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E-4GU-1/3/5/6
USB MODEM INSTALLATION

E-4GU-5

E-4GU-6

(Product appearance may vary)

The E-4GU-x Modem is used to enable SMS alert messages to be sent from an ENVIROMUX Enterprise Environment Monitoring System (SYSTEM) to any user's cell phone or device capable of receiving SMS messages. Before connecting the modem to the SYSTEM, a GSM SIM card configured for SMS messaging must be installed to the modem following instructions from the modem manufacturer. If the ENVIROMUX 3G/4G Data Transfer features are going to be used (E-xD SYSTEM models only), the SIM card must also be configured to support this instead of **or** in addition to SMS messaging (see page 5).

To use E-4GU-1 and E-4GU-5 the E-2D/5D/16D must be running firmware version 4.21 or newer.

The E-4GU-1 modems accept the mini SIM card and the micro SIM card (when used with micro-to-mini SIM card adapter-acquired from SIM card provider). It is compatible with the E-xD.

The E-4GU-3 modems accept the mini SIM card and the micro SIM card (when used with micro-to-mini SIM card adapter-acquired from SIM card provider). It is compatible with the E-xD and E-MINI-LXO.

The E-4GU-5 modem accepts the mini SIM card and is only compatible with the E-xD. It is not compatible with the E-MINI-LXO.

The E-4GU-6 modem accepts the micro SIM card and is only compatible with the E-xD (firmware version 4.4 or newer). It is not compatible with the E-MINI-LXO.

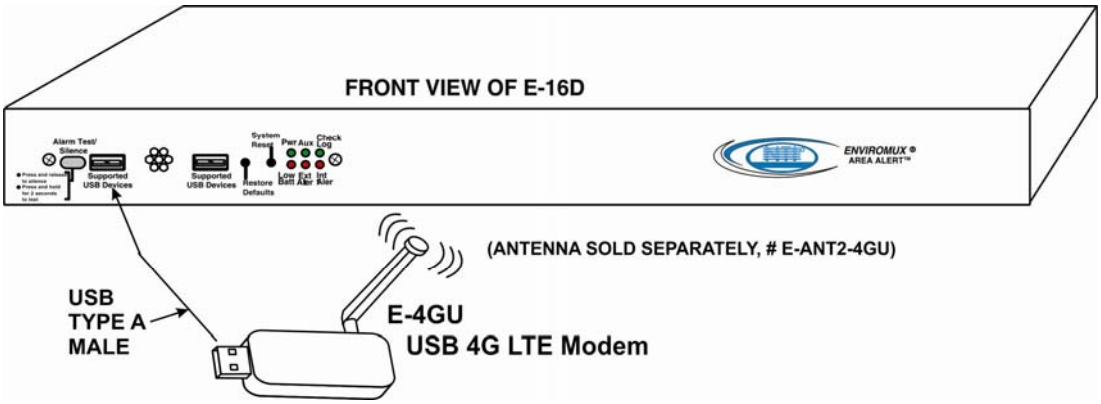
Cell phone SIM cards

A SIM card or *Subscriber Identity Module* is a portable memory chip used in some models of cellular telephones. It can be thought of as a mini hard disk that automatically activates the phone (or in this case the GSM modem) into which it is inserted. SIM cards are available in four standard sizes. The first is the size of a credit card (85.60 mm x 53.98 mm x 0.76 mm). The next, more popular miniature-version ("mini") has a width of 25 mm, a height of 15 mm, and a thickness of 0.76 mm. The third, "micro" version measures 15 mm x 12 mm x 0.76 mm, and lastly the "nano" measures 12.3 mm x 8.8 mm x 0.67 mm.

Some cellular service providers use SIM cards. Verify with your service provider that their SIM card will work with a 4G GSM type modems before purchasing their SIM card. **See charts on last page for SIM card compatibility.**

Note: Make sure the SIM card is for GSM communication (not CDMA), configured to send SMS messages, and that it is not locked (some SIM cards are "locked" to search for a specific IMEI number of the phone to operate).

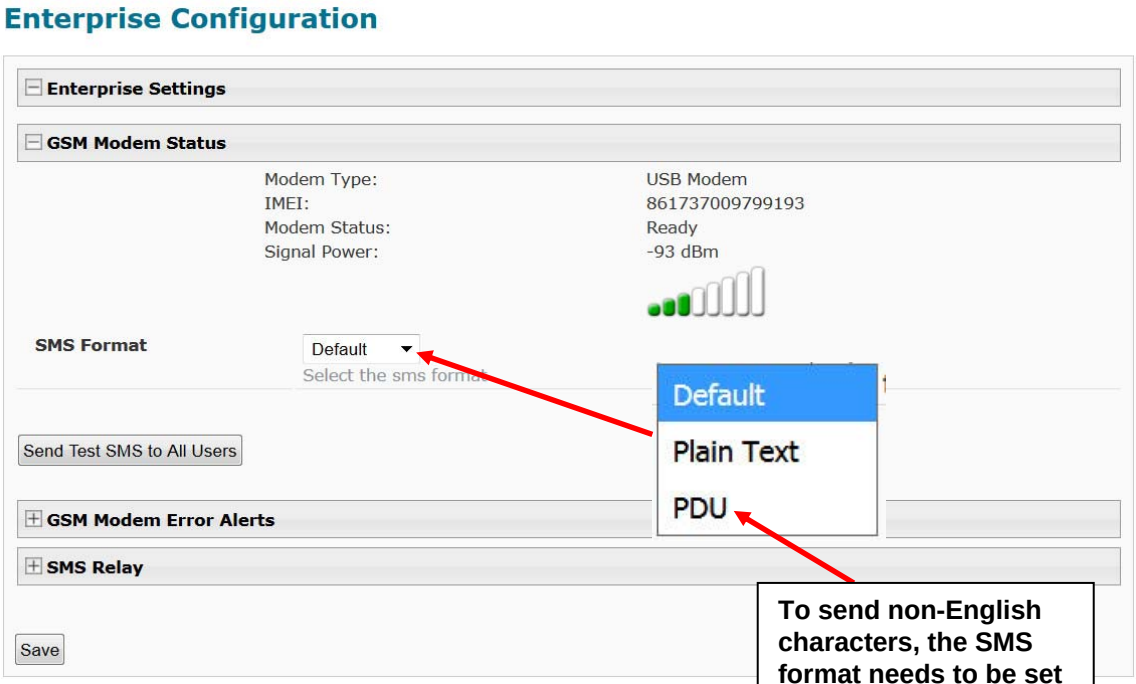
With the SIM card installed, plug the modem into an available USB Type A port on the SYSTEM.

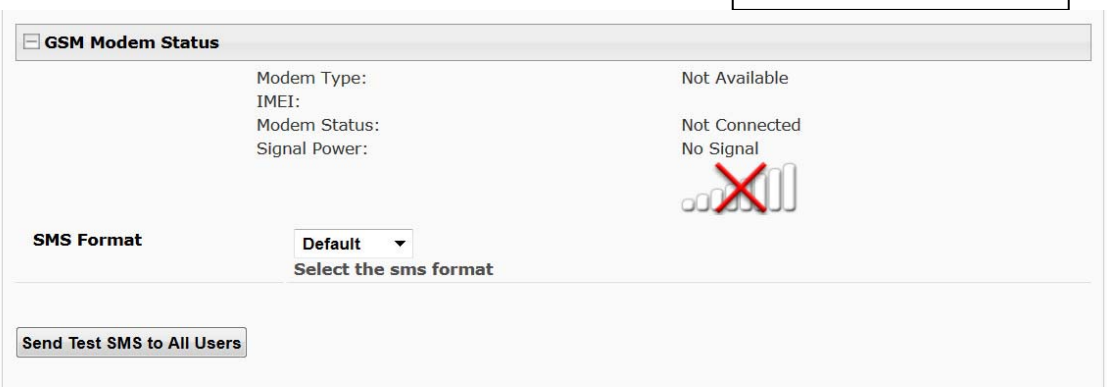


Once installed, the SYSTEM will sense the modem and provide status information on the “Enterprise Configuration” page in the web browser.

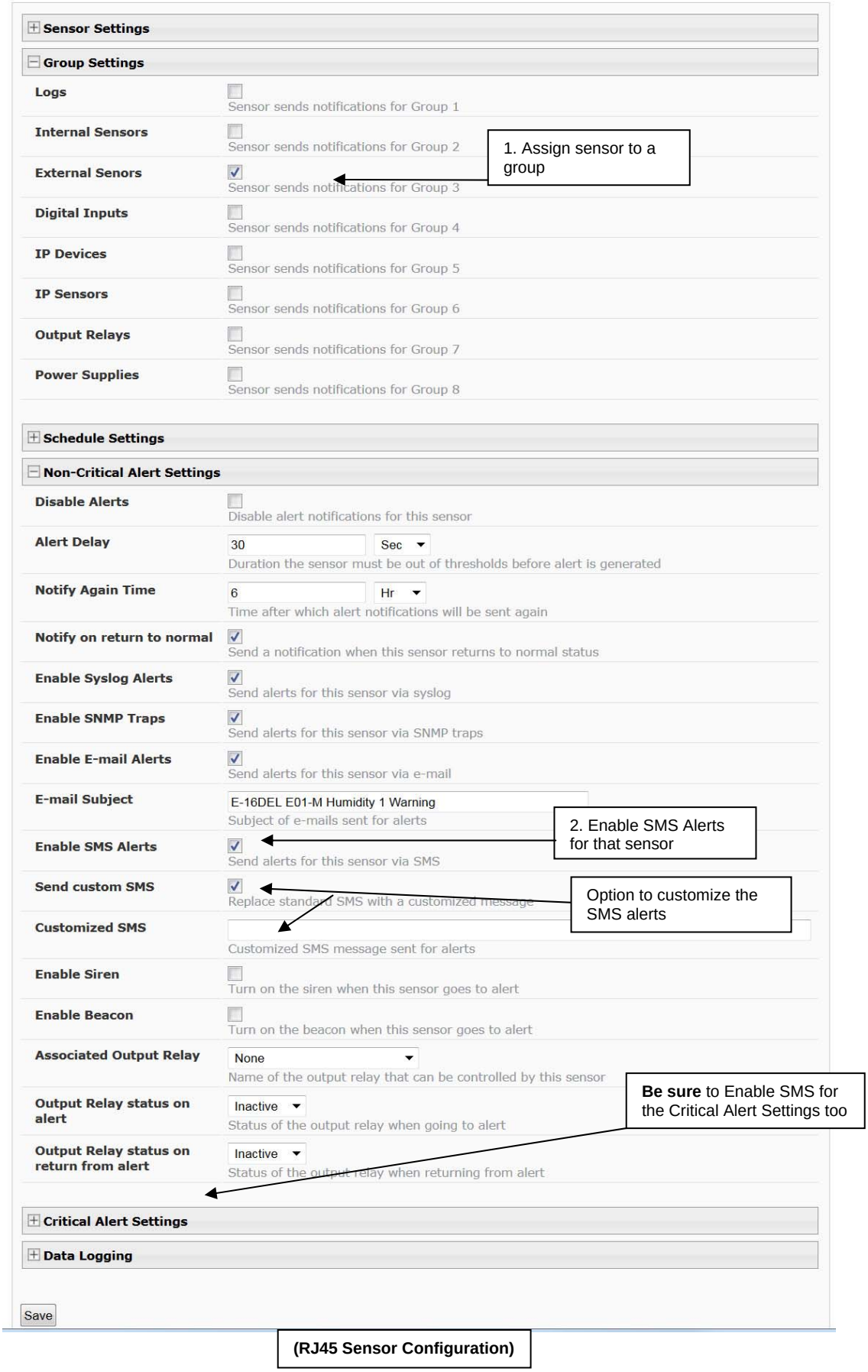
When a modem is present, the type, status, IMEI number, and signal strength will be displayed. The modem will work with a signal strength between -111dBm (weak) and -51dBm (strong).

To send and receive SMS messages, be sure to enable SMS messaging in the configuration for each applicable sensor and for each user that will receive them. (Refer to your respective SYSTEM manual for configuration instruction.)





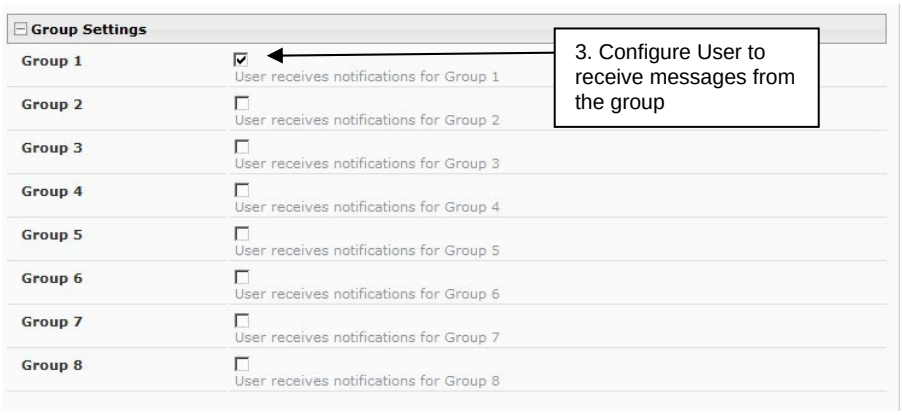
E-16DEL E01-M Humidity 1 Configuration (Type: Temperature/Humidity)

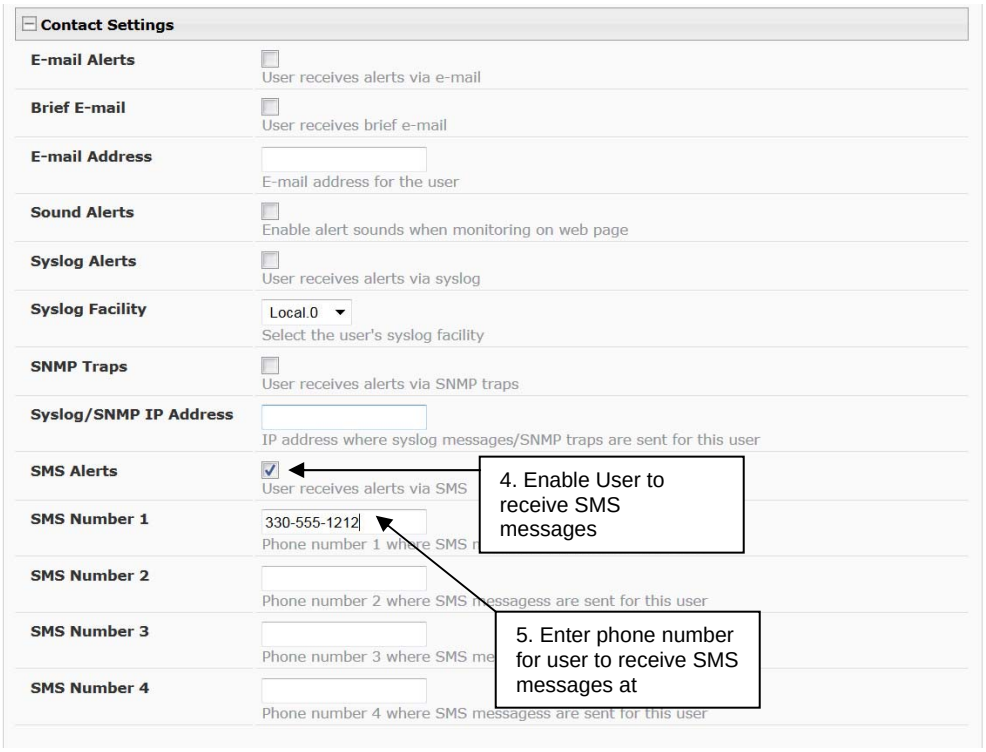


(RJ45 Sensor Configuration)

Digital Input Configuration

(Digital Input Sensor Configuration)





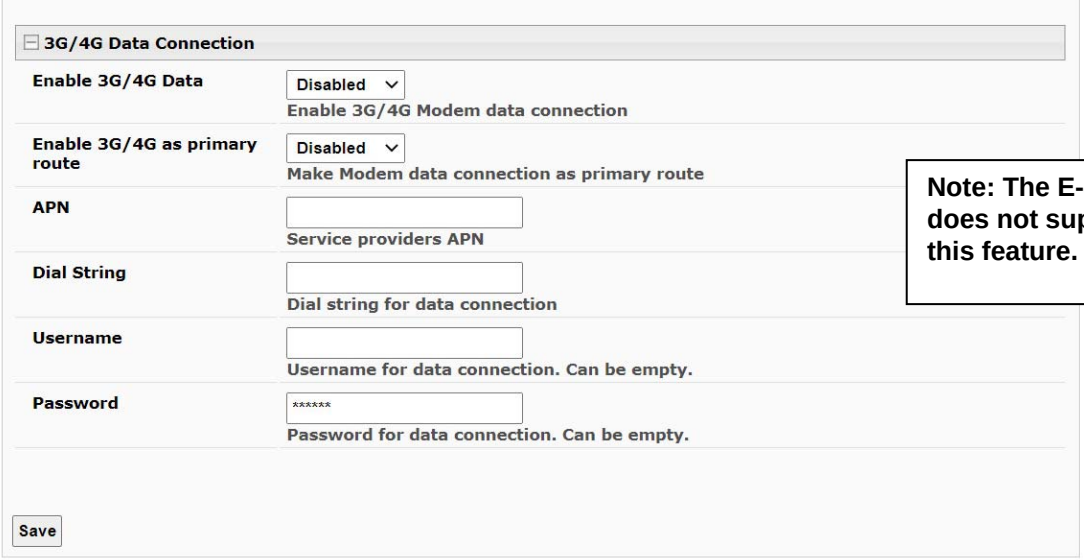
(User Configuration)

3G/4G Data Support (E-4GU-1/3/6 and E-xD Models only)

3G/4G Data Transfer And SMS Messaging

To use your USB modem for 3G/4G Data connection, your SIM card must be configured to support 3G/4G data connections and have either a **public or private** IP address. Make sure the account associated with the SIM card also has SMS messaging enabled if this feature will be used. With 3G/4G data connection support, the ENVIROMUX can be configured ("Enable 3G/4G Data" below) to send all alert messaging through the USB modem instead of requiring an Ethernet connection for these messages.

Note: When configured for 3G data transfer and SMS messaging only, no access to the ENVIROMUX will be possible through the modem.



Configuration Page from E-xD Web Interface

(**Administration->Network->3G/4G Data Connection**)

3G/4G Data Transfer, SMS Messaging, and Web Interface

To access the web interface through your USB modem, your SIM card must be configured to support 3G/4G data connections and have a **public** IP address. The ENVIROMUX can be configured ("Enable 3G/4G as primary route" above) to send all alert messaging through the USB modem instead of requiring an Ethernet connection for these messages. With a public IP address, you will also be able to access the web interface using the IP address of the SIM card for full control of the ENVIROMUX through the modem.

Make sure the account associated with the SIM card also has SMS messaging enabled if this feature will be used.

Contact your service provider to obtain a SIM card with the features you desire.

Note: If the 3G/4G Data connection is enabled as the primary internet connection, make sure that a reliable signal exists between the modem and service provider. Otherwise attempts made by the ENVIROMUX to communicate with devices on the network may be delayed and cause unnecessary alert messages.

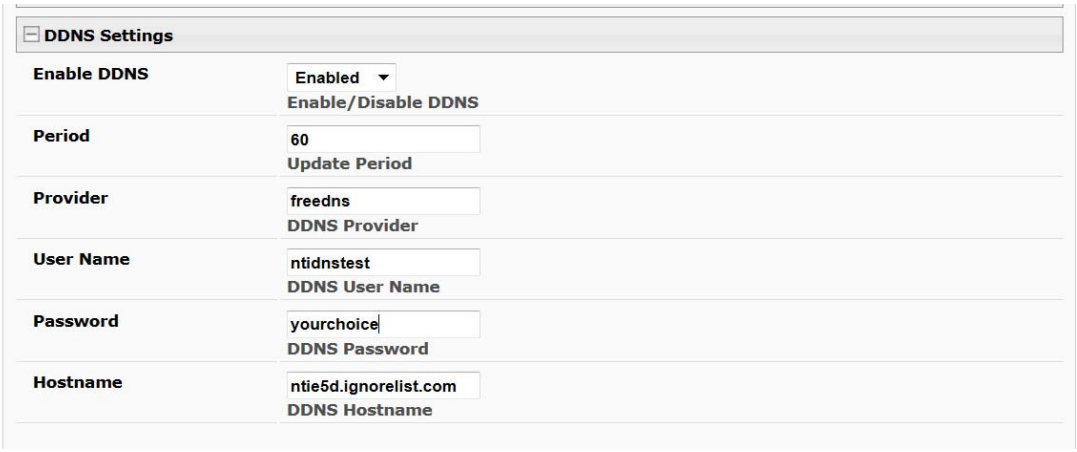
DDNS Settings

If you are going to access the web interface of the ENVIROMUX through your USB modem, and your service provider does not support a fixed (static) IP address (only offers a dynamic IP address), then in order to reliably access the ENVIROMUX web interface through the modem, the ENVIROMUX DDNS support feature will need to be configured.

The ENVIROMUX supports DDNS services with many providers, for example No-IP, Dydns and FreeDNS. (See list of known providers below). Any provider compatible with inadyn daemon will work with the E-xD. For general information on inadyn go to https://github.com/troglobit/inadyn .

Simply establish an account with a DDNS provider. Then, enable the support, enter a value in seconds (range is 30-764000) for the Update Period, enter the DDNS service provider and other required pieces of information indicated below.

The Update Period determines how often the ENVIROMUX will check with the DDNS provider to verify that it has the correct IP address associated with the DDNS hostname. If the IP address they have is different than that in the ENVIROMUX, the recorded IP address will be updated with the IP address in the ENVIROMUX.



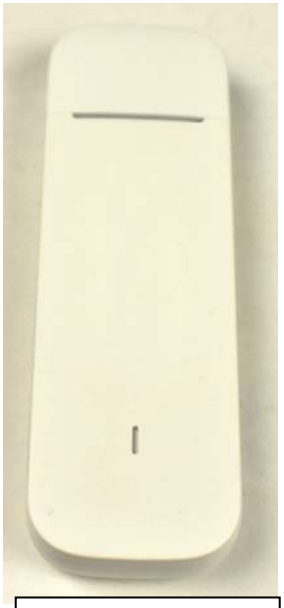
Configuration Page from E-xD Web Interface

(**Administration->Network->DDNS Settings**)

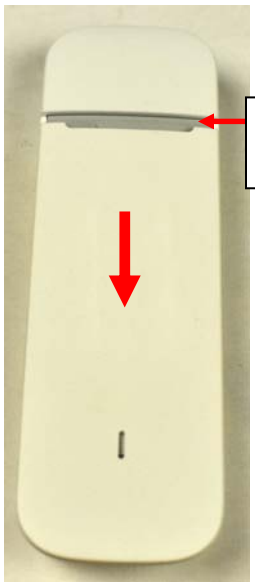
DNS Provider List

DDNS Provider	Provider Name To Use	DDNS Provider	Provider Name To Use
ChangeIP	changeip	gira.de	gira
OVH	ovh	sitelutions.com	sitelutions
Strato	strato	dnsomatic.com	dnsomatic
cloudxns	cloudxns	dynsip.org	dynsip
ddnss.de	ddnss.de	no-ip.com	no-ip
dhis	dhis	3322.org	3322
dnsexit	dnsexit	he.net	he
dtdns	dtdns	spdyn.de	spdyn
duckdns	duckdns	nsupdate.info	nsupdate
duiadns	duiadns	loopia.com	loopia
dyndns.org	dyndns	domains.google.com	domains.google
dynv6.com	dynv6	tzo.com	tzo
easydns.com	easydns	zerigo.com	zerigo
freedns.afraid.org	freedns	zoneedit.com	zoneedit
freemyip.com	freemyip		

Install SIM card in E-4GU-1/3 Modem



E-4GU-1/3 Modem

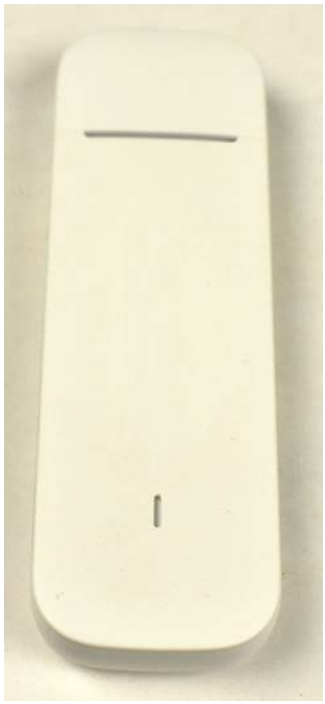


1- Slide cover down about 1/8"

2- Remove cover

3- Set SIM card on modem above card slot. The chamfered corner is at top left.

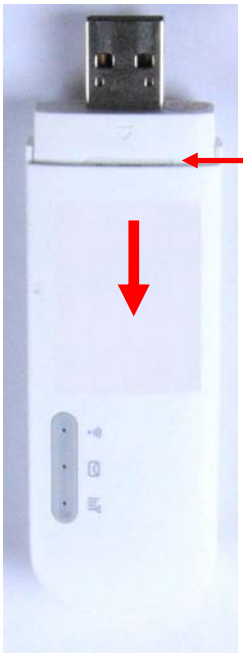
4- Slide SIM card into slot fully. (Card is fully in slot above)



5 - Replace cover

Install SIM card in E-4GU-5 Modem

E-4GU-4 Modem



1- Slide cover down about 1/8"

2- Remove cover

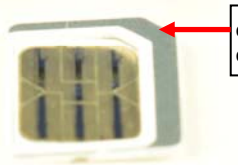
3- Approach modem with Micro SIM card . The chamfered corner is at bottom right.

4- Slide SIM card into slot fully.
(Card is fully in slot above)

5 - Replace cover

Install SIM card in E-4GU-6 Modem

Leave antennas off for SIM card installation.



chamfered corner

1- Line the SIM card up. Chamfered corner to front right.

2- Insert card straight into slot. NOT AT AN ANGLE.

3- Insert card fully. The edge should be fully inside, as shown above.

4- Attach antennas

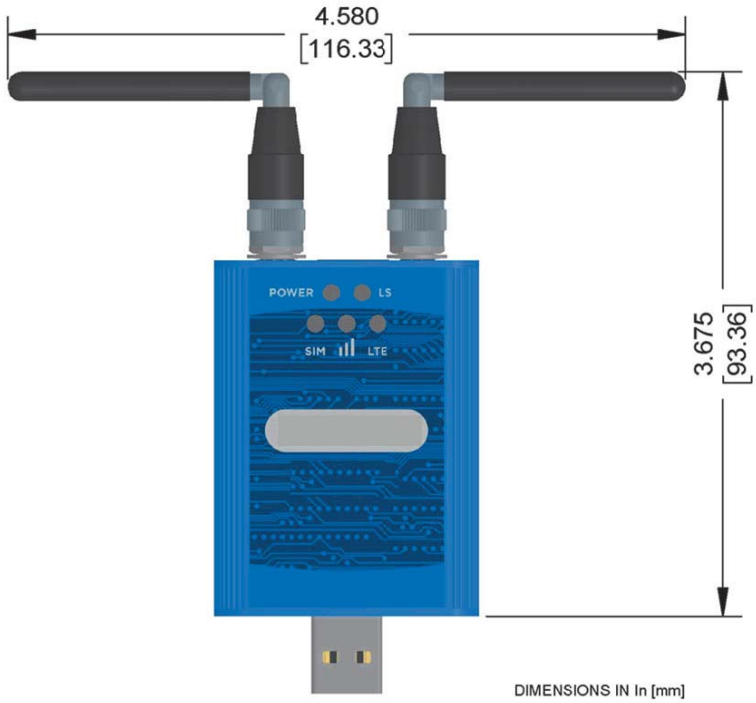
E-4GU-6 Modem LEDs

The E-4GU-6 includes 5 LEDs to provide status information as per the chart below.

Note:

- Slow is 1 second on 1 second off
- Fast is 200 milliseconds on 200 milliseconds off

LED	Status	Description
Power	On	Device has power
	Off	Device does not have power
Link Status (LS)	On	Radio is not registered
	Flash Slow	Registered
	Off	Radio is turned off, in PSM mode, receiving a firmware update, or SIM is not inserted.
LTE	On	LTE
	Flash Fast	3G
	Flash Slow	2G
	Off	SIM not inserted or radio technology unknown
SIM	On	Ready
	Flash Slow	Other
	Off	SIM not inserted
Signal Strength	On	Excellent
	Flash Fast	Good
	Flash Slow	Fair
	Off	No signal or SIM not inserted



Specifications

E-4GU-1/3

Protocol Supported	SMS
SIM Card supported	Mini (25x15x0.76mm) and Micro (15x12x0.76mm)(w/Adapter)
Cellular Standard supported	2G/3G/4G
Connector	USB Type A Male
External Antenna	Two CRC-9 ports provided (antenna not included)
Compatibility- E-4GU-1 purchased **before 11/14/22**	E-2D/5D/16D with firmware version 2.60 or newer and E-MINI-LXO with firmware version 3.2 or newer
Compatibility- E-4GU-1 purchased **after 11/14/22**	E-2D/5D/16D with firmware version 4.21 or newer
Compatibility-E-4GU-3	E-2D/5D/16D with firmware version 2.60 or newer and E-MINI-LXO with firmware version 3.2 or newer
Regulatory Approvals	CE,RoHS (E-4GU-3 only)

Effective 11/14/22

NTI#	4G LTE Bands Supported*	4G Frequencies Supported	3G Support	2G Support
E-4GU-1	1/2/4/5/7/28	FDD 700/850/1700/1900/ 2100/2600 MHz	WCDMA(UMTS) DC-HSPA+/ HSPA+/HSPA/UMTS 850/1900/2100MHz	GSM/GPRS/EDGE 850/900/1800/1900 MHz
E-4GU-3	1/3/7/8/28/40	FDD 700/900/1800/2100/ 2600 Mhz, TDD 2300 MHz	WCDMA(UMTS) DC-HSPA+/ HSPA+/ HSPA/UMTS 900/ 2100MHz	GSM/GPRS/EDGE 850/ 900/1800/1900 MHz

***Check with your service provider to determine what band(s) must be supported by your modem for your area to determine what model is right for you.**

Models purchased after 11/14/22 are compatible with E-2D/5D/16D operating firmware revision 4.21 or newer.

Models purchased before 11/14/22 are compatible with E-2D/5D/16D operating firmware revision 2.60 or newer and are compatible with the E-MINI-LXO with firmware revision 3.2 or newer. .

For added connectivity, up to two E-ANT2-4GU external antennas (sold separately) can be attached to the E-4GU-1 or E-4GU-3 modems.

E-4GU-1/3 with E-ANT2-4GU attached

E-4GU-5

Protocol Supported	SMS
Network Protocol	LTE, 4G
External Antenna	Two CRC-9 ports provided (antenna not included)
4G Network Band supported	LTE:1/3/7/8/20
3G Network Band supported	UMTS: 900/ 2100MHz
2G Network Band supported	GSM: 850/900/1800/1900 MHz
SMS Modes	Text and PDU
SIM Card supported	Mini (25x15x0.76mm) and Micro (15x12x0.76mm)(w/Adapter)
USB Connector	Type A Male Plug
WiFi	Access Point for up to 10 WiFi users
Input Voltage	5VDC
Dimensions (WxDxH)	28x88x11>5mm (1.1x3.46x.45 In.) without Antennas
Operating Temperature	-10°C to 40°C (14°F to 104°F)
Storage Temperature	-20°C to 70°C (-4°F to 158°F)
Humidity Range	5% to 95% R.H (Non-Condensing)
Compatibility	E-2D/5D/16D with firmware **Rev. 4.21 or newer**
Regulatory Approvals	CE, RoHS

Note: When connected to the ENVIROMUX system, E-4GU-5 modem extends 3.07" from the edge of the case.

E-4GU-6

Protocol Supported	SMS
Security Supported	SSL/TLS 1.2 or higher
SIM Card supported	Micro (15x12x0.76mm)
Cellular Standard supported	2G/3G/4G
4G Network Band supported	LTE: 1/2/3/4/5/7/8/12/18/19/20/25/26/28
3G Network Band supported	UMTS: 800/850/900/ 1700/1900/2100MHz
2G Network Band supported	GSM: 850/900/1800/1900 MHz
Connector	USB Type A Male
External Antenna	Two CRC-9 ports provided (antennas included)
Compatibility	E-2D/5D/16D with firmware version 4.4 or newer
Operating Temperature	-40°C to +85°C
Storage Temperature	-40°F to +185°F (-40°C to +85°C)
Relative Humidity	15% to 85% operating and storage
Dimensions (WxDxH)	2.45” x 1.79” x 0.78” (6.22 x 4.54 x 1.98 cm)
Regulatory Approvals	CE,RoHS, TAA Compliant
Safety Approval	UL, cUL, IEC 62368-1