

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



**E-4GU-3**



**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-1/3 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-4GU-1/3 modems accept the mini SIM card and the micro SIM card (when used with micro-to-mini SIM card adapter). It is compatible with the E-xD and E-MINI-LXO models.

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 later). It is not compatible with the E-MINI-LXO.

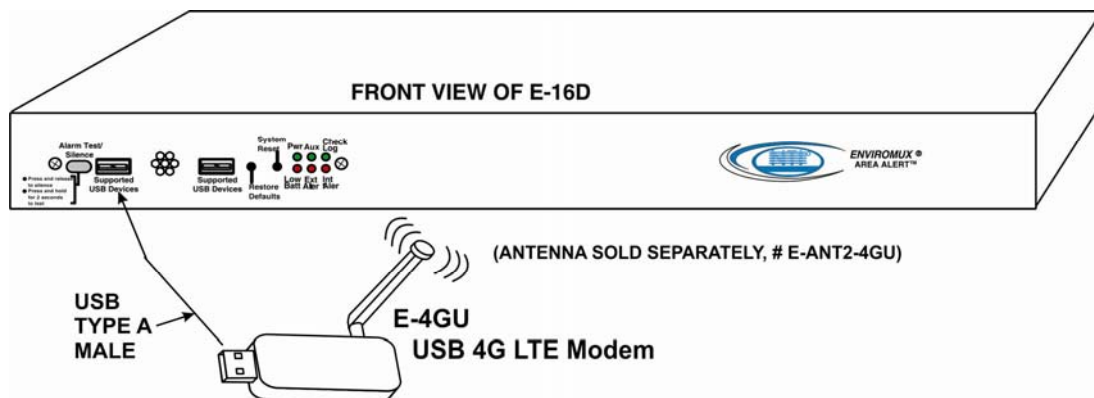
### Cell phone SIM cards

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 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

**Enterprise Settings**

**GSM Modem Status**

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



**SMS Format**      Default ▾  
Select the sms format

Send Test SMS to All Users

**GSM Modem Error Alerts**

**SMS Relay**

Save


Default

Plain Text

PDU

**GSM Modem Status**

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



**SMS Format**      Default ▾  
Select the sms format

Send Test SMS to All Users

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

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

(RJ45 Sensor Configuration)

# Digital Input Configuration

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

1. Assign sensor to a group

2. Enable SMS Alerts for the Digital Sensor

(Digital Input Sensor 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 <input type="button" value="v"/> 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 <input type="button" value="v"/> 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

(User Configuration)

## 3G/4G Data Support (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.**

<b>3G/4G Data Connection</b>	
Enable 3G/4G Data	Disabled <input type="button" value="v"/> Enable 3G/4G Modem data connection
Enable 3G/4G as primary route	Disabled <input type="button" value="v"/> Make Modem data connection as primary route
APN	<input type="text"/> Service providers APN
Dial String	<input type="text"/> Dial string for data connection
Username	<input type="text"/> Username for data connection. Can be empty.
Password	<input type="password" value="*****"/> Password for data connection. Can be empty.
<input type="button" value="Save"/>	

#### 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.

DDNS Settings	
Enable DDNS	Enabled Enable/Disable DDNS
Period	60 Update Period
Provider	freedns DDNS Provider
User Name	ntidnstest DDNS User Name
Password	yourchoice DDNS Password
Hostname	ntie5d.ignorelist.com DDNS Hostname

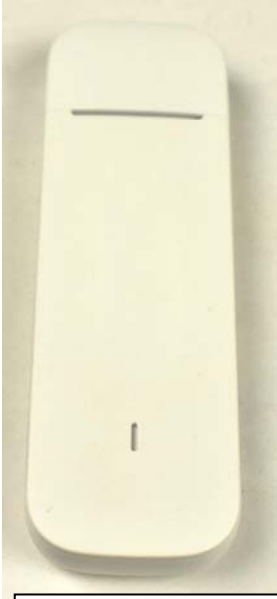
Configuration Page from E-xD Web Interface

(Administration->Network->DDNS Settings)

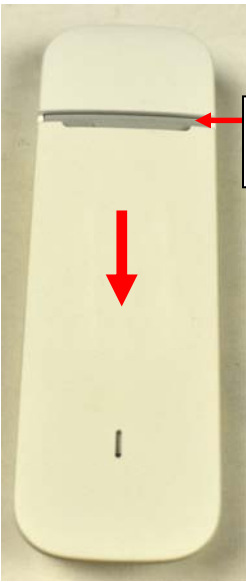
## DNS Provider List

DDNS Provider	Provider Name To Use	DDNS Provider	Provider Name To Use
Changelp	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



1/8" Gap

1- Slide cover down about 1/8"



2- Remove cover



chamfered corner

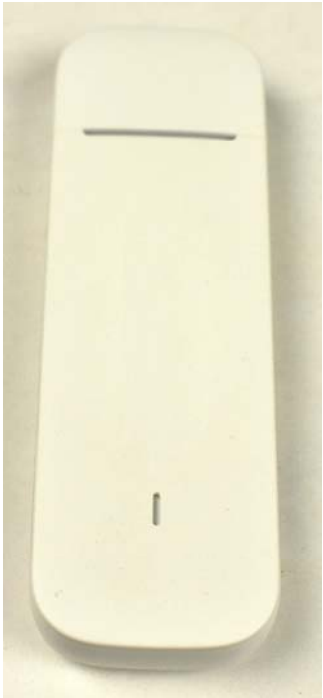
Mini SIM card

Mini SIM card slot

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)



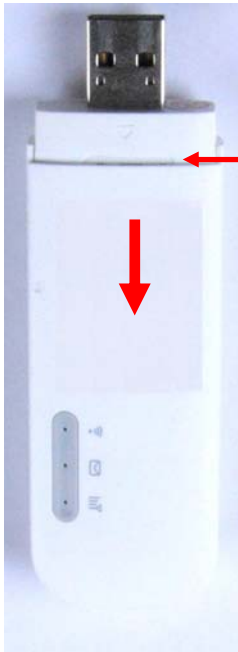
5 - Replace cover



# Install SIM card in E-4GU-5 Modem



E-4GU-4 Modem



1/8" Gap

1- Slide cover down about 1/8"



2- Remove cover



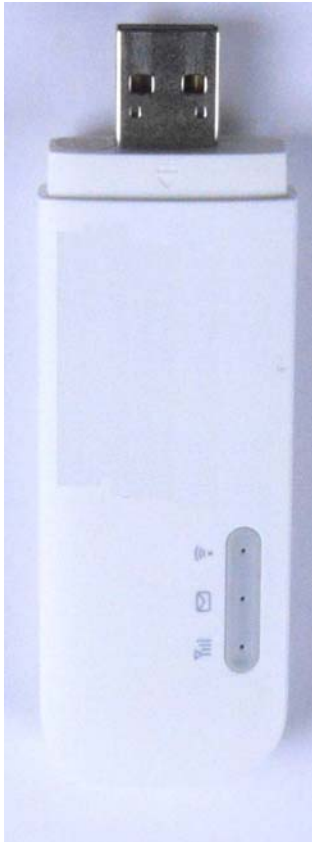
Micro SIM card

chamfered corner

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)

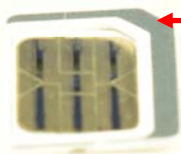


5 - Replace cover

# Install SIM card in E-4GU-6 Modem



Leave antennas off for SIM card installation.



chamfered corner

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

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



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




4- Attach antennas

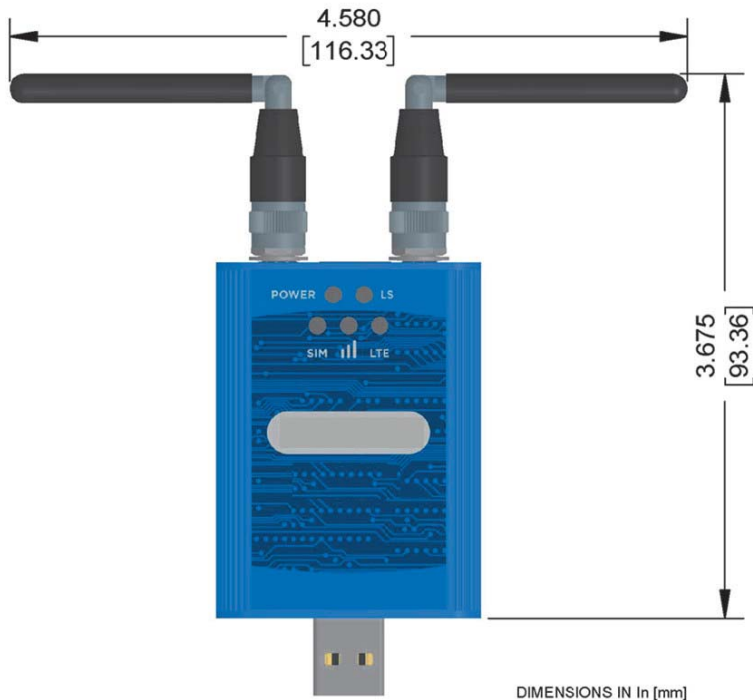
# E-4GU-6 Modem LEDs

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

### 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. 3.8 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 later
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

MAN166 REV 5/27/22