Protege DIN Rail Cellular Modem

The Protege DIN Rail Cellular Modem is a cellular communication device that provides a convenient wireless connection for a Protege controller.

With no physical network required this is an ideal solution for remote sites and installations where network infrastructure may be unavailable, or difficult and expensive to install.

Supports both Protege GX and Protege WX controllers.
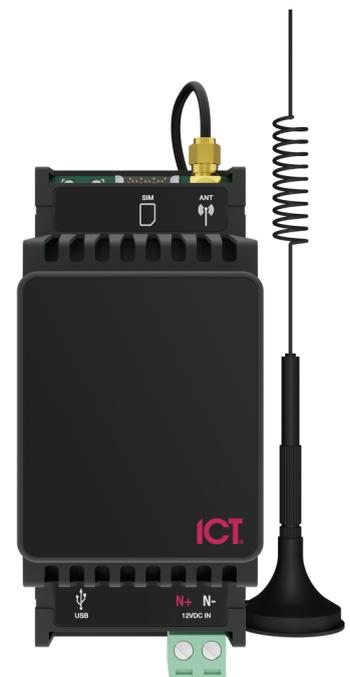
Feature Highlights

> Wireless IP alarm transmission for convenient, cost-effective monitored outbound reporting

> Supports programming downloads to Protege GX controllers

> Supports event uploads from Protege GX controllers

> Supports manual control to Protege GX controllers

> Secure encrypted communication when reporting via the Protege ArmorIP reporting service

> Continuous connection detection and automatic fail reset

> Category M-1 cellular network capability with fallback to 2G GSM

> 4G, Dual Mode LTE-M/NB-IoT cellular technology

> USB connection to controller

> Micro-SIM card holder

> SMA antenna connection

> Industry standard DIN rail mounting

The Protege DIN Rail Cellular Modem facilitates IP alarm transmission to a monitoring station from a Protege GX or Protege WX controller.

Controller — Cellular Modem — Cellular Network — Monitoring Station / Protege GX System
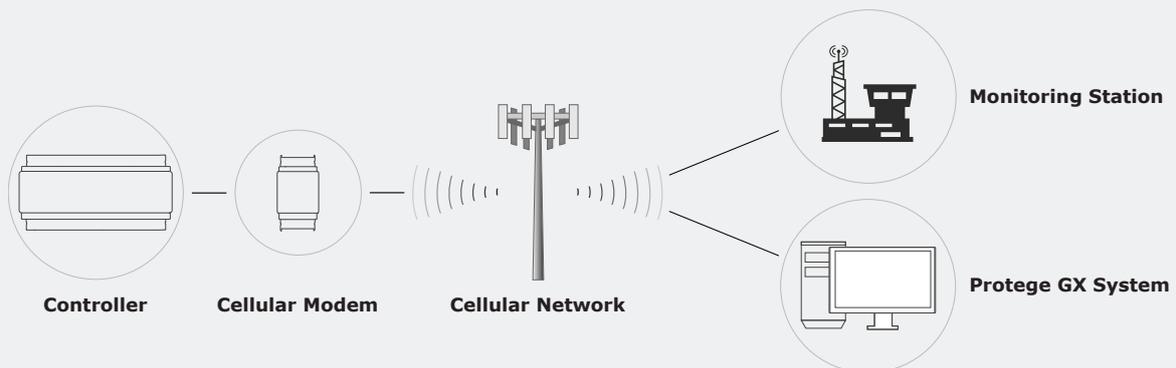
For Protege GX controllers the cellular modem also facilitates programming downloads and manual control from the Protege GX system, and event uploads to the Protege GX events database.

IP Alarm Transmission

IP alarm transmission capability allows communication of alarms from a controller to a monitoring station via cellular network transmission, delivering convenient, cost-effective monitored outbound reporting.

Programming Downloads

On supported networks the modem can receive programming updates from the Protege GX system for Protege GX controllers.

Event Uploads

The cellular modem can upload events from the Protege GX controller to the Protege GX events database.

Manual Control

On supported networks the modem can receive manual control commands from the Protege GX system for Protege GX controllers, providing live control over doors, areas, outputs, inputs and more.

Unlimited Accessibility

With no physical network required the Protege DIN Rail Cellular Modem provides a connection solution without barriers.

Cellular network communication means more accessible and more cost-effective reporting to monitoring station automation software than traditional copper line solutions, and enables access in locations where physical connections are not possible.

Secure Encrypted Communication

When using Protege's ArmorIP reporting service, provides secure AES encryption on data transmissions.

Automatic Fail Reset

The cellular modem includes continuous connection detection and automatic fail reset. If there is an error with the cellular connection the controller will automatically reset the modem to attempt to resolve the connection.

Status Display

The Protege controller web interface displays the cellular network connection status and details, including signal strength, the Mobile Network Operator the cellular modem is currently connected to, and its network registration status.

Reporting Backup

The modem can provide a secondary reporting path as a backup to existing reporting connections.

Globally Compatible

With validated cellular network providers across the globe, the Protege DIN Rail Cellular Modem can perform virtually anywhere.

For a list of validated network providers in your region, see the *Supported Cellular Network Providers* table.

Wall Mountable

The additional wall mounting feature provides absolute convenience and flexibility in module positioning.

Frequently Asked Questions (FAQs)

Can I use the modem to connect to a Protege WX controller's web interface for programming, manual commands and viewing events?

No. Programming downloads, event uploads and manual control are currently not supported in Protege WX controllers. This functionality may be available in the future. Speak to the ICT sales team to register your interest.

Can I use the modem to download programming to a Protege GX controller?

Yes. Programming downloads, event uploads and manual control can be facilitated with Protege GX controllers on supported cellular networks. Due to the speed of cellular networks, programming downloads work best in conjunction with the Protege GX single record download service.

Is the download speed the same as ethernet?

No. Cellular network transmissions are not as fast as ethernet. The speed for the cellular modem is limited to a maximum uplink of 1Mbps and maximum downlink of 588Kbps.

Can I use the modem for Protege GX cross-controller communication?

No. This is not supported or possible.

Can I obtain my system controller time from the cellular network?

No. This is currently not supported, but may be available in the future.

Can I use the modem to update controller firmware?

No. Firmware updates are not supported and will cause unexpected results if attempted.

Can I update the modem firmware?

No. Modem firmware updates are currently not supported. This may be available in the future.

What networks is the modem compatible with?

The modem is compatible with supported cellular networks only.
It is not a WiFi-enabled device and does not support connection to a wireless LAN.

Can I use the modem on a private APN (Access Point Name)?

Yes. However, some private APNs have specific account configuration requirements which have not been validated and may present connection limitations. Connection should be validated prior to deployment.

Can the modem directly replace my dial-up reporting service?

Yes. You will need to change the reporting service from ContactID to a supported IP protocol which the monitoring station is capable of receiving.

Can I use the modem as a primary and/or secondary backup reporting path?

Yes. The cellular modem can be used in any combination of primary, secondary and/or backup IP reporting services.

When Dynamic IP address update is enabled, why does the USB Ethernet IP address in the controller's user interface not match the controller's updated IP address in Protege GX?

If using NAT (Network Address Translation) the IP address displayed in the user interface may be different.

Can I receive push notifications on my Protege Mobile App via the modem?

Yes. Push notifications are supported for both Protege GX and Protege WX controllers.
For Protege WX controllers the push notification service must first be activated using a wired connection.

Can I receive SMS alerts or other messages directly to my mobile phone?

No. SMS messaging is not supported.

Can the modem be used to make/receive voice calls?

No. Voice functionality is not supported.

Can I connect a third-party panel to the modem?

No. Third-party panels are not supported. The modem supports Protege GX and Protege WX controllers only.

Can I connect multiple controllers to the modem?

No. The modem does not support multiple connections. Only one controller can be connected to each modem.
Do not connect a USB hub or multi-USB adaptor to the modem, as unexpected results may occur.

Can multiple Protege GX controllers report through a single modem, using cross-controller communications?

Yes. With a single cellular modem connected to a single controller, and that controller connected to other controllers through a wired ethernet network using cross-controller communications, any controller in the group can use the single reporting service running on the first controller to report to a monitoring station via the modem.

Other functionality such as downloading programming to all controllers or sending events to Protege GX from all controllers will not work via that cellular connection.

Does GSM fallback include 3G?

No. GSM is often used as a generic term for mobile communication, but is strictly related to 2G networks. The modem does not support any 3G operation.

Can the cellular modem connect to any mobile network provider?

Yes. The modem is compatible with any valid cellular network provider. You may obtain a SIM from any suitable provider in your region, however there are some minimum requirements to ensure reliable operation.

> The selected provider should have good coverage across your region.

> For installations with alarm reporting only, a minimum data plan of 500MB/month is recommended.

> For installations with alarm reporting and programming downloads/event uploads, a minimum data plan of 1GB/month is recommended.

Note: The frequency and type of data transmissions will affect data consumption, so care must be taken to select a data plan which meets the requirements of your installation.

Are there recommended network providers?

Yes. ICT has tested and validated providers in each region, and continues to do so. SIMs with suitable data plans can be purchased from ICT, or sourced directly from the provider or its agents.

For a list of validated network providers in each region, see the *Supported Cellular Network Providers* table.

Supported Cellular Network Providers

The following table identifies the mobile network operators that have been tested and validated by ICT, and the functionality they support.

✅ = Supported

☑️ = Supported with conditions

❌ = Not supported

Region	MNO	APN	APN Login	SIM Plan	Reporting	Inbound
Australia	Telstra	telstra.m2m	N/A	No specific plan required	✅	❌
Canada	Rogers	media.com	Obtain login from provider	TBC	✅	❌
	Telus	pse.telus.iot	N/A	TBC	✅	✅
	Inbound service requires request for static IP.					
Denmark	3 SE	data.tre.se	TBC	TBC	☑️	☑️
	Supported provider, not yet physically validated.					
	Telenor	services.telenor.se	N/A	No specific plan required	✅	☑️
	Supported provider, inbound service not yet physically validated.					
Hong Kong	3 Mobile	mobile.lte.three.com.hk	N/A	TBC	✅	❌
	China Mobile	CMHK	N/A	TBC	✅	❌
	China Unicorn	3gnet	N/A	TBC	✅	❌
	CSL	PCCW	N/A	TBC	✅	❌
	HKT	PCCW	N/A	TBC	✅	❌
Indonesia	Indosat Ooredoo	Indosatgprs	Obtain login from provider	4G DATA SIM	✅	❌
New Zealand	Spark	m2mdirect	N/A	TBC	✅	✅
	Contact Spark to be put onto the correct SIM plan for inbound service.					
	One NZ	internet	N/A	No specific plan required	✅	✅
Sweden	3 SE	data.tre.se	TBC	TBC	☑️	☑️
	Supported provider, not yet physically validated.					
	Telenor	services.telenor.se	N/A	No specific plan required	✅	☑️
	Supported provider, inbound service not yet physically validated.					
USA	T-Mobile	iot.t-mobile.com	N/A	4G LTE	✅	✅

Technical Specifications

Ordering Information	
PRT-4G-USB	Protege DIN Rail Cellular Modem
Power Supply	
Operating Voltage	12V DC
Operating Current	300mA (Max)
Communications	
USB	USB-C
SIM Card Socket	Micro-SIM
Cellular Technology	4G, Dual Mode LTE-M/NB-IoT
LTE Cat-M1	Uplink up to 1 Mbps Downlink up to 588 Kbps
LTE Cat-NB2	Uplink up to 160 Kbps Downlink up to 120 Kbps
Operating Frequencies (LTE)	B1, B2, B3, B4, B5, B8, B12, B13, B18, B19, B20, B25, B26, B27, B28, B66, B71, B85
Antenna Connection	
Antenna Connector	SMA
Antenna Impedance	50ohm
Antenna Gain,VSWR	5dBi, ≤2
Antenna Frequency	4G wide band 600-2700 MHz
Polarization and Radiation Direction	Vertical, Omnidirectional
Length	320 ± 3 mm (12.6 ± .12 ")
Base Diameter	30 ± 2 mm (1.18 ± .08 ")
Mounting	Magnetic Base
Dimensions	
Dimensions (L x W x H)	39 x 90 x 60mm (1.53 x 3.54 x 2.36")
Net Weight	70g (2.5oz)
Gross Weight	200g (7.1oz)
Operating Conditions	
Operating Temperature	UL/cUL 0° to 49°C (32° to 120°F) : EU EN -10° to 55°C (14° to 131°F)
Storage Temperature	-10˚ to 85˚C (14˚ to 185˚F)
Humidity	0%-93% non-condensing, indoor use only (relative humidity)

Regulatory Notices

For a full regulatory and approval list please visit the ICT website.

New Zealand (RSM) and Australia (RCM)

This equipment carries the R-NZ label and complies with EMC and radio communications regulations of the Australian Communications and Media Authority (ACMA) governing the Australian and New Zealand (AS/NZ) communities.

CE – Compliance with European Union (EU)

Conforms where applicable to European Union (EU) Low Voltage Directive (LVD) 2014/35/EU, Electromagnetic Compatibility (EMC) Directive 2014/30/EU, Radio Equipment Directive (RED)2014/53/EU and RoHS Recast (RoHS2) Directive: 2011/65/EU + Amendment Directive (EU) 2015/863.

This equipment complies with the rules of the Official Journal of the European Union, for governing the Self Declaration of the CE Marking for the European Union as specified in the above directives.

Security Grade 4, Environmental Class II, EN 50131-1:2006+A2:2017, EN 50131-3:2009, EN 50131-6:2008+A1:2014, EN 50131-10:2014, EN 50136-1:2012, EN 50136-2:2013, EN 60839-11-1:2013, Power frequency magnetic field immunity tests EN 61000-4-8, Readers Environmental Class: IVA, IK07.

UK Conformity Assessment (UKCA) Mark

This equipment carries the UKCA label and complies with all applicable standards.

Lic. Number EU CE 5131A-ME910G1WW

UL/cUL (Underwriters Laboratories)

> UL1076 for Proprietary Burglar Alarm Units and Systems

> UL1610 for Central-Station Burglar-Alarm Units

> UL294 for Access Control System Units

> CAN/ULC 60839-11-1 for Electronic Access Control Systems

> CAN/ULC S559 for Fire Signal Receiving Centres and Systems

> CAN/ULC S304 for Signal Receiving Centre and Premise Burglar Alarm Control Units

Federal Communications Commission (FCC)

FCC Rules and Regulations CFR 47, Part 15, Class C.

This equipment complies with the limits for a Class C digital device, pursuant to Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference; (2) This device must accept any interference received, including interference that may cause undesired operation.

Industry Canada

ICES-003

This is a Class B digital device that meets all requirements of the Canadian Interference-Causing Equipment Regulations.
Cet appareil numérique de classe B est conforme à la norme canadienne ICES-003

CAN ICES-3 (B) / NMB-3 (B) (ISED only) / (ISDE seulement)

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