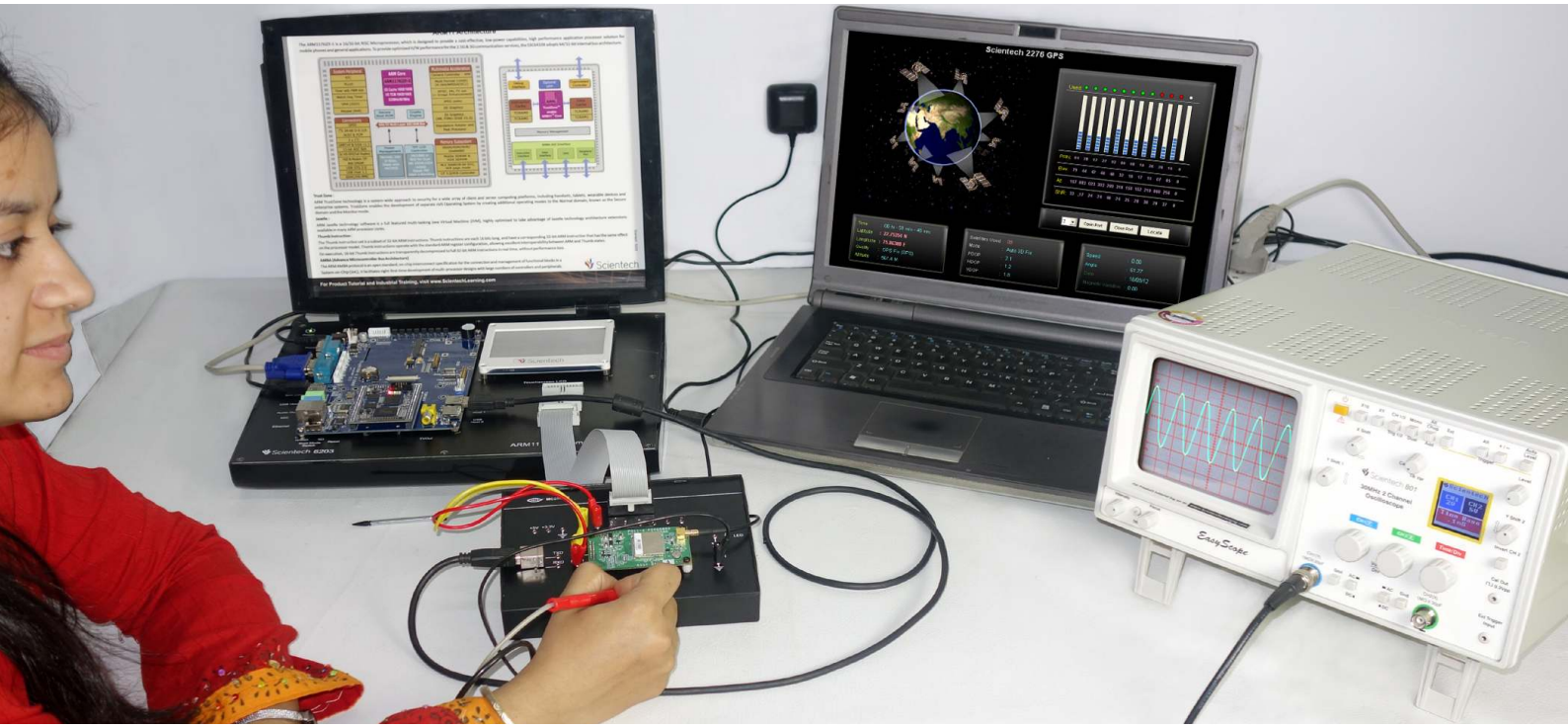
GPS module for Embedded Platforms

Nvis MC20GPS



Nvis GPS module MC20GPS is an extension module for Nvis Microcontroller development platforms. The module has been designed for students and practicing engineers to gain invaluable practical experience on the principle and applications of microcontroller & GPS Module. The objective is to have a clear understanding of how GPS module is interfaced and controlled with microcontroller. It has various terminals for connection to external real world applications. Nvis GPS module will provide a basic understanding of the GPS fundamentals, Satellites & Design aspects of GPS receiver by actually connecting to the Satellite by GPS antenna.

Features

- **12 channel GPS & carrier**
- **Fast Cold/Warm/Hot start TTFF time of 45/38/8 sec**
- **Fast requisition time of 0.1 second**
- **NMEA 0183 Ver 2.2 GGA, GLL, GSA, GSV, RMC and VTG standard output**
- **SiRf binary protocol output**
- **On board real time RTCM SC-104 differential**
- **1PPS (one pulse per second) signal**
- **USB powered**
- **USB for PC communication**
- **GPS Software for analysis**
- **Expansion connectors for plug in with Microcontroller unit and prototyping area**

Scope of Learning

- Understanding the concept of GPS
- Establishing link between GPS Satellite & GPS platform
- Measurement of latitude & longitude
- Study of effect of DOP
- Study of HDOP & VDOP
- Analysis of NMEA 0183 Protocols
- Analysis of Elevation; Azimuth, SNR
- Study of PRN code
- Study of common NMEA standard Protocol like, GPGGA, GPGLL, GPGSA, GPGSV, GPRMC, GPVTG
- Study of other GPS NMEA standard like, GPALM, GPGRS, GPGST, GPMSS, GPZDA
- Study of UTC date & time
- Study of useful conversion formulas

GPS module for Embedded Platforms

Nvis MC20GPS

Technical Specifications

Channel	:	12
Receiver Frequency	:	1575.42 MHz
Position Accuracy	:	25 meters CEP without SA
Velocity Accuracy	:	0.1 meters/second, without SA
Time Accuracy	:	Synchronized to GPS time
Update rate	:	1 sec.
Receiver Sensitivity	:	-175 dB
Serial Communication	:	4800 Baud Rate (default)
Protocol Messenger	:	NMEA0183 V 2.2, SiRf binary & RTCMSC-104 V2.0 type 1,2,9
Maximum Speed	:	515 meters/sec.
Maximum Altitude	:	18000 meters
Time to First Fix	:	45 / 38 / 8 sec
Power Supply	:	From Scientech 620X series or Nvis 500X series Microcontroller development platforms
USB	:	5 V
Power Consumption	:	2 VA approximately
Dimensions (mm)	:	W 326 × D 252 × H 52
Weight	:	0.8 kg.
Product Tutorial	:	Online (Theory, procedure, reference, results, etc).

Included Accessories :

B-Type USB Cable	:	1 no.
GPS antenna	:	1 no.

Optional accessory :

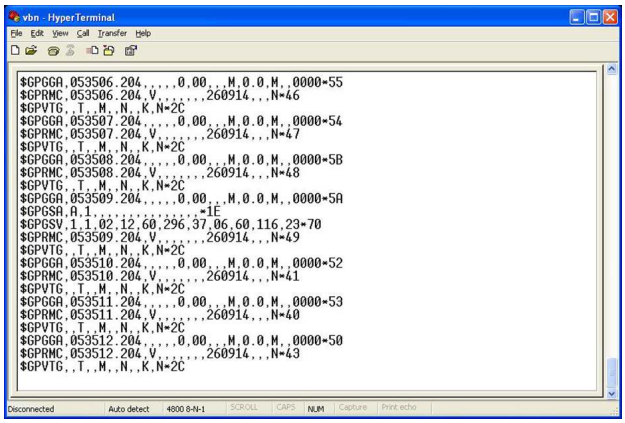
Battery

GPS Software

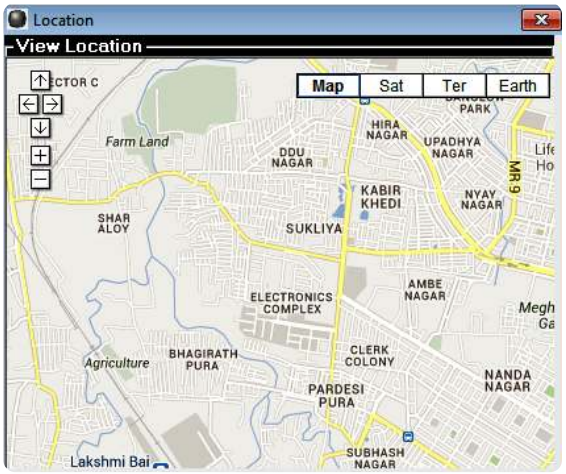
Note :

1. This module is compatible with Scientech 620X series and Nvis 5001A/2/3/4/4A/5 series Microcontroller development platforms.
2. To run MC20GPS module with Nvis 5004, add-on board is required.

GPS Data on PC



GPS View Location Window (Optional)



Subject to Change

Designed and Manufactured in India by -

Nvis Technologies Pvt. Ltd.

141-A, Electronic Complex, Pardesipura, Indore-452010, India.

✆ +91-731-4211500, ✉ info@nvistech.com, 🌐 www.NvisTech.com