



/TLW-BLU-E

USER MANUAL

Additional Manual for BLUES-NV series



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/TLW-BLU-E- User Manual
Version 1.1

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R.V.R. Elettronica s.r.l.

Via del Fonditore 2/2c - 40138 - Bologna (Italia)

Phone: +39 051 6010506

Fax: +39 051 6011104

Email: info@rvr.it

Web: www.rvr.it

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1. /TLW-BLU-E Option

1.1 Preparation

1.1.1 Preliminary checks

Provide for the following (applicable to operating tests and putting into service):

√ Connection cable kit including:

- Ethernet cable (cable with RJ45 connector, not included) for connection to ADSL router or LAN network;

or

- Crossover Ethernet cable (cable with RJ45 connector, not included) for direct connection to PC.

1.1.2 Connection

- Connect the **LAN** output of **/TLW-BLU-E** option to the appropriate input of your ADSL router or LAN network. If the connecting device is different, identify an equivalent.



Note: *If you intend to connect it directly to a PC, it is necessary to use a crossover ethernet cable. This is a basic prerequisite to ensure equipment correct operation.*

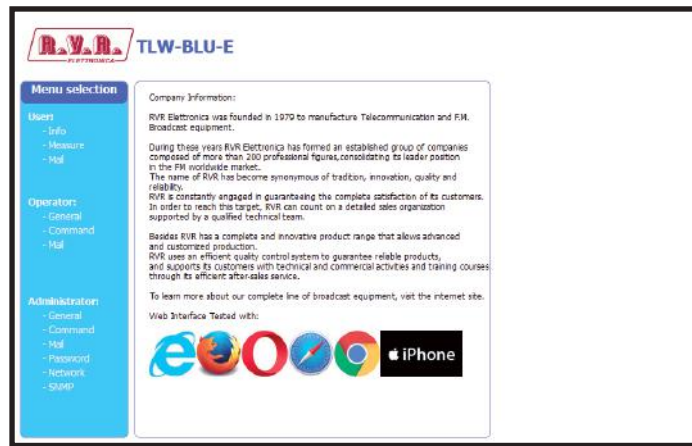
1.2 First Power-On and Set-Up

Perform this procedure upon first power-up and each time you make changes to the configuration this component is integrated into.

Once all connections previously described are performed, the equipment is ready for commissioning.

Follow the procedure below to open the **WUI** (Web User Interface):

- 1) Open your web browser on your PC, and connect to ***http://192.168.0.244*** address to connect to the **WUI** (if LAN IP address was previously modified, it is necessary to use the new one). At this point the following page opens:



Menu 1

By factory the RVR uses the following adjustments:

- IP address: **192.168.0.244**
- Netmask address: **255.255.255.0**
- Gateway address: **192.168.0.1**



Note : If address <http://192.168.0.244> does not work, check and set IP address as **192.168.0.XXX** (where XXX is a figure between 0 and 255, excluding 244 that is /TLW-BLU-E option default address). To change the IP address, follow the instructions in the manual or in the online guide and technical help, specific for the Operating System you use.

2) If you have changed the access mode , enter the **User Name** and **Password** previously saved. Enter your credentials to log on as administrator, or maintenance, and then click **OK** on the item.



Note : The username to log in as a user is **user**, that one to enter as operator is **operator**, while the username to log in as administrator is **admin**.

The user names are not modifiable by the user.



Menu 2



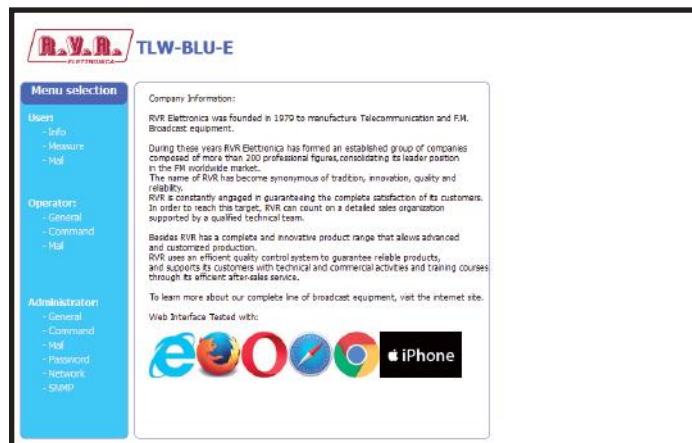
Note: Login as user enables read-only mode through the menus. If the administrator password is not set, it can not be enabled for user or operator.

- 3) Modify the parameters in accordance with the own needs.
- 4) Now interface is ready to remotely read data and modify the various settings of the equipment.

1.3 Web User Interface (WUI)

The **WUI** (Web User Interface) allows you to adjust, modify or display the configuration variables and the operation data.

After access is made, the **Main Menu** opens and shows possible viewing options. This picture shows the **Main Menu** after access:



Menu 3

To enter in one of the sub-menus, select the name and then click on item to enter.

To go back to **Main Menu**, just press the F5 key on your computer's keyboard to force the WEB page reload.

The page that appears is divided into three frames:

- 1) **Title:** it has the RVR logo and an identification of the current page displayed. It is located on the top of the page.
- 2) **Navigation menu:** it allows you to select the page to display. To enter into a submenu, select the name and then click on the item to enter.
- 3) **Body:** area where the page displays information about the selected menu.

1.3.1 Info Menu - User

Values found here are “live readings”, and as such they can not be modified. To change the settings, use the **operator** or **administrator** “**Command**” menu.

This page shows the user the data of /TLW-BLU-E interface:



Menu 4

Firmware Release

Shows the firmware release of BLUES-NV.

Firmware Date

Shows the firmware date of issue of BLUES-NV.

Conf. Tab

Shows the Configuration Table loaded on BLUES-NV.

WEB Software Release

Shows the release of WEB firmware.

WEB Software Date

Shows the date of issue of WEB firmware.

Station Name

Shows the ID name of transmitting station.

Code FSK

Shows the FSK code of transmitting station.

1.3.2 Measure Menu - User

Values found here are “live readings”, and as such they can not be modified. To change the settings, use the **operator** or **administrator** “**Command**” menu.

The upper part allows you to enable or disable the Auto-refresh by clicking on the relevant box.

With Auto-refresh enabled the measures are taken every 3 seconds (“Get Data ..”) and gave available in a legible form by the current page (“Ready”).

With Auto-refresh disabled the measures are frozen (“Stopped”) at the time when you uncheck the box and gave available in a legible form by the current page.

This page shows the user the data of the exciter connected to the /TLW-BLU-E interface:



Menu 5

Forward Pwr

Shows exciter forward power expressed in W.

Reflected Pwr

Shows exciter reflected power expressed in W.

Frequency

Shows operating frequency of exciter expressed in MHz.

PWR Preset

Shows the power percentage of exciter expressed in %.

Audio Alarm

Shows the status of an impasse due to excessive SWR.

RF Power On

Shows the power status of exciter.

PLL LOCK

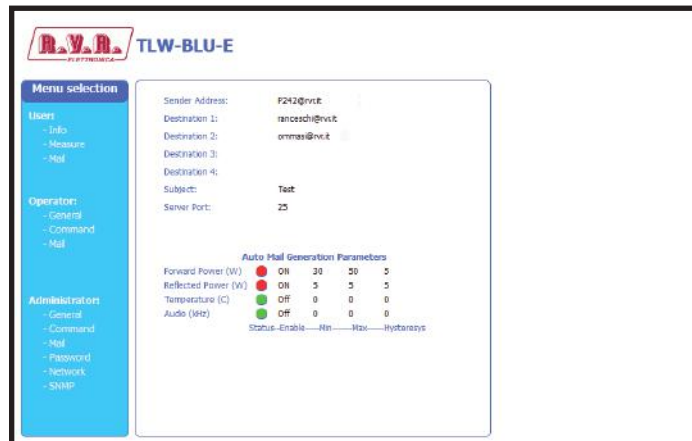
Shows the lock status at frequency set by PLL.

Foldback	Shows the triggered status of the foldback function (automatic reduction of output power).
Ext R.F. Mute	Shows the status of power inhibition by an interlock signal.
FSK enable	Shows the activation of status of FSK code transmission of exciter.
Deviation	Shows exciter deviation expressed in kHz.
Left Audio	Shows modulation on left channel of exciter expressed in kHz.
Right Audio	Shows modulation on right channel of exciter expressed in kHz.
VPA	Shows amplifier module voltage of exciter expressed in V.
RF Efficiency	Shows efficiency of exciter expressed in %.
IPA	Shows amplifier module current of exciter expressed in A.
Temperature	Shows equipment internal temperature reading expressed in °C.

1.3.3 Mail Menu - User

Values found here are “live readings”, and as such they can not be modified. To change the settings, use the **operator** or **administrator** “Mail” menu.

This page shows the user the information relating to the sending of messages through the network of the **/TLW-BLU-E** interface:



Menu 6

Sender Address

Shows of the transmission address used in sending messages.

Destination 1

Shows of the first destination address used in sending messages in case of alarms.

Destination 2

Shows of the second destination address used in sending messages in case of alarms.

Destination 3

Shows of the third destination address used in sending messages in case of alarms.

Destination 4

Shows of the fourth destination address used in sending messages in case of alarms.

Subject

Shows of the personalization in the subject field of the email in case of sending alarm messages.

Server Port

Shows of the port used by the TCP transmission protocol.

Auto Mail Generation Parameters

Shows of the configured parameters that lead to the transmission of the alarm message.

1.3.4 General Menu - Operator & Administrator



Note : Access to this menu and modification of these parameters are only possible after login with operator or administrator rights.

This page shows to the user the information about the /TLW-BLU-E interface and allows the setting of various parameters.

Press the **Update** button to confirm selection; if you let timer to time out, the parameter setting will remain as previously set.

Below will be described only items that allow the modification of the parameter, with respect to the Info menu. Press the buttons to confirm your choice, or wait at the time-out, the parameter will be set to the previous one:



Menu 7

Firmware Release

Shows the firmware release of BLUES-NV.

Firmware Date

Shows the firmware date of issue of BLUES-NV.

Conf. Tab

Shows the Configuration Table loaded on BLUES-NV.

WEB Software Release

Shows the release of WEB firmware.

WEB Software Date

Shows the date of issue of WEB firmware.

Station Name

Shows the ID name of transmitting station.

New Station Name

Setting of the station name. Write the name in the box that you want to assign, then press the **Update** button to apply the choice.

Code FSK

Shows the FSK code of transmitting station.

New Code FSK

Setting of FSK code of transmitting station. Write the code in the box that you want to assign, then press the **Update** button to apply the choice.

1.3.5 Command Menu - Operator & Administrator



Note : Access to this menu and modification of these parameters are only possible after login with operator or administrator rights.

This page shows to the user the information about the exciter connected to **/TLW-BLU-E** interface and allows the setting of various parameters.

Below will be described only items that allow the modification of the parameter, with respect to the Info menu. Press the buttons to confirm your choice, or wait at the time-out, the parameter will be set to the previous one:



Menu 8

Forward Pwr

Shows exciter forward power expressed in W.

Reflected Pwr

Shows exciter reflected power expressed in W.

Frequency

Shows operating frequency of exciter expressed in MHz.

- PWR Preset
Shows the power percentage of exciter expressed in %.
- Audio Alarm
Shows the status of an impasse due to excessive SWR.
- RF Power On
Shows the power status of exciter.
- PLL LOCK
Shows the lock status at frequency set by PLL.
- Foldback
Shows the triggered status of the foldback function (automatic reduction of output power).
- Ext R.F. Mute
Shows the status of power inhibition by an interlock signal.
- FSK enable
Shows the activation of status of FSK code transmission of exciter.
- Deviation
Shows exciter deviation expressed in kHz.
- Left Audio
Shows modulation on left channel of exciter expressed in kHz.
- Right Audio
Shows modulation on right channel of exciter expressed in kHz.
- VPA
Shows amplifier module voltage of exciter expressed in V.
- RF Efficiency
Shows efficiency of exciter expressed in %.
- IPA
Shows amplifier module current of exciter expressed in A.
- Temperature
Shows equipment internal temperature reading expressed in °C.
- RF Power ON
Press **Set** to change the logical state of the data.

RF Power OFF

Press **Set** to change the logical state of the data.

PWR Preset

Setting the power percentage of exciter expressed in %. Write in the box the value that you want to assign and then press the **Set** button to apply the choice.

Frequency

Setting the operating frequency expressed in MHz. Write in the box the value that you want to assign and then press the **Set** button to apply the choice.

FSK ON

Press **Set** to change the logical state of the data.

FSK OFF

Press **Set** to change the logical state of the data.

1.3.6 Mail Menu - Operator & Administrator



Note : Access to this menu and modification of these parameters are only possible after login with operator or administrator rights.

This page not only shows to the user the information relating to the sending of messages through the network of the **/TLW-BLU-E** interface, but also allows you to set several parameters.

Press the **CHANGE SETTINGS** or **SET EVENTS** button at the end of the line to confirm the choice; leaving the timeout to elapse, the parameter will remain set to the previous one.

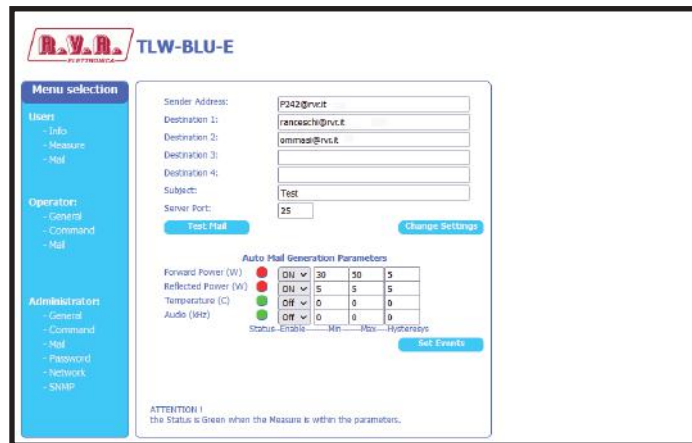


Note : the e-mails can only be forwarded via an MX record, that is a DNS record that identifies the e-mail server associated with a domain. Changing the MX records can be useful if you want to use your own mail server and it is absolutely necessary that the DNS domain used supports this function for its correct functioning.



Note : for the changes that can be made within these submenus, in-depth technical knowledge of network management is required. Modification is therefore recommended by trained or qualified personnel.

Below will be described only items that allow the modification of the parameter, with respect to the Info menu. Press the buttons to confirm your choice, or wait at the time-out, the parameter will be set to the previous one:



Menu 9

Sender Address

Setting of the transmission address used in sending messages.

Destination 1

Setting of the first destination address used in sending messages in case of alarms.

Destination 2

Setting of the second destination address used in sending messages in case of alarms.

Destination 3

Setting of the third destination address used in sending messages in case of alarms.

Destination 4

Setting of the fourth destination address used in sending messages in case of alarms.

Subject

Setting of the personalization in the subject field of the email in case of sending alarm messages

Server Port

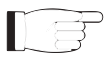
Setting of the port used by the TCP transmission protocol.

Auto Mail Generation Parameters

Setting of the configured parameters that lead to the transmission of the alarm message. .

It is possible to change the status of the automatic generation of emails between active or inactive; moreover it is possible to vary the value of the forward power (in W), reflected power (in W), temperature (in ° C) and audio (in kHz), by writing directly in the field the value to be varied between minimum, maximum and hysteresis.

1.3.7 Password Menu - Administrator



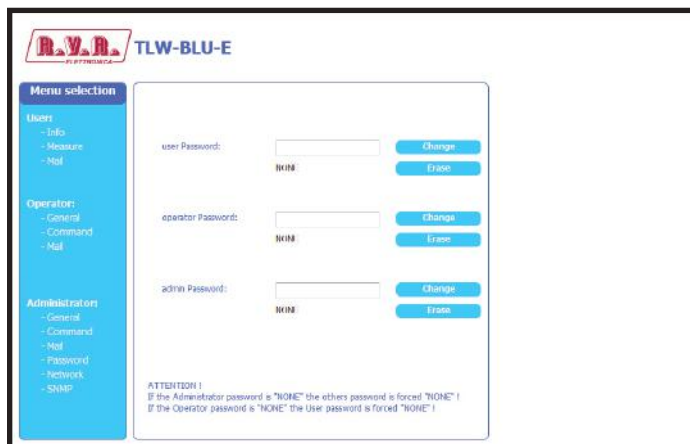
Note : Access to this menu and modification of these parameters are only possible after login with administrator rights.



Note : If the administrator password is not set, you can not to enable the user or operator password.

Press the **Change** button to confirm selection; if you let timer to time out, the parameter setting will remain as previously set.

This page allows the configuration of login as an administrator and maintenance of **/TLW-BLU-E** interface via WUI:



Menu 10

User Password

Shows and set the password for user functions (parameter read-only enabling).

The **Erase** button allows you to delete the password set for maintenance.

Operator Password

Shows and set the password for operator functions (parameter reading and partial change enabling).

The **Erase** button allows you to delete the password set for maintenance.

Admin Password

Shows and set the password for administrator functions (parameter reading and full change enabling).

The **Erase All** button allows you to delete the password set both for the administrator and for the maintenance.

1.3.8 Network Menu - Administrator



Nota : Access to this menu and modification of these parameters are only possible after login with administrator rights.

This page not shows the user the information about /TLW-BLU-E interface network connection and allows setting various parameters.

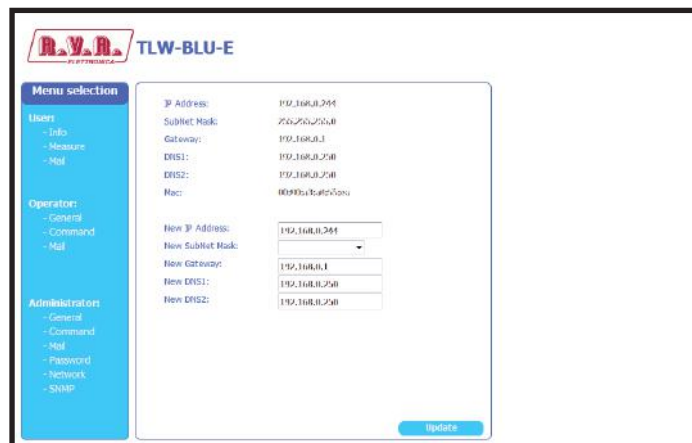
Press the **Update** button to confirm selection; if you let timer to time out, the parameter setting will remain as previously set.



Note : to make changes within these sub-menus you need to have through technical knowledge of network management. It is recommended to have changes performed by trained or qualifi ed personnel.



Note: The IP address must be set to static and does not have the opportunity to acquire an address from DHCP server on network



Menu 11

IP Address

Shows the number that unequivocally identifies, within a single network, the devices connected to an IT network that uses the IP standard (Internet Protocol).

Subnet Mask

Shows the subnet mask, necessary for the computer that must communicate with another IP address to know if it should route packages toward the gateway of its local network or use the address of the receiver local network.

Gateway

Shows gateway address. In simpler networks, there is only one gateway that forwards to the internet network all the outbound traffic. In more complicated networks where many subnets are available, each of them refers to a gateway that will route data traffic towards the other subnets or forward it to other gateways.

DNS1

Shows the first DNS server address (Domain Name System); in case the server should change the server hosting a service, or it is necessary to change its IP address, it is enough to change the DNS record, without changing client settings.

DNS2

Shows the second DNS server address (Domain Name System); in case the server should change the server hosting a service, or it is necessary to change its IP address, it is enough to change the DNS record, without changing client settings.

MAC

Shows the MAC (Media Access Control) address; this address is uniquely assigned to the ethernet network card present on exciter. It can be useful if you want to add in your router, or firewall, a list of MAC addresses of network cards authorized to connect to the network.

New IP address

Set the new IP (Internet Protocol) number.

New Subnet Mask

Set the new subnet mask.

New Gateway

Set the new gateway address.

New DNS1

Set the new first DNS server address (Domain Name System).

New DNS2

Set the new second DNS server address (Domain Name System).

1.3.9 SNMP Menu - Administrator



Nota : Access to this menu and modification of these parameters are only possible after login with administrator rights.

This page shows the user the information related to the management and supervision of the devices connected to the network via SNMP (Simple Network Management Protocol) of **/TLW-BLU-E** interface and allows setting various parameters.

Press the **Update** button to confirm selection; if you let timer to time out, the parameter setting will remain as previously set.



Note : to make changes within these sub-menus you need to have through technical knowledge of network management. It is recommended to have changes performed by trained or qualified personnel..



Menu 12

Actual Status

Shows the status of SNMP (Simple Network Management Protocol) service.

Read Community

Shows the set string for Read command that allows you to monitor the different variables of the system managed.

Write Community

Shows the set string for Write command that allows you to monitor the different variables of the system managed.

Primary Trap IP

Shows the first identification number of the IP address set to send the TRAP signaling that configures the agent to send a special message to the occurrence of certain events.

Primary Trap Port

Shows the first port number set by the TCP transmission protocol for the TRAP signaling that configures the agent to send a special message to the occurrence of certain events. The port can not be changed.

Secondary Trap IP

Shows the second identification number of the IP address set to send the TRAP signaling that configures the agent to send a special message to the occurrence of certain events.

Secondary Trap Port

Shows the second port number set by the TCP transmission protocol for the TRAP signaling that configures the agent to send a special message to the occurrence of certain events. The port can not be changed.

New Status

Set the status of SNMP (Simple Network Management Protocol) service.

New Read Community

Set the string for Read command.

New Write Community

Set the string for Write command.

New Primary Trap IP

Set the first identification number of the IP address set to send the TRAP signaling.

New Secondary Trap IP

Set the second identification number of the IP address set to send the TRAP signaling.

Main IP

By pressing the MIB (Management Information Base) highlighted you can download onto your PC, or browser device, the general database for the management of devices in communications networks.

Specific Mib

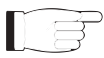
By pressing the MIB (Management Information Base) highlighted you can download onto your PC, or browser device, the specific database for the management of devices in communications networks.

2. SNMP Telemetry

SNMP (Simple Network Management Protocol) is a worldwide protocol that allows the management and supervision of the equipment connected to the network.

Measurements and commands are described by a MIB (Management Information Base), which is a list of OID (Object Identifier). Each OID is a variable that can be written (SET) or read (GET) through a NMS (Network Management System) compatible with SNMP.

The MIB is a text file written in ASN.1 and it is imported from the NMS in order to know what OID can be expected by the AGENT (proxy card) and how to interpret the information received.



Note : *The user can not freely distribute the MIB, unless written authorization issued by the manufacturer. The MIB is property of the manufacturer.*

The SNMP version used in this application is the v2, and is compatible with all NMS systems.



The screenshot shows the TLW-BLU-E web interface. On the left is a blue sidebar menu with categories: Users, Operator, and Administrators. The main content area is titled 'Menu selection' and contains a form for SNMP configuration. The form includes the following fields:

- Actual Status: enable
- Read Community: public
- Write Community: private
- Primary Trap IP: 192.168.0.41
- Primary Trap Port: 162
- Secondary Trap IP: 192.168.0.41
- Secondary Trap Port: 162
- New Status: (dropdown menu)
- New Read Community: public
- New Write Community: private
- New Primary Trap IP: 192.168.0.41
- New Secondary Trap IP: 192.168.0.41
- Main MIB: [rtr-main-mib.mib](#)
- Specific MIB: [rvr-blw-backlight-mib.mib](#)

An 'Update' button is located at the bottom right of the form.

Menu 1



Note : *Use a MIB BROWSER (not included) to use the MIB of RVR equipments. These are usually provided in an accompanying CD with the system in which the /TLW-BLU-E is installed.*

2.1 MAIN MIB Description

The MAIN MIB reads and manages the main parameters of /TLW-BLU-E and provides general information related to manufacturer.

Through this MIB you can read, and in some cases set, parameters such as IP address, Netmask, Gateway and DNS address.

It is also possible to manage IP address, time and date stored within the telemetry system.

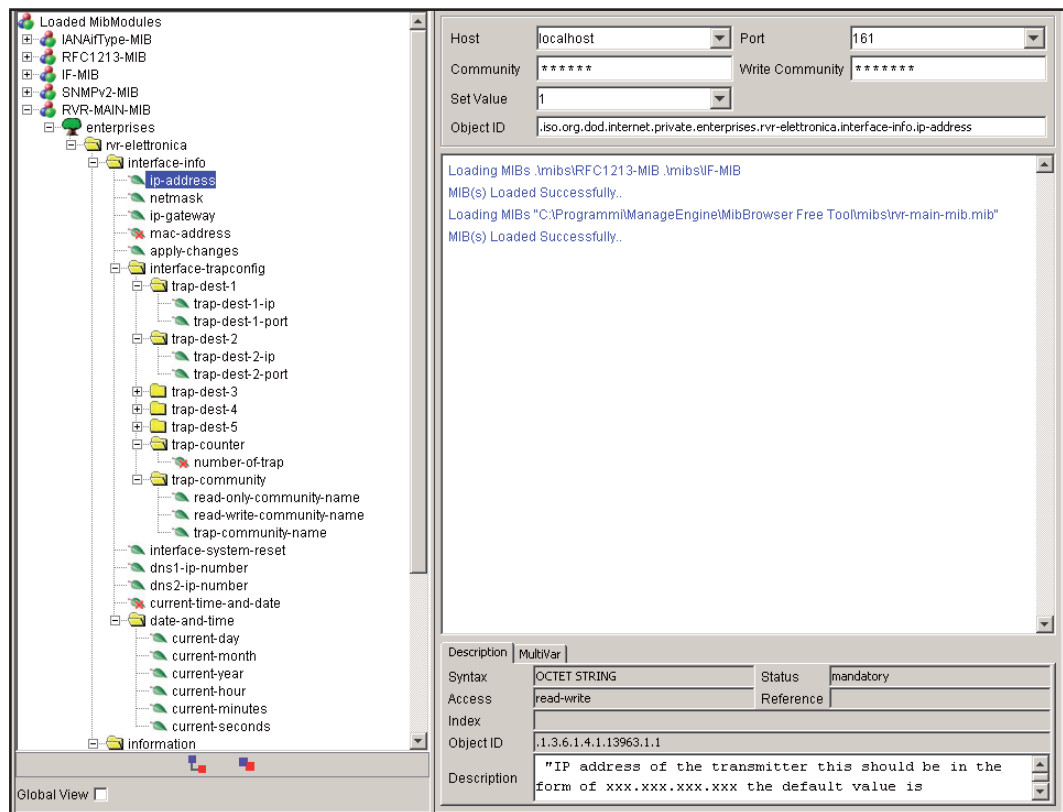
In cases where the parameter is a read-only, and you can not change it, it will be indicated by a red X over the icon reference. In some cases to apply a particular change, it is necessary to click on the OID item “Apply Changes”.



Note : *In the following examples is used a MIB browser of ManageEngine, but any MIB Browser can be used.*

2.1.1 Reading and Settings of parameters

The description of each variable is specified inside MIB, which are subsequently reported in the description box (Description) at the end.



Menu 2

The telemetry system is capable of sending Trap up to two different addresses. Different addresses can be set using the OID in major MIB, in this case:

- IP address for the destination of the Trap.

2.2 SPECIFIC MIB Description

The SPECIFIC MIB reads and manages the parameters administrated by /TLW-BLU-E included in transmitter station.

Through this MIB you can read powers (forward, reflected or unbalanced), temperature, voltages and currents on modules of possible amplifiers, exciters and changeovers connected to /TLW-BLU-E.



Note: In MIB browser will always display the maximum configuration of amplifiers, exciters and changeover available. The machines not present, will report zero readings.

It is also possible to manage to control the switching on or off of transmitter, the alarm reset, automatic or manual changeover.

In cases where the parameter is a read-only, and you can not change it, it will be indicated by a red X over the icon reference. In some cases to apply a particular change, it is necessary to click on the OID item "Apply Changes".

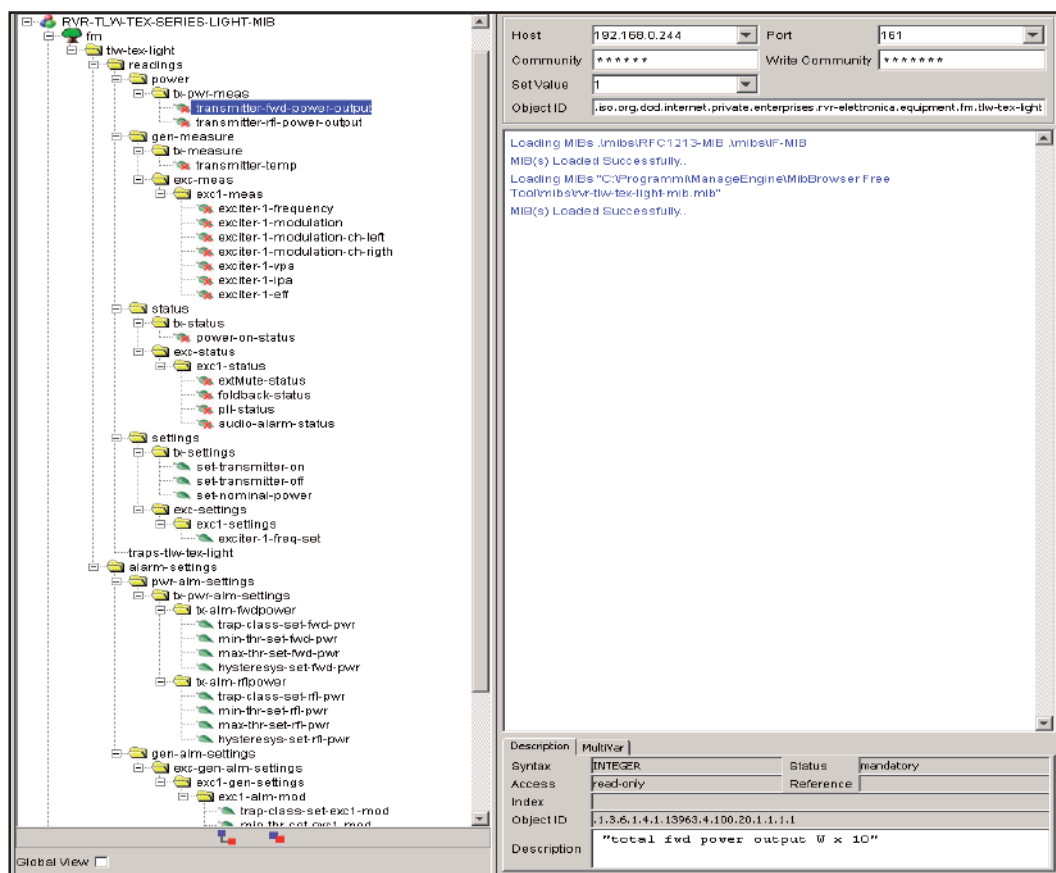


Note: In the following examples is used a MIB browser of ManageEngine, but any MIB Browser can be used.

2.2.1 Reading of Measurement

Each transmitter has a range of measures that can be read.

The description of each variable is specified inside MIB, which are subsequently reported in the description box (Description) at the end.



The screenshot shows a MIB browser interface with a tree view on the left and a detailed description box on the right. The tree view shows a hierarchy of MIB objects under the root 'RVR-TLW-TEX-SERIES-LIGHT-MIB'. The selected object is 'total-fwd-power-output' under the 'transmitter-fwd-power-output' node. The description box on the right shows the following details:

Description	Multivar	Status	mandatory
Syntax	INTEGER	Access	read-only
Index		Reference	
ObjectID	1.3.6.1.4.1.13963.4.100.20.1.1.1.1		
Description	"total fwd power output W x 10"		

Menu 3

2.2.1 Reading of Status

Similarly to measurements, each transmitter has a range of states that can be read.

The description of each variable is specified inside MIB, which are subsequently reported in the description box (Description) at the end.

The screenshot displays a MIB browser interface. On the left, a tree view shows the hierarchy of the MIB, with the 'status' node circled in red. On the right, a detailed view of a variable is shown, including its syntax (INTEGER), access (read-only), and a description: "total fwd power output W x 10".

Menu 4

The indications on the states can be of three types:

- **0** Indication of absence of the transmitter system component.
- **1** Indication of ON state, presence or activation of parameter.
- **2** Indication of OFF state, absence or deactivation of parameter.

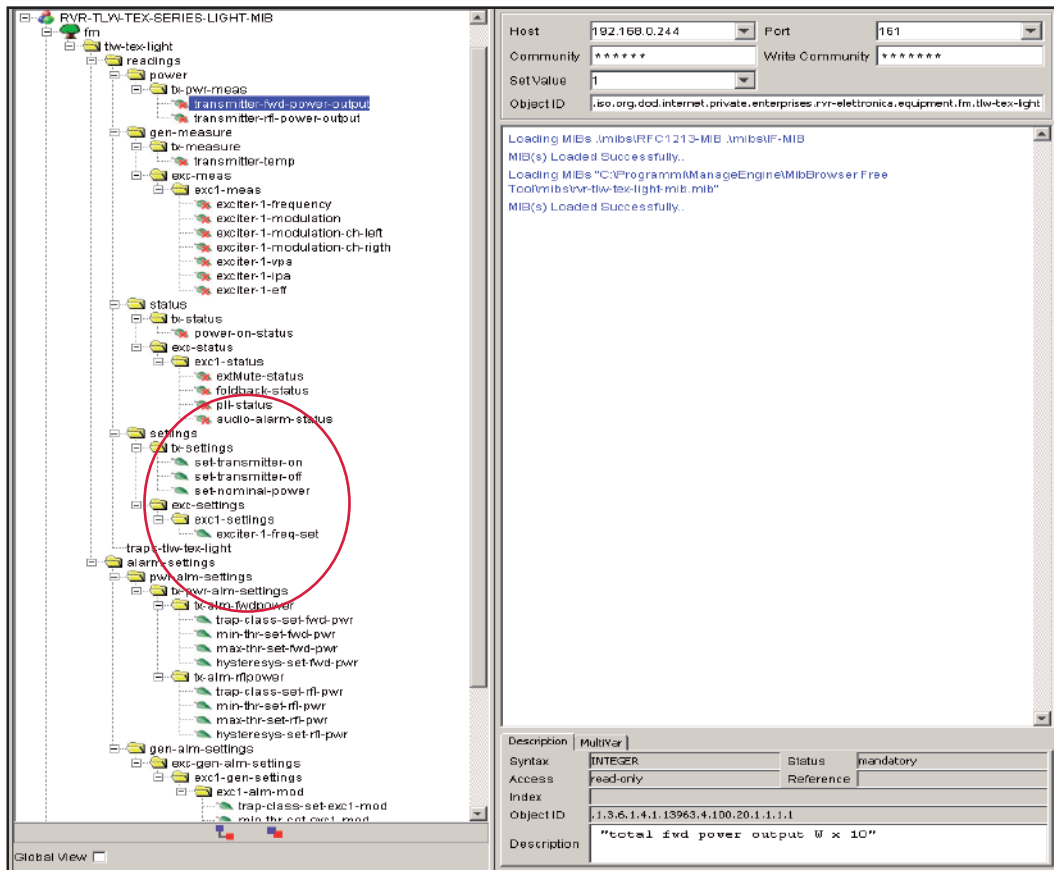
2.2.2 Comand sending

Similarly to measurements, the commands have a number of OID that are only in write mode. For each transmitter, the MIB export a specific set of OID.

The commands set are of two types: bistable (ON / OFF) or impulsive type.

- **Bistable control:** in order to activate (ON), the user must send a "2" as value; in order to disable (OFF), the user must send a "1" as value. No other value is accepted like a command.

- **Impulsive control:** typically the commands are impulsive type. In other words, if you put the transmitter “ON” (“2” value), the next command is “OFF” (“2” value) and not a disable for “ON” command (“1” value).



Description	Multivar	Status	Mandatory
Syntax	INTEGER		
Access	read-only	Reference	
Index			
ObjectID	.1.3.6.1.4.1.13963.4.100.20.1.1.1.1		
Description	"total fwd power output W x 10"		

Menu 5

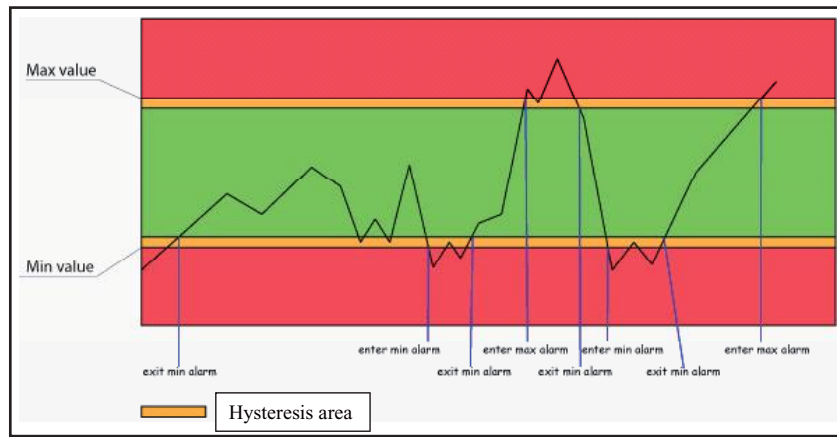


Note: In the example above, all controls are impulsive type.

2.2.3 Reading and Settings of Trap

For each Trap related to measurement can be set:

- Enabler Trap command on a power measure.
- The minimum value (MIN) is the fixed point below which is sent a Trap.
- The maximum value (MAX) is the fixed point beyond which is sent a Trap.
- The hysteresis value is a nominal value that the system adds (or subtracts) to real value in order to exit from alarm condition. In other words, it is helpful to avoid situations of continuous alarm, if readout is very close to the set point alarm.



Menu 6

As you can see the hysteresis is a protected area in which the alarm is not sent, when the value exceeds the minimum value (MIN) when there is no alarm or the maximum value (MAX) alarm is active, the minimum value (MIN) alarm is set. To exit the MIN alarm condition, the value should be equal to the MIN value plus the value of hysteresis.



Note : the hysteresis value must be less than $\frac{1}{2}$ referred to distance between the minimum value (MIN) and maximum value (MAX).

An example of an analog alarm setting, are included in the following section in the SNMP tree:

Menu 7

Below are shown the OID descriptions of the trap sent by system:

The screenshot shows a network management interface. On the left, a tree view displays various MIBs and their sub-objects. A red circle highlights the 'TRAPS' section, which includes:

- trap-tlw-tex-light-forward-power
- trap-tlw-tex-lights-reflected-power
- trap-tlw-tex-light-exciter-1-modulation

On the right, the detailed view for the selected OID is shown. The Host is 192.168.0.244 and the Port is 161. The ObjectID is .iso.org.dod.internet.private.enterprises.rvr-electronica.equipment.fm.tlw-tex-light. The description of the trap is:

Description	MultiVar	Status	Reference
total fwd power output W x 10		mandatory	

Menu 8

3. Connecting to Internet network

In order to connect the system to the public network **/TLW-BLU-E** you must have an internet connection typically provided through a router with NAT (Network Address Translation), which allows devices connected to the LAN to go out with the number router's public IP and protect any attempts at forcing.

In case you have connecting directly with the public IP address on the LAN socket is advisable to insert a router / firewall to avoid exposing the system **/TLW-BLU-E** directly to the public network but manage only the ports used by **/TLW-BLU-E** for the functions of the web interface and SNMP.

The system uses incoming port 80, can not be changed, such as web interface visible from any Web Browser and port 161 can not be changed, such as SNMP port.

For sending of SNMP Trap **/TLW-BLU-E** uses port 162 that can not be changed.

To ensure that the **/TLW-BLU-E** is visible from the outside is necessary that the router / firewall is set up port forwarding, the function can have different names depending on the brand of your router.

The public port 80 from IP to the IP of **/TLW-BLU-E** for WEB and port 161 of the public interface to the IP of **/TLW-BLU-E** for SNMP data.

To ensure that the unit can send the Trap needs to be able to use the network at its output port 162 for Trap.

The apparatus as said default IP is set to RVR as 192.168.0.244 and will be adjusted on the network configured as your router's LAN port is used for port forwarding.

If you have multiple devices connected to the LAN after the router is necessary to use different ports on the public interface that will be routed to the fixed ports of the devices **/TLW-BLU-E** must have a LAN IP different from each other.

- **/TLW-BLU-E #1** IP 192.168.0.244 Port forwarding port 80 > port 80 of 192.168.0.244
- **/TLW-BLU-E #1** IP 192.168.0.244 Port forwarding port 161 > port 161 of 192.168.0.244
- **/TLW-BLU-E #2** IP 192.168.0.245 Port forwarding port 81 > port 80 of 192.168.0.245
- **/TLW-BLU-E #2** IP 192.168.0.245 Port forwarding port 163 > port 161 of 192.168.0.245

With this configuration, the apparatus **/TLW-BLU-E # 1** will be visible from WEB as <http://public.ip> and apparatus **/TLW-BLU-E # 2** will be visible from as <http://public.ip:81> WEB, SNMP and how you must use port 161 to see the **/TLW-BLU-E # 1** and port 163 to see the **/TLW-BLU-E # 2**.

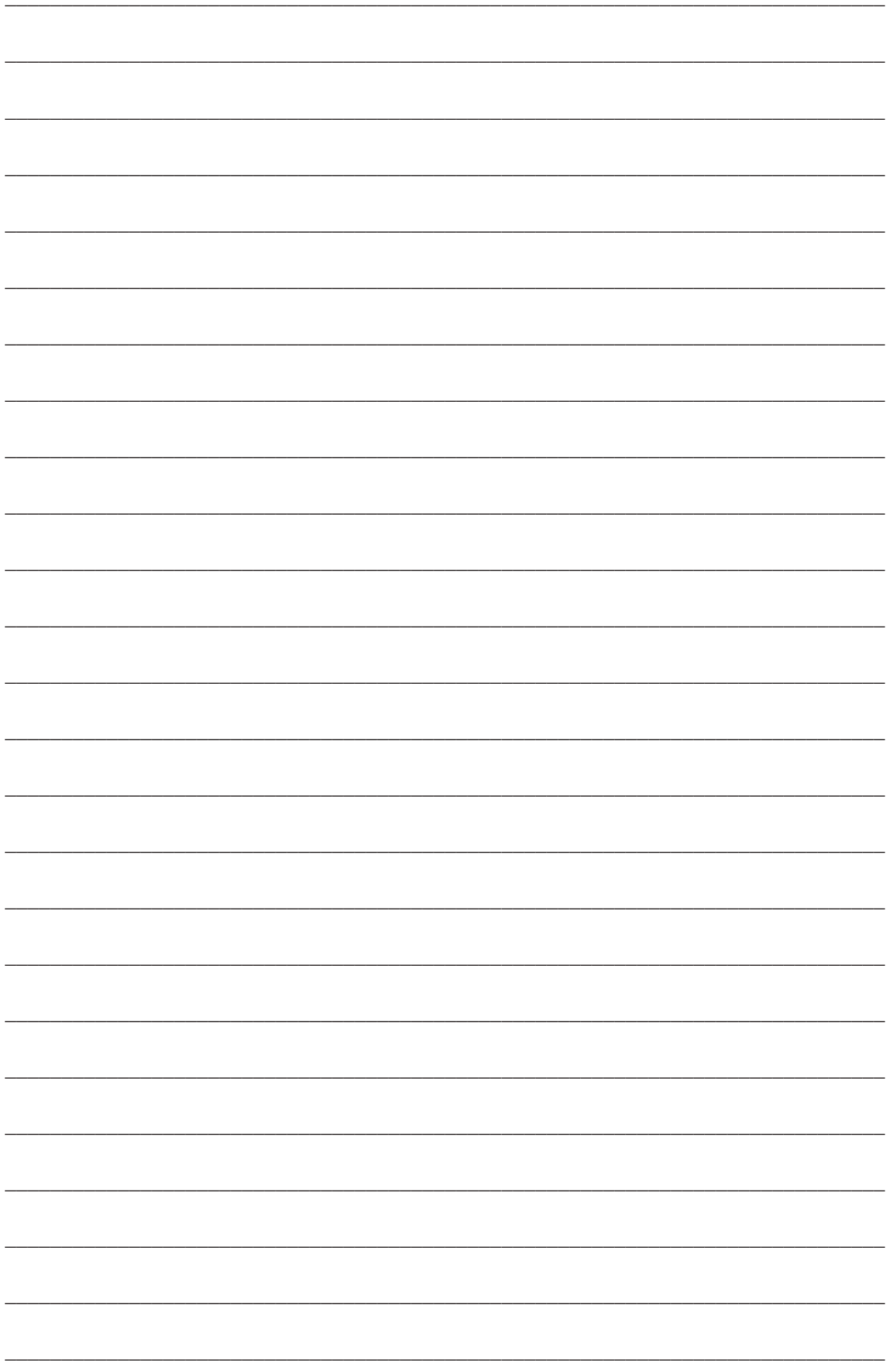
To send the Trap being output there is no problem, as long as there are no restrictions on using port 162 is wanted by the service provider.

To know the public IP of our apparatus is desirable to have a FIXED IP connection service that is provided by the provider, if the service has a dynamic IP you will have to rely on a DNS service that gives a name to our IP and keep updated in the event of a change of IP in order to reach the **/TLW-BLU-E** always writing the same name.

This service is provided by many providers, some free and some paid, and usually some routers include this function that can handle some of the service providers, and in case you need to use this service will need to be programmed into your router by following the instructions in that, given the various methods used to manage this function, we can not include this function in the system **/TLW-BLU-E**.

In case your network **/TLW-BLU-E** has many systems connected to the Internet the safest way to manage and functional systems is to create a VPN between all stations and the headquarters in order to have all the devices in the same network in order to view them directly with their IP without the limitations of different ports for devices in the same location, not all routers have this programming possibilities, limits the output ports and having to manage any dynamic IP with a DNS service.

In this case, the customer will have to rely on a company that specializes in networks to configure your VPN between locations.





R.V.R. Elettronica S.p.A.

Via del Fonditore, 2 / 2c

Zona Industriale Roveri · 40138 Bologna · Italy

Phone: +39 051 6010506 · Fax: +39 051 6011104

e-mail: info@rvr.it · web: <http://www-rvr-it>

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