernet cable into the WAN Port of SETU VGRX and the other end into the LAN Switch/Hub.



The default IP Address of the WAN Port is: **192.168.1.100**

The default Subnet Mask of the WAN Port is: **255.255.255.0**

Connecting to the Mobile Network

Make sure the site you have installed the system has sufficient network signal strength.

SETU VGRX supports both GSM (2G/3G) and CDMA modules. Therefore, Mobile Port can be either GSM or CDMA. In the GSM Port, SIM Card is installed and in the CDMA Port, RUIM Card is installed. Consider SIM as RUIM, if CDMA module is installed in your SETU VGRX.

If CDMA module is installed in your SETU VGRX, following parameters will not be applicable.

- Band Selection
- CLIR
- Emergency Number
- Network Selection
- Preferred Network Mode
- Route Calls returned Unconnected to Original Caller
- SIM PIN
- SIM Balance Inquiry
- SIM Recharge
- SMS Service Center Number (SMSC)
- SMS

Enabling SIM PIN Protection



If your SETU VGRX has a CDMA module, make sure you have disabled the PIN protection before installing the RUIM in the CDMA Port.

Protect the SIM Card from unauthorized use with a Personal Identification Number (PIN) on the SIM (in consultation with the customer/owner of the SIM).

To enable SIM PIN protection,

- Get a mobile handset. Insert the SIM into the mobile handset.
- From the mobile handset enable PIN protection.
- Assign a value as the SIM PIN.
- Remove the SIM from the mobile handset.

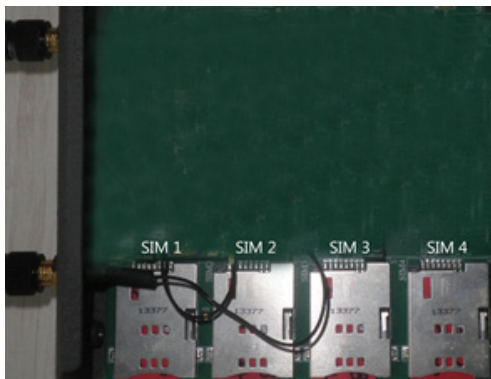


If you do not want to use PIN protection, insert the SIM Card in the mobile handset and disable PIN protection. Remove the SIM Card from the mobile handset and insert it in the Mobile Port's SIM holder.

If your SETU VGRX has a 3G module, you must disable Call Waiting in the SIM Card before inserting it into the SIM holder of the Mobile Port. This will prevent current calls from being disconnected whenever there is a call waiting on the Mobile Port.

Inserting the SIM Card

- Make sure you are wearing an electrostatic discharge preventive wrist strap or belt and power supply is switched off. Unplug the adapter, if you have connected it.
- Unscrew and remove the cover of SETU VGRX. Keep the cover and screws aside.
- The Mobile Ports are located on the Main Board.



- Insert the SIM Card into the SIM holder—SIM1, SIM2, SIM3, SIM4—of the **Mobile Port** with the contact side of the SIM Card facing down.
- Replace the cover and secure the cover with the screws.
- Fix the Mobile Antenna to the connector.

Connecting to the CO Network

- To the **FXO Ports**, connect the Analog Trunk lines from your CO Network/PSTN.

You may also connect a PBX to the FXO Port.

Connecting Telephone instruments

- To the **FXS Ports**, connect standard single line telephones using standard telephone cables with RJ11 plugs.

You may also connect a Fax machine or a PBX to the FXS Port.

Connecting Radio Devices

- To the **Radio Ports**, connect the Radio devices using the cables supplied with the product for the Radio Ports.
- Plug the RJ45 cable connector into the Radio Port.
- If you are connecting Radio devices using the cable with RJ45 connectors at one end and the loose wires on the other end, refer to the Pin out details given below:

Connector	Color	PIN Number	Signaling
RJ45-1 to RJ45-4	Orange & White	1	PTT
	Orange	2	PTT_RTN
	Green & White	3	Rx-
	Blue	4	Tx+
	Blue & White	5	Tx-
	Green	6	Rx+
	Brown & White	7	Unused
	Brown	8	Unused

Power ON SETU VGRX

- Check the mains voltage at the power plug from where the power supply is to be fed to the system. It should be as per the specifications mentioned in the [“Product Specifications”](#) in the System Manual.
- Make sure system’s earthing is proper.
- Connect the Power Adapter into the power jack, and plug it into a power outlet.
- Switch ON the power supply and observe the reset cycle.

LED Indication

At Power ON, Power LED will turn ON (Continuous Green). Other LEDs will follow the sequence summarized in the table below, during initialization.

System Status ^a	STS	R1	R2	R3	R4	P1	P2	P3	P4	M1	M2	M3	M4	Time in MS
Power ON - UBOOT	ON (R)	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
Kernel UP	ON (R)	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
Application and LED Driver Loaded	OFF	ON (R)	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
Few Initialization (i.e SysConfig, Resolver, SysLog etc.)	OFF	ON (R)	ON (R)	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
Few Initialization (i.e WebJvs, CallManager, PortCfg etc.)	OFF	ON (R)	ON (R)	ON (R)	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
VOPP Program Download Success	OFF	ON (R)	ON (R)	ON (R)	ON (R)	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
	ON (G)	ON (R)	ON (R)	ON (R)	ON (R)	ON (R)	ON (R)	ON (R)	ON (R)	ON (R)	ON (R)	ON (R)	ON (R)	1000 ms
	ON (R)	ON (R)	ON (R)	ON (R)	ON (R)	ON (R)	ON (R)	ON (R)	ON (R)	ON (R)	ON (R)	ON (R)	ON (R)	1000 ms
All Init Done, System goes Live	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	1000 ms
	ON (G)	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	1000 ms
	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	1000 ms
(Continuous Green blinking as given in last 2 steps)														

a. R stands for Red color LED and G stands for Green color LED.

During initialization, the Mobile Port LEDs (M1 to M4) will indicate the following error/event/status:

LED Status	Color	Event/State/Status
200ms On-200ms Off	Red	GSM Initialization
500ms On - 500ms Off	Red	PUK required
500ms On- 500ms Off - 500ms On-500ms Off- 500msOn-1500ms Off (3 Blinks)	Red	SIM PIN Required
500ms On - 500ms Off - 500ms On - 2500ms Off (2 Blinks)	Red	SIM PIN Wrong
500ms On - 3500ms Off (1 Blink)	Red	SIM Absent
1sec On - 1sec Off	Red	Mobile network absent

During normal functioning, Mobile Port LEDs will display following error/events/status:

LED Status	Color	Event/State/Status
Continuous OFF	---	Port Idle/Disable
400ms On - 200ms Off - 400ms On - 3000ms Off (2 Blinks)	Red	Incoming Ring Event
2000 ms On - 2000 ms Off	Red	Off-hook Event
Continuous On	Green	Speech
Continuous On	Green	Sending SMS/ Processing Balance Inquiry / Processing Balance Recharge

During normal functioning, FXS/FXO Port LEDs (P1 to P4) will display following error/events/status:

LED Status	Color	Event/State/Status
Continuous OFF	-	Port Idle/Disable
400ms On - 200ms Off - 400ms On - 3000ms Off (2 Blinks)	Red	Incoming Ring Event
2000 ms On - 2000 ms Off	Red	Off-hook Event
Continuous On	Red	Speech



During Off-hook state, FXS Port LED glows Red (2000 ms On - 2000 ms Off). However, if the system is in programming mode, the LED of the port from which you entered the programming mode will glow continuously Red as in Speech state. After exiting the programming mode, the LED will again glow Red (2000 ms On - 2000 ms Off) displaying Off-hook event.

During normal functioning, Radio Port LEDs (R1 to R4) will display following error/events/status:

LED Status	Color	Event/State/Status
Continuous OFF	-	Port Idle/Disable
400ms On - 200ms Off - 400ms On - 3000ms Off (2 Blinks)	Red	Incoming Ring Event
2000 ms On - 2000 ms Off	Red	Off-hook Event ^a
Continuous On	Red	Speech

a. A call initiated by the Radio Port but not matured i.e. the two way speech is not established.

During initialization, System LED (STS) will display following error/events/status:

LED Status	Color	Comment
Continuous On	Red	VoPP program download fail.
2000 ms On (Red) 5000 ms On (Green)	Red and Green	Modules not detected.
2000 ms On - 2000 ms Off	Red	T1 DSP 5502 is not detected.
1sec On - 1sec Off	Green	SETU VGRX started successfully. Network link is Up. SIP stack is Up. CDR buffer is not full.
500 ms On - 500ms Off - 500 ms On - 500ms Off - 500 ms On - 500ms Off - 500 ms On - 500ms Off (4 Blinks)	Green	Network link is down. SIP stack is down. CDR buffer is not full.
500 ms On - 500ms Off - 500 ms On - 500ms Off - 500 ms On - 1500ms Off (3 Blinks)	Green	Network link is Up. SIP stack is down. CDR buffer is not full.
500 ms On - 500ms Off - 500 ms On - 500ms Off - 500 ms On - 500ms Off - 500 ms On - 500ms Off (4 Blinks)	Red	Network link is down. SIP stack is down. CDR buffer is full.
1sec On - 1sec Off	Red	Network link is up. SIP stack is up. CDR buffer is full.

LED Status	Color	Comment
500 ms On - 500ms Off - 500 ms On - 500ms Off - 500 ms On - 1500ms Off (3 Blinks)	Red	Network link is up. SIP stack is up. CDR buffer is full.

When the Reset Cycle is completed, you may configure the system using the embedded web server, *Jeeves*.

Accessing Jeeves (GUI)

SETU VGRX provides an embedded web server with a Graphic User Interface (GUI), *Jeeves*, for configuration.

To access Jeeves, you will need to connect a computer to SETU VGRX.

Connecting a Computer

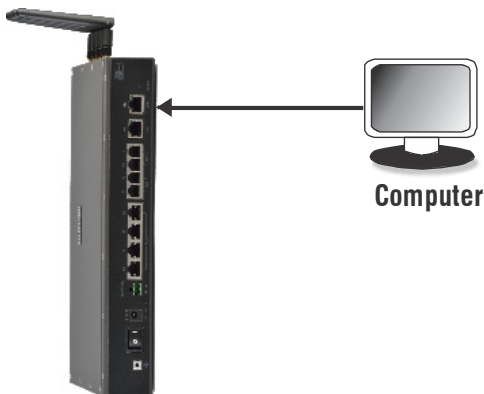
You may connect a standalone computer to SETU VGRX or grab any computer connected in the same LAN as SETU VGRX.



- Connect a standalone computer to SETU VGRX, when installing the system for the first time. You may connect it to the LAN after you have finished installation and configuration of the system.
- If the computer for accessing Jeeves is connected in a LAN Switch and the WAN Port of SETU VGRX is connected behind a NAT router, make sure that both the LAN and WAN connections are in different Subnets.

To connect a standalone computer,

- Plug one end of the Ethernet cable supplied with the system into the LAN Port of SETU VGRX. Plug the other end into the LAN Port of the computer.



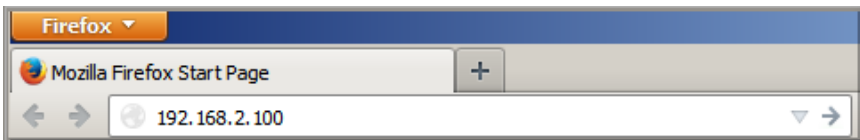
- Make sure the IP Address of the computer and the LAN Port of SETU VGRX do not conflict, and that both are in the same Subnet.

The default IP Address of the LAN Port of SETU VGRX is: **192.168.2.100**

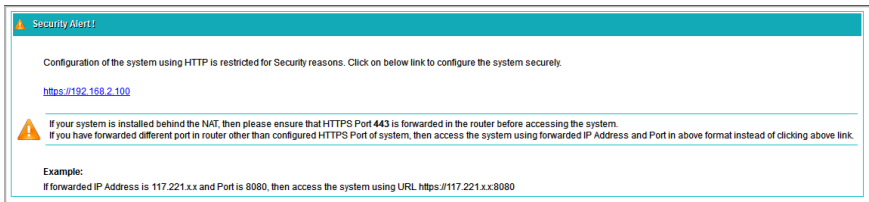
The default Subnet Mask of the LAN Port of SETU VGRX is: **255.255.255.000**

Change the Subnet of the computer, if necessary.

- Make sure a Web-browser, either Internet Explorer version 7 or later or Mozilla Firefox version 3.5 or later, is installed on the computer.
- Open the browser on the computer.
- In the address bar of the browser, enter the default IP address of the LAN Port:
192.168.2.100



- You will be redirected to the HTTPS protocol for security reasons.



- Click the <https://192.168.2.100> link.
- The **Login** page will open.
- In **Login Password**, enter **1234**, the default SE Password.
- Click the **Login** button.


SETU VGRX

English
Español
Français
Deutsch
Português
Italian

Login Password
☒ Login

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- You will be prompted to change the default SE Password.

Password Change

Login through default password is not allowed. Change the password to login.

Current Password

New Password

Confirm New Password

Note :

Password must follow following requirements:

- Minimum length must be 6 characters.
- Password must include atleast 1 uppercase, 1 lowercase, 1 number and 1 special character.
- Allowed characters are 0-9, a-z, A-Z, all special characters except %, =, #, +, &, \, <, >, ", ' and space.

☒ Submit

- In **Current Password**, enter the default SE Password.
- Enter the **New Password**. All ASCII characters (except Percentage %, Hash #, Equal to =, Plus +, And &, Backslash \, Less than <, Greater than >, Apostrophe ', Double Quote " and Space) and digits 0 to 9 are allowed. The new password must be:
 - a minimum of 6 characters to a maximum of 16 characters.
 - include atleast one upper-case, one lower-case, one number and one special character.

- In **Confirm New Password**, re-enter the new password to confirm.
- Click **Submit**. You will be re-directed to the Login page again.
- In **Login Password**, enter the new password.



As this password is meant for restricting access to the SE mode, we strongly recommend you to:

- Keep the password secret.
 - Select a complex password that cannot be easily guessed.
 - Change the password regularly. See **Login Password** topic in the System Manual for instructions.
- On successful login, the **Home** page of Jeeves opens.

The left navigation bar displays the links **Basic Settings**, **Advanced Settings**, **Maintenance** and **Status**.



Basic Settings break down the complexities of configuration and are sufficient to get your system into operation.

Advanced Settings enable you to configure the advanced features and facilities of SETU VGRX.

Maintenance allows you to carry out system maintenance and monitoring activities like uploading/upgrading firmware and configuration, system debug, system restart.

Status allows you to view the system details and the status of all the ports.

You may now configure the Basic Settings of SETU VGRX.

Configuring SETU VGRX

To configure the Basic Settings,

- Click the **Basic Settings** link.
- The parameter sub-links appear on the left navigation bar.




- Click the parameter sub-link you wish to configure.
- The respective parameter page opens.
- Get familiar with the buttons and icons listed below before you begin to change the settings of the parameters on each page.

 **Expand:** expands a link to display all parameters under the link.

 **Collapse:** collapses a link; hides all parameters under the link.

 **Settings:** enables you to configure / edit the settings of a parameter further.

 **Logout:** enables you to exit Jeeves.

Default: assigns factory set values to all the parameters on the page.

Add: enables you to add a new record/entry.

Delete: enables you to delete a record/entry.

Close: enables you to exit a window.

- Set the parameters on the page to the desired values and click the **Submit** button to save.

Read the *SETU VGRX System Manual* for detailed instructions.



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