



# MOTOROLA Z8



**Z8**





**MOTOROLA Z8**



## Specifications

### **ID:**

- thin, KICKing slider with two cameras ,
- Premium soft-touch with single piece lens
- Dimensions 109x50x15.45mm, 77cc, 112g, int. antenna

### **Bands/Modes:**

- Dual mode UMTS 2100, HSDPA 3.6Mbps
- Quadband GSM/GPRS/EDGE Class 10
- (850, 900, 1800, 1900)

### **•Power (based on current information):**

- Li-Ion 1030mAH battery with Instant-On
- 5 hours 3G talk time, 16 days standby time\*
- 5 hours video playback (MPeg4, 30fps)
- 12 hours music playback (MP3 at 128kbps)

### **Display & UI:**

- 2.2” QVGA 16 Million colour TFT display
- 5 wayscroll, two softkeys, app/back/send/end
- Symbian 9.2, UIQ 3.1, Motorola softkey UI
- Dynamic homescreen
- Powerful TI 2420 multimedia processor

### **Memory:**

- 90 MB free internal user memory
- Hot-swappable microSD memory slot



**MOTOROLA Z8**



## Key Features

### Camera:

2MP camera with 8x zoom and flash  
Modes: Normal, Indoor, Outdoor, Sports, Portrait, Night and Backlight  
Flash: Always On, On Once, Off  
Dedicated camera shoot key  
JPEG/EXIF, ISO, White balance  
VGA camera (front facing) for video call

### Videocam:

Resolutions up to QVGA at 30fps on capture  
Recording in AMR at 8kHz  
Clip length limited only by free memory  
File format .mp4 and .3gp (for MMS)

### Multimedia:

Video player for download and streaming taking full advantage of HSDPA speeds  
Streaming 3GPP, H.263, H.264 @ 30fps,  
MPEG-4 AMR-NB

### Music:

Player, playlists, OMA DRM v1  
MP3, AAC/AAC+/AAC+E, AMR-NB



**MOTOROLA Z8**



## Enablers

### Browser:

HTML 4.01, XHTML 1.1, WML 2.0 (opera)  
Portrait and landscape modes  
CSS 2.1, ECMAScript, DOM 2, SVG-T 1.1  
Small screen rendering

### Calling:

Phonebook, Voice call, Video call, Call logs, Call waiting, hold, divert and timer,  
Conference calling, Hands-free speaker  
Caller id with image  
Speaker independent name dialling  
Automatic answer (headset or car kit needed)  
Speed dialling, Voice commands

### Messaging:

SMS (concatenated), EMS, MMS 1.2  
Contact based blacklist filter  
iTap predictive text, all supported languages  
Email with SMTP, POP3, IMAP4, SSL/TLS  
Attachments: .jpg, .3gp, .mp3, .mp4

### Connectivity:

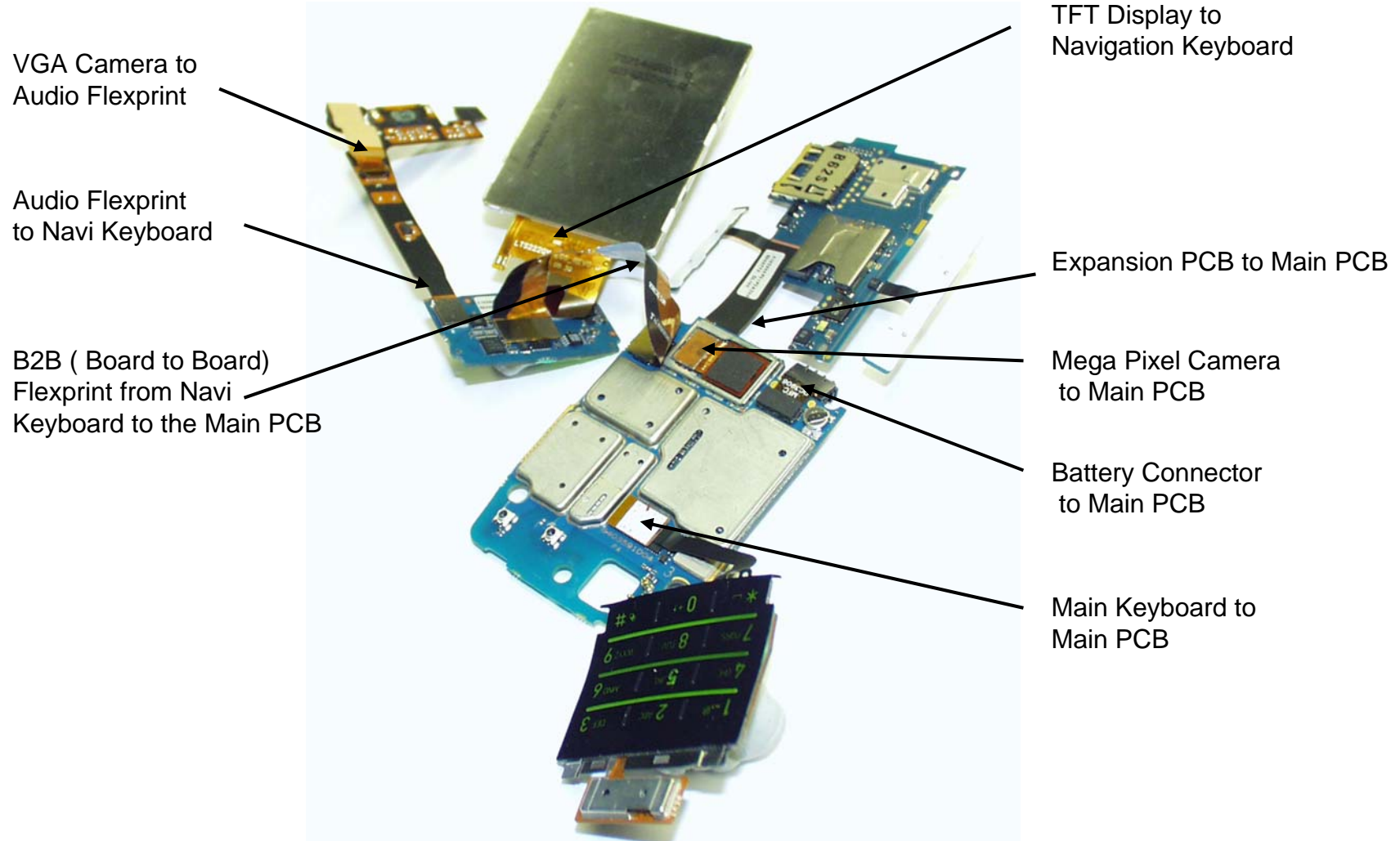
OMA DM 1.2, CP 1.1 and DS with SyncML  
mini-USB/EMU, Full rate USB 2.0; PC sync application  
Bluetooth: Class 2 EDR; A2DP  
FOTA

### Java:

J2ME MIDP 2.0, CLDC 1.1  
OTA download of applications and games



# Flex Interconnection





## PCB Top

U3000  
Atlas IC

J5400  
Battery Contact  
Connector

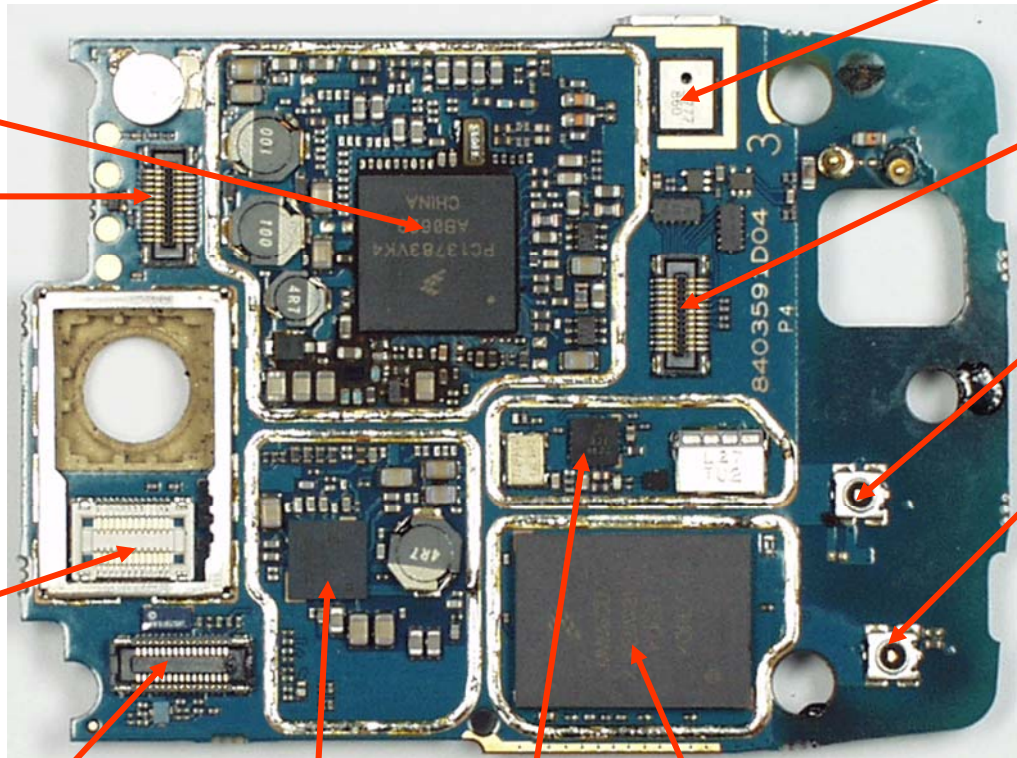
J7500  
Mega Pixel  
Camera Connector

J8001  
Main PCB to Navi  
PCB Connector

U2001  
OMAP Power  
Management IC

U301  
WCDMA LNA

U102  
WCDMA Tranceiver IC



MK4001  
Main Microphone

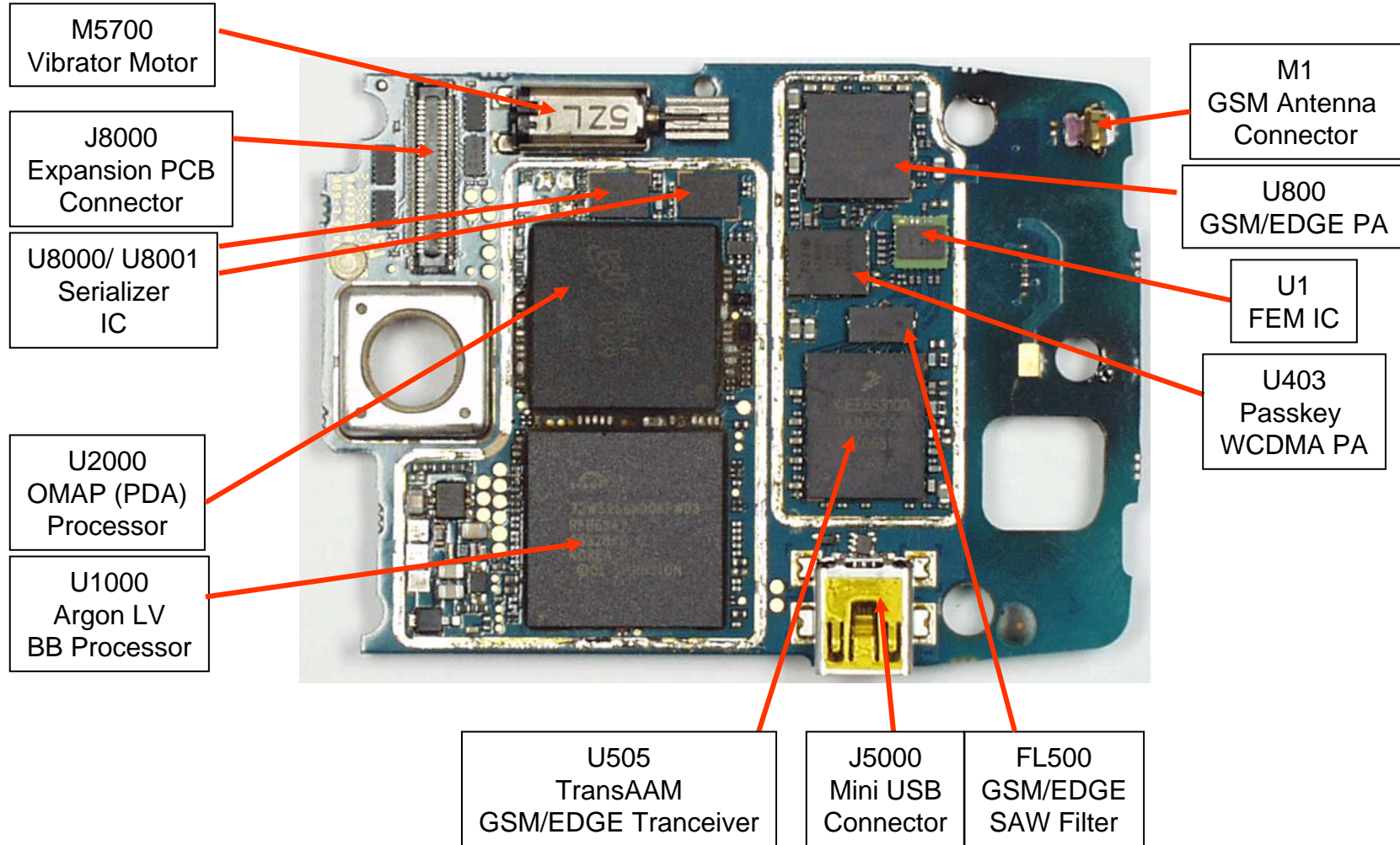
J5100  
Main Keyboard  
Connector

J1  
WCDMA  
Antenna Connector

J2  
GSM /Edge  
Antenna Connector

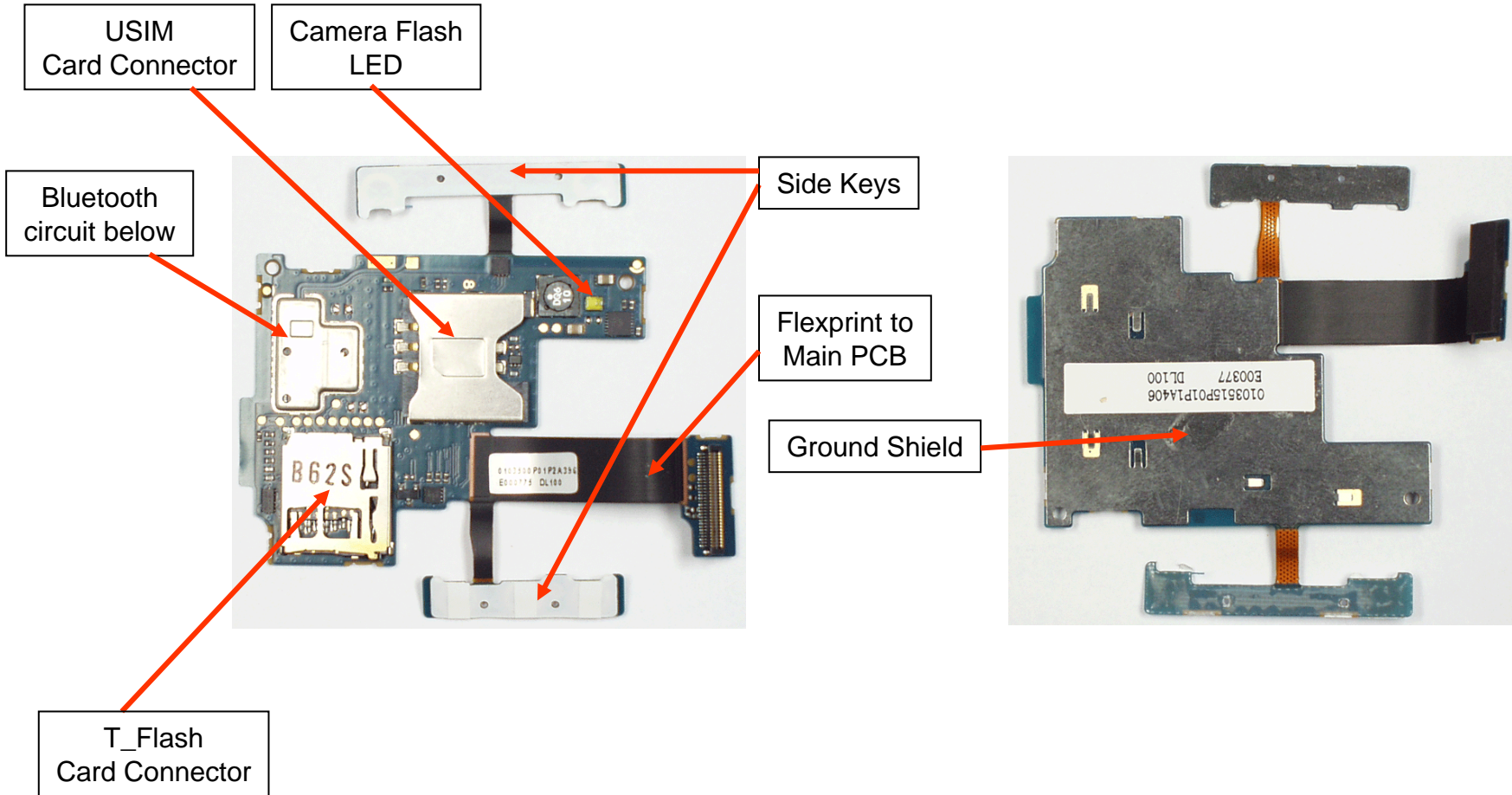


## PCB Bottom





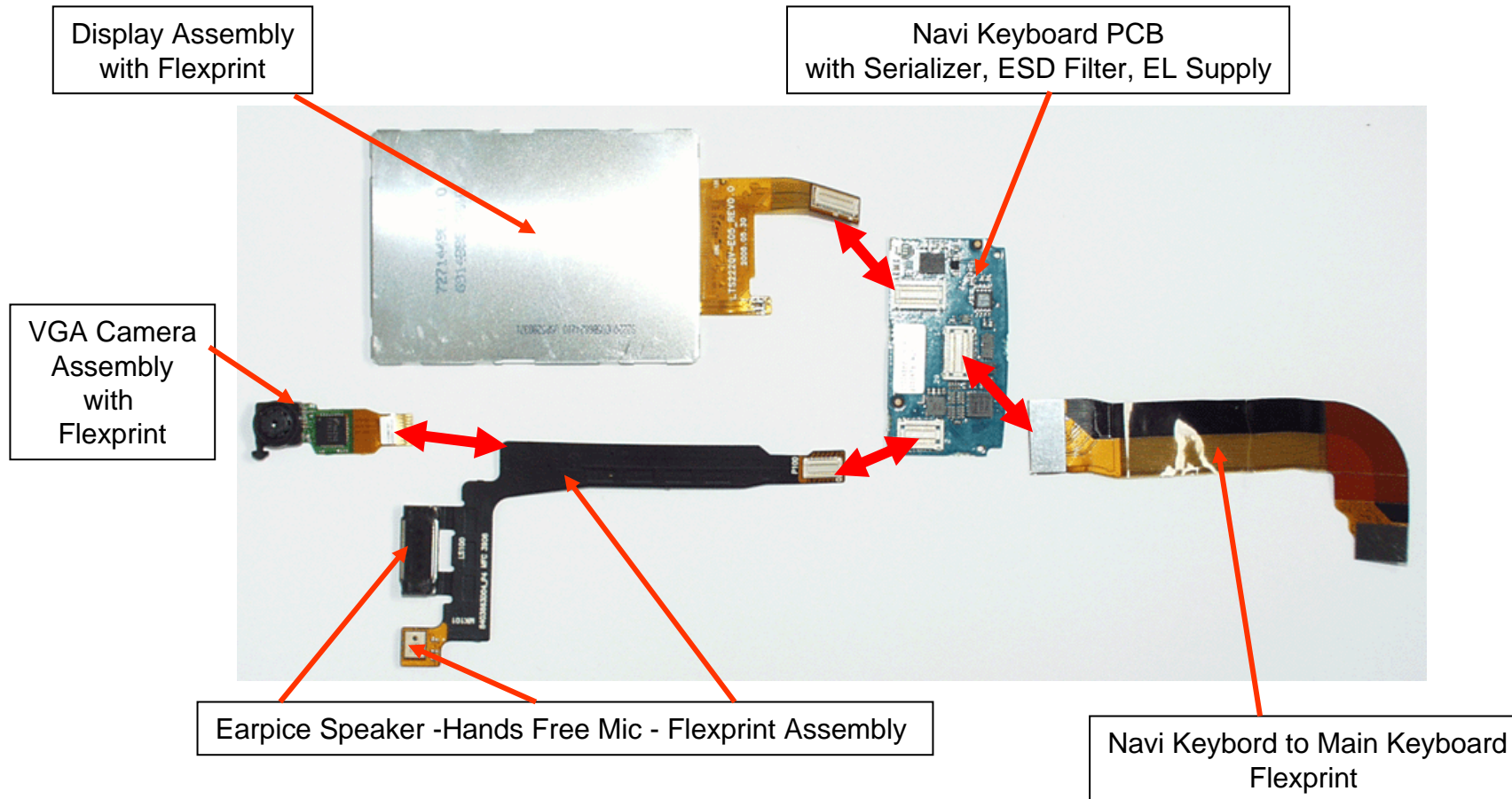
### Expansion Board PCB





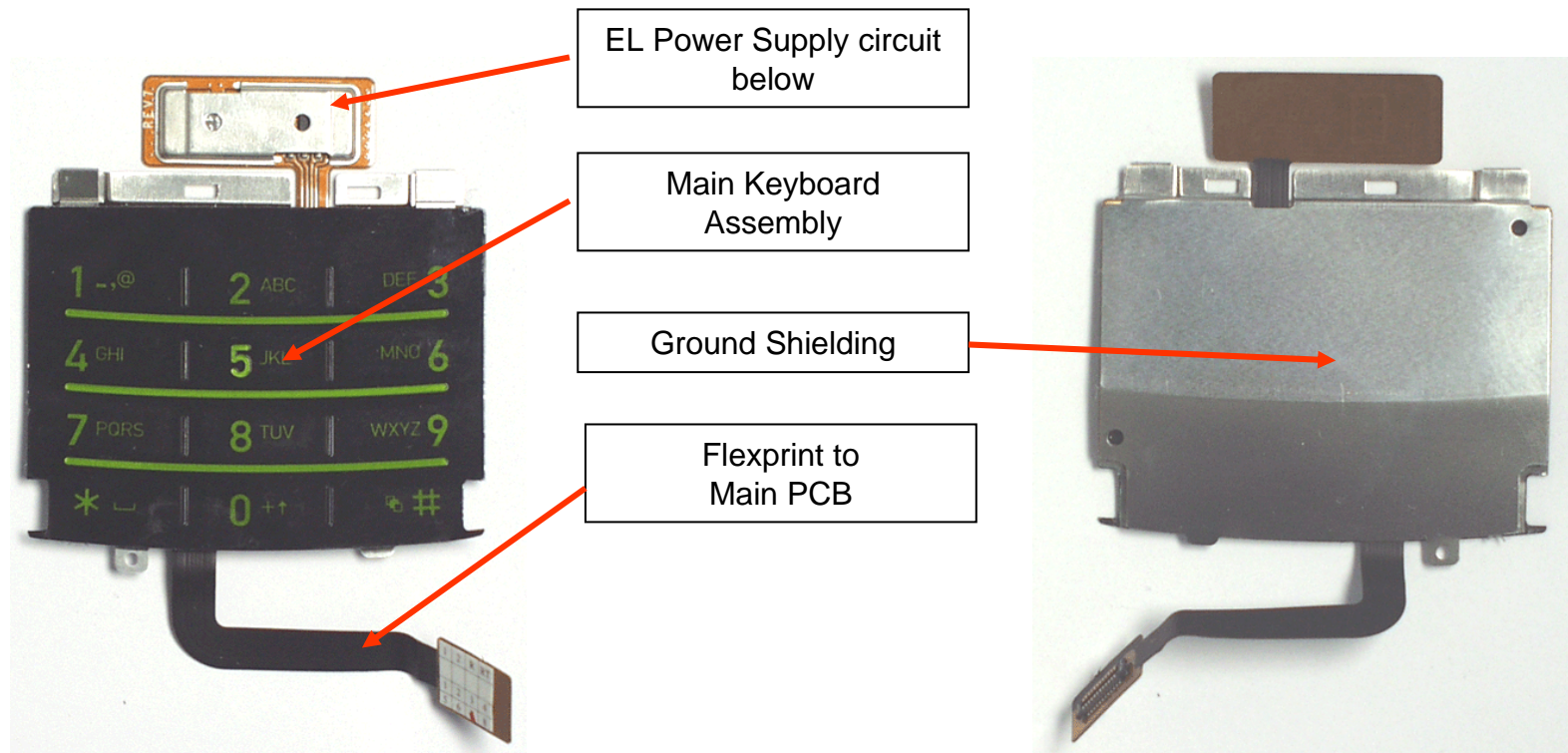


## Slider Assembly





## Main Keyboard





## Chipset overview

U1 – Frontend Module (Switch, Duplex)

U102 – Syphony (WCDMA Tranceiver)

U301 – WCDMA LNA

U403 – Passkey ( WCDMA PA)

U505 – TransAAM ( GSM/ EDGE Tranceiver)

U800 – Orphee ( GSM/ EDGE PA)

U1000 – Argon LV (Main BB CPU)

U1500 – PoP - Argon Memory (Flash 64MB NOR & 64MB NAND, 64MB RAM)

U2000 – OMAP (Application Processor TI - 2420)

U2001 – OMAP (Power Mangement TI - TWL92230

(Regulators, Media Card Tranceiver)

U2002- PoP – OMAP Memory ( 1.0GB Nand Flash, 512MB DDR SDRAM)

U3000 – Atlas (Power Managment, Audio, Charger)

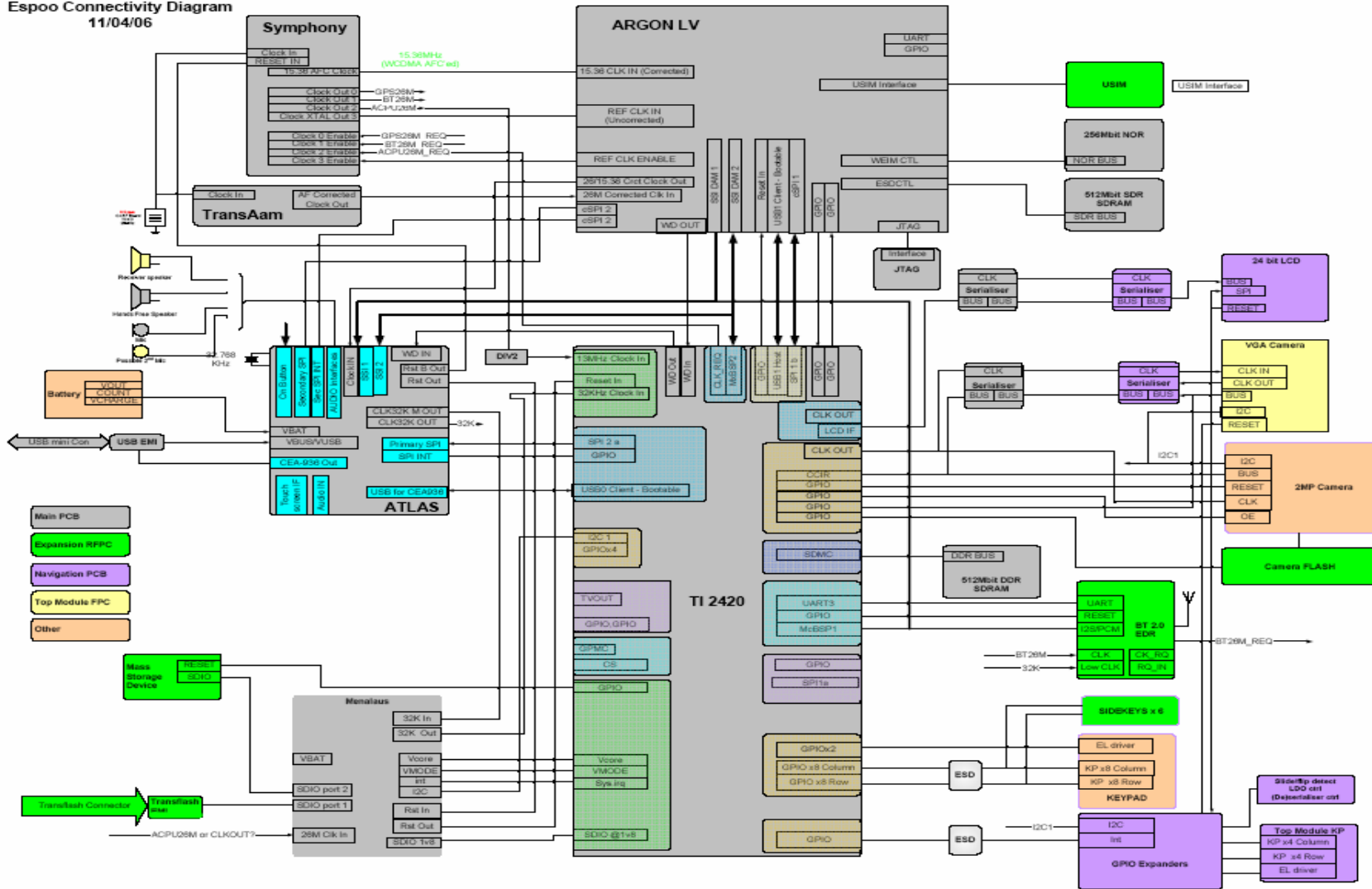


# MOTOROLA Z8



## Simple Block Diagram Overview

Espoo Connectivity Diagram  
11/04/06





**MOTOROLA Z8**



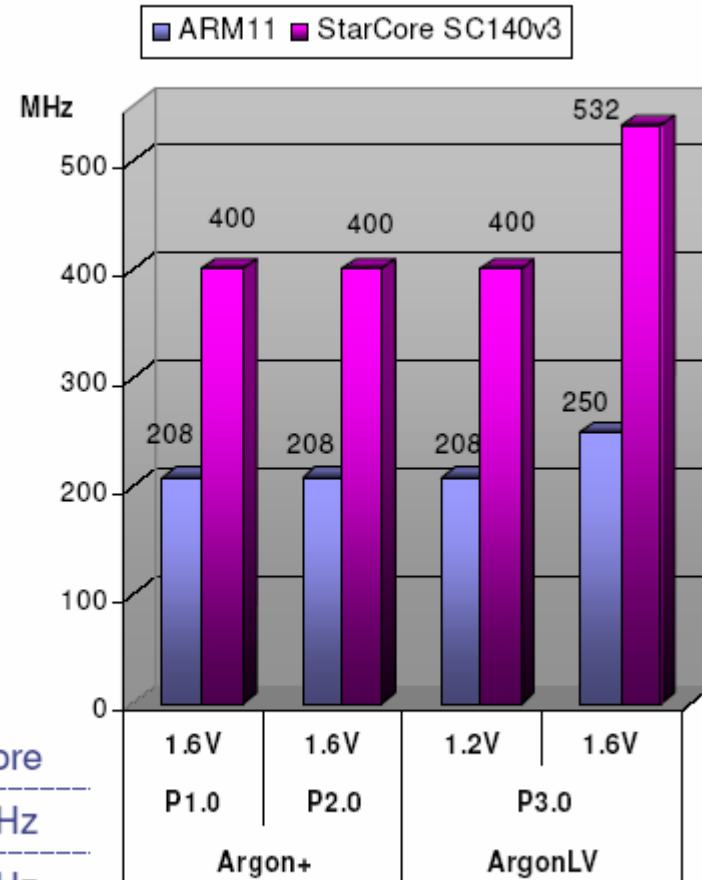
## **ARGON LV**

- ARM11 running at 399MHz
- StarCore SC140 running at 208MHz
- SDMA for improved inter-processors communication running at 133MHz
- External Memory IF, SDR/DDR SDRAM running at 133MHz
- WAMMO to support 3GPP Release 5 (HSDPA) running at 16x chip rate (61.44 MHz).
- E-fuse change from Development to Secure version
- E-fuse test is required during massproduction



## ARGON +/LV overview

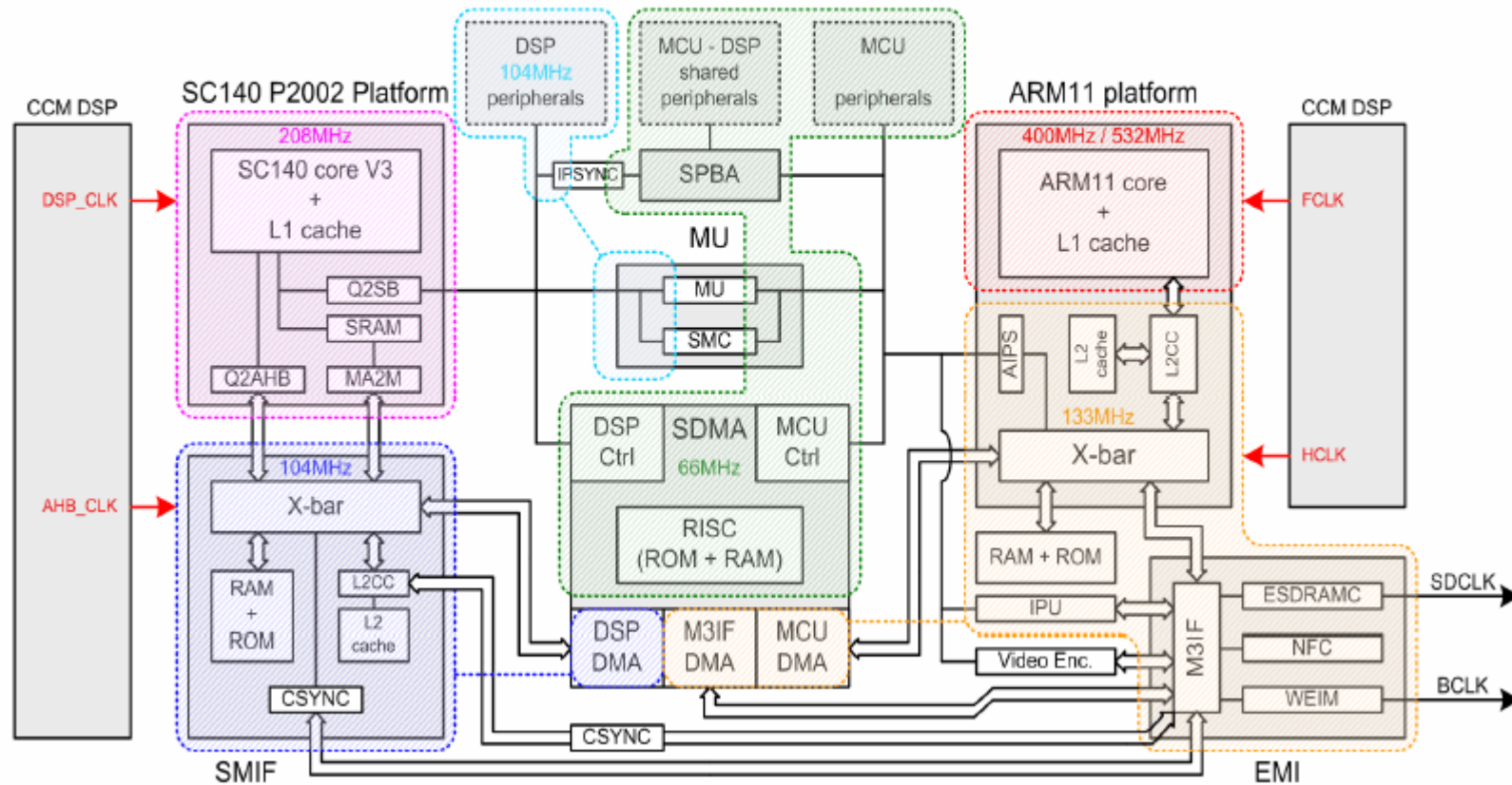
- **Technology: CMOS 90 - Crolles**
- **StarCore-SC140v3 DSP** subsystem to execute the Layer-1 modem functions
- **ARM11 subsystem** for executing Layer 2&3 modem-functions including applications such as video decoding or video telephony enabled by image and video accelerators.
- **Nominal Voltage (ArgonLV)**
  - 1.2V (1.1V @junction)
  - turbo mode 1.6V (1.45v @ junction)



		ARM11	StarCore
Argon+ P1.0/P2.0	@1.6V	400 MHz	208MHz
ArgonLV	@1.2V	400 MHz	208MHz
	@1.6V	532MHz	250MHz



## ARGON Internal Block

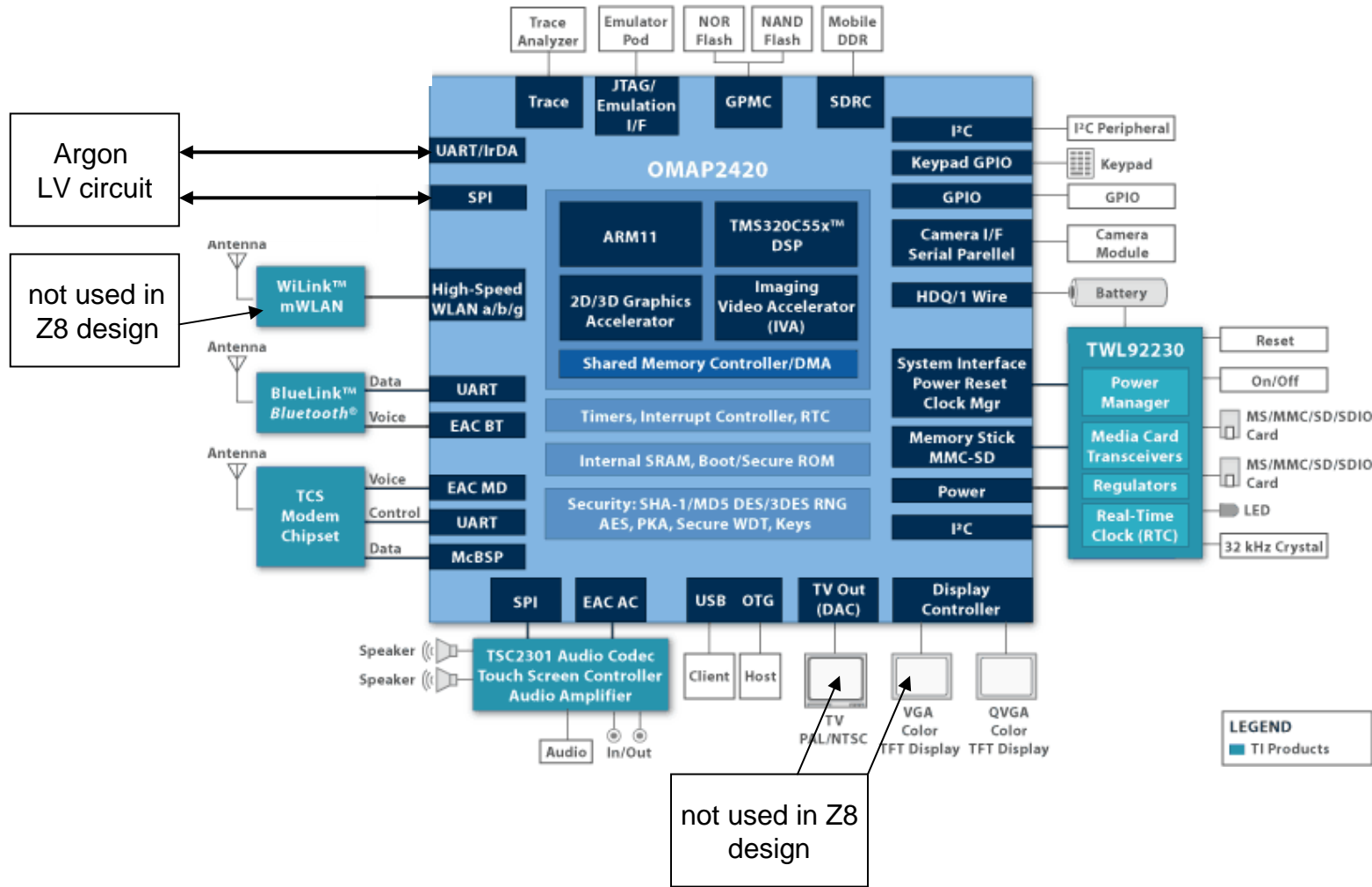




# MOTOROLA Z8



## OMAP – TI2420 + Power Mangement TI-TWL92230







**MOTOROLA Z8**



## **OMAP – TI2420 + Power Mangement TI-TWL92230**

The OMAP2420 includes the benefits of the OMAP 2 architecture's parallel processing, giving users the ability to instantly run applications and operate multiple functions simultaneously without quality of service compromises.

The OMAP2420 includes an integrated ARM1136 processor (330 MHz), a TI TMS320C55x™DSP (220 MHz), 2D/3D graphics accelerator, imaging and video accelerator, high-performance system interconnects and industry-standard peripherals.

Multimedia enhancements made in the OMAP2420 include an added imaging and video accelerator for higher-resolution still capture applications, multi-megapixel cameras and full-motion video encode and decode with VGA resolution of 30 frames per second.



**MOTOROLA Z8**



## **OMAP – TI2420 + Power Mangement TI-TWL92230**

### **Key Features:**

- Dedicated 2D/3D graphics accelerator at 2 million polygons per second
- Added imaging and video accelerator enables high-resolution still image capture, larger screen sizes and higher video frame rates
- Supports high-end features including 4+ megapixel cameras, VGA-quality video, high-end interactive gaming functionality and analog/digital TV video output
- 5-Mb internal SRAM boosts streaming media performance
- Software compatibility with previous OMAP™ processors
- Parallel processing ensures no interruptions or degradation of service with simultaneously running applications

[Optimized power management companion chip, TWL92230](#)

12 mm x 12 mm, 325-ball MicroStar BGA™, 0.5-mm pitch with Media Card Tranceiver

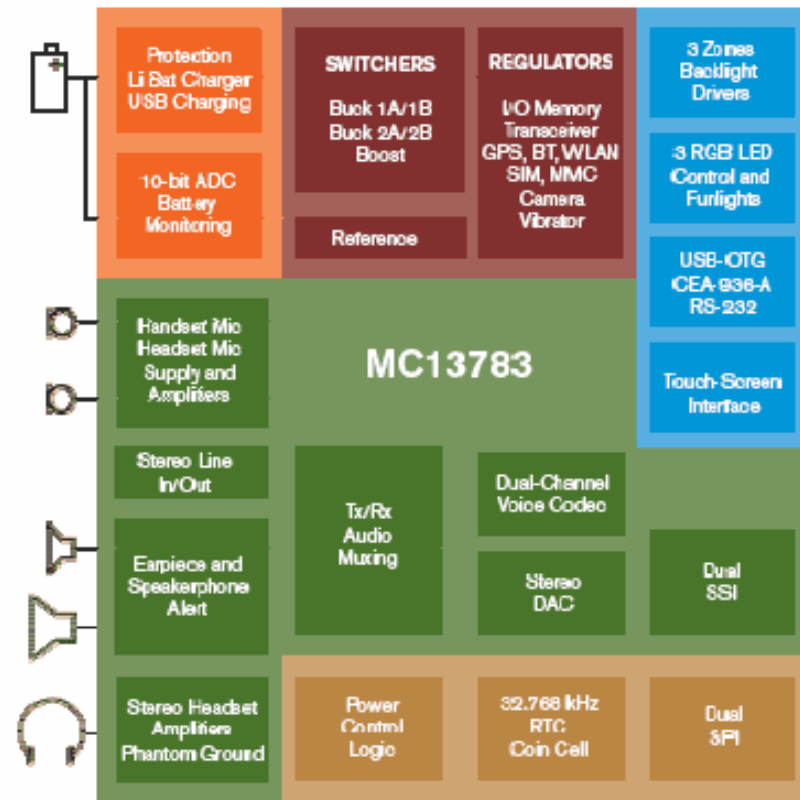


MOTOROLA Z8



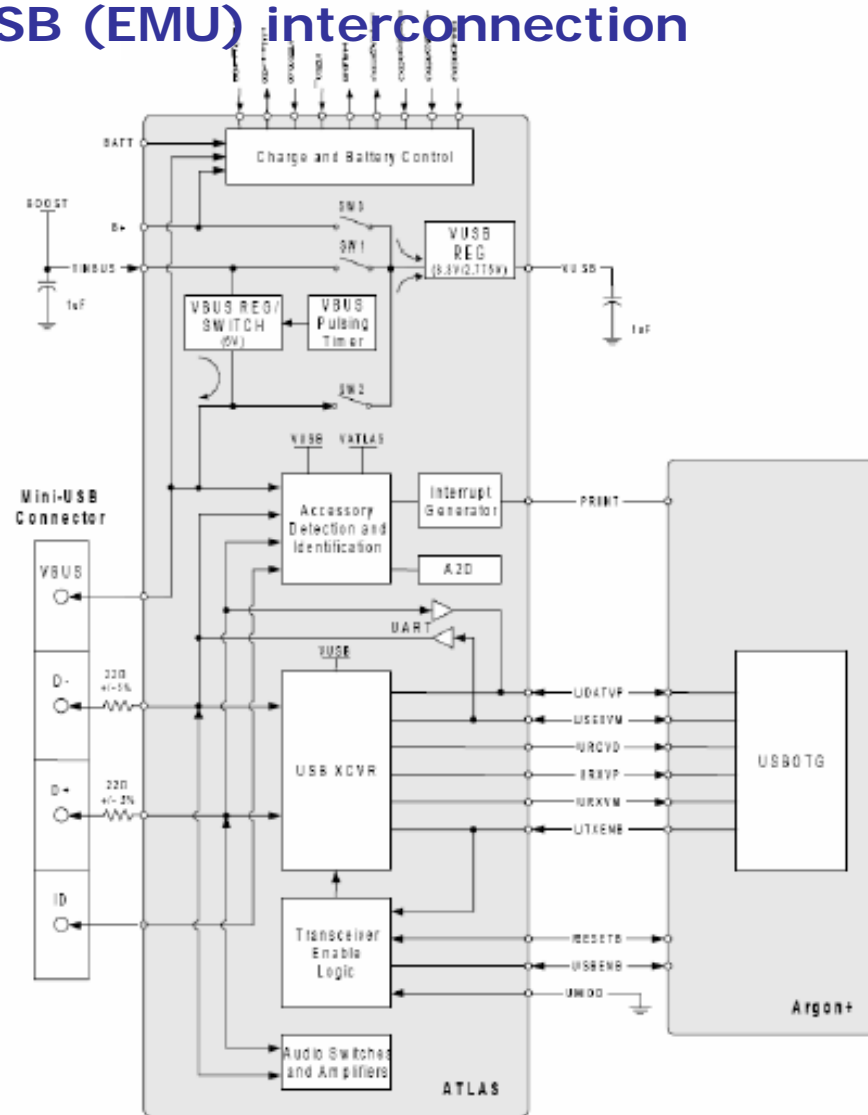
### ATLAS Block overview

- 247 pin BGA
- 0.5 mm pitch (10x10 mm)
- 13-bit voice codec
- 16-bit stereo DAC converter
- USB on the-Go
- Battery-charger Interface
- Buck switcher
- Boost switcher
- Audio Amplifiers
- Real-time clock
- Touch-screen interface
- Funlights features





## USB (EMU) interconnection



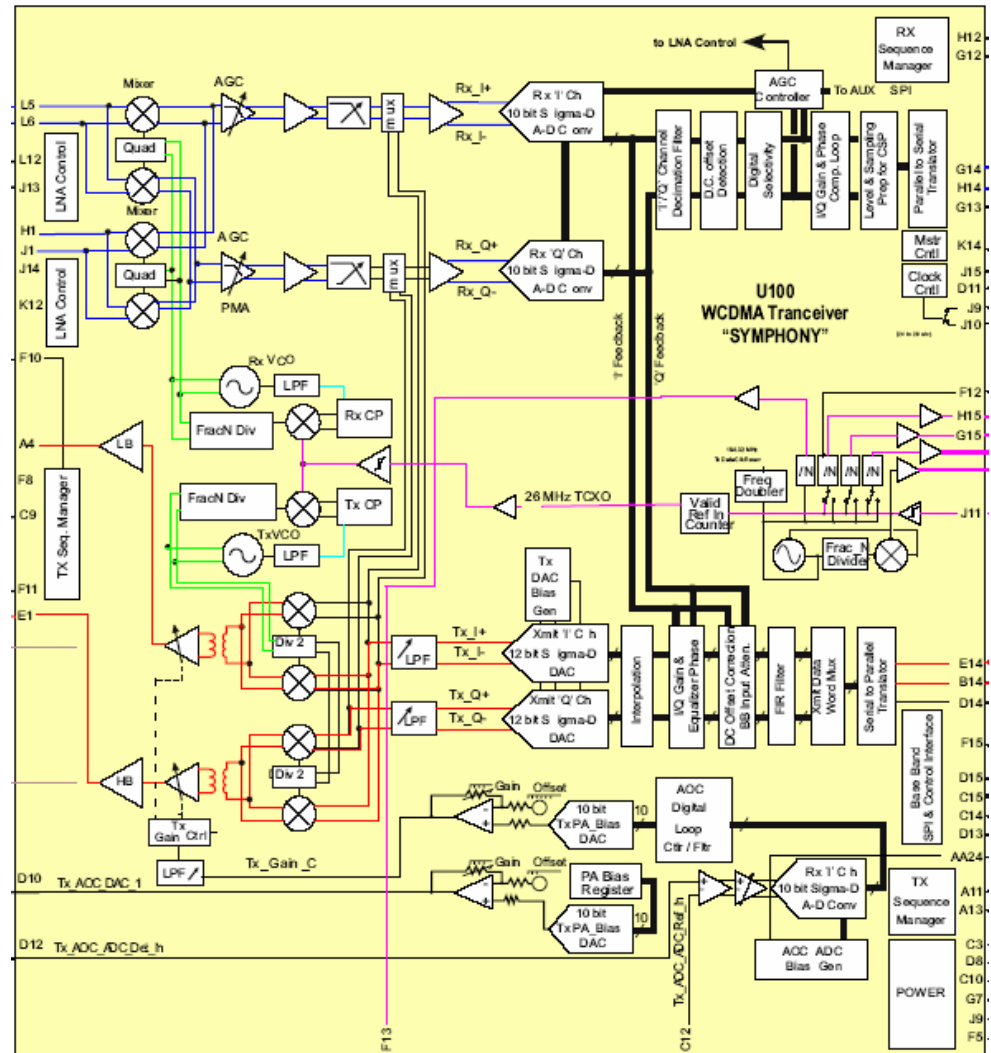


MOTOROLA Z8



## Symphony

WCDMA tri-band exciter (TX) and receiver back-end for UMTS Band 1, Band 2 and Band 6 165 pin BGA

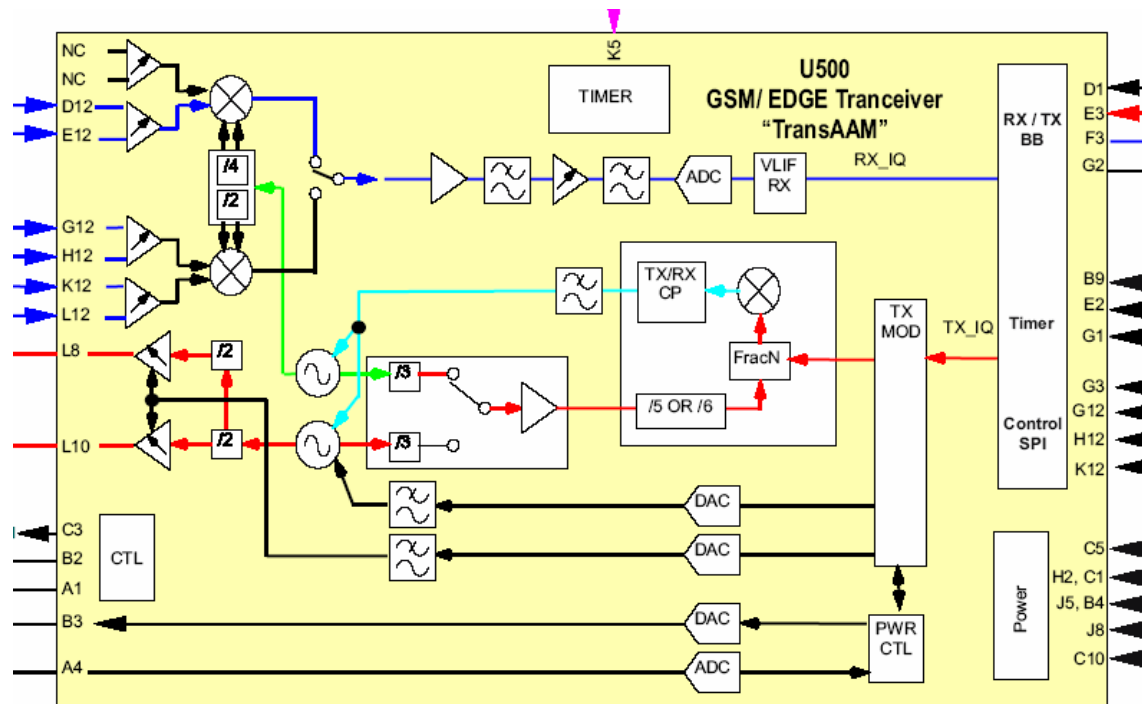




### TransAAM

- Quad GSM/EDGE Transceiver
- Including
- Fractional-N synthesizer
- Very low IF Receiver

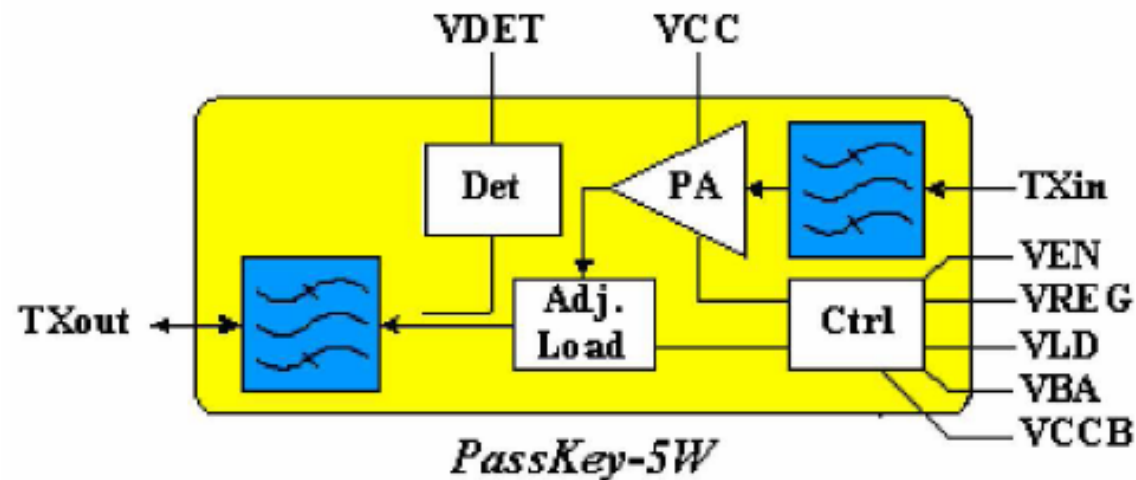
- GSM/EDGE TX modulator
- Power amplifier control circuitry
- 132 pin plastic LGA





### PassKey (WCDMA)

- Single-band, single-mode WCDMA power amplifier
- 50 Ohm in/output
- Including power detector and bandpass filters
- Maximum output in High power mode 25 dBm





## GSM / EDGE PA (Orphee)

- Quad Band (850/900/1800/1900)
- Integrated output power control
- EDGE Class 12
- GMSK power class 4 low band
- GMSK power class 1 high band
- EDGE power class E2

