



## G-4510/G4510D

Power Saving PAC with Solar charger and optional communication module (RoHS)

### Features

- Embedded MiniOS7, anti-virus
- Option Communication Modem
- Solar charger for Lead acid battery
- 10/100 Base-TX compatible Ethernet controller
- COM port: COM1 (5-wire RS232), COM2 (RS-485)
- I/O: 3 DI, 3 DO, 8 AI, 1 relay DO
- Support SD card
- Built-in RTC, NVRAM, EEPROM
- 128\*64 dots LCM display (option)
- GPS : 32 channels with All-In-View tracking (option)



### Introduction

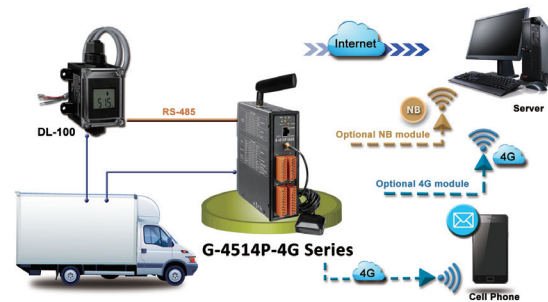
The G-4510 series are M2M (Machine to Machine) Power Saving PAC with a solar charger. It can be used in hydrologic monitoring or mudslide monitoring system. G-4510 can be used to wirelessly transmit data and other functions with its optional 4G/NB communication module. With optional GPS model, the G-4510 can also be a GPS tracking system for vehicle management or maritime system. The features of G-4510 series: Solar charger, Ethernet interface, optional GPS module, optional 4G/NB communication module, 3 digital inputs, 3 digital outputs, 8 analog inputs, 1 relay output.

### Applications

#### 1. Hydrologic / Wind Monitoring Application



#### 2. Car Monitor / Tracking System



### System Specifications

Model	G-4510	G-4510D
<b>CPU Module</b>		
CPU	1-Axis(IEPE)	3-Axis
SRAM/Flash	±80g	±18g
NVRAM	0.5Hz~15kHz	10Hz~1KHz
EEPROM	100mV/g	400mV/g per axis
<b>Comm. Interface</b>		
COM ports	COM1:5-wire RS-232; COM2: RS-485	
Ethernet	10/100 Base-TX Ethernet controller	
<b>GPS Interface</b>		
Support Channels	32	
Protocol Support	NMEA 0183	
<b>Lead Acid Battery</b>		
Battery	12V Lead-Acid Battery	
Charging Voltage	Voltage of Power Input must be over +16V	
Low Voltage Protect	Low Voltage disconnect = 11.1V / Low Voltage reconnect = 12.6V	
<b>LED Indicators</b>		
System	Red	
GSM	Yellow	
GPS	Green	
Charging / Fault	Green / Red	

Model	G-4510	G-4510D
<b>LCD Interface</b>		
Effective display area	-	80.61 mm x 14.37 mm (W x H)
Module Dimension	-	93 mm x 70 mm x 1.6 mm (W x H x T)
<b>Power (Solar Input)</b>		
Protection	Power reverse polarity protection	
Frame Ground Protection	ESD, Surge, EFT, Hi-Pot	
Power Requirement	+10 VDC ~ +30 VDC , (Max. Voltage of Solar Panel must less +30V)	
GPS	Green	
<b>Mechanical</b>		
Casing	Metal	
Dimensions (W x L x H)	47 mm x 142 mm x 168 mm	
Installation Environment	DIN-Rail and Wall mount	
<b>Environment</b>		
Operating Temperature	-20 ~ +70 °C	-15 ~ +55 °C
Storage Temperature	-40 ~ +80 °C	-20 ~ +70 °C
Humidity	5 ~ 95% RH, Non-condensing	

## I/O Specifications

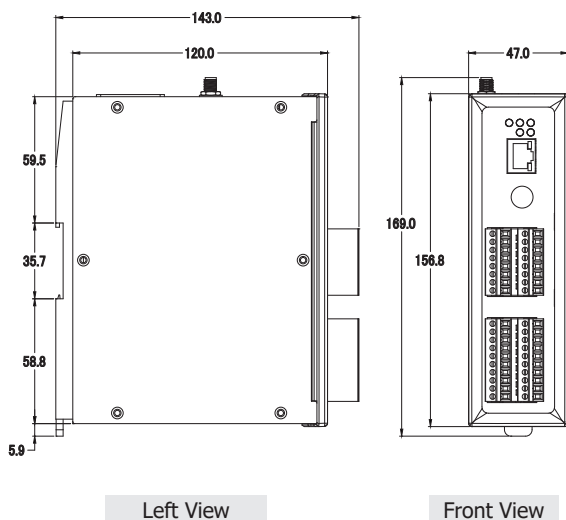
Model	G-4510	G-4510D
<b>Digital Input</b>		
Input Channel	3	
Input Type	Source(Dry Type), Common Ground	
Off Voltage Level	+1 V max.	
On Voltage Level	+3.5 ~ +30 V	
Isolated Voltage	Non-isolated	
<b>Digital Output</b>		
Output Channel	3	
Output Type	Open Collector (Sink/NPN)	
Load Voltage	+30 VDC max.	
Load Current	100 mA max.	
Isolated Voltage	Non-isolated	
<b>Analog Input</b>		
Input Channel	8	
Resolution	12 - bit	
Input Range/Type	0 ~ 20 mA	
Sample Rate	1 KHz max. (Read one channel)	
Accuracy	+/- 2 LSB (+/- 0.0097 mA)	
Isolated Voltage	2500Vrms 3000Dc to DC	
<b>Relay</b>		
Output Channel / Type	1 / Form C	
Input Range	2A@30 Vdc ; 0.25 A @250 Vac	
Mechanical endurance	typ. 108 operations	

## Order Accessories Specifications

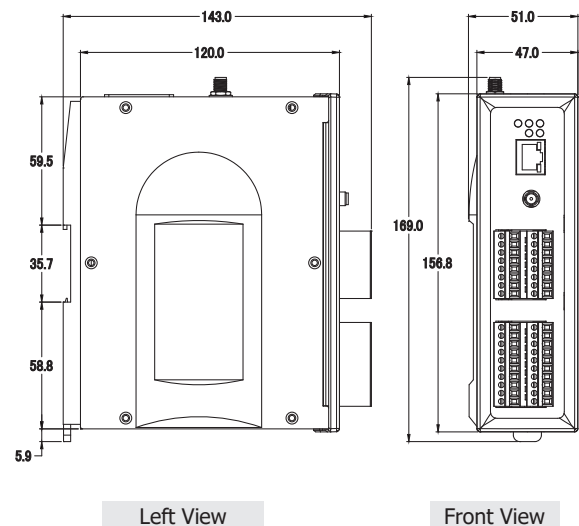
Module (Optional)	EC21-AU	EC25-E	BG96
Category	LTE category 1	LTE category 4	LTE Cat-M1/NB1/EGPRS
<b>Digital Input</b>			
LTE-FDD	B1/B2/B3/B4/B5/B7/B8/B28	B1/B3/B5/B7/B8/B20	B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B26/B28
LET-TDD	B40	B38/B40/B41	B39 (For Cat M1 Only)
WCDMA	B1/B2/B5/B8	B1/B5/B8	--
GSM/EGPRS	850/900/1800/1900MHz	900/1800Mhz	850/900/1800/1900MHz
<b>Digital Output</b>			
Region	Latin America, Australia, New Zeland, Taiwan	EMEA, Korea, Thailand, India	Global
Certification	Carrier: Telstra Regulatory: FCC /Anatel/NCC/JATE/TELEC/RCM Others:WHQL	Carrier: Vodafone/Deutsche Telekom/ SKT/Telefónica/ T-Mobile/KT/ LGU+ Regulatory: GCF/ CE/ KC/ NCC/ RCM/ FAC/ NBTC/ ICASA Others: WHQL	Carrier: Vodafone (Global) Deutsche Telekom Telefónica(Europe)/ Verizon/AT&T/T-Mobile/ Sprint/ U.S. Celluar (North America) Telus/Rogers /Bell (Canada) SKT/LGU+ (South Korea) NTT DOCOMO/SoftBank/ KDD (Japan) Telstra (Australia) Regulatory: GCF (Global),CE (Europe) FCC/PTCRB (North America) IC (Canada) IFETEL (Mexico) CCC (China) KC (South Korea) NCC (Taiwan) JATE/TELEC (Japan) RCM (Australia) NBTC (Thailand) IMDA (Singapore) Others: RoHS Compliant
<b>Environment</b>			
Temperature Range	-40°C ~ +80°C	-40°C ~ +85°C	-40°C ~ +80°C
Dimensions	51.0mm × 30.0mm × 4.9mm		

## Dimensions (Units: mm)

### G-4510



### G-4510D



## Wire Connections

### Digital Input Wire Connection

Input Type	ON State DI value as 0	OFF State DI value as 1
Relay Contact		
TTL/ CMOS Logic		
Open Collector		

### Digital Output Wire Connection

Input Type	ON State DO value as 1	OFF State DO value as 0
Drive Relay		
Resistance Load		

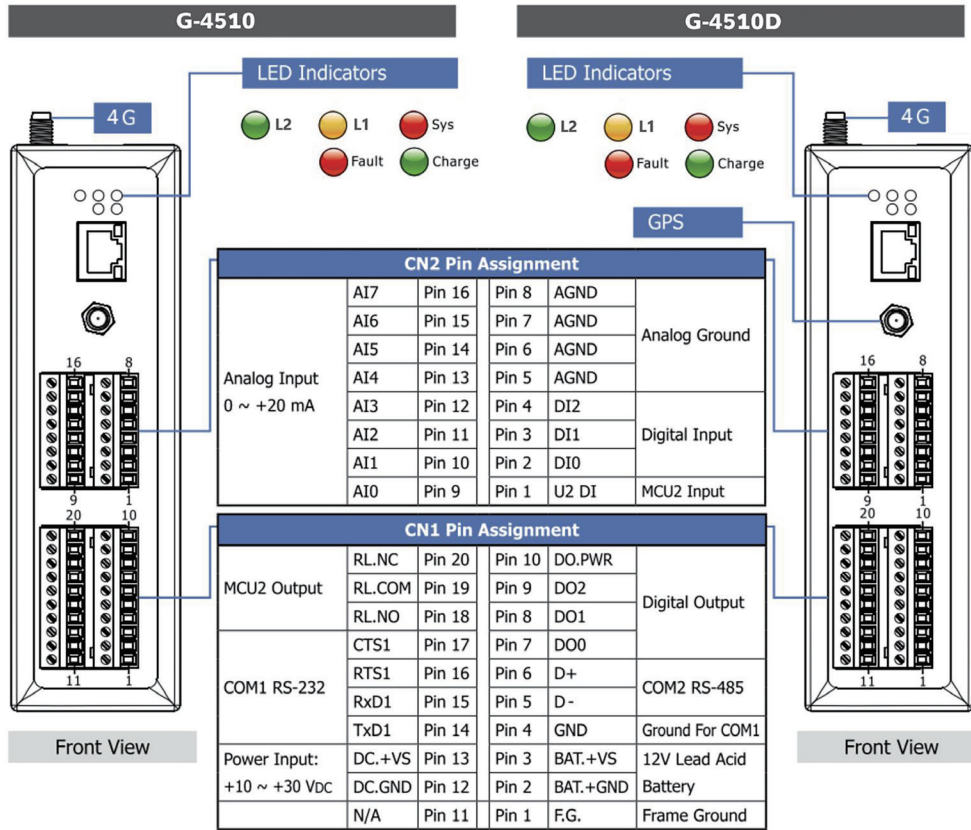
### Current Input Wire Connection

Input Type	
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### Relay Wire Connection

	Relay Output ON	Relay Output OFF
Relay		








## Pin Assignments



## Ordering Information

<b>G-4510 CR</b>	Power Saving PAC with Solar charger, optional GPS Function and communication module(RoHS)
<b>G-4510D CR</b>	Power Saving PAC with Solar charger, LCD display, optional GPS Function and communication module (RoHS)

## Accessories

	<b>ANT-421-05 CR</b>	5 dBi, 4G LTE omni-directional antenna (SMA Male Plug) (RoHS)
	<b>ANT-Base-01 CR</b>	Antenna magnetic base with 1.5 meter cable (SMA Male Plug) (RoHS)
	<b>ANT-115-03 CR</b>	GPS magnetic mount antenna with 5 meters cable (SMA Male Plug) (RoHS)
	<b>ANT-421-04 CR</b>	2 dBi, 4G LTE omni-directional antenna (SMA Male Plug) (RoHS)
	<b>EC21-AU CR</b>	3G/4G Communication LTE category 1 module
	<b>EC25-E CR</b>	3G/4G Communication LTE category 4 module
	<b>BG96 CR</b>	NB1/M1/EGPRS Communication LPWA module