



Quectel Wireless Solutions

Professional Wireless Solution Provider



M20 GSM Module Presentation

September 2009

- **M20 General description**
 - Product advantages
 - Target applications
 - Hardware architecture
 - Standard AT Command
 - Enhanced Software Technology
 - Mechanical dimension

- **M20 vs. Competitors' products**
 - M20 vs C-Company XX55i
 - M20 vs H-Company XX310

- **Support**
 - Technical materials package



Product Hardware Advantages

Extremely Low Standby Current

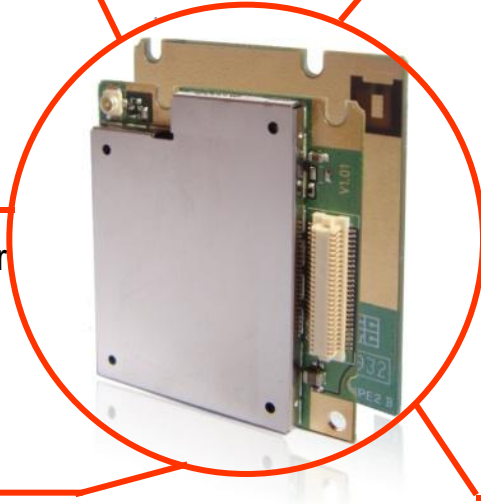
1.1mA @ DRX=5

Low TX Current

1.5A @ GSM900 Peak Power

Wide Working Temperature Range

-45 ° C to +85 ° C



Quad-band High Data Speed

GPRS Multi-slot Class 12

Industry-standard Interface

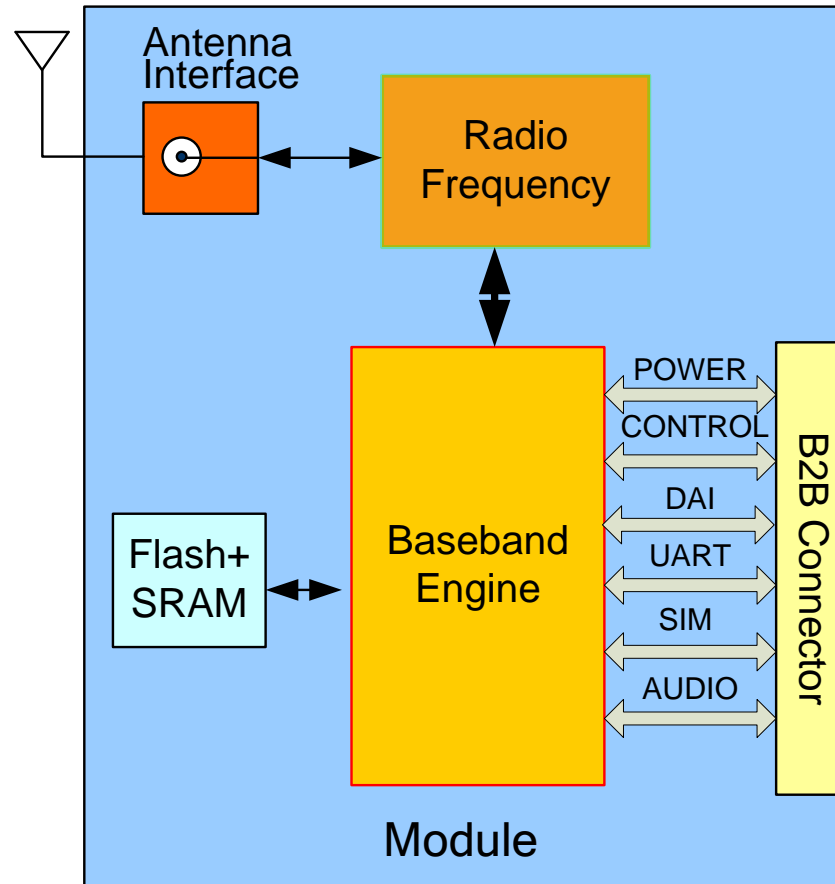
+8KV/-6KV ESD

Quad Band

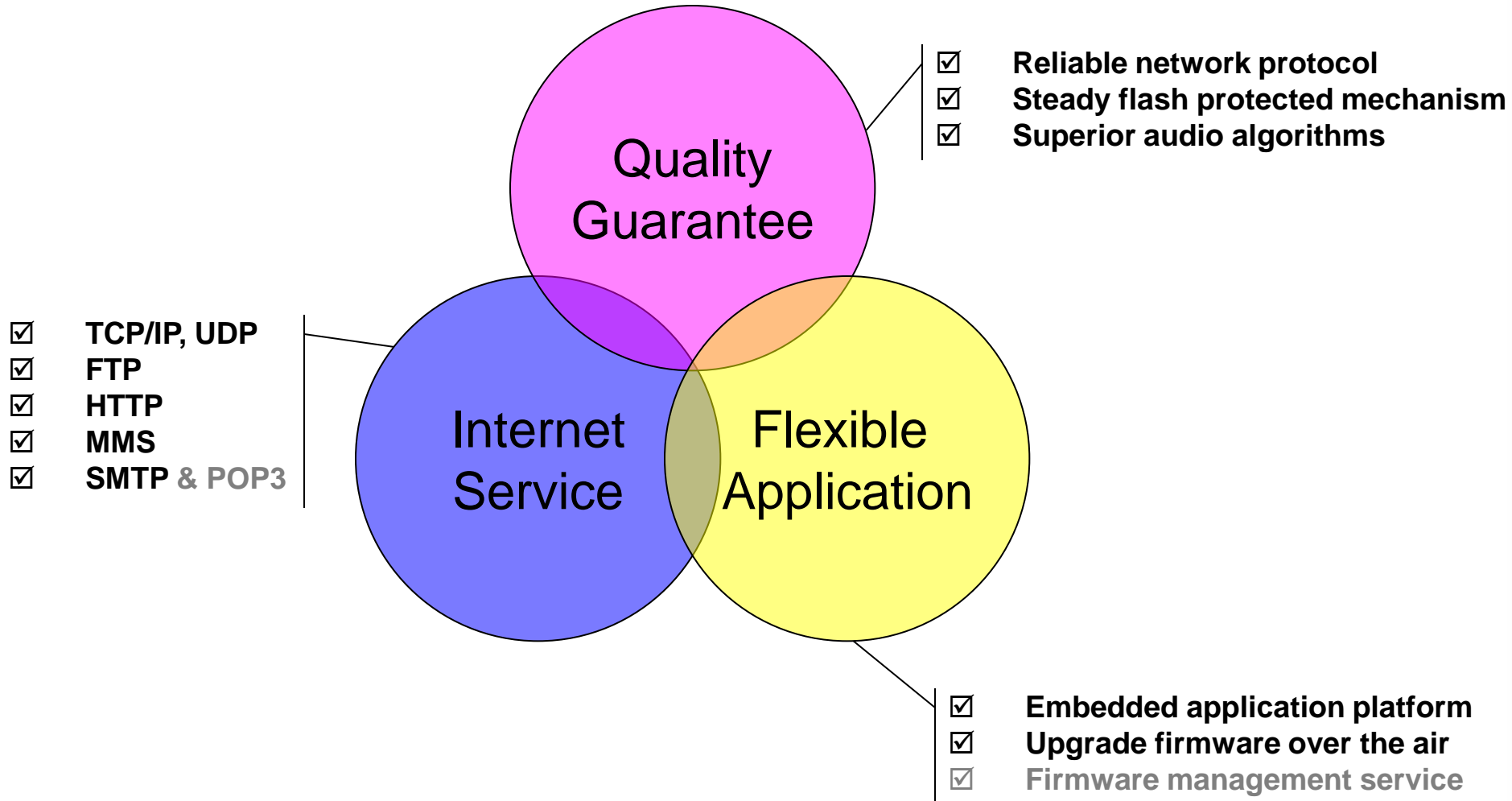
GSM850\GSM900\DCS1800/PCS1900

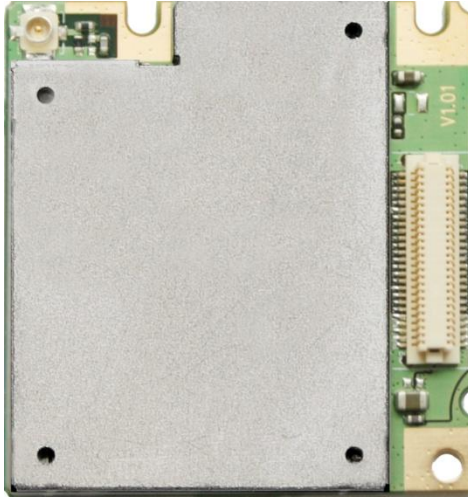
- Tracking and tracing
- Telemetry
- Wireless POS
- Security
- Connected PND
- Health Care
- Remote Maintenance & Control

Hardware Architecture



- Standard V.25ter AT commands
- GSM 07.07
- GSM 07.05 (SMS)
- GPRS AT commands in accordance to GSM 07.07
- TCP/IP stack AT commands
- STK (SIM Application Toolkit)
- Quectel defined AT commands (enhanced functions)





| | |
|----------------|---|
| Length: | 35 mm ($\pm 0.15\text{mm}$) |
| Width: | 32.5 mm ($\pm 0.15\text{mm}$) |
| Height: | 2.95 mm ($\pm 0.3\text{mm}$) (including B2B connector 3.1mm) |
| Weight: | 6g |

| Product Feature | | Quectel M20 | C-Company XX55i |
|--------------------------|-------------------------------|--|--|
| Power consumption | Idle registered, power saving | 1.1mA @ DRX=5 0.7mA @ DRX=9 | 3.0mA @ DRX=5 2.5mA @ DRX=9 |
| RX sensitivity | GSM850 | <-108.5dBm average, -107dBm maximum | -107dBm average |
| | EGSM900 | <-108.5dBm average, -107dBm maximum | -107dBm average |
| | DCS1800 | <-108.5dBm average, -107dBm maximum | -107dBm average |
| | PCS1900 | <-108.0dBm average, -107dBm maximum | -107dBm average |
| Temperature Range | Normal operation | -35° C ~ +80° C | -20° C ~ +55° C |
| | Restricted operation | -45° C ~ -35° C and +80° C ~ +85° C (industrial standard) | -40° C to -20° C and +55° C to +70° C |
| | Storage and non operating | -45° C ~ +90° C | -40° C ~ +85° C |
| ESD | VBAT, RF,GND | air discharge ±10KV, contact discharge ±5KV | Antenna and SIM card interface: ±8KV air discharge and ±4KV contact discharge. Other pins: ±1KV contact discharge |
| | other pins | air discharge +8KV/-6KV | |
| Switch-off normal method | | By PWRKEY or AT command | only AT command |
| GPRS | | Class 12, max. 85.6 kbps(uplink & downlink). More than 0.7 billions mobile terminals are using the same GPRS protocol. | Class 10, max. 42.8kbps (uplink). |
| MMS | | Support | None |
| Embedded Application | | Open CPU, can easily embed and run application in module | Java application. Restricted mode to develop application. Consume lots of system resource to support Java virtual machine. |

| Product Feature | | Quectel M20 | H-Company XX310 |
|-------------------------------|-------------------------------|--|---|
| Power consumption | Idle registered, power saving | 1.1mA @ DRX=5 0.7mA @ DRX=9 | <4mA |
| RX sensitivity | GSM850 | <-108.5dBm average, -107dBm maximum | <-106dBm |
| | EGSM900 | <-108.5dBm average, -107dBm maximum | <-106dBm |
| | DCS1800 | <-108.5dBm average, -107dBm maximum | <-106dBm |
| | PCS1900 | <-108.0dBm average, -107dBm maximum | <-106dBm |
| Temperature Range | Normal operation | -35° C ~ +80° C | -20° C ~ +70° C |
| | Restricted operation | -45° C ~ -35° C and +80° C ~ +85° C (industrial standard) | -30° C ~ +75° C |
| | Storage and non operating | -45° C ~ +90° C | -40° C ~ +90° C |
| ESD | VBAT, RF,GND | air discharge ±10KV, contact discharge ±5KV | 8KV at antenna pad and SIM card interface only. Other pins: ±2KV |
| | Other pins | air discharge +8KV/-6KV | |
| GPRS | | Class 12, max. 85.6 kbps(uplink & downlink). More than 0.7 billions mobile terminals are using the same GPRS protocol. | Class 10, max. 42.8kbps (uplink). |
| Speech codec | | FR,EFR, AMR, echo suppression, echo cancellation | no echo cancellation |
| Audio | | provide superior audio features., e.g. midi, MP3 ring tone | no Midi or MP3 ringtone |
| Digital audio interface | | can communicate with external digital audio interface | None |
| Internet service | | TCP/IP, FTP,HTTP, later SMTP, TFTP, HTTPS, POP3 | TCP/IP only |
| MMS | | Support | None |
| Embedded Application | | Open CPU, can easily embed and run application in module | None |
| Firmware upgrade over the air | | Has integrated red bend's FOTA solution | None |

➤ Technical materials package

- Hardware, software, specification
- Application notes package
- Debug tool, download tool, test tool, EVB package
- Certification & test report package

➤ Development Tool

• Interfaces

- ✓ RS-232 interface
- ✓ Power supply
- ✓ Antenna interface
- ✓ Debug UART interface
- ✓ Earphone interface

• Features

- ✓ Network status LED
- ✓ Power key
- ✓ Emergency off key
- ✓ Charging (optional)



M20 EVB KIT



Thank You!

info@quectel.com