



Micronix PV-1800

Multipurpose PC/104 module:

- GSM/GPRS modem
- Power supply
- 8 isolated 12-bit A/D ch.
- 15 digital I/O and
- 1xRS232

The Micronix PV-1800 offers a unique combination of GSM/GPRS modem, power supply and I/O signals. These features provide an efficient and cost-effective GSM/GPRS solution.



Micronix PV-1800 is a low-power GSM/Cellular modem using Sony Ericsson's GM47 dual band (900/1800MHz) cellular engine. The PV-1800 can be controlled by AT commands and is fully compatible with the AT command set.

The PV-1800 also includes a power supply, which provides 4A at 5V for external use, thus you do not need an extra power supply for your system. PV-1800 has 8 isolated analogue (0-10V) inputs, enabling data acquisition directly on-board. 8 digital inputs and 7 digital outputs (all opto-isolated) allowing the user to control auxiliary equipment. Events can be reported thru the SMS feature on the GSM modem.

The Micronix PV-1800 also includes 1 complete 16C550 compatible serial port for serial expansion. The board can be configured for any standard COM port address.

An on-board SIM card socket provides a fast and reliable integration of your SIM card without any cabling or customisation. A free of charge software lets you easily install and configure the SIM card, including PIN code setting.

Micronix PV-1800 represents the latest development within GSM technology and holds all the necessary approvals (R&TTE and GCF), thus PV-1800 is recommended for all new designs. The PV-1800 is ideal for all PC/104 based data logging and alarm systems. The PV-1800 withstands extended temperatures, shock and vibration of mobile equipment.

Micronix PV-1800 Features

- Dual-band EGSM900/GSM1800.
- Compliant to GSM phase 2/2+.
- Low power consumption.
- Data, SMS.
- Modem control via AT commands.
- GSM modem uses COM1, COM2, COM3 or COM4.
- 1xRS232 port (standard COM port).
- Integrated I/O:
 - 8 Digital inputs, opto-isolated.
 - 7 Digital outputs, opto-isolated.
 - 8 Isolated analogue inputs (0-10V), 12-bit.
- Wide temperature range: -20° to +70°C.
- Stacks on the PC/104 bus.
- Low cost.

General specifications

Input voltage:	8-27V DC, operational.	Environmental Data:	
Max input voltage:	35V DC.	Operating temperature:	-20° to 70° C.
Output voltage/current:	5V DC, 4A (depending on configuration & thermal conditions).	Storage temperature:	-40 to 85° C.
Power consumption:		Humidity:	20 to 90% non-condensing.
Conditions:	676mW.	Cyclic humidity:	ETS 300 019-2-5 or equal.
+24V input no MODEM		Vibration:	10-1000 Hz Sinus and random @ 1-1,5G RMS.
All DO & DI off		Sustained vibration:	EN 60068-2-34 & EN 60068-2-36.
No external load on +5V.		Shock:	IEC 60068-2-27 & IEC 60068-2-29.
		Size (WxLxH):	90 x 95 x 15 mm.
		Weight:	116 g (excl. packaging).

GSM/GPRS Modem specifications

SIM card interface:	3V or 5V.	SMS:	Point-to-point (MT and MO). SMS cell broadcast.
Antenna impedance:	50Ω.	Data:	Text and PDU mode. CSD up to 14.4 kbps, USSD. Non transparent mode V.110.
RF Output power:	2W(900MHz), 1W(1800 MHz). MMCX RF connector.	Power consumption	
Antenna connector:	R&TTE.	Idle mode:	5 mA (3.6V). -18mW.
Approvals:	GCF approval.	Switched off:	<100µA (3.6V). <360µW.

GSM/GPRS Modem specifications – continued -

Supplementary services:	Simple I/O signals:* Connector type:	3 Analogue inputs, (0 - 2.75V), 8 Bit. 1 analogue output, (0 – 2.475V), 8 Bit. 4 general purpose digital I/O, 0 – 2.75V. 10-pin box header 2,54mm.
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Digital I/O specifications

8 digital inputs, opto-isolated	0-24V input, non-polarity. Isolation: Up to 1000 Vrms. Logic "1": Uin: 10-24V. Logic "0": Uin: 0-1.5V. Max input voltage: 30V, current limiting resistor. Counter input: DI0 acts as a 16bit up-counter. DI0 & DI1 act as 16bit quadrature counter.	7 digital outputs, Opto-isolated	PNP outputs Up to 1000 Vrms. 0.5A (PNP), 1.5A in total. 30V DC. Snubber-diode at each output. 10-pin box header 2,54mm.
Max counting rate: Interrupts: Connector:	10kHz. Int. 5,9,10,11,15 selectable on input channel 0 and 1. 10-pin box header 2,54mm.		

Analogue Input specifications

Inputs:	8 single ended or 4 differential.	Resolution:	12-Bit resolution.
Ranges, single ended (8):	0-2.5V or 0-5V or 0-10V or 0-20mA or 4x0-20mA & 4x0-2.5V (default configuration).	Conversion time:	11µs typ.
OR		Isolation:	1kV, 1 minute.
Ranges, differential (4):	0-2.5V or 0-5V or 0-10V or 0-20mA or 2x0-20mA & 2x0-2.5V.	Input impedance:	1 MΩ/100pF.
		Accuracy:	0.5% of FSR ±3LSB (default).
		Connector type:	10-pin box header 2,54mm.

RS232 port specifications

2xRS232 ports:	1 used for GSM/GPRS modem 1 Standard COM-port. Asynchronous communication.	RS232 interface:	Supports: TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND. Complete RS-232 Modem control signals, except RI. RTS used for data direction control. Supported by DOS and Windows.
Baud rate:	Up to 115 Kbps.	Connector:	10-pin box header 2,54mm.
UART:	16C550 with 16-byte FIFO.		
Interrupt selectable:	IRQ 3,4,5,7,9,10,11,12 or 15. Individually or shared interrupt.		
I/O-address:	Selectable from 2C8H to 3F8H.		
Surge protection:	± 8 kV according to IEC1000-4-2.		

Versions & Ordering codes

Model no.	Feature					
	GSM/GPRS Modem	Simple I/O*: 3AI,1AO, 4DIO	Power supply, 5V DC, 4A output	Digital I/O, 8DI and 7DO	Analogue inputs, 8 AI	Serial port, 1xRS232
PV-1800-S-1	•	•	•	•	• 8x0-2.5V	•
PV-1800-S-2	•	•	•	•	• 8x0-5V	•
PV-1800-S-3	•	•	•	•	• 8x0-10V	•
PV-1800-S-4	•	•	•	•	• 8x0-20mA	•
PV-1800-S-5	•	•	•	•	• 4x0-2.5V & 4x0-20mA	•
PV-1800-S-6	•	•	•	•	• 4x0-2.5V Diff.	•
PV-1800-S-7	•	•	•	•	• 4x0-5V Diff.	•
PV-1800-S-8	•	•	•	•	• 4x0-10V Diff.	•
PV-1800-S-9	•	•	•	•	• 4x0-20mA Diff.	•
PV-1800-S-10	•	•	•	•	• 2x0-2.5V & 2x0-20mA	•
PV-1800A-S-X	•	•	•	•	• X=1,2,3,4,5,6,7,8,9,10	•
PV-1820-S	•	•	•	•		
PV-1820A-S	•	•	•	•		
PV-1830-S	•	•	•	•		
PV-1830A-S	•	•	•	•		

*: For details on these, please refer to SonyEricsson's documentation:

GM47_48 Guidelines.

GM47_48 Integrators Manual.



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