Specification

PMU

RTM7916 is a power management system chip optimized for 3G/4G, especially based on the Spreadtrum RTM7916 system solution. RTM7916 cIntegrated 7 DC-DCs and 26 low dropout regulators (LDOs), which are optimized for specific 3G subsystems. All the chipset in the platform power though this chip. Support standby mode with small deep-sleep current.

Baseband

RTM7916 is a highly integrated application processor with embedded TD-LTE, LTE FDD, TD-SCDMA/HSPA(+), It consists of Dual-coreARM Cortex TM -A75 processor and Six-core ARM Cortex TM -A55 processor as application processor, which includes a NEON multimedia processing engine, ARM Mali RTM7916 as 3D graphics accelerator, multi-standard multi-media accelerators and advanced audio subsystem. The specially optimized architecture of RTM7916 can achieve high performance and low power for a lot of applications. Proprietary architectures and algorithms were developed for low power ASIC design and power management. Unique techniques are used for noise suppression/cancellation, echo suppression/cancellation algorithm. Overall, UMS512 chip set presents a high cost-effective platformfor six mode Android mobile devices.

The multi-standard video accelerator and an advanced audio subsystem are also included to provide advanced multimedia application and services such as streaming Audio and video，a multitude of decoders and encoders such as H.264and MPEG-4。Audio supported includes FR，HR，EFR，AMR FR，and AMR HR vocoders，polyphonic ringtones and advanced audio functions such as echo cancellation，hands-free speakphone operation and noise cancellation.

WCN

UMW2631 is a chip that includes the WiFi, Bluetooth baseband core and their RF. It's the highest level of integration for a mobile system with integrated 802.11b/g/n and single stream 802.11n, Smart ready mode, It also includes on-chip 2.4GHz CMOS power amplifiers. Implemented advanced power saving technology, the chip can satisfy the mobile devices which require minimal power consumption and compact pcb size.

RF

UMW2631 is a highly integrated, single-die radio transceiver chip that supports 3G WCDMA, HSDPA, HSUPA. Implemented in low cost bulk CMOS, it is optimized to meet the challenges of today's small form factor, power efficient, high performance cellular handsets. The UMW2631 has total of 7 single-ended transmit ports, 12 primary and 12 diversity single-ended receive ports. The UMW2631 provides connectivity multiple bands of operation. The UMW2631 offers a cost competitive and small footprint radio solution for multi-mode, multi-band applications with the highest performance at the lowest power.

The linear transceiver architecture of UMW2631 is utilized for 3G systems, offering excellent performance and design margins over 3GPP requirements.

PA

The RTM7916 is a multi-mode multi-band front-end module (FEM) delivering both the power amplification and antenna switching functions. With the state-of-the-art integration design and advanced GaAs technology, this FEM supports both quad-band

The RTM7916 is a 42-pin power amplifier module developed for high linearity applications.

With advanced InGaP HBT technology, the module supports multi-band. The RTM7916 meets the stringent linearity requirements of LTE QPSK specifications, as well as those of 16QAM modulation. The RTM7916 is self contained with three GaAs power amplifiers for low, mid and high bands, a CMOS controller, a SOI 3P4T switch, a SP5T switch ,a SP7T switch and input & output matching networks. The GaAs PA provides RF amplification in linear mode, while the CMOS controller provides regulated voltage through MIPI RFFE interface. The integrated SOI switch supports band selection and Tx/Rx function. The module is fully matched to 50 ohms at all RF ports.

Operating Frequency Band (RF):

Bluetooth: 2402-2480MHz

WiFi: IEEE 802.11b/g/n 20: 2412-2462MHz/ 11 channel

IEEE 802.11n 40: 2422-2452MHz/ 7 channel

IEEE 802.11a/n/ac(20M): 5150MHz ~5250MHz/ 4 channel
IEEE 802.11n/ac(40M): 5150MHz ~5250MHz/ 2 channel
IEEE 802.11ac(80M): 5150MHz ~5250MHz/ 1 channel

IEEE 802.11a/n/ac(20M): 5725MHz ~5850MHz/ 5 channel
IEEE 802.11n/ac(40M): 5725MHz ~5850MHz/ 2 channel

IEEE 802.11ac(80M): 5725MHz ~5850MHz/ 1 channel

GSM/GPRS/EDGE 850: 824~849MHz

GSM/GPRS/EDGE 1900: 1850~1910MHz

WCDMA Band 2: 1850~1910MHz

WCDMA Band 5: 824~849MHz

FDD-LTE BAND 2: 1850-1910MHz

FDD-LTE BAND 4: 1710-1755MHz

FDD-LTE BAND 5: 824-849MHz

FDD-LTE BAND 7: 2500-2570MHz

FDD-LTE BAND 12: 699-716MHz

FDD-LTE BAND 17: 704-716MHz

Modulation mode：

Bluetooth BLE: GFSK

Bluetooth EDR: GFSK, π/4 DQPSK, 8DPSK

WiFi (2.4G): DSSS, OFDM

WiFi (5G): OFDM

GMSK, BPSK

QPSK, 16QAM

Maximum of Antenna Gain：

Bluetooth: -0.13dBi

WiFi (2.4G): -0.13dBi

WiFi (5.2G): -0.38dBi

WiFi (5.8G): -0.50dBi

GSM850: -0.87dBi

PCS1900: 0.47dBi

WCDMA Band 2: 0.47dBi

WCDMA Band 5: -0.87dBi

FDD-LTE BAND 2: 0.47dBi

FDD-LTE BAND 4: 0.54dBi

FDD-LTE BAND 5: -0.87dBi

FDD-LTE BAND 7: -0.47dBi

FDD-LTE BAND 12: -1.22dBi

FDD-LTE BAND 17: -1.25dBi

Ratings:

AC 120-240V

DC 3.89V by battery