



Sciencetech TechBooks are compact and user friendly learning platforms that provide a modern, portable, comprehensive and practical way to learn technology. Each TechBook is provided with detailed multimedia learning material which covers basic theory, step by step procedure to conduct the experiment and other useful information.

Sciencetech TechBook 2138A, Understanding 3G Communication System is a unique product that allows users to design and develop a 3G mobile phone which uses an Android operating system. It's specially designed GUI helps users to run various AT commands related to 3G GSM network, voice calling, SMS, TCP/IP, HTTP, GPS and many more. One can study different signals used in SD card, SIM card, Mic, and vibrator operation.

Students can develop their own apps in Android studio.

Features

- Android based design
- Android Operating System porting
- Design your own mobile
- Control via AT Commands
- Study GPS NEMA Protocol
- GSM and GPS Antenna
- USB 2.0 support
- SIM card interface
- Audio interface
- SD card interface
- Android GPIO interface
- SMS application
- FTP/FTPS/HTTP/HTTPS/SMTP/POP3
- MP3 player
- Office Suite (pdf, word, PPT and xls)
- Electronics circuit simulation software
- USB and Ethernet ports
- Android application development and examples
- Online Product Tutorial

Scope of Learning

- GSM and WCDMA theory and standards
- Understand 3G Communication architecture
- Understand 3G network AT commands
- Study network protocols like TCP/IP, HTTP, FTP and SMTP
- Study GPS network and its applications using AT commands
- Study SMS using AT commands
- Android based application development

Technical Specifications

GSM capability : Tri-Band UMTS 2100/1900/850MHz or 900MHz

Monitor : For display

Operating Systems : Android 4.0 (Version 4.0.3)

Data rate Specifications of Modem

- HSDPA - Max. 7.2Mbps (DL)
- HSUPA - Max.5.76Mbps (UL)
- HSUPA + HSDPA - Max. 2.0Mbps (UL) + 3.6Mbps (DL)
- UMTS - Max.384Kbps (DL), Max.384Kbps (UL)
- EDGE Class - Max. 236.8Kbps (DL),Max.118Kbps (UL)
- GPRS - Max. 85.6Kbps (DL), Max.42.8Kbps (UL)
- CSD - GSM data rate 14.4Kbps
- UMTS data rate 57.6Kbps

GPS Specifications

- A-GPS (assisted GPS) mode : Mobile station based, Mobile station assisted.
- Stand-alone GPS

Network Support

- Support on GSM and WCDMA

SMS Support

- Point to point Mobile Originated and Mobile Terminated
- Text mode and PDU mode

Maximum output power of modem

- UMTS 850/1900/2100 : 0.25W
- GSM850/GSM900 : 2.00W
- DCS1800/PCS1800 : 2.00W

Tests Points : 16 nos.

Dimensions (mm) : W 326 x D 252 x H 52

Power Supply : 110V - 260V AC, 50/60Hz

USB Port : 3 nos.

Weight : 1.5Kg (approximately)

Operating Conditions : 0-40°C; 80% RH

Product Tutorial : In built applications

Included Accessories :

- 5V DC Adaptor - 1no.
- SD Card - 1no.
- SD Card reader - 1no.
- USB Cable A - A & A-B type - 1no. each
- Hands free - 1no.
- GSM & GPS Antenna - 1no. each
- HDMI to VGA converter - 1no.

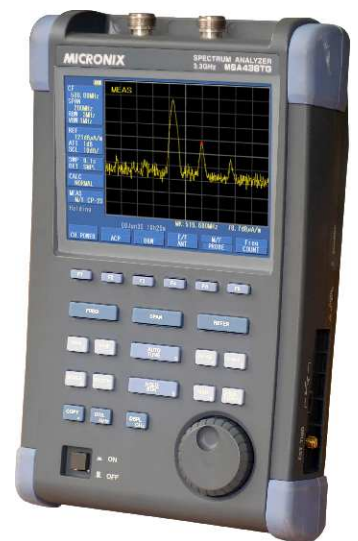
Note: SIM card should have 3G activated and should be owned by the user
 Optional: 3 GHz portable Spectrum Analyzer for RF studies



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Main Menu



Spectrum Analyzer (optional)



Voice Call Application



General Command Application