

# G-4500 series

Quad-band M2M Mini-Programmable Automation Controller

## Introduction

ICP DAS has launched the mini-style G-4500 series. The G-4500 features M2M (Machine to Machine) which is the hottest topic in the 21 century. Instant monitoring, immediate message sharing, quick responding, and so on are becoming the popular issues when speaking of machines. Most importantly, an intelligent, efficient machine effectively lowers your labor cost which always counts the most.



But how are we going to make this happen? G-4500 would tell you!

A compact programmable automation controller plus an antenna makes G-4500 born in the world. With built-in GPRS/GSM, G-4500 does more than just working alone by itself. G-4500 not only monitors the data but sends them out in real time to the control center if necessary.

Also, by combining a GPS (optional) with G-4500, G-4500 suddenly becomes a tracking system which you can often find out in the car system, marine system, etc.

Inside G-4500, a high-performance CPU is working over there; outside G-4500, you get the standard interface of an antenna, an Ethernet port, 3 digital inputs, 3 digital outputs, 8 analog inputs, 2 RS-232 COM ports and 1 RS-485 COM port. GPS is optional.

There are two options, G-4500 and G-4500D. G-4500D equips with a 128x64 display for direct data presenting.

## Features

- Embedded MiniOS7, anti-virus
- Supports a variety of TCP/IP features, including TCP, UDP, IP, ICMP, ARP
- 10/100Base-TX Ethernet Controller
- COM port: COM1 (5-wire RS-232), COM2 (RS-485), COM3 (3-wire RS-232)
- Built-in self-tuner ASIC controller on RS-485 port
- I/O: 3 channel DI, 3 channel DO, 8 channel AI
- Support SD storage card
- GPRS/GSM: Quad-band 850/900/1800/1900 MHz(option)
- Support TCP server, TCP client, UDP client connection from GPRS
- GPS : 16 channels with All-In-View tracking (option)
- 128\*64 dots LCM display (only for G-4500D-SIM340 and G-4500PD-SIM340)
- Support Virtual COM technology
- Support Modbus Protocol
- High reliability in harsh environment
- Free easy-to-use software development toolkits

## I/O Specification

Digital Output	
Output Channel	3
Output Type	Open Collector (Sink/NPN)
Load Voltage	+30 Vdc max.
Load Current	100 mA max.
Isolated Voltage	Non-isolated
Digital Input	
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
Analog Input	
Input Channel	8
Resolution	12 - bit
Input Range/Type	0 ~ 20 mA
Sample Rate	1 KHz max. (Read one channel)

## Hardware Specification

Item	G-4500-SIM340	G-4500D-SIM340	G-4500P-SIM340	G-4500PD-SIM340
CPU	80 MHz internal microprocessor			
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. Interface				
COM ports	COM1:5-wire RS-232; COM2: RS-485; COM3:3-wire RS-232			
Ethernet	10/100 Base-TX Ethernet controller			
GPRS Interface				
Frequency Band	Quad-band 850/900/1800/1900 MHz			
GPRS connectivity	GPRS class 10/8; GPRS station class B			
DATA GPRS	Downlink transfer: Max. 85.6 kbps; Uplink transfer: Max 42.8kbps			
SMS	MT, MO, CB, Text and PDU mode			

GPS Interface					
Support Channels	-			32	
Sensitivity	-			Tracking = up to -159 dBm (with external LNA)	
				Cold start = up to -146 dBm (with external LNA)	
Acquisition Time	-			Hot start (Open Sky) = 2 s(typical)	
				Cold start (Open Sky) = 36 s(typical)	
Protocol Support	-			NMEA 0183 version 3.01	
LCD Interface					
General	Effective display area	-	80.61 mm x 14.37 mm (W x H)	-	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)	-	93 mm x 70 mm x 1.6 mm (W x H x T)
Life Time	-		Expected life is more than 100,000 hours under normal operation	-	Expected life is more than 100,000 hours under normal operation
Power					
Protection	Power reverse polarity protection				
Frame Ground Protection	ESD, Surge, EFT, Hi-Pot				
Power Requirement	15W; Unregulated +10 V <sub>DC</sub> ~ +30 V <sub>DC</sub>				
Power Consumption	Idle: 75 mA @ 24 V <sub>DC</sub> ; Data Link: 150 ~ 400 mA (peak) @ 24 V <sub>DC</sub>				
LED Indicators					
System	Red				
GPRS	Yellow				
GPS	Green			Yes	
Mechanical					
Casing	Metal				
Dimensions	47 mm x 142 mm x 168 mm (W x L x H)				
Installation	DIN-Rail and Wall mount				
Environment					
Operating Temperature	-20 ~ +70 °C	-15 ~ +55 °C	-20 ~ +70 °C	-15 ~ +55 °C	
Storage Temperature	-40 ~ +80 °C	-20 ~ +70 °C	-40 ~ +80 °C	-20 ~ +70 °C	
Humidity	5~90% RH, non-condensing				

More information: <http://m2m.icpdas.com/g-4500-sin340.html>