

## E-3GU-4 / E-4GU-1/2/3/4 USB MODEM INSTALLATION



**E-3GU-4**

(Product appearance may vary)



**E-4GU-4**

The E-3GU-4 and 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 Data Transfer features are going to be used (E-3GU-4 modem and 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).

Compatible ENVIROMUX models include E-2D/5D/16D and E-MINI-LXO.

**To use E-4GU-1/2/3 the E-2D/5D/16D must be running firmware version 2.60 or later. E-MINI-LXO must be running version 3.2 or later.**

The E-3GU-4 and E-4GU-1/2/3 modems accept the mini SIM card and the micro SIM card (when used with micro-to-mini SIM card adapter).

The E-4GU-4 modem accepts the micro SIM card and is only compatible with the E-MINI-LXO. Compatibility with the E-xD is coming soon.

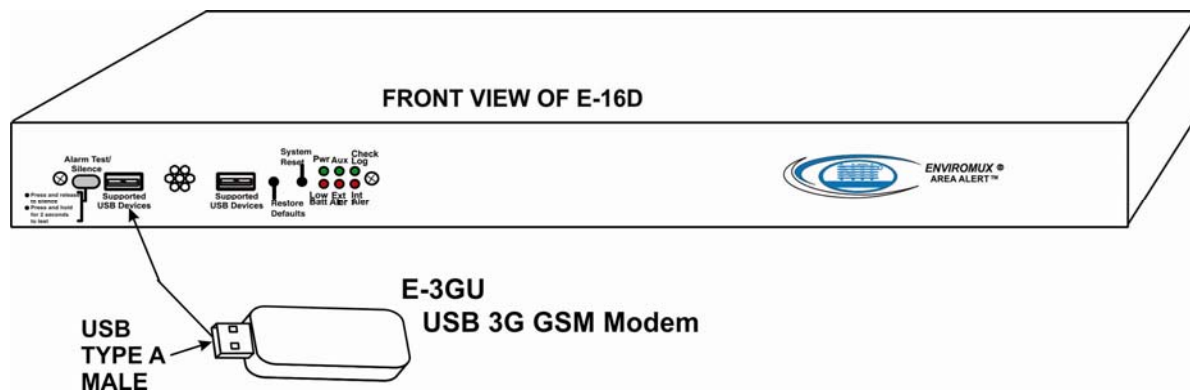
### Cell phone SIM cards

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 3G (or 4G if applicable) 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.)

## Enterprise Configuration

The screenshot shows the 'Enterprise Configuration' web interface. The 'GSM Modem Status' section displays the following information:

Field	Value
Modem Type:	USB Modem
IMEI:	861737009799193
Modem Status:	Ready
Signal Power:	-93 dBm

Below the status information, there is a signal strength indicator showing four bars. The 'SMS Format' dropdown menu is set to 'Default', and a red arrow points to it from a callout box. The callout box lists the options: 'Default', 'Plain Text', and 'PDU'. The 'Send Test SMS to All Users' button is visible below the dropdown. The 'GSM Modem Error Alerts' and 'SMS Relay' sections are collapsed. A 'Save' button is at the bottom left.

**NOTE: The SMS Format must be set to PDU in order to use the E-4GU-2 modem.**

**(Plain Text or PDU formats will work with E-4GU-1, E-4GU-3, E-4GU-4 and E-3GU-4 models)**

This screenshot shows the 'Enterprise Configuration' web interface with the 'GSM Modem Status' section. The status information is as follows:

Field	Value
Modem Type:	Not Available
IMEI:	Not Connected
Modem Status:	No Signal
Signal Power:	

The signal strength indicator shows four bars with a red 'X' over them. The 'SMS Format' dropdown menu is set to 'Default'. The 'Send Test SMS to All Users' button is visible below the dropdown.

**Note:** When using the E-4GU-4, the signal power may or may not be reported in the web interface accurately. Refer to the blue Status LED on the modem. If the blue Status LED is illuminated solid, your signal is good and the modem is ready to use.



**LEDs of E-4GU-4 shine through the case. Make sure surrounding lighting is not too bright in order to see them.**

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

+ Sensor Settings	
- Group Settings	
Logs	<input type="checkbox"/> Sensor sends notifications for Group 1
Internal Sensors	<input type="checkbox"/> Sensor sends notifications for Group 2
External Sensors	<input checked="" type="checkbox"/> Sensor sends notifications for Group 3
Digital Inputs	<input type="checkbox"/> Sensor sends notifications for Group 4
IP Devices	<input type="checkbox"/> Sensor sends notifications for Group 5
IP Sensors	<input type="checkbox"/> Sensor sends notifications for Group 6
Output Relays	<input type="checkbox"/> Sensor sends notifications for Group 7
Power Supplies	<input type="checkbox"/> Sensor sends notifications for Group 8
+ Schedule Settings	
- Non-Critical Alert Settings	
Disable Alerts	<input type="checkbox"/> Disable alert notifications for this sensor
Alert Delay	30 <input type="text"/> Sec <input type="button" value="v"/> Duration the sensor must be out of thresholds before alert is generated
Notify Again Time	6 <input type="text"/> Hr <input type="button" value="v"/> Time after which alert notifications will be sent again
Notify on return to normal	<input checked="" type="checkbox"/> Send a notification when this sensor returns to normal status
Enable Syslog Alerts	<input checked="" type="checkbox"/> Send alerts for this sensor via syslog
Enable SNMP Traps	<input checked="" type="checkbox"/> Send alerts for this sensor via SNMP traps
Enable E-mail Alerts	<input checked="" type="checkbox"/> Send alerts for this sensor via e-mail
E-mail Subject	E-16DEL E01-M Humidity 1 Warning Subject of e-mails sent for alerts
Enable SMS Alerts	<input checked="" type="checkbox"/> Send alerts for this sensor via SMS
Send custom SMS	<input checked="" type="checkbox"/> Replace standard SMS with a customized message
Customized SMS	<input type="text"/> Customized SMS message sent for alerts
Enable Siren	<input type="checkbox"/> Turn on the siren when this sensor goes to alert
Enable Beacon	<input type="checkbox"/> Turn on the beacon when this sensor goes to alert
Associated Output Relay	None <input type="button" value="v"/> Name of the output relay that can be controlled by this sensor
Output Relay status on alert	Inactive <input type="button" value="v"/> Status of the output relay when going to alert
Output Relay status on return from alert	Inactive <input type="button" value="v"/> Status of the output relay when returning from alert
+ Critical Alert Settings	
+ Data Logging	
<input type="button" value="Save"/>	

1. Assign sensor to a group

2. Enable SMS Alerts for that sensor

Option to customize the SMS alerts

Be sure to Enable SMS for the Critical Alert Settings too

(Digital Input Sensor Configuration)

## Digital Input Configuration

Digital Input Settings	
Group Settings	
Logs	<input type="checkbox"/> Sensor sends notifications for Group 1
Internal Sensors	<input type="checkbox"/> Sensor sends notifications for Group 2
External Sensors	<input type="checkbox"/> Sensor sends notifications for Group 3
Digital Inputs	<input checked="" type="checkbox"/> Sensor sends notifications for Group 4
IP Devices	<input type="checkbox"/> Sensor sends notifications for Group 5
IP Sensors	<input type="checkbox"/> Sensor sends notifications for Group 6
Output Relays	<input type="checkbox"/> Sensor sends notifications for Group 7
Power Supplies	<input type="checkbox"/> Sensor sends notifications for Group 8
Schedule Settings	
Alert Settings	
Disable Alerts	<input type="checkbox"/> Disable alert notifications for this digital input
Alert Delay	2 Sec Duration the digital input must be out of normal status before alert is generated
Notify Again Time	30 Min Time after which alert notifications will be sent again
Notify on return to normal	<input checked="" type="checkbox"/> Send a notification when this digital input returns to normal status
Auto acknowledge	<input checked="" type="checkbox"/> Automatically acknowledge alert when digital input returns to normal status
Enable Syslog Alerts	<input checked="" type="checkbox"/> Send alerts for this digital input via syslog
Enable SNMP Traps	<input checked="" type="checkbox"/> Send alerts for this digital input via SNMP traps
Enable E-mail Alerts	<input checked="" type="checkbox"/> Send alerts for this digital input via e-mail
E-mail Subject	E-16DEL E01M Digital Input 7 Alert Subject of e-mails sent for alerts
Select IP Camera	Trendnet TV-IP562WI Select IP camera for image capture on alert
Attach IP camera capture to e-mail	<input type="checkbox"/> Attach captured image from selected IP camera to alert e-mail
Save image to USB	<input type="checkbox"/> Save captured image from selected IP camera to USB Flash
Enable SMS Alerts	<input checked="" type="checkbox"/> Send alerts for this digital input
Send custom SMS	<input type="checkbox"/> Replace standard SMS with a customized message
Customized SMS	 Customized SMS message sent for alerts
Enable Siren	<input type="checkbox"/> Turn on the siren when digital input goes to alert
Enable Beacon	<input type="checkbox"/> Turn on the beacon when digital input goes to alert
Associated Output Relay	None Name of the output relay that can be controlled by this digital input
Output Relay status on alert	Inactive Status of the output relay when going to alert

1. Assign sensor to a group

2. Enable SMS Alerts for the Digital Sensor

## (User Configuration)

Group Settings	
Group 1	<input checked="" type="checkbox"/> User receives notifications for Group 1
Group 2	<input type="checkbox"/> User receives notifications for Group 2
Group 3	<input type="checkbox"/> User receives notifications for Group 3
Group 4	<input type="checkbox"/> User receives notifications for Group 4
Group 5	<input type="checkbox"/> User receives notifications for Group 5
Group 6	<input type="checkbox"/> User receives notifications for Group 6
Group 7	<input type="checkbox"/> User receives notifications for Group 7
Group 8	<input type="checkbox"/> User receives notifications for Group 8

3. Configure User to receive messages from the group

Contact Settings	
E-mail Alerts	<input type="checkbox"/> User receives alerts via e-mail
Brief E-mail	<input type="checkbox"/> User receives brief e-mail
E-mail Address	<input type="text"/> E-mail address for the user
Sound Alerts	<input type="checkbox"/> Enable alert sounds when monitoring on web page
Syslog Alerts	<input type="checkbox"/> User receives alerts via syslog
Syslog Facility	Local.0 Select the user's syslog facility
SNMP Traps	<input type="checkbox"/> User receives alerts via SNMP traps
Syslog/SNMP IP Address	<input type="text"/> IP address where syslog messages/SNMP traps are sent for this user
SMS Alerts	<input checked="" type="checkbox"/> User receives alerts via SMS
SMS Number 1	330-555-1212 Phone number 1 where SMS messages are sent for this user
SMS Number 2	<input type="text"/> Phone number 2 where SMS messages are sent for this user
SMS Number 3	<input type="text"/> Phone number 3 where SMS messages are sent for this user
SMS Number 4	<input type="text"/> Phone number 4 where SMS messages are sent for this user

4. Enable User to receive SMS messages

5. Enter phone number for user to receive SMS messages at

## 3G Data Support (E-xD Models and E-3GU-4 only)

### 3G Data Transfer And SMS Messaging (Applies to E-3GU-4 only)

To use your USB modem for 3G Data connection, your SIM card must be configured to support 3G 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 data connection support, the ENVIROMUX can be configured ("Enable 3G 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.**

The screenshot shows a web interface for configuring 3G data connection. It has a title bar "3G Data Connection" with a minus icon. Below are several fields: "Enable 3G Data" with a dropdown set to "Enabled" and a description "Enable 3G Modem data connection"; "Enable 3G as primary route" with a dropdown set to "Disabled" and a description "Make Modem data connection as primary route"; "APN" with a text box containing "epc.tmobile.com" and a description "Service providers APN"; "Dial String" with a text box containing "\*99\*\*\*1#" and a description "Dial string for data connection"; "Username" with an empty text box and a description "Username for data connection. Can be empty."; and "Password" with an empty text box and a description "Password for data connection. Can be empty.". At the bottom left is a "Save" button.

#### Configuration Page from E-xD Web Interface

(Administration->Network->3G Data Connection)

### 3G Data Transfer, SMS Messaging, and Web Interface (Applies to E-3GU-4 only)

To access the web interface through your USB modem, your SIM card must be configured to support 3G data connections and have a **public** IP address. The ENVIROMUX can be configured ("Enable 3G 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 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.**

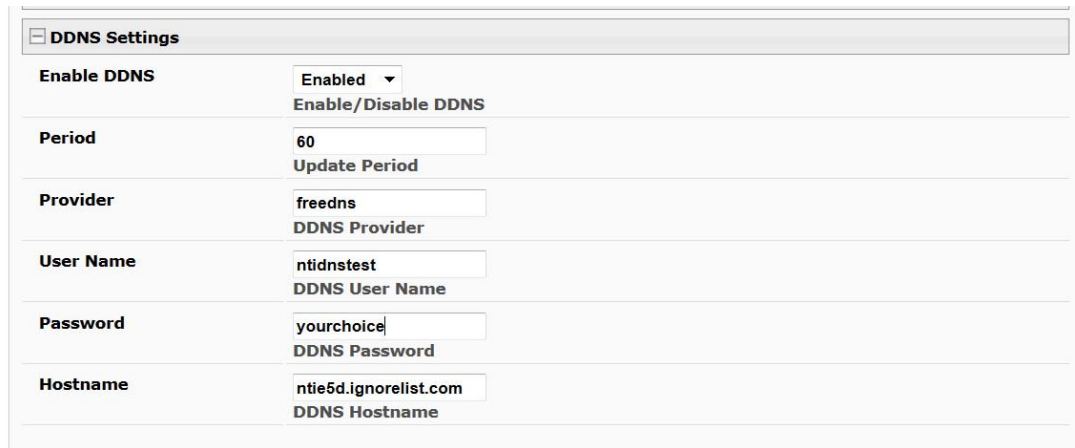
## DDNS Settings (Applies to E-3GU-4 Modem only)

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-3GU Modem



E-3GU Modem



1/8" Gap

1- Slide cover down about 1/8"



2- Remove cover



Mini SIM

card slot

3- Set SIM card on modem below card slot. The chamfered corner is at bottom right.

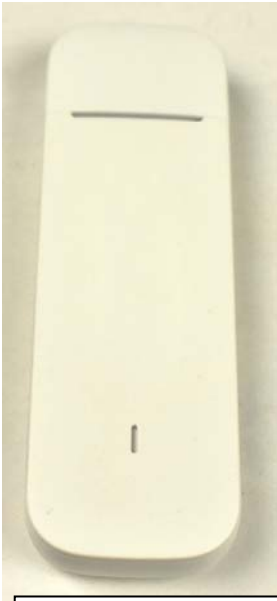


4- Slide SIM card into slot fully. (Card is fully in slot above)

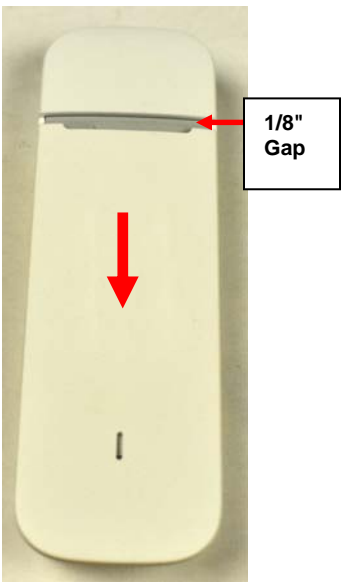


5 - Replace cover

Install SIM card in E-4GU-1/2/3 Modem



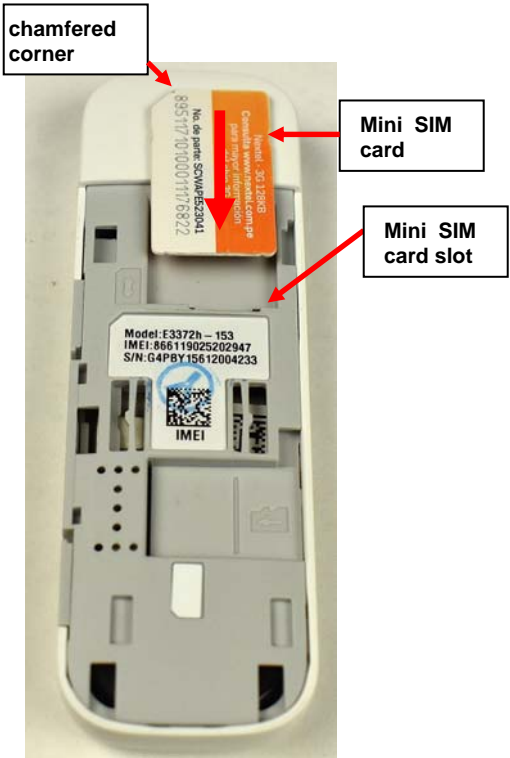
E-4GU-1/2/3 Modem



1- Slide cover down about 1/8"



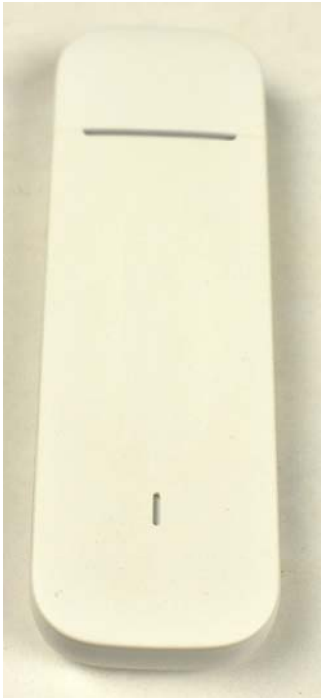
2- Remove cover



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)

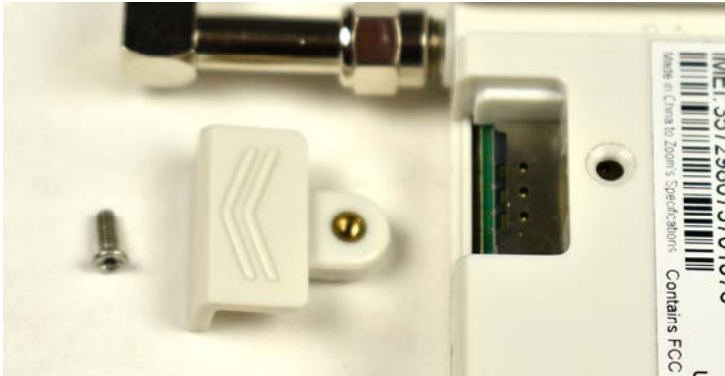


5 - Replace cover

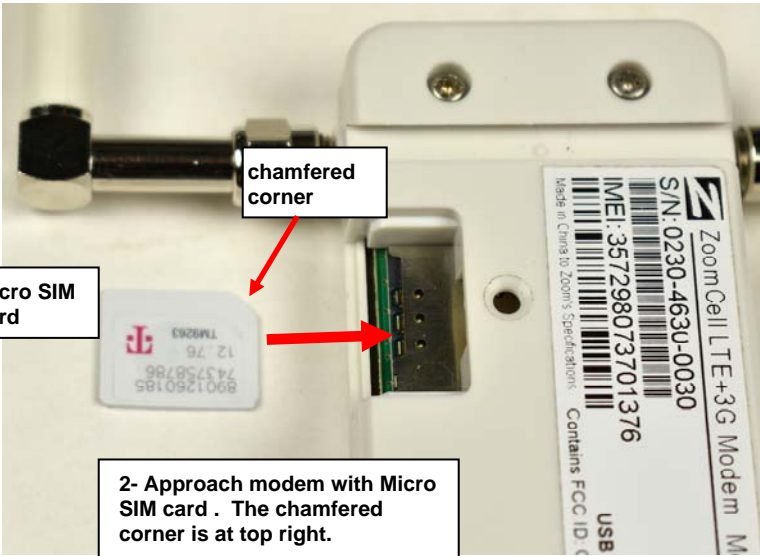
Install SIM card in E-4GU-4 Modem



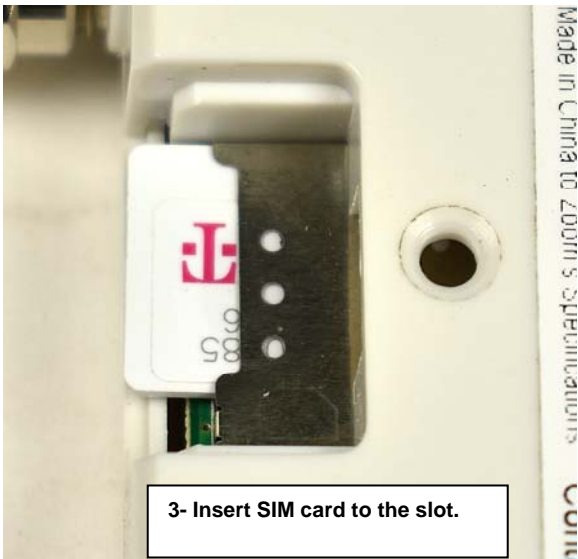
E-4GU-4 Modem



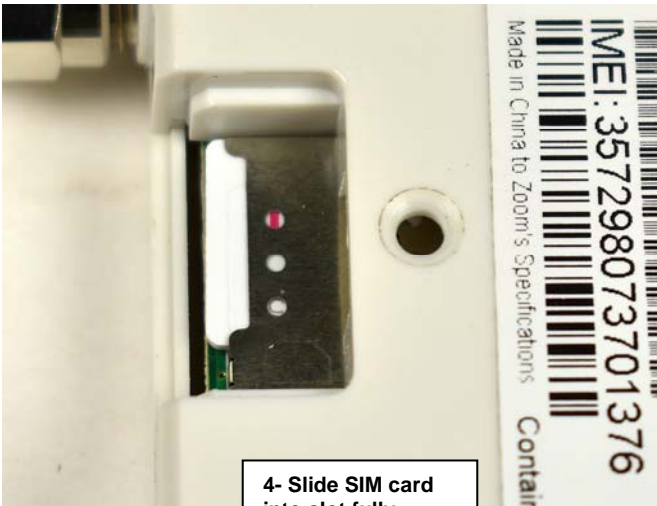
1- Remove cover



2- Approach modem with Micro SIM card . The chamfered corner is at top right.



3- Insert SIM card to the slot.



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



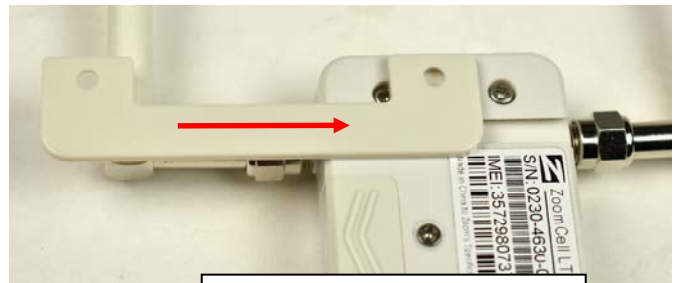
5 - Replace cover

## E-4GU-4 Mounting Bracket

The E-4GU-4 comes with a mounting bracket for wall mount installation.



E-4GU-4 Mounting bracket and screws



Slide bracket into slot on modem



Mounting bracket installed

## Specifications

### E-3GU-4

Protocol Supported	SMS
SIM Card supported	Mini (25x15x0.76mm) and Micro (15x12x0.76mm) (w/Adapter)
Cellular Standard supported	2G/3G
Connector	USB Type A Male
3G Network Band supported	HSPA+/HSUPA/HSDPA/HSPA/UMTS(WCDMA)-2100 MHz
2G Network Band supported	GSM/GPRS/EDGE-850/900/1800/1900 MHz
Compatibility	E-2D/5D/16D and E-MINI-LXO
Regulatory Approvals	CE,RoHS

### E-4GU-1/2/3

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-2D/5D/16D with firmware version 2.60 or later and E-MINI-LXO with firmware version 3.2 or later
Regulatory Approvals	CE,RoHS

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 850/1700/1900/2100MHz	GSM/GPRS/EDGE 850/900/1800/1900 MHz
E-4GU-2	1/3/7/8/20	FDD 800/900/1800/2100/2600 MHz	UMTS: 900/2100 MHz	GSM: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.**

The E-4GU-1/2/3 modem requires E-xD firmware revision 2.60 or newer to be compatible with E-2D/5D/16D.

#### E-4GU-4

Protocol Supported	SMS
Network Protocol	LTE, 3G
Carrier Certification	AT&T, PTCRB
Region	United States (AT&T, T-MOBILE)
External Antenna	SMA, U.FL (IPX) (Two SMA Antennas included)
Maximum Speeds	LTE Cat 1: 10.3Mbps Download / 5.2Mbps Upload HSPA: 7.2Mbps Download / 5.76Mbps Upload
4G Network Band supported	LTE: 2, 4, 5, 12
3G Network Band supported	HSPA: 850, 1700/2100, 1900 MHz
SMS Modes	Text & PDU
LED Status Light	2 x LEDs: Green for Power Blue for status
IP Services	TCP / UDP Client & Server, HTTP/DNS/FTP/SMTP Client, TLS support for TCP/UDP/HTTP/FTP/SMTP
SIM Connector	Micro SIM
USB Connector	Type A Male Plug
Supplemental Power Connector	USB Micro -B Receptacle
Input Voltage	5VDC for both primary USB & Micro-B inputs
Dimensions (WxDxH)	3.87x .60x4.73 In. (98x15.2x120.1mm) with Antennas 1.98 x .60 x 3.19 (98x15.2x81mm) without Antennas
Operating Temperature	-30°C to 60°C (-22°F to 140°F)
Storage Temperature	-40°C to 85°C (-40°F to 185°F)
Humidity Range	5% to 95% R.H (Non-Condensing)
Compatibility	E-MINI-LXO with firmware version 3.2 or later
Regulatory Approvals	FCC part 15B