IDT1-1420G/GP Quick Installation Guide
First Edition, May 2013

1. Overview

Welcome to NXN's iDT1-1420G/1420GP industrial cellular modem series. With 1 Port serial RS-232/422/485, 4 Digital Input, 2 Relay Out, the cellular modems that allow you to connect serial devices to the GSM/GPRS network. Besides, iDT1-1420GP is embedded with GPS module which is suitable for real-time GPS tracking applications.

2. Package Checklist

Before installing iDT1-1420G/GP, verify that the package contains the following items:

IDT1-1420G
- 1420G Device
- DIN-Rail Clip
- GSM Antenna
- Terminal block x 2
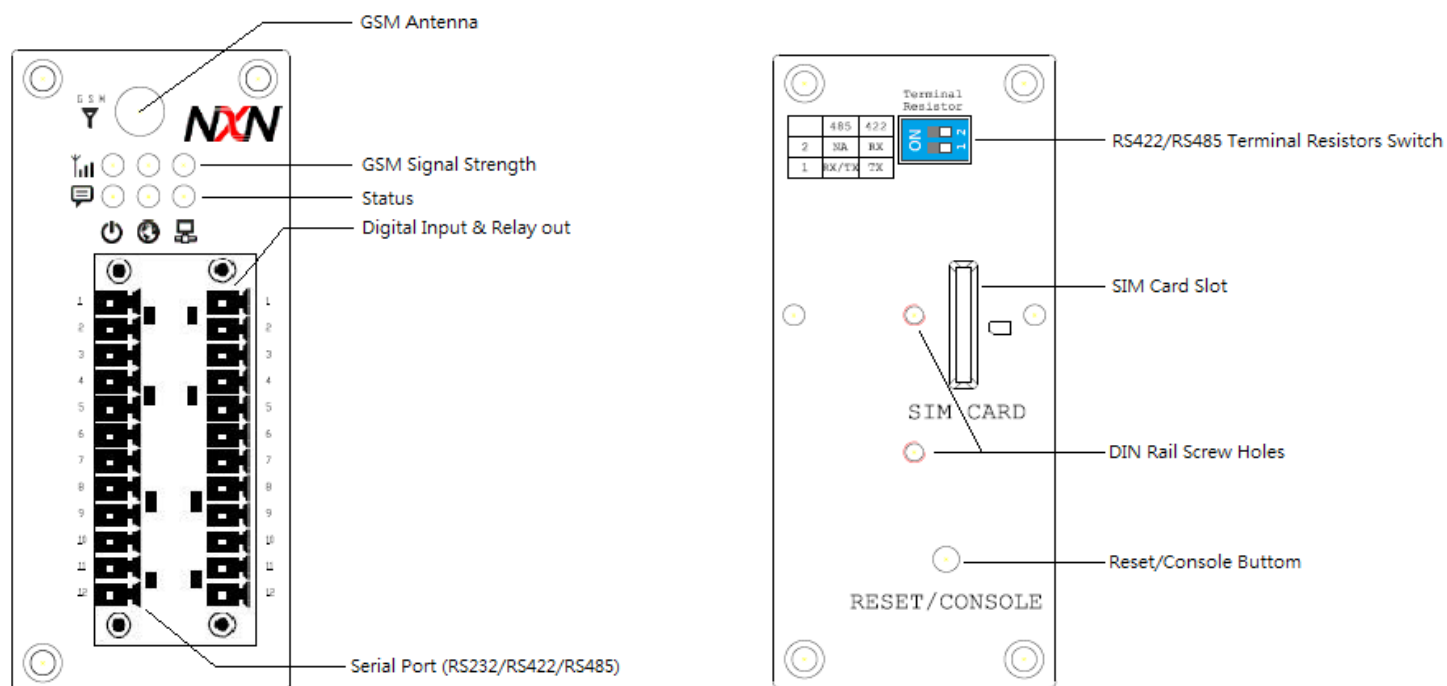- Female RS-232 cable x 1
- iDT Document & Software CD

IDT1-1420GP
- 1420GP Device
- SIM Cover
- GSM Antenna
- GPS Antenna
- Terminal block x 2
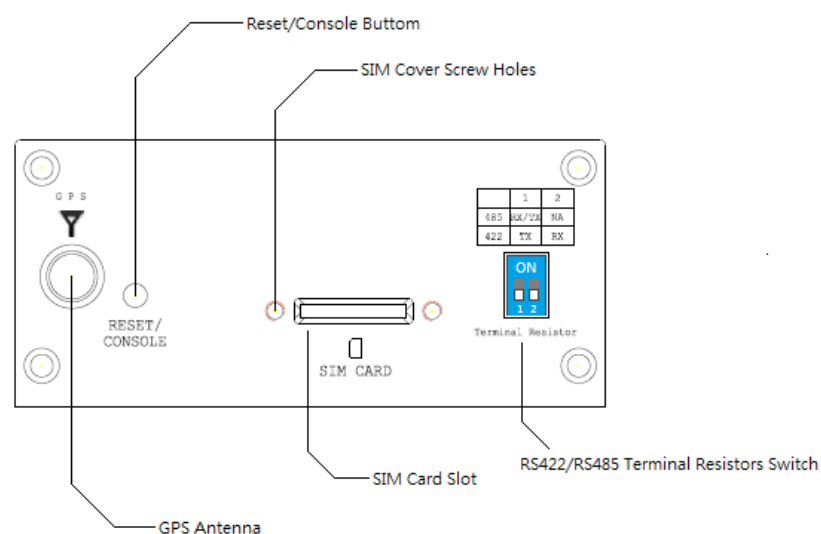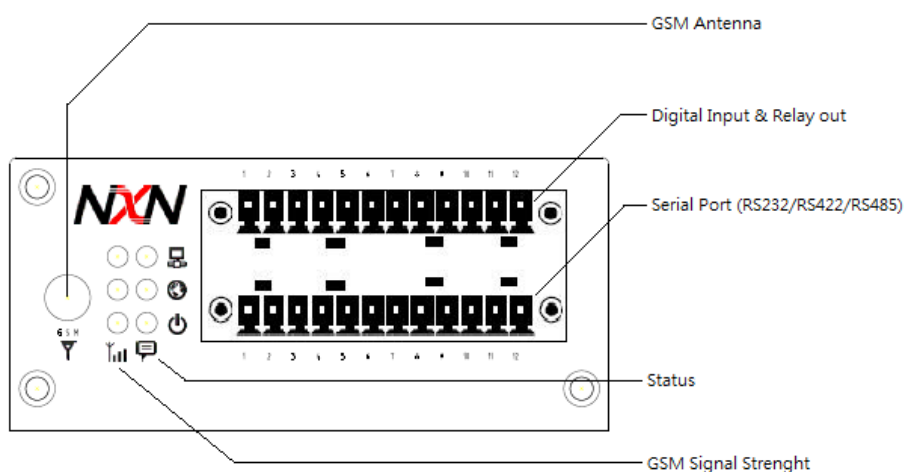- Female RS-232 cable x 1
- iDT Document & Software CD

3. Hardware Introduction

As shown in the following figures, iDT1-1420G/GP the front has GSM antenna connector, six LED indicators and two terminal blocks, one of terminal block for the RS-232/422/485 interface; another one for digital input, relay out and power. The rear has terminal resistor switch, SIM slot and reset/console button, for the RS-422/485 interface the terminal resistor switch for mount or unmounts internal terminal resistors on the wire, and iDT1-1420G only different with iDT1-1420GP is the iDT-1420GP has a GPS antenna connector for GPS receiver.
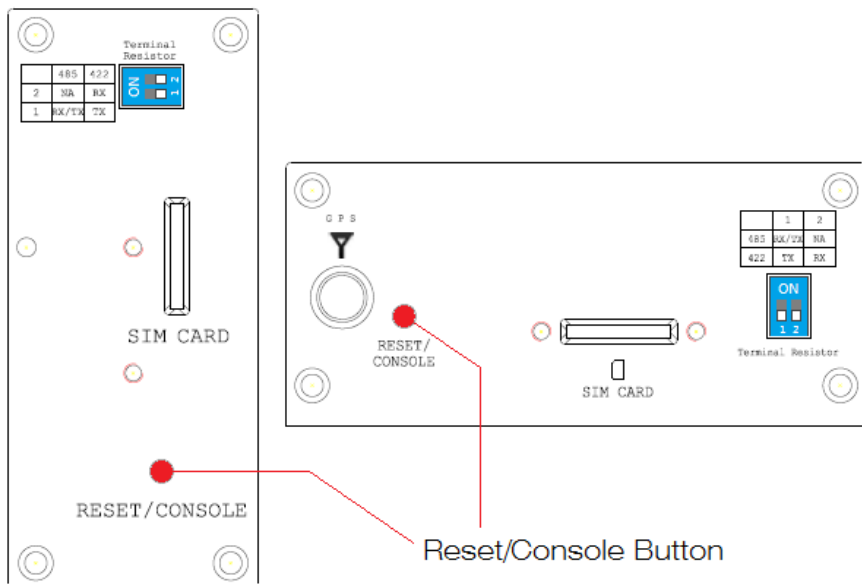
IDT1-1420G

GSM Antenna
GSM Signal Strength
Status
Digital Input & Relay out
Serial Port (RS232/RS422/RS485)

Terminal Resistor

	485	422
2	NA	RX
1	RX/TX	TX

RS422/RS485 Terminal Resistors Switch
SIM Card Slot
DIN Rail Screw Holes
Reset/Console Buttom

SIM CARD
RESET/CONSOLE

IDT1-1420GP

GSM Antenna
Digital Input & Relay out
Serial Port (RS232/RS422/RS485)
Status
GSM Signal Strenght

Reset/Console Buttom
SIM Cover Screw Holes

	1	2
485	RX/TX	NA
422	TX	RX

Terminal Resistor

RESET/CONSOLE
SIM CARD

RS422/RS485 Terminal Resistors Switch
SIM Card Slot
GPS Antenna

Reset/Console Button

IDT1-1420G/GP has one push button on the rear. The button function shown as following figures.

1. Click the Reset button to restart iDT1-1420G/GP.
2. Press the Console button continuously for 3 seconds to entering console mode to configure iDT1-1420G/GP.

Reset/Console Button

LED Indicators

IDT1-1420G/GP that contains six LED indicators, as described in the following table.

Console Mode

| LED Name	LED ICON	LED Function
Power	⏻	Continuously dark 1s then bright 1s
Network	🌐	Continuously dark 1s then bright 1s
Link	🖥	Continuously dark 1s then bright 1s
GSM Signal	📶	Always dark

Connection Mode

| LED Name	LED ICON	LED Function
Power	⏻	Continuously dark 1s then bright 1s– Normal running
		Fast blinking – Hardware abnormal.
Network	🌐	Dark –Not obtain an IP address
		Bright – Already obtain an IP address
Link	🖥	Dark – No network connection establish
		Bright – Least one connection has established
GSM Signal	📶	🟢🟢🟢 Nice signal quality
		🟢🟢⚫ Good signal quality
		🟢⚫⚫ Bad signal quality
		⚫⚫⚫ Completely no signal

4. Hardware Installation Procedure

STEP 1: After removing iDT1-1420G/GP from the box, you should connect RS232 cable to the terminal block and connect the cable to laptop or PC.

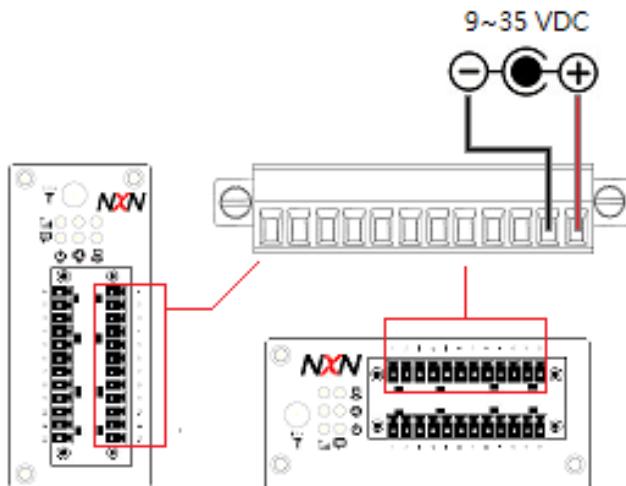| White	Blue	Green	Yellow	Orange	Red	Brown	Black
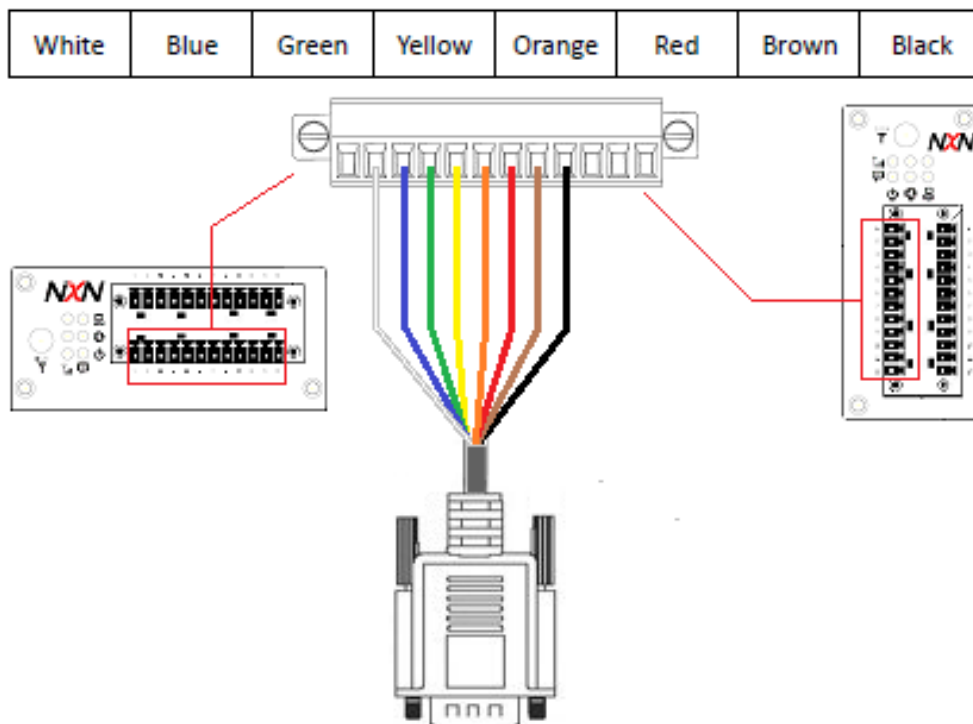
STEP 2: Connect GSM antenna to iDT1-1420G/GP for provide better signal environment to easy access GSM/GPRS network.

iDT1-1420GP
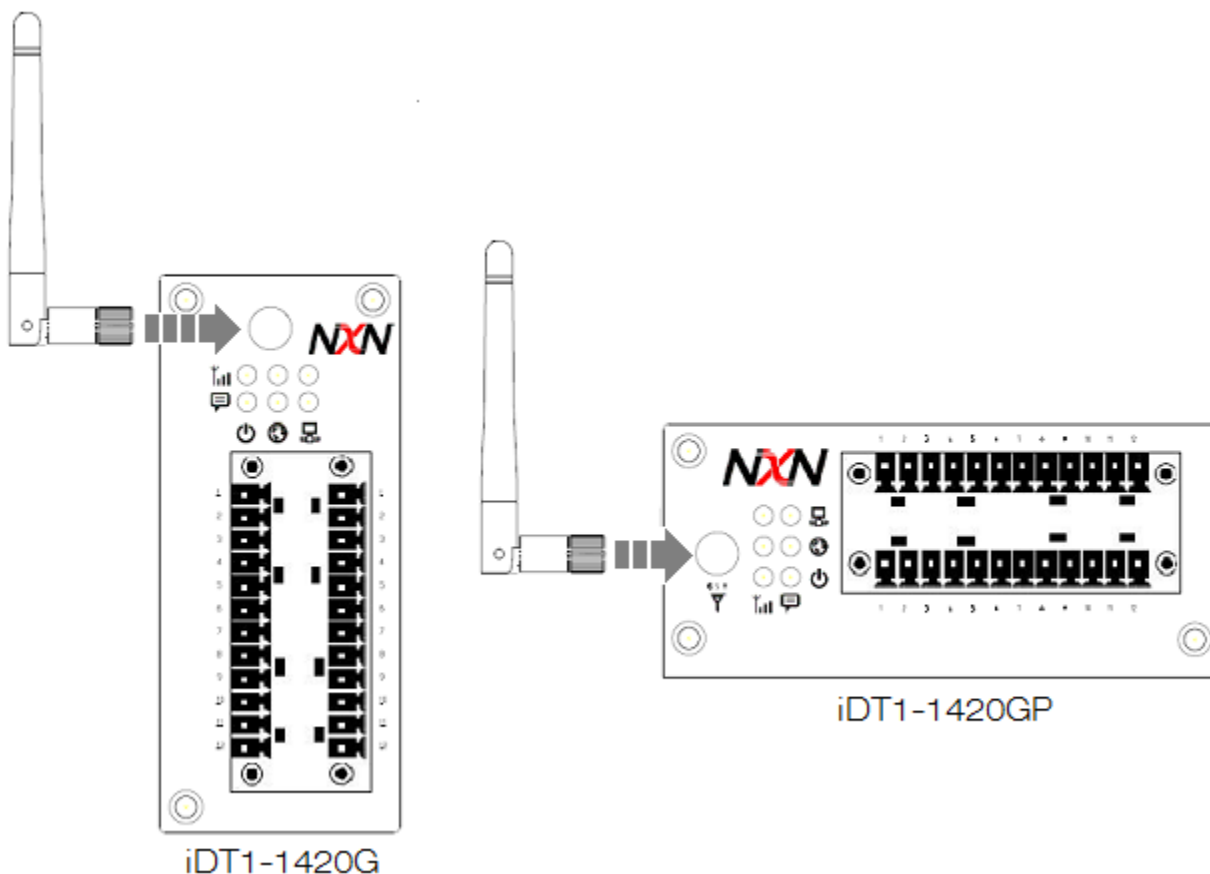
iDT1-1420G

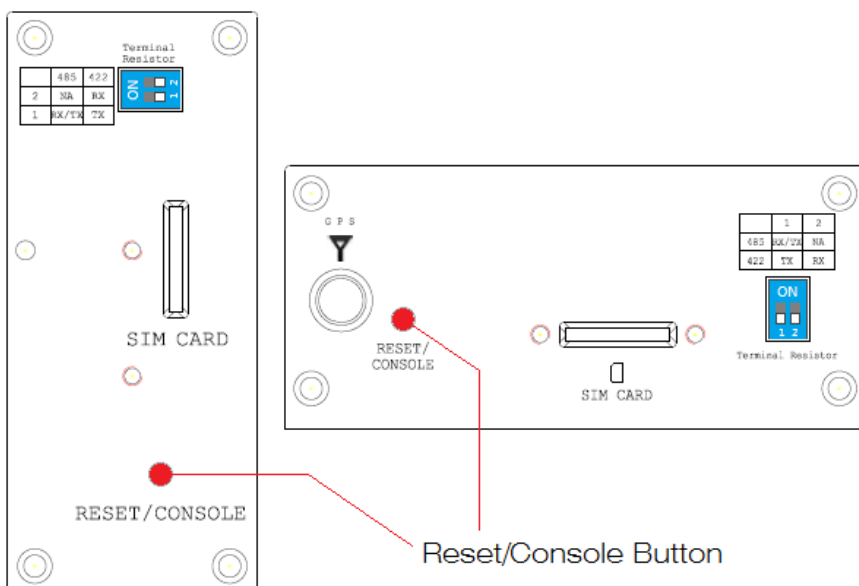**STEP 3:** Connect GPS antenna to iDT1-1420GP for receive signal of satellites.
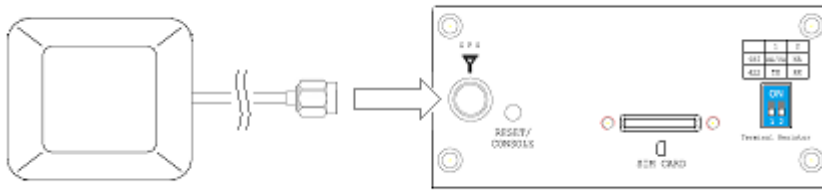
STEP 4: Wiring power cable to iDT1-1420G/GP.

STEP 5: Press Console button continuously for 3 seconds to entering console mode to configure iDT1-1420G/GP.

Note. Please refer to LED indicators section to make sure iDT1420G/GP already entered to console mode.


Reset/Console Button

STEP 6: Software Installation Information and configure iDT1-1420G/GP

To install **iDT Administration Utility (EZAdm)**, insert the **iDT Document & Software CD** into your laptop's/computer's CD-ROM drive. Once the **iDT Installation CD** window opens, click on the Installation icon, and follow the instructions on the screen.

You can click on the **Documents** icon for more information about **iDT Administration Utility (EZAdm)**, click on the **Documents** icon, and then select "iDT1 Series User's Manual" to open the user's guide for configured iDT1-1420G/GP.

STEP 7: Insert SIM card to iDT1-1420G/GP
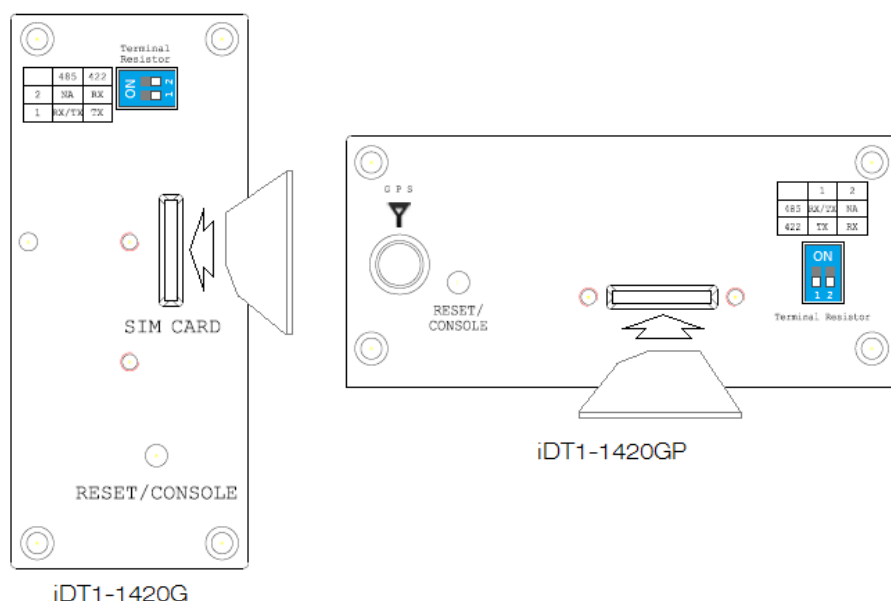
STEP 8: Append SIM cover or DIN-Rail clip to iDT-1420G/GP.
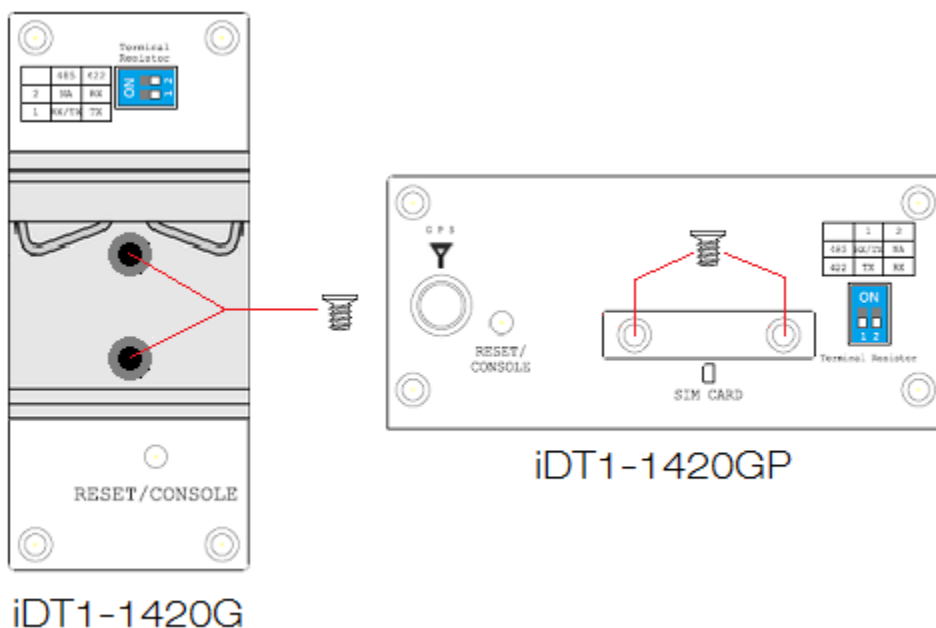
Wall or Cabinet Mounting

The IDT1-1420GP contains two L plates for attaching the device to a wall or the inside of a cabinet. Use two screws per bracket to attach the IDT1-1420GP to a wall or cabinet. The heads of the screws should be less than 6.0 mm in diameter, and the shafts should be less than 3.5mm in diameter, as shown by following figure.
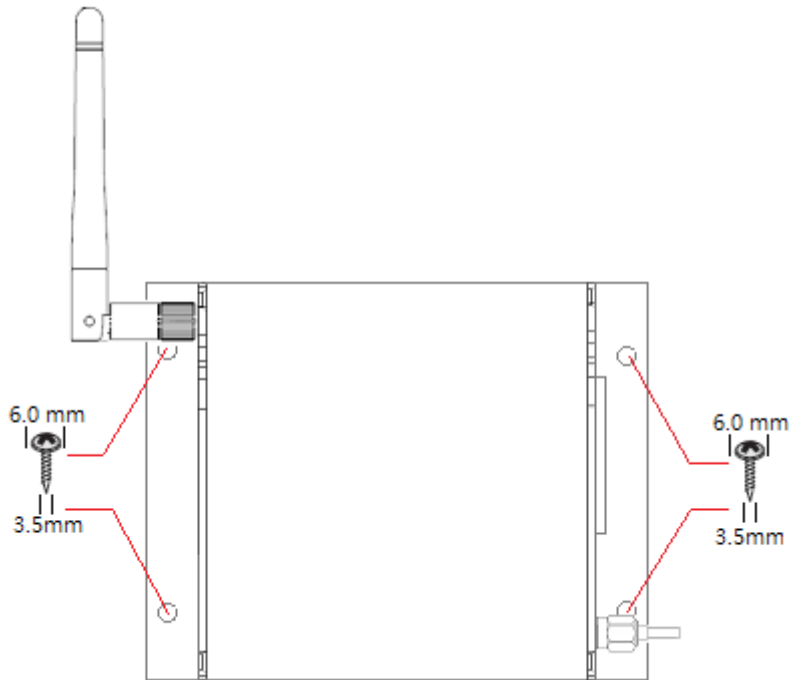
DIN-Rail Mounting

The iDT1-1420G contains DIN-Rail attachments. When snapping the attachments to the DIN-rail, make sure the stiff metal springs are at the top. Please refer to following figure by step to correct mounting.
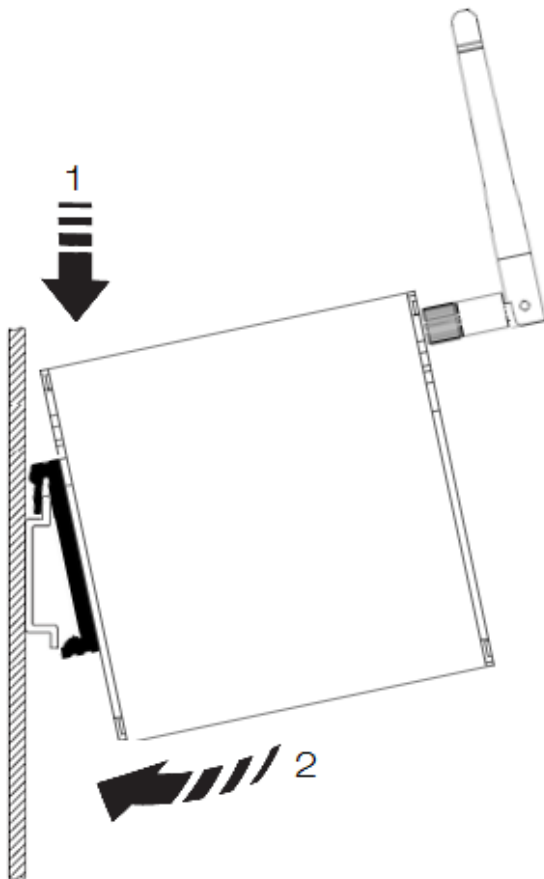
5. Terminal Resistors for the RS-422/RS-485

DIP switches on the bottom of IDT1-1420G/GP are used to set the internal 120Ω resistor wiring to each serial port.

6. Pin Assignments

Pin assignments for iDT1-1420GP

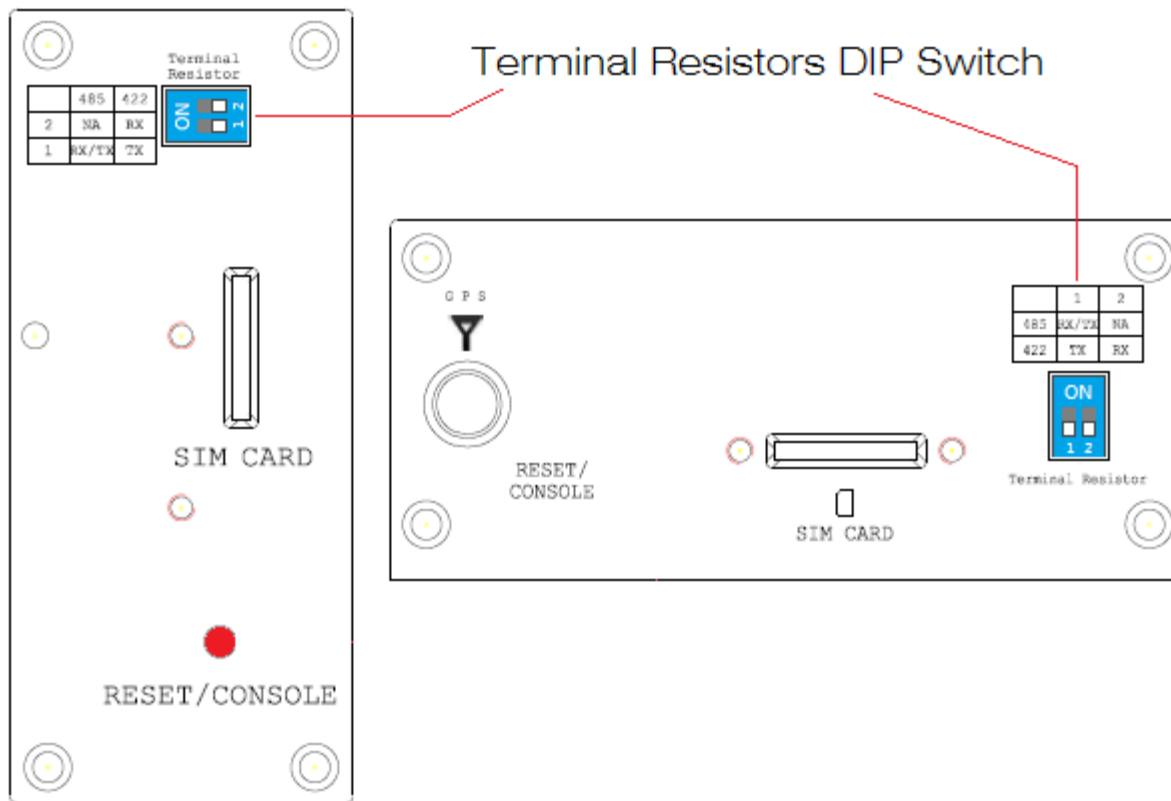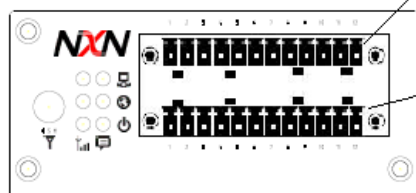| 1	2	3	4	5	6	7	8	9	10	11	12
DI-3	DI-2	DI-1	DI-0	NC	COM	NO	NC	COM	NO	GND	VIN
Digital Input				Relay Output 2			Relay Output 1				9~35V

1	2	3	4	5	6	7	8	9	10	11	12
RI	CTS	RTS	DSR	GND	DTR	TXD	RXD	DCD	GND	GND	GND
RS232											

1	2	3	4	5	6	7	8	9	10	11	12
NA	TX -	TX+	NA	GND	NA	RX -	RX +	NA	GND	GND	GND
RS422											

1	2	3	4	5	6	7	8	9	10	11	12
NA	NA	NA	NA	GND	NA	−	+	NA	GND	GND	GND
RS485											

Pin assignments for iDT1-1420G

1	DI-3		1	RI		1	NA		1	NA	
2	DI-2	Digital Input	2	CTS		2	T-		2	NA	
3	DI-1		3	RTS		3	T+		3	NA	
4	DI-0		4	DSR		4	NA		4	NA	
5	NC		5	GND	RS232	5	GND	RS422	5	GND	RS485
6	COM	Relay Out 1	6	DTR		6	NA		6	NA	
7	NO		7	TXD		7	R-		7	-	
8	NC		8	RXD		8	R+		8	+	
9	COM	Relay Out 2	9	DCD		9	NA		9	NA	
10	NO		10	GND	Ground	10	GND	Ground	10	GND	Ground
11	GND	Ground	11	GND	Ground	11	GND	Ground	11	GND	Ground
12	VIN	9~35VDC	12	GND	Ground	12	GND	Ground	12	GND	Ground
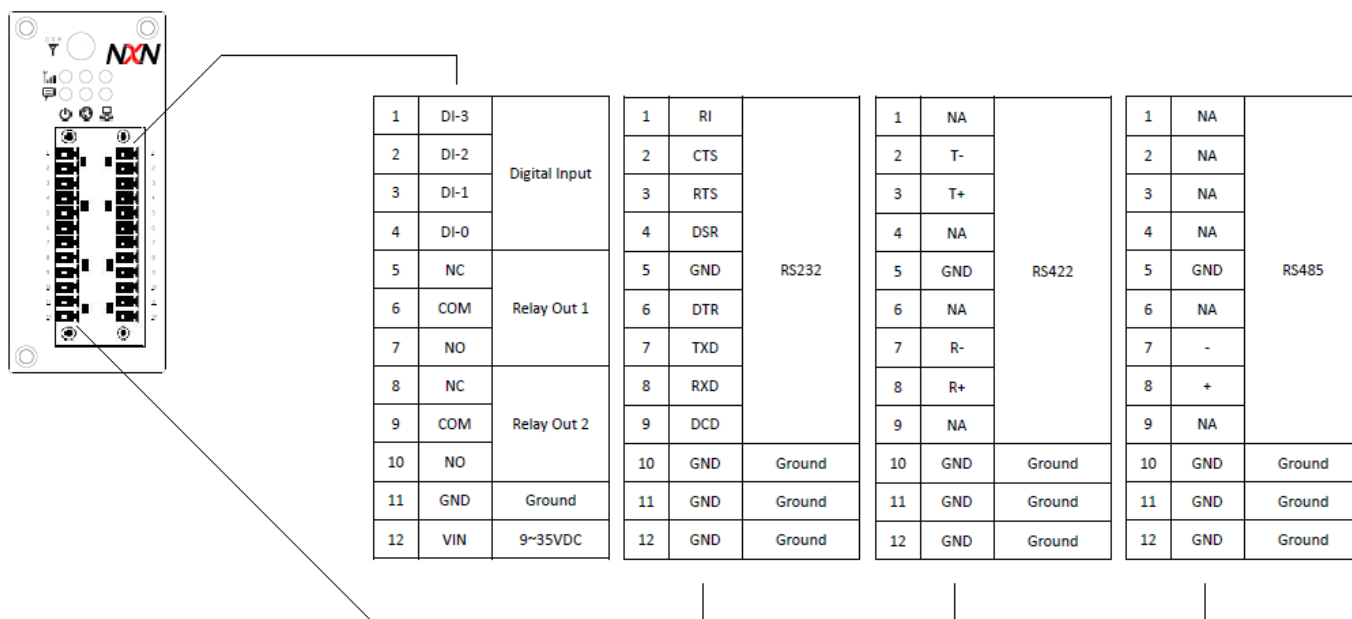
7. Hardware Specifications

IDT1-1420G

■ Cellular Interface

Radio Frequency Standard	GSM/GPRS
Band Frequency	Quad-band 850/ 900/ 1800/ 1900 MHz (Software Selectable)
Multi-slot Class Capable	Class 10
Mobile Station Class	Class B
Coding Schemes	CS1, CS2, CS3, CS4
Transmission Rate	Up to 85.6K bps
Transmission Power	Transfer Mode class 10 (3Rx/2Tx): 1.4 Watts @GSM 850 / EGSM 900, Transfer Mode class 10 (3Rx/2Tx): 1 Watt @ DCS 1800 / PCS 1900
SIM Card Type	1.8V / 3 V

■ Serial Interface

Number of Ports	1
Serial Connector	Terminal block
Serial Signal Types	RS-232/422/485 (Software Selectable)
Terminal Resistor	None/120Ω(Hardware Selectable)
Data Bits	5/6/7/8
Stop Bits	1/1.5/2
Parity	None/Even/Odd/Mark
Flow Control	RTS/CTS, XON/XOFF for RS232, XON/XOFF for 422 and 485
Baud rate	100 bps to 230.4 Kbps
ESD Protection	15 KV

■ I/O Interface

Digital Output	2 relay outputs with current carrying capacity of DC 1A @ 24 VDC / AC 0.5A @ 125VAC
Digital Input	4 dry-contact inputs (open – on , grounded – off)

■ Power Requirements

Power Input	Terminal block,
Input Voltage	9 to 35 VDC
Power Consumption	170 mA (idle), 650 mA (peak) @12VDC

■ Physical Characteristics

Housing	Aluminum
Weight	300±5g

| Dimensions(L x W x H) | 92 x 86 x 40 mm (3.62 x 3.38 x 1.57 in) |

■ Environmental Limits

Operating Temperature	Standard Models: -40 to 85°C (-40 to 185°F)
Storage Temperature	-40 to 85°C (-40 to 185°F)
Ambient Relative Humidity	5 to 95%RH

IDT1-1420GP

■ Cellular Interface

Radio Frequency Standard	GSM/GPRS
Band Frequency	Quad-band 850/ 900/ 1800/ 1900 MHz (Software Selectable)
Multi-slot Class Capable	Class 10
Mobile Station Class	Class B
Coding Schemes	CS1, CS2, CS3, CS4
Transmission Rate	Up to 85.6K bps
Transmission Power	Transfer Mode class 10 (3Rx/2Tx): 1.4 Watts @GSM 850 / EGSM 900, Transfer Mode class 10 (3Rx/2Tx): 1 Watt @ DCS 1800 / PCS 1900
SIM Card Type	1.8V / 3 V

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| Digital Input | 4 dry-contact inputs (open – on , grounded – off) |

■ Power Requirements

Power Input	Terminal block,
Input Voltage	9 to 35 VDC
Power Consumption	180 mA (idle), 680 mA (peak) @12VDC

■ Physical Characteristics

Housing	Aluminum
Weight	315±5g
Dimensions(L x W x H)	92 x 86 x 40 mm (3.62 x 3.38 x 1.57 in)

■ Environmental Limits

Operating Temperature	Standard Models: -40 to 85°C (-40 to 185°F)
Storage Temperature	-40 to 85°C (-40 to 185°F)
Ambient Relative Humidity	5 to 95%RH

■ GPS Interface

Chipset	SiRF Star VI
Frequency	L1 1575.42MHz.
Protocol	NMEA 0183 ver 3.0, GGA, GSA, GSV, RMC
Chip set TTFF	Reacquisition: less than 1s, Hot start: less than 1s @ open sky Warm start: less than 35s @ open sky, Cold start: less than 35s @ open sky
Accuracy	Position: within 10m for 90%, Velocity: 0.1m/s