Features

- Cortex-A8, 1GHz CPU
- Linux kernel 3.2.1.4
- 512 MB DDR3 and 512 MB Flash
- 64-bit Hardware Serial Number
- Real-Time Capability
- I/O Expansion Bus
- 10/100/1000M Ethernet Ports
- 3 Serial Ports (RS-232/485)
- Operating Temperature: -25 ~ +75°C
- Industrial Tri-band 4G module
- 4G modem

LP-5231PM-4GC/LP-5231PM-4GE

Introduction

The LP-5231PM-4GE/LP-5231PM-4GC is equipped a Cortex-A8 CPU (1 GHz) and using Linux OS with Linux Kernel 3.2.14 that is a compact and real-time OS used to quickly create time critical and high performance applications.

The 4G module of LP-5231PM-4GC work on frequencies of WCDMA 900/2100 MHz, TD-SCDMA 1900/2100 MHz, CDMA2000 (BC0) 800 MHz, FDD LTE:B1/B3/B8, TDD LTE: B38/B39/B40/B41 and GSM 850/900/1800/1900 MHz. The 4G module of LP-5231PM-4GE work on frequencies of WCDMA 2100/900/850 MHz, FDD LTE:B1/B3/B5/B7/B8/B20 and GSM 850/900/1800/1900 MHz. These modules utilize the 3G/4G network for convenient and inexpensive data transfer from remote instruments, meters, computers or control systems in either live data or packet data. These modules has the integrated TCP/IP stack so that even simple controllers with serial communications ports can be connected to the modem without the need for special driver implementation. With the features of theirs, the systems can be SMS and GPRS/3G/4G connection applications with our PAC.

Linux Kernel OS

Main advantage of the LP-5231PM-4GE/LP-5231PM-4GC is its high quality control system, including its stably properties, open source and the standard LinPAC SDK for Windows and Linux using the GNU C language, GUI software. The main purpose of LP-5231PM-4GE/LP-5231PM-4GC is to allow the numerous enthusiastic Linux users to control their own embedded system easily within the Linux environment.
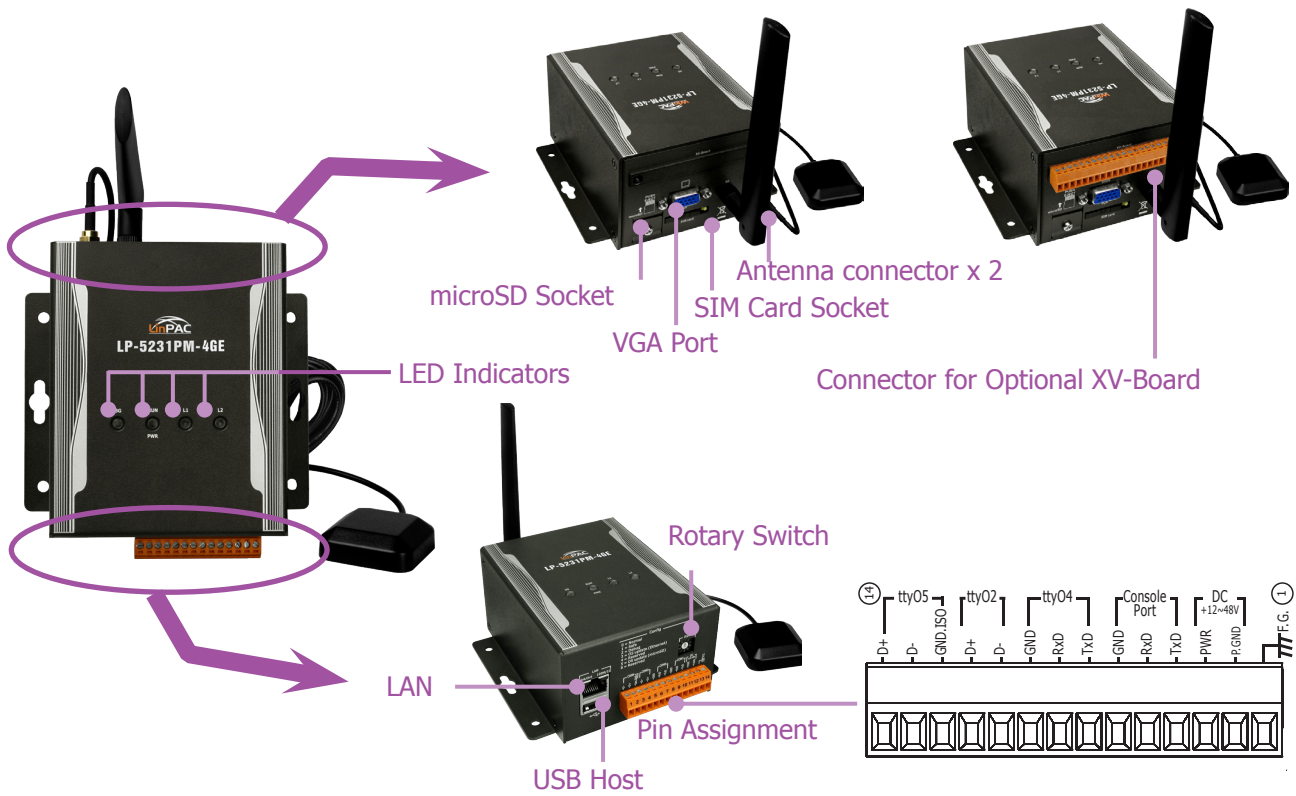
- LinPAC SDK for Windows and Linux
- Support for GNU C Language
- Support for GUI: Using GTK + Library
- Support for DCON, Modbus and SNMP Protocols
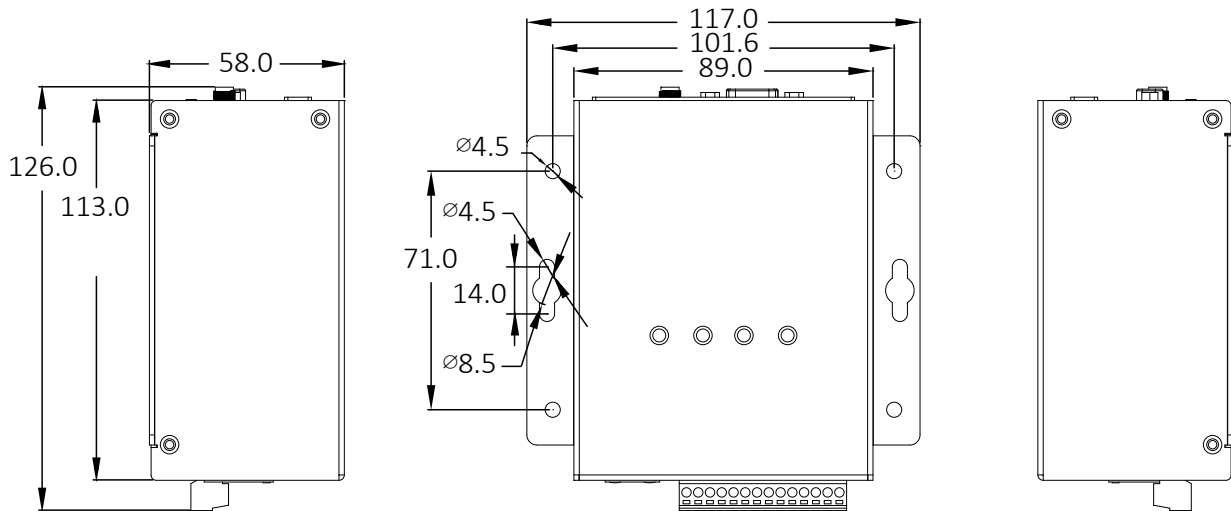- Support for USB to Serial Converter

■ Specifications

Models	LP-5231PM-4GE	LP-5231PM-4GC
System Software		
OS	Linux Kernel 3.2.14	
Embedded Service	SFTP server, Web server, SSH	
SDK Provided	LinPAC SDK (GCC based toolchain and LinPAC Libraries)	
CPU Module		
CPU	Cortex-A8, 1GHz	
SDRAM	512 MB DDR3	
Flash	512 MB	
FRAM	64 KB	
Expansion Flash Memory	microSD socket with one microSD card (support up to 32 GB microSDHC card)	
RTC (Real Time Clock)	Provide second, minute, hour, date, day of week, month, year	
64-bit Hardware Serial Number	Yes, for Software Copy Protection	
Dual Watchdog Timers	Yes	
LED Indicators	4 LEDs (Power, Running and 2 user defined LEDs)	
Rotary Switch	Yes (0 to 9)	
VGA and Communication Ports		
VGA Resolution	VGA x 1 (max. resolution up to 1280 x 1024)	
Ethernet	RJ-45 x 1, 10/100/1000 Based-TX (Auto-negotiating, Auto MDI/MDI-X, LED indicators)	
USB 2.0 (host)	1	
Console Port	RS-232 (RxD, TxD and GND); Non-isolated	
ttyO2	RS-485 (Data+, Data-); Non-isolated	
ttyO4	RS-232 (RxD, TxD and GND); Non-isolated	
ttyO5	RS-485 (Data+, Data-); 2500 V_{DC} isolated	
I/O Expansion		
I/O Expansion Bus	Yes, one optional XV-board	
Mechanical		
Casing	Metal	
Dimensions (W x L x H)	117 mm x 126 mm x 58 mm	
Installation	DIN Rail and Wall Mounting	
Environmental		
Operating Temperature	-25 to +75°C	
Storage Temperature	-40 to +80°C	
Ambient Relative Humidity	10 to 90% RH (non-condensing)	
Power		
Input Range	+12 to +48 V_{DC}	
Consumption	6.5 W	
GSM System		
Frequency Band	GSM: 850/900/1800/1900 MHz	
GPRS Connectivity	GPRS class 12/10; GPRS station class B	
Data GPRS	Downlink transfer: Max. 85.6 kbps; Uplink transfer: Max 42.8k bps	
3G System		
Frequency Band	WCDMA 850/900/2100 MHz	WCDMA 900/2100, TD-SCDMA 1900/2100, CDMA2000 (BC0) 800
Data Transmission	DC-HSPA+ Download: Max. 42 Mbps; Upload: Max 5.76Mbps TD-SCDMA Download: Max. 4.2 Mbps; Upload: Max 2.2Mbps CDMA2000 EVDO Download: Max. 14.7 Mbps; Upload: Max 5.4Mbps	
4G System		
Frequency Band	FDD LTE: B1/B3/B5/B7/B8/B20	FDD LTE: B1/B3/B8, TDD LTE: B38/B39/B40/B41
Data Transmission	Download Max 100Mbps/Upload Max 50Mbps	
GPS System (option)		
Support Channels	32	
Protocol Support	NMEA 0183	

Appearance

microSD Socket

SIM Card Socket

VGA Port

Antenna connector x 2

Connector for Optional XV-Board

LED Indicators

Rotary Switch

LAN

Pin Assignment

USB Host

T4			ttyO5		ttyO2		ttyO4		Console Port		DC +12~48V		1
D+	D-	GND.ISO	D+	D-	GND	RxD	TxD	GND	RxD	TxD	PWR	P.GND	F.G.

Dimension

58.0

126.0

113.0

117.0

101.6

89.0

⌀4.5

⌀4.5

71.0

14.0

⌀8.5

Ordering Information

LP-5231PM-4GE	PAC with Linux OS, one LAN port, GPS and 4G module (Frequency Band for Europe) (Metal Case) (RoHS)
LP-5231PM-4GC	PAC with Linux OS, one LAN port, GPS and 4G module (Frequency Band for China) (Metal Case) (RoHS)

Option Accessories

XV-Board	Add-on I/O Expansion Board