

VITA-350E

Automatic Vehicle Location Device with GPS, GPRS, D I/O, RS-232



Features

- 16 channel global positioning engine
- Tri-band GSM/GPRS 900/1800/1900 MHz
- 1 x RS-232 serial port
- 9 x programmable digital I/O
- Built-in watchdog timer
- Real-time clock (RTC)
- Built-in data logger capability with flash memory (up to 80 MB)
- M2M configuration utility
- Remote parameter configuration via GPRS

Introduction

Advantech's first M2M product, the VITA-350, provides in-vehicle data solutions over GSM/GPRS networks for fleet management and transportation applications. A 16-channel GPS module with 1 x RS-232 and 9 x digital I/O ports are also offered for advanced tracking and alarms.

Turn-key Solution

Industrial hardware design with intelligent software capabilities makes the VITA-350 a reliable fleet management solution. The VITA-350 is a compact vehicle platform that combines GPS + GPRS modules and versatile data input interfaces. The hardware is optimized with Windows CE in mind, making Advantech's VITA-350 an ideal platform for many professional fleet management and telemetry applications.

Versatile I/O Interfaces

The VITA-350 offers 9 x GPIO and 1 x RS-232 serial ports that allow users to monitor and connect to external devices.

Embedded SDK for Easy Configuration

Advantech also provides an SDK (software development kit) package, including APIs, to back up the VITA-350, making the system easy to integrate and manage.

Over The Air Upgrades

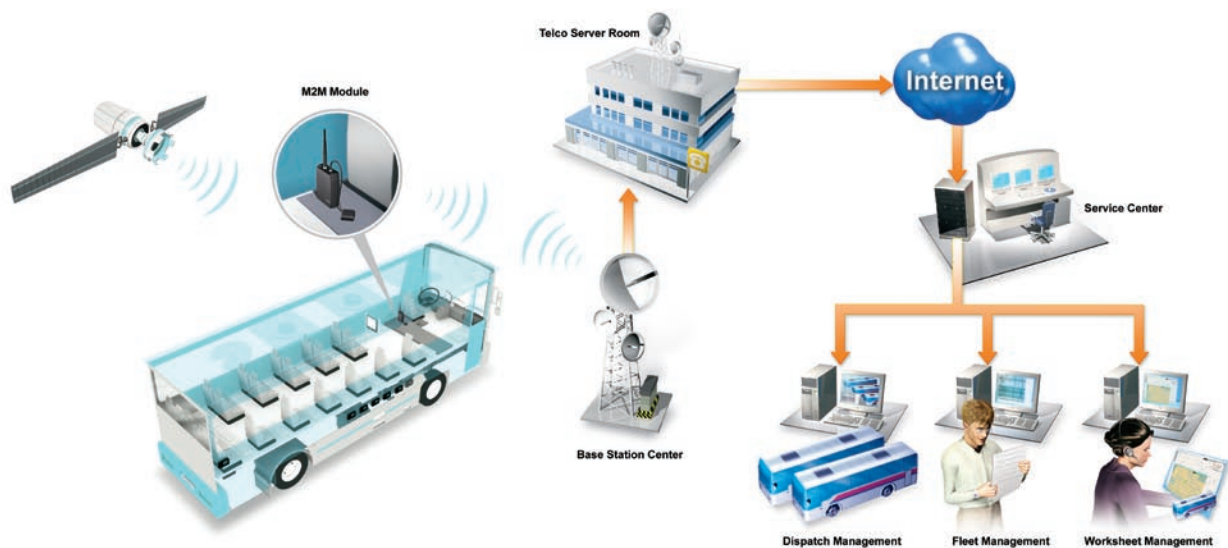
The VITA-350 provides remote parameter upgrades Over The Air (OTA), without the need to re-set parameters at the local site, saving both time and cost on field maintenance.

Specifications

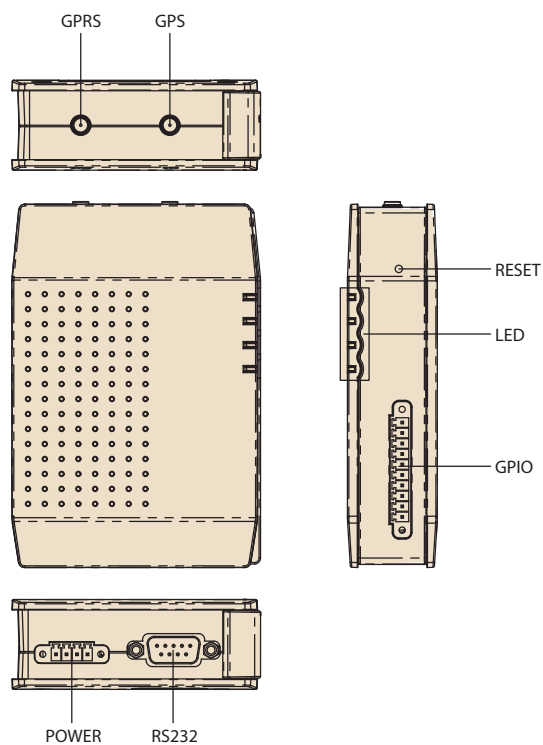
General Specifications	Dimensions (W x D x H)	121.3 x 83.01 x 30 mm (47.76" x 32.68" x 11.81")				
	Weight	170 g (0.375 lb)				
	Case Material	Plastic				
	Power Input Voltage	10 ~ 30 V _{DC}				
	Power Consumption	Operating mode < 2 W (GPRS transmission; GPS receiving) Standby mode 1.5 W (GPRS online; GPS receiving) Idle mode < 1.5 W (GPRS online; GPS OFF)				
	Operating Temperature	-10 ~ 65° C				
	Storage Temperature	-20 ~ 70° C				
GPRS Module Siemens Power Modes	Parameter	Description	Condition	Typ	Max	Unit
	IBATT+	Average supply current 3)	Power Down Mode	50	100	uA
			Sleep mode at DRX = 2, DRX = 5, DRX = 9	4.3, 3.0, 2.5	N/A	mA
			IDLE mode at DRX = 2, GSM 850 1) 4), EGSM 900 1) 4), GSM 1800/1900 2) 4)	15, 15 15	N/A	mA
			Data mode GPRS, (4 RX, 1 TX) GSM 850 1) 4), EGSM 900 1) 4), GSM 1800/1900 2) 4)	300, 300, 230	N/A	mA
			Notes: 1) Power control level PCL 5 2) Power control level PCL 0 3) All average supply current values at IVDD = 0 mA 4) Test condition for typical values: 50W antenna			

GPS Specifications		16 Channel ANTARIS 4 Positioning Engine	
		Supports Various Serial Protocols (NEMA, UBX, & RTCM)	
		Supports Active Antenna	
		Short Antenna and Open Circuit	
		Power Brown-out Protection: No External Hardware Reset Needed	
	Accuracy	Position 2.5 m CEP 5.0 m SEP Position DGPS/SBAS2 2.0 m CEP 3.0 m SEP	
	Acquisition	GPS Mode	Fast Mode
		Cold Start	34 s
		Warm Start	33 s
		Hot Start	< 3.5 s
		Re-acquisition	< 1 s
GSM/GPRS Specifications of Siemens MC55 Module	Sensitivity	Tracking	-158 dBm
		Acquisition & re-acquisition	-148 dBm
		Cold starts	-142 dBm
GSM/GPRS Specifications of Siemens MC55 Module	Tri-band MC55	EGSM900 / GSM1800/1900	
	GPRS Multi-slot	Class 10	
	GPRS Mobile Station	Class B	
	Download: Max.	85.6 Kbps	
	Uplink: Max.	42.8 Kbps	
	Coding scheme	CS1-4	
	Internet Service	TCP, UDP, HTTP, FTP, SMTP, POP3	
External I/O		1 x Serial Port: RS-232 interface	
		1 x Reset Button	
		1 x Phoenix Type Power Input Connector	
		1 x Phoenix Type Digital I/O Connector	
Programmable Digital I/O	Digital I/Os	9 x GPIO	
	VIH	2.64 ~ 3.3 V (Input logic 1)	
	VIL	0 ~ 0.66 V (Input logic 0)	
	VOH	3.2 ~ 3.3 V (Output logic 1)	
	VOL	0 ~ 0.4 V (Output logic 0)	
	Maximum DC Current	5mA	
LED Indicators	Green LED (Power Indicator)	LED Mode	VITA-350 Status
		1 LED ON	+12/+24 V Power ON
		2 LED OFF	+12/+24 V Power OFF
	Red LED (GPS Indicator)	LED Mode	VITA-350 Status
		1 LED ON	NA
		2 LED OFF	NA
	Blue LED (GPRS Indicator)	LED Mode	VITA-350 Status
		1 LED Permanently OFF	GPRS Power Down
		2 LED 600ms ON/ 600ms OFF	Limited Network Service: No SIM inserted. No PIN entered. Network search in progress. Ongoing user authentication. Network login in progress.
		3 LED 75ms ON/ 75ms OFF/ 75ms ON/ 3s OFF	GPRS network activated
		4 LED 0.5s ON/ OFF depending on transmission activity	GPRS Data Transfer in progress. LED goes ON within 1 sec after data packets are exchanged.
		LED Mode	VITA-350 Status
	Orange LED (Error Indicator)	1 LED ON	Error
		2 LED OFF	System OK
Certification	FCC	Part 15B, FCC ID - M28VITA-350, Safety - UL 60950-1	
	CE: R&TTE	EMI - EN55022; EN61000-3-2; EN61000-3-3	
		EMS - EN61000-4-2; EN61000-4-3; EN61000-4-4; EN61000-4-5; EN61000-4-6; EN61000-4-8; EN61000-4-11	
		LVD - EN60950	
	ISO 7637-1/-2		
	E-mark	ECER10; CISPR 25; E13: E13 x 10R00 x 10R02 x 9613 x 00	
	NCC	GPRS PLMN01; NCC Number: CCAB07DG0290T1	
GSM/GPRS		301489 -1/-17	
	Vibration & Shock	MIL-STD-810F 514.5C-3	

System Diagram



Dimensions



Unit: mm

121.3 (W) x 83.01 (D) x 30 (H)

Packing List

1 x VITA-350E Module
1 x GPS Antenna
1 x GPRS Antenna
1 x Wall/DIN Rail Mounting Kit
1 x CD-ROM (User Manual; Utility)
1 x 4-pin Phoenix jack power cable

Ordering Information

Part Number	Description
VITA-350E	M2M module with 1 x GPS, 1 x GPRS, 1 x RS-232, & 9 x programmable Digital I/Os.