DB1

Quad core single board computer with a powerful ARM Cortex™ A53 processor and onboard WiFi, Bluetooth & GPS.

PROCESSOR

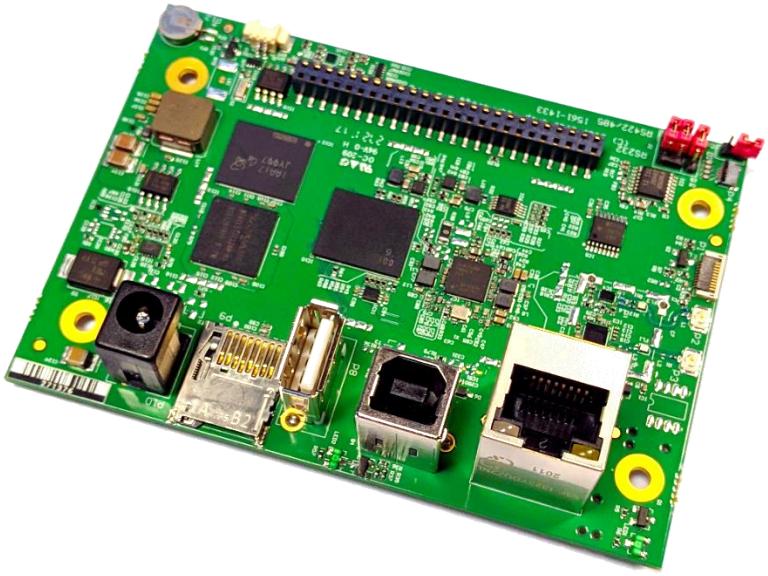
AMD x64/x86

OPERATING SYSTEM

Windows · Linux · Android

I/O

RS232 · RS485 · USB · Ethernet · GPS · WiFi · Bluetooth



› Powerful compute capability

Qualcomm optimised Quad A53 cores running at 1.2GHz offer performance advantages. 2GB DRAM provides capacity for complex applications and multitasking.

› Integrated wireless functionality

2.4GHz WiFi, BT / BLE, GNSS (GPS,.BeiDou, Galileo).

› High performance graphics

Qualcomm Adreno A306 3D graphics core and video encode / decode.

› Low Power operation

Born from the mobile phone industry the processor is optimised for low operation, with a wide variety of clocking and sleep modes.

SUMMARY

The DB1 single board computer offers high performance, low power, integrated Wifi and Bluetooth functionality along with GNSS in a small form factor. A wide range 6-36Vdc input power supply, support for Linux and Android and industry standard interfaces offer ease of integration to your systems; UARTs, SPIs, I2C, Audio, USB2, Ethernet, and GPIO.

Support for Blue Chip Technologies standard LCDs and touch panels is additionally incorporated enabling integration to Beta Industrial Panel Computer assemblies.

- Quad core 1.2GHz ARM Cortex A53 processor
- Adreno 306 3D graphics accelerator
- Video Engine supporting up to FHD video encode & decode
- 2GB low-power memory options
- 8GB eMMC Flash
- WiFi 802.11 a/b/g/n 2.4GHz
- BT / BLE 4.0
- USB Host, USB Device, three UARTs
- SPI port, I²C bus, 12 GPIOs
- CSI, 2 lane, 8MP camera interface
- Available use with Android, Linux
- Low power operation - just 1W idle at desktop

+44 (0) 1829 772000 · sales@bluechiptechnology.com · Chowley Oak, Tattenhall, Cheshire CH3 9EX (K) · www.bluechiptechnology.com

DB1

TECHNICAL SPECIFICATIONS

Core System

Processor	ARM Cortex-A53 microprocessor cores up to 1.2 GHz Quad Core, 512kB I2 cache NEON MPE Coprocessor with SIMD MP
Memory	Low Power DDR3 DDR-533 Memory Speed32-bit Memory Bandwidth 1GB
Graphics	Adreno 306; up to 400 MHz 3D graphics accelerator LCD 18-bit, up to 1920x1080 resolution
Storage	8GB eMMC5.1 Flash Micro SD Card socket
Audio	Low power audio for mp3 and AAC playback; Dolby Digital Plus and DTS-HD surround sound Fluence™ Noise Cancellation QAudioFX/Qconcert/QEnsemble 128-voice wavetable Audio Codec onboard Microphone in / Line in, Headphone output 3W Class D amplifier
Camera Interface	CSI 2 lane @ 1.5Gbps per lane up to 8MP sensor USB UVC
Operating System Support	Ubuntu Linux 18.04 LTS Buildroot Android 6.0
Real Time Clock	Onboard with integrated 5.5mAh rechargeable battery
Watchdog	Yes

Power

Input Voltage	12 Volts DC
Power Consumption	Linux desktop 1000mW

I/O

Ethernet	10/100/1000 Mbit LAN, implemented via USB2 max throughput 480Mbps
Wireless	Wi-Fi 802.11 a/b/g/n 2.4GHz Station and Access Point operation, BT / BLE 4.0 Single UFL connector for both devices Recommended antenna for R&TTE compliance GNSS – 3 band support (GPS, BeiDou, and Galileo) Onboard UFL connector for antenna
Serial	3 UARTs up to 4MHz operation @ RS232 voltage levels. One supports RS422/485 @ 3V via a jumper USB 2.0 Host (HS, FS, LS) USB 2.0 Device (HS & FS) SPI port with chip selects I^2C bus up to 400KHz
GPIO	Up to 12 additional inputs and outputs Pins can be configured to suit your design

Physical

Operating Temperatures	Standard -20°C to 70°C Humidity 20% to 80% non-condensing
Overall Dimensions	99mm x 67mm
Approvals	CE, UKCA Thermal

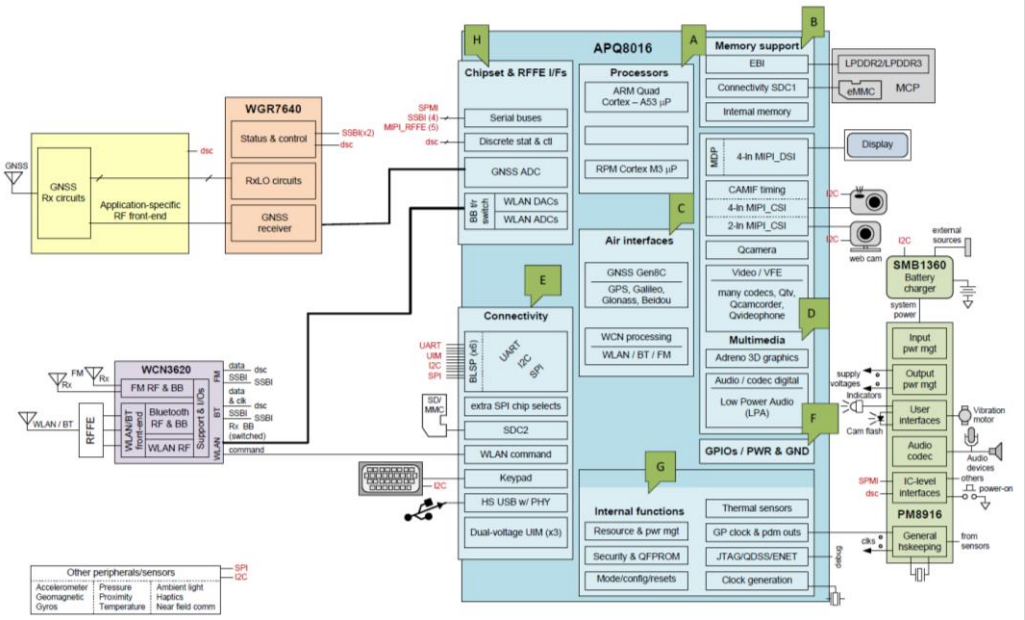


Figure 1 Qualcomm Snapdragon 410e functional block diagram

(Not all interfaces implemented on DB1, see above and User Guide for detailed specification)

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