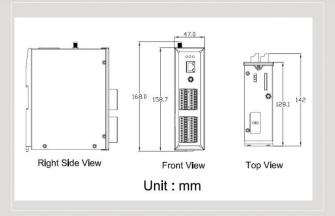


M2M Series Products

3G Power Saving PAC with Solar Charger



G-4513 Series



Dimensions

The G-4513 series are M2M (Machine to Machine) Power Saving PAC with a cellular transceiver and a solar charger. It can be used in hydrologic monitoring or mudslide monitoring system. With optional GPS model, the G-4513 can also be a GPS tracking system for vehicle management or maritime system. The features of G-4513 series: Solar charger, 3G module, Ethernet interface, optional GPS module, 3 digital inputs, 3 digital outputs, 8 analog inputs, 1 relay output.

Features

- Embedded MiniOS7, anti-virus
- Support GSM 850 / 900 / 1800 / 1900 MHz.
- Support WCDMA 850 / 900 / 1900 / 2100 MHz
- 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
- Application

- Support SD card.
- Built-in RTC, NVRAM, EEPROM
- 128*64 dots LCM display (option)
- GPS: 32 channels with All-In-View tracking (option)
- Support TCP, UDP client connection over 3G
- High reliability in harsh environments
- DIN-Rail mountable







Hardware Specifications

GDI:	tem	G-4513-3GWA	G-4513D-3GWA	G-4513P-3GWA	G-4513PD-3GWA	
CPU		80 MHz internal micropro	cessor	•	'	
SRAM/Flash		512K/512K , real time clock, watchdog timer				
NVRAM		31 bytes, battery backup, data valid up to 10 years				
EEPROM		16 KB, retention > 40 years. 1,000,000 erase/write cycles				
Comm. Interf	face					
COM ports		COM1:5-wire RS-232; CO)M2: RS-485			
Ethernet		10/100 Base-TX Ethernet				
GSM Interfac	re	10,100 Base 111 Billetillet				
Frequency I		GSM 850/900/1800/1900	MHz			
GPRS conn		GPRS class 10/8; GPRS station class B				
SMS	ectivity	MT, MO, CB, Text and PDU mode				
3G Interface		WI, MO, CB, Text and FI	DO Illoue			
Frequency I	Dand	WCDMA 850/900/1900/2	100 MHz			
Power Class		Class 3 (250mW @ WCD)				
Digital Input		Class 3 (230IIIW @ WCD.	MA/HSPA)			
		2				
Input Chanr	nei	Source(Dry Type), Common Ground				
Input Type	T 1					
Off Voltage		+1 V max. +3.5 ~ +30 V				
On Voltage Level						
Isolated Voltage		Non-isolated				
Digital Outpu						
Output Cha		3				
Output Type		Open Collector (Sink/NPN)				
Load Voltage		+30 VDC max.				
Load Currer	<u> </u>	100 mA max.				
Isolated Voltage		Non-isolated				
Analog Input						
Input Chanr	nel	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		2500 Vrms 3000Dc to DC				
Relay						
Output Cha	nnel / Type	1 / Form C				
Input Range		2A@30 Vdc ; 0.25 A @25	0 Vac			
Mechanical		typ. 10 ⁸ operations	- 140			
GPS Interface	1 1 1 1 1 1	typ. 10 operations				
Support Cha				32		
Sensitivity		-		Tracking = up to -159 dB:	m (with external I NA)	
		Cold start = up to -146 dBm (with external LNA)				
		_		Hot start (Open Sky) = 2 s(typical)		
Acquisition	Time				Cold start (Open Sky) = 36 s(typical)	
Acquisition				373 FE 4 0100 ' 0.01		
Acquisition Protocol Su	pport	-		NMEA 0183 version 3.01		
Acquisition	pport ee	-	00.61	NMEA 0183 version 3.01		
Acquisition Protocol Su	pport ee Effective	-	80.61 mm x 14.37 mm	NMEA 0183 version 3.01	80.61 mm x 14.37 mm (W	
Acquisition Protocol Su	pport ee Effective display area		(W x H)	NMEA 0183 version 3.01	80.61 mm x 14.37 mm (W x H)	
Acquisition Protocol Su LCD Interfac	pport ee Effective		(W x H) 93 mm x 70 mm x 1.6	NMEA 0183 version 3.01	80.61 mm x 14.37 mm (W	
Acquisition Protocol Su LCD Interfac	pport Effective display area Module	-	(W x H) 93 mm x 70 mm x 1.6 mm (W x H x T) Expected life is more	NMEA 0183 version 3.01	80.61 mm x 14.37 mm (W x H) 93 mm x 70 mm x 1.6 mm	
Acquisition Protocol Su LCD Interfac	pport Effective display area Module	-	(W x H) 93 mm x 70 mm x 1.6 mm (W x H x T) Expected life is more than 100,000 hours	NMEA 0183 version 3.01	80.61 mm x 14.37 mm (W x H) 93 mm x 70 mm x 1.6 mm (W x H x T) Expected life is more than 100,000 hours under	
Acquisition Protocol Su LCD Interfac General Life Time	pport EE Effective display area Module Dimension	-	(W x H) 93 mm x 70 mm x 1.6 mm (W x H x T) Expected life is more	NMEA 0183 version 3.01	80.61 mm x 14.37 mm (W x H) 93 mm x 70 mm x 1.6 mm (W x H x T) Expected life is more than	
Acquisition Protocol Su LCD Interfac General Life Time Power (Solar	pport EE Effective display area Module Dimension	-	(W x H) 93 mm x 70 mm x 1.6 mm (W x H x T) Expected life is more than 100,000 hours under normal operation	NMEA 0183 version 3.01	80.61 mm x 14.37 mm (W x H) 93 mm x 70 mm x 1.6 mm (W x H x T) Expected life is more than 100,000 hours under	
Acquisition Protocol Su LCD Interfac General Life Time Power (Solar Protection	Effective display area Module Dimension	Power reverse polarity pro	(W x H) 93 mm x 70 mm x 1.6 mm (W x H x T) Expected life is more than 100,000 hours under normal operation	NMEA 0183 version 3.01	80.61 mm x 14.37 mm (W x H) 93 mm x 70 mm x 1.6 mm (W x H x T) Expected life is more than 100,000 hours under	
Acquisition Protocol Su LCD Interfac General Life Time Power (Solar Protection Frame Grou	Effective display area Module Dimension Input) Module Dimension	Power reverse polarity pro ESD, Surge, EFT, Hi-Pot	(W x H) 93 mm x 70 mm x 1.6 mm (W x H x T) Expected life is more than 100,000 hours under normal operation	-	80.61 mm x 14.37 mm (W x H) 93 mm x 70 mm x 1.6 mm (W x H x T) Expected life is more than 100,000 hours under	
Acquisition Protocol Su LCD Interfac General Life Time Power (Solar Protection Frame Group Power Requirements	Effective display area Module Dimension Input) Ind Protection airement	Power reverse polarity pro ESD, Surge, EFT, Hi-Pot +10 V _{DC} ~ +30 V _{DC} , (Max	(W x H) 93 mm x 70 mm x 1.6 mm (W x H x T) Expected life is more than 100,000 hours under normal operation otection C. Voltage of Solar Panel me	- - - ust less +30V)	80.61 mm x 14.37 mm (W x H) 93 mm x 70 mm x 1.6 mm (W x H x T) Expected life is more than 100,000 hours under normal operation	
Acquisition Protocol Su LCD Interfac General Life Time Power (Solar Protection Frame Group Power Requiper Power Cons	Effective display area Module Dimension Input) Input Module Dimension	Power reverse polarity pro ESD, Surge, EFT, Hi-Pot +10 V _{DC} ~ +30 V _{DC} , (Max	(W x H) 93 mm x 70 mm x 1.6 mm (W x H x T) Expected life is more than 100,000 hours under normal operation otection C. Voltage of Solar Panel me	-	80.61 mm x 14.37 mm (W x H) 93 mm x 70 mm x 1.6 mm (W x H x T) Expected life is more than 100,000 hours under normal operation	
Acquisition Protocol Su LCD Interfac General Life Time Power (Solar Protection Frame Group Power Requirements	Effective display area Module Dimension Input) Input Module Dimension	Power reverse polarity pro ESD, Surge, EFT, Hi-Pot +10 V _{DC} ~ +30 V _{DC} , (Max	(W x H) 93 mm x 70 mm x 1.6 mm (W x H x T) Expected life is more than 100,000 hours under normal operation otection C. Voltage of Solar Panel me	- - - ust less +30V)	80.61 mm x 14.37 mm (W x H) 93 mm x 70 mm x 1.6 mm (W x H x T) Expected life is more than 100,000 hours under normal operation	
Acquisition Protocol Su LCD Interfac General Life Time Power (Solar Protection Frame Group Power Requiper Power Cons	Effective display area Module Dimension Input) Input Module Dimension	Power reverse polarity pro ESD, Surge, EFT, Hi-Pot +10 V _{DC} ~ +30 V _{DC} , (Max Sleep: < 10 mA@12V; Idl 12V Lead-Acid Battery	(W x H) 93 mm x 70 mm x 1.6 mm (W x H x T) Expected life is more than 100,000 hours under normal operation otection c. Voltage of Solar Panel mile: 77 mA @ 24 V _{DC} ; Data I	- - - ust less +30V)	80.61 mm x 14.37 mm (W x H) 93 mm x 70 mm x 1.6 mm (W x H x T) Expected life is more than 100,000 hours under normal operation	
Acquisition Protocol Su LCD Interfac General Life Time Power (Solar Protection Frame Grou Power Requ Power Cons Lead Acid Ba	Effective display area Module Dimension Input) Input In	Power reverse polarity pro ESD, Surge, EFT, Hi-Pot +10 V _{DC} ~ +30 V _{DC} , (Max Sleep: < 10 mA@12V; Idl	(W x H) 93 mm x 70 mm x 1.6 mm (W x H x T) Expected life is more than 100,000 hours under normal operation otection c. Voltage of Solar Panel mile: 77 mA @ 24 V _{DC} ; Data I	- - - ust less +30V)	80.61 mm x 14.37 mm (W x H) 93 mm x 70 mm x 1.6 mm (W x H x T) Expected life is more than 100,000 hours under normal operation	
Acquisition Protocol Su LCD Interfac General Life Time Power (Solar Protection Frame Grou Power Requ Power Cons Lead Acid Ba Battery	Effective display area Module Dimension Input) Input In	Power reverse polarity pro ESD, Surge, EFT, Hi-Pot +10 V _{DC} ~ +30 V _{DC} , (Max Sleep: < 10 mA@12V; Idl 12V Lead-Acid Battery Voltage of Power Input max	(W x H) 93 mm x 70 mm x 1.6 mm (W x H x T) Expected life is more than 100,000 hours under normal operation otection c. Voltage of Solar Panel mile: 77 mA @ 24 V _{DC} ; Data I	ust less +30V) Link: 150 ~ 400 mA (peak)	80.61 mm x 14.37 mm (W x H) 93 mm x 70 mm x 1.6 mm (W x H x T) Expected life is more than 100,000 hours under normal operation	
Acquisition Protocol Su LCD Interfac General Life Time Power (Solar Protection Frame Grou Power Requ Power Cons Lead Acid Ba Battery Charging Vo	Effective display area Module Dimension Input) Input In	Power reverse polarity pro ESD, Surge, EFT, Hi-Pot +10 V _{DC} ~ +30 V _{DC} , (Max Sleep: < 10 mA@12V; Idl 12V Lead-Acid Battery Voltage of Power Input max	(W x H) 93 mm x 70 mm x 1.6 mm (W x H x T) Expected life is more than 100,000 hours under normal operation otection x. Voltage of Solar Panel me: 77 mA @ 24 V _{DC} ; Data I	ust less +30V) Link: 150 ~ 400 mA (peak)	80.61 mm x 14.37 mm (W x H) 93 mm x 70 mm x 1.6 mm (W x H x T) Expected life is more than 100,000 hours under normal operation	
Acquisition Protocol Su LCD Interfac General Life Time Power (Solar Protection Frame Grou Power Requ Power Cons Lead Acid Ba Battery Charging Vo Low Voltage	Effective display area Module Dimension Input) Input In	Power reverse polarity pro ESD, Surge, EFT, Hi-Pot +10 V _{DC} ~ +30 V _{DC} , (Max Sleep: < 10 mA@12V; Idl 12V Lead-Acid Battery Voltage of Power Input max	(W x H) 93 mm x 70 mm x 1.6 mm (W x H x T) Expected life is more than 100,000 hours under normal operation otection x. Voltage of Solar Panel me: 77 mA @ 24 V _{DC} ; Data I	ust less +30V) Link: 150 ~ 400 mA (peak)	80.61 mm x 14.37 mm (W x H) 93 mm x 70 mm x 1.6 mm (W x H x T) Expected life is more than 100,000 hours under normal operation	
Acquisition Protocol Su LCD Interfac General Life Time Power (Solar Protection Frame Group Power Requested Acid Ba Battery Charging Voltage Low Voltage LED Indicato	Effective display area Module Dimension Input) Input In	Power reverse polarity pro ESD, Surge, EFT, Hi-Pot +10 V _{DC} ~ +30 V _{DC} , (Max Sleep: < 10 mA@12V; Idl 12V Lead-Acid Battery Voltage of Power Input mu Low Voltage disconnect =	(W x H) 93 mm x 70 mm x 1.6 mm (W x H x T) Expected life is more than 100,000 hours under normal operation otection x. Voltage of Solar Panel me: 77 mA @ 24 V _{DC} ; Data I	ust less +30V) Link: 150 ~ 400 mA (peak)	80.61 mm x 14.37 mm (W x H) 93 mm x 70 mm x 1.6 mm (W x H x T) Expected life is more than 100,000 hours under normal operation	
Acquisition Protocol Su LCD Interface General Life Time Power (Solar Protection Frame Grou Power Cons Lead Acid Ba Battery Charging Vc Low Voltage LED Indicato System	Effective display area Module Dimension Input) Input In	Power reverse polarity pro ESD, Surge, EFT, Hi-Pot +10 V _{DC} ~ +30 V _{DC} , (Max Sleep: < 10 mA@12V; Idl 12V Lead-Acid Battery Voltage of Power Input mt Low Voltage disconnect = Red	(W x H) 93 mm x 70 mm x 1.6 mm (W x H x T) Expected life is more than 100,000 hours under normal operation otection x. Voltage of Solar Panel me: 77 mA @ 24 V _{DC} ; Data I	ust less +30V) Link: 150 ~ 400 mA (peak)	80.61 mm x 14.37 mm (W x H) 93 mm x 70 mm x 1.6 mm (W x H x T) Expected life is more than 100,000 hours under normal operation	
Acquisition Protocol Su LCD Interface General Life Time Power (Solar Protection Frame Group Power Cons Lead Acid Ba Battery Charging Vo Low Voltage LED Indicato System 3G GPS	Effective display area Module Dimension Input) Input Input Independent of the protection different sumption dittery Interpolation of the protection difference of the protect displayed and protection displayed and displayed a	Power reverse polarity pro ESD, Surge, EFT, Hi-Pot +10 V _{DC} ~ +30 V _{DC} , (Max Sleep: < 10 mA@12V; Idl 12V Lead-Acid Battery Voltage of Power Input mu Low Voltage disconnect = Red Yellow -	(W x H) 93 mm x 70 mm x 1.6 mm (W x H x T) Expected life is more than 100,000 hours under normal operation otection x. Voltage of Solar Panel me: 77 mA @ 24 V _{DC} ; Data I	ust less +30V) Link: 150 ~ 400 mA (peak)	80.61 mm x 14.37 mm (W x H) 93 mm x 70 mm x 1.6 mm (W x H x T) Expected life is more than 100,000 hours under normal operation	
Acquisition Protocol Su LCD Interface General Life Time Power (Solar Protection Frame Grout Power Constant Battery Charging Voltage LED Indicato System 3G GPS Charging / I	Effective display area Module Dimension Input) Input Input Independent of the protection different sumption dittery Interpolation of the protection difference of the protect displayed and protection displayed and displayed a	Power reverse polarity pro ESD, Surge, EFT, Hi-Pot +10 V _{DC} ~ +30 V _{DC} , (Max Sleep: < 10 mA@12V; Idl 12V Lead-Acid Battery Voltage of Power Input mt Low Voltage disconnect = Red	(W x H) 93 mm x 70 mm x 1.6 mm (W x H x T) Expected life is more than 100,000 hours under normal operation otection x. Voltage of Solar Panel me: 77 mA @ 24 V _{DC} ; Data I	ust less +30V) Link: 150 ~ 400 mA (peak)	80.61 mm x 14.37 mm (W x H) 93 mm x 70 mm x 1.6 mm (W x H x T) Expected life is more than 100,000 hours under normal operation	
Acquisition Protocol Su LCD Interface General Life Time Power (Solar Protection Frame Grout Power Const. Lead Acid Ba Battery Charging Voltage LED Indicato System 3G GPS Charging / I Mechanical	Effective display area Module Dimension Input) Input Input Independent of the protection different sumption dittery Interpolation of the protection difference of the protect displayed and protection displayed and displayed a	Power reverse polarity pro ESD, Surge, EFT, Hi-Pot +10 V _{DC} ~ +30 V _{DC} , (Max Sleep: < 10 mA@12V; Idl 12V Lead-Acid Battery Voltage of Power Input mu Low Voltage disconnect = Red Yellow - Green / Red	(W x H) 93 mm x 70 mm x 1.6 mm (W x H x T) Expected life is more than 100,000 hours under normal operation otection x. Voltage of Solar Panel me: 77 mA @ 24 V _{DC} ; Data I	ust less +30V) Link: 150 ~ 400 mA (peak)	80.61 mm x 14.37 mm (W x H) 93 mm x 70 mm x 1.6 mm (W x H x T) Expected life is more than 100,000 hours under normal operation	
Acquisition Protocol Su LCD Interface General Life Time Power (Solar Protection Frame Grout Power Cons Lead Acid Ba Battery Charging Vo Low Voltage LED Indicato System 3G GPS Charging / I Mechanical Casing	Executive display area Module Dimension Input) Input Input Ind Protection irrement sumption attery Interpolation interpolation irrement sumption attery Input Inpu	Power reverse polarity pro ESD, Surge, EFT, Hi-Pot +10 V _{DC} ~ +30 V _{DC} , (Max Sleep: < 10 mA@12V; Idl 12V Lead-Acid Battery Voltage of Power Input mu Low Voltage disconnect = Red Yellow - Green / Red Metal	(W x H) 93 mm x 70 mm x 1.6 mm (W x H x T) Expected life is more than 100,000 hours under normal operation otection A. Voltage of Solar Panel mre: 77 mA @ 24 V _{DC} ; Data I list be over +16V 11.1V / Low Voltage recon	ust less +30V) Link: 150 ~ 400 mA (peak)	80.61 mm x 14.37 mm (W x H) 93 mm x 70 mm x 1.6 mm (W x H x T) Expected life is more than 100,000 hours under normal operation	
Acquisition Protocol Su LCD Interface General Life Time Power (Solar Protection Frame Grout Power Requipment Constant Lead Acid Ba Battery Charging Volume Law Voltage LED Indicato System 3G GPS Charging / I Mechanical Casing Dimensions	Input) Input) Input) Input) Ind Protection irement sumption ittery oltage e Protect Fault	Power reverse polarity pro ESD, Surge, EFT, Hi-Pot +10 V _{DC} ~ +30 V _{DC} , (Max Sleep: < 10 mA@12V; Idl 12V Lead-Acid Battery Voltage of Power Input mt Low Voltage disconnect = Red Yellow - Green / Red Metal 47 mm x 142 mm x 168 m	(W x H) 93 mm x 70 mm x 1.6 mm (W x H x T) Expected life is more than 100,000 hours under normal operation otection A. Voltage of Solar Panel mile: 77 mA @ 24 V _{DC} ; Data I list be over +16V 11.1V / Low Voltage recon	ust less +30V) Link: 150 ~ 400 mA (peak)	80.61 mm x 14.37 mm (W x H) 93 mm x 70 mm x 1.6 mm (W x H x T) Expected life is more than 100,000 hours under normal operation	
Acquisition Protocol Su LCD Interface General Life Time Power (Solar Protection Frame Grout Power Cons Lead Acid Ba Battery Charging Vo Low Voltage LED Indicato System 3G GPS Charging / I Mechanical Casing Dimensions Installation	Effective display area Module Dimension Input) Ind Protection arement sumption ditery oltage e Protect Fault	Power reverse polarity pro ESD, Surge, EFT, Hi-Pot +10 V _{DC} ~ +30 V _{DC} , (Max Sleep: < 10 mA@12V; Idl 12V Lead-Acid Battery Voltage of Power Input mu Low Voltage disconnect = Red Yellow - Green / Red Metal	(W x H) 93 mm x 70 mm x 1.6 mm (W x H x T) Expected life is more than 100,000 hours under normal operation otection A. Voltage of Solar Panel mile: 77 mA @ 24 V _{DC} ; Data I list be over +16V 11.1V / Low Voltage recon	ust less +30V) Link: 150 ~ 400 mA (peak)	80.61 mm x 14.37 mm (W x H) 93 mm x 70 mm x 1.6 mm (W x H x T) Expected life is more than 100,000 hours under normal operation	
Acquisition Protocol Su LCD Interface General Life Time Power (Solar Protection Frame Grout Power Require Power Constant Solar Protection Power Require Power Constant Solar Battery Charging Volume Leb Indicato System 3G GPS Charging / I Mechanical Casing Dimensions Installation Environment	Effective display area Module Dimension Input) Ind Protection airement sumption attery Oltage e Protect Fault	Power reverse polarity pro ESD, Surge, EFT, Hi-Pot +10 V _{DC} ~ +30 V _{DC} , (Max Sleep: < 10 mA@12V; Idl 12V Lead-Acid Battery Voltage of Power Input mu Low Voltage disconnect = Red Yellow - Green / Red Metal 47 mm x 142 mm x 168 m DIN-Rail and Wall mount	(W x H) 93 mm x 70 mm x 1.6 mm (W x H x T) Expected life is more than 100,000 hours under normal operation otection A. Voltage of Solar Panel me: 77 mA @ 24 V _{DC} ; Data I list be over +16V 11.1V / Low Voltage recom		80.61 mm x 14.37 mm (W x H) 93 mm x 70 mm x 1.6 mm (W x H x T) Expected life is more than 100,000 hours under normal operation @ 24 V _{DC}	
Acquisition Protocol Su LCD Interface General Life Time Power (Solar Protection Frame Group Power Cons Lead Acid Ba Battery Charging Vo Low Voltage LED Indicato System 3G GPS Charging / I Mechanical Casing Dimensions Installation	Effective display area Module Dimension Input) Ind Protection arement sumption attery Oltage Protect Fault Cemperature	Power reverse polarity pro ESD, Surge, EFT, Hi-Pot +10 V _{DC} ~ +30 V _{DC} , (Max Sleep: < 10 mA@12V; Idl 12V Lead-Acid Battery Voltage of Power Input mt Low Voltage disconnect = Red Yellow - Green / Red Metal 47 mm x 142 mm x 168 m	(W x H) 93 mm x 70 mm x 1.6 mm (W x H x T) Expected life is more than 100,000 hours under normal operation otection A. Voltage of Solar Panel mile: 77 mA @ 24 V _{DC} ; Data I list be over +16V 11.1V / Low Voltage recon	ust less +30V) Link: 150 ~ 400 mA (peak)	80.61 mm x 14.37 mm (W x H) 93 mm x 70 mm x 1.6 mm (W x H x T) Expected life is more than 100,000 hours under normal operation	