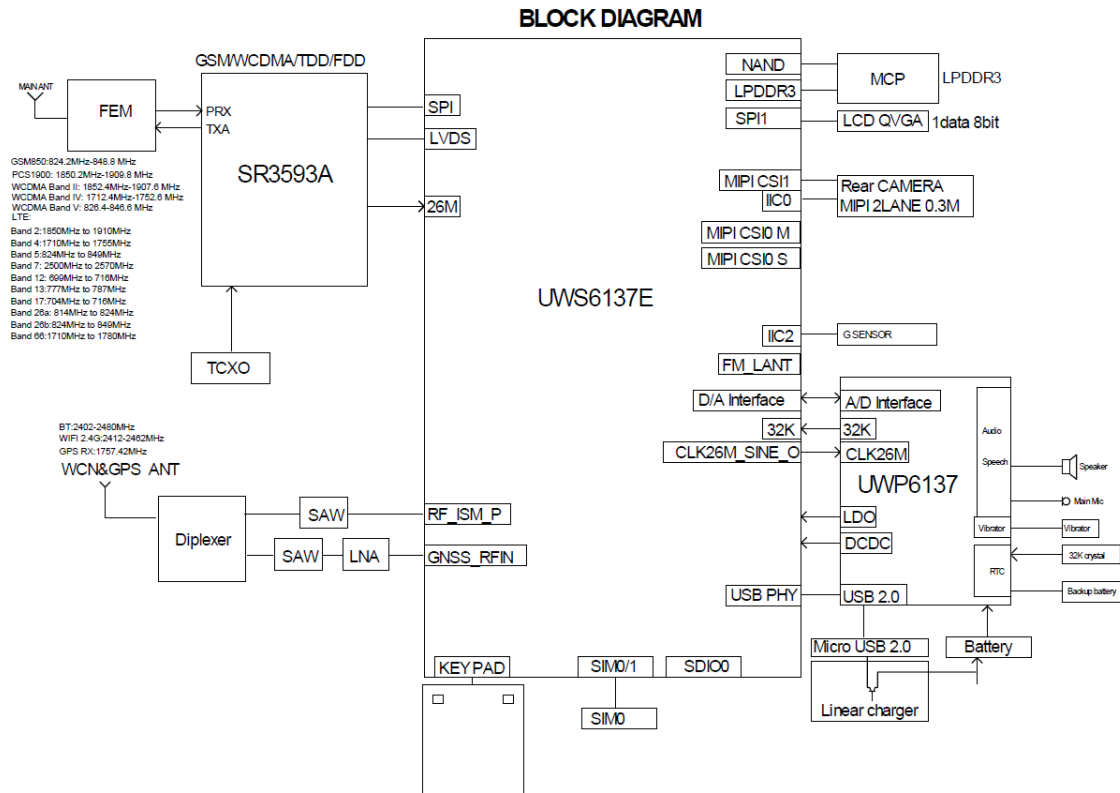


Operating Description

1. Block diagram



2. PMU

UWP6137E is a power management system chip optimized for 2G/3G/4G smart phones, especially based on the UWS6137E system solution. UWP6137E integrated 7 DC-DCs and 26 low dropout regulators (LDOs), which are optimized for specific 2G/3G/smart phone subsystems. All the chipset in the platform power through this chip. Support standby mode with small deep-sleep current.

3. Baseband

UWS6137E is a highly integrated application processor with embedded TD-LTE, LTE FDD, WCDMA, and GSM/GPRS/EDGE. It consists of One-core ARM® Cortex-A75MP core and Tri-core ARM® Cortex-A55MP as application processor, which includes a NEON multimedia processing engine, IMG 8300 as 3D graphics accelerator, multi-standard multi-media accelerators and advanced audio subsystem. The specially optimized architecture of UWS6137E 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, UWS6137E chip set presents a high cost-effective platform for 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.264 and 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 speakerphone operation and noise cancellation.

UWS6137E includes the WiFi/BT/FM/GNSS baseband core and their RF. It's the highest level of integration for a mobile system with integrated 802.11/b/g and single stream 802.11n, Bluetooth 5.0, Smart ready mode, GNSS and an FM radio receiver. It also includes on-chip CMOS power amplifiers.

Implemented advanced power saving technology, the chip can satisfy the mobile devices which require minimal power consumption and compact pcb size.

4. RF

SR3593A is a highly integrated, single-die radio transceiver chip that supports 4G FDD-LTE, TDD-LTE, 3G WCDMA, HSDPA, HSUPA, GSM/EDGE as well as TD-SCDMA operation. 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 SR3593A has total of 7 single-ended transmit ports, 2 GSM, 12 primary and 12 diversity single-ended receive ports. The SR3593A provides connectivity multiple bands of operation. The SR3593A 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 SR3593A is utilized for 2.5G, 3G and 4G systems, offering excellent performance and design margins over 3GPP requirements. For 2.5G, a direct modulation scheme is used in the transmitter and performance of 2.5G receive and transmit chains is such that no additional RF filters are required to meet out-of-band noise specifications. The output driver stage for each transmitter chain is single-ended and matched to 50Ω.

5. Technical Parameters

Product Name:	FutureTrack Jovio Jr LTE
Model/Type reference:	KW1403
Serial Model:	N/A
Power Supply:	Input: DC 5V/1A DC 3.85V from Rechargeable Li-ion battery
Hardware Version:	N/A
Software Version:	N/A
GSM/WCDMA:	
Support Networks:	GSM, GPRS, EDGE, WCDMA, HSDPA, HSUPA
Frequency Bands:	☒ GSM 850 ☒ PCS1900 (U.S. Bands) ☐ GSM 900 ☐ DCS 1800 (Non-U.S. Bands) ☒ WCDMA Band II ☒ WCDMA Band IV ☒ WCDMA Band V (U.S. Bands) ☐ WCDMA Band I ☐ WCDMA Band VIII (Non-U.S. Bands)
Type of Modulation:	GMSK, 8PSK Modulation For GSM/GPRS/EDGE

	BPSK,QPSK Modulation For WCDMA/HSDPA/HSUPA
Frequency Range:	GSM/GPRS/EDGE 850: 824.2MHz-848.8 MHz
	GSM/GPRS/EDGE 1900: 1850.2MHz-1909.8 MHz
	WCDMA Band II: 1852.4MHz-1907.6 MHz
	WCDMA Band IV: 1712.4MHz-1752.6 MHz
	WCDMA Band V: 826.4-846.6 MHz
Antenna type:	PIFA Antenna
Antenna gain:	GSM850: -11.87dBi, PCS1900: -3.95dBi WCDMA II: -3.95dBi, WCDMA IV: -1.18dBi; WCDMA V: -11.87dBi
LTE:	
Operation Band:	FDD-LTE: Band 2/4/5/7/12/13/17/26/66
Support Bandwidth:	Band 2: ☒ 1.4MHz, ☒ 3MHz, ☒ 5MHz, ☒ 10MHz, ☒ 15MHz, ☒ 20MHz Band 4: ☒ 1.4MHz, ☒ 3MHz, ☒ 5MHz, ☒ 10MHz, ☒ 15MHz, ☒ 20MHz Band 5: ☒ 1.4MHz, ☒ 3MHz, ☒ 5MHz, ☒ 10MHz Band 7: ☒ 5MHz, ☒ 10MHz, ☒ 15MHz, ☒ 20MHz Band 12: ☒ 1.4MHz, ☒ 3MHz, ☒ 5MHz, ☒ 10MHz Band 13: ☒ 5MHz, ☒ 10MHz Band 17: ☒ 5MHz, ☒ 10MHz Band 26a: ☒ 1.4MHz, ☒ 3MHz, ☒ 5MHz, ☒ 10MHz Band 26b: ☒ 1.4MHz, ☒ 3MHz, ☒ 5MHz, ☒ 10MHz, ☒ 15MHz Band 66: ☒ 1.4MHz, ☒ 3MHz, ☒ 5MHz, ☒ 10MHz, ☒ 15MHz, ☒ 20MHz
Frequency Range:	Band 2:uplink 1850MHz to 1910MHz; downlink 1930MHz to 1990MHz Band 4:uplink 1710MHz to 1755MHz; downlink 2110MHz to 2155MHz Band 5:uplink 824MHz to 849MHz; downlink 869MHz to 894MHz Band 7:uplink 2500MHz to 2570MHz; downlink 2620MHz to 2690MHz Band 12:uplink 699MHz to 716MHz; downlink 729MHz to 746MHz Band 13:uplink 777MHz to 787MHz; downlink 729MHz to 746MHz Band 17:uplink 704MHz to 716MHz;downlink 746MHz to 756MHz Band 26a:uplink 814MHz to 824MHz; downlink 859MHz to 869MHz Band 26b:uplink 824MHz to 849MHz; downlink 869MHz to 894MHz Band 66:uplink 1710MHz to 1780MHz;downlink 2110MHz to 2200MHz
Power Class:	Power Class 3
Modulation Type:	QPSK, 16QAM
Antenna type:	PIFA Antenna

Antenna gain:	LTE Band 2: -3.95dBi; LTE Band 4: -1.18dBi; LTE Band 5: -11.87dBi; LTE Band 7: -2.40dBi; LTE Band 12: -11.18dBi; LTE Band 13: -15.63dBi; LTE Band 17: -11.18dBi; LTE Band 26: -11.87dBi; LTE Band 66: -1.18dBi.
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2.4G WIFI:

Supported type:	802.11b/802.11g /802.11n(HT20)/802.11n(HT40)
Modulation:	802.11b(DSSS):CCK,DQPSK,DBPSK 802.11g(OFDM):BPSK,QPSK,16-QAM,64-QAM 802.11n(OFDM):BPSK,QPSK,16-QAM,64-QAM
Operation frequency:	802.11b/802.11g/802.11n(H20): 2412MHz~2462MHz 802.11n(H40): 2422MHz~2452MHz
Channel number:	802.11b/802.11g/802.11n(H20): 11 802.11n(H40): 7
Channel separation:	5MHz
Antenna type:	PIFA Antenna
Antenna gain:	-1.33dBi

Bluetooth :

Supported type:	Bluetooth BR/EDR
Modulation:	GFSK, $\pi/4$ DQPSK, 8DPSK
Operation frequency:	2402MHz~2480MHz
Channel number:	79
Channel separation:	1MHz
Antenna type:	PIFA Antenna
Antenna gain:	-1.33dBi

Bluetooth LE:

Supported type:	Bluetooth LE 1M
Modulation:	GFSK
Operation frequency:	2402MHz~2480MHz
Channel number:	40
Channel separation:	2MHz
Antenna type:	PIFA Antenna
Antenna gain:	-1.33dBi

GPS RX:	
Modulation:	MSK
Operation frequency:	1575.42MHz
Antenna type:	PIFA Antenna

Simultaneous Transmission Possibilities: WWAN + WLAN or BT