

# XY3501 Specification

**V1.0**

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**ShenZhen NewMobi Technology Co.,LTD**

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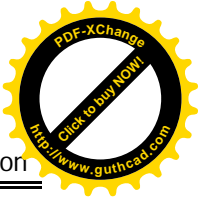
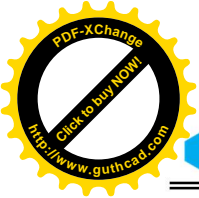
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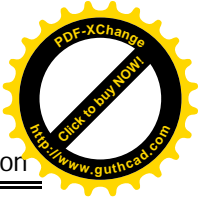
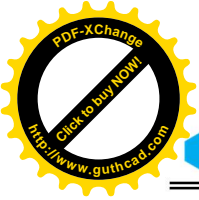
Addr: ROOM 3A15 to 3A19, Floor 4, JinYuan Bussiness Building A, XiXiang Blvd, BaoAn Dist., ShenZhen City, GuangDong Province, China.



XY3501 Module is a LTE module based on Mediatek MT6735 platform, the module integrated Application Processor and LTE modem, run on Android 5.1 operation system. it can be second developed on the Application Processor and Android System, There are many peripheral interfaces you can use to connect and control other devices, like I2C, SPI, UART, USB OTG, GPIO, INT etc. the module is powerful and cost-effective, it has good expandability and flexibility in design, can meet various demands on products. It can be widely used on Consumer Electronics and Industry Equipment etc. When there are a demand of nearby or remote communication, smarter device, Android system, You can choose to use our Core Board.

### Main Characteristic

- OS  
Android 5.1 (64bit)
- CPU  
Quad-core ARM Cortex-A53 up to 1.3Ghz  
512KB unified L2 cache
- ROM & RAM  
8GB eMMC + 8Gb LPDDR3 (optional 16GB+16Gb、32GB+16Gb)
- Connectivity  
WIFI: Support 802.11 a/b/g/n  
FM: FM Receiver  
Bluetooth: BT 4.0  
GPS: GPS/Beidou/Galileo/Glonass  
A-GPS: Support
- Band Support  
TDD\_LTE: Band38/39/40/41(2555~2655MHz)  
FDD\_LTE: Band3/1  
WCDMA: Band1/8  
TDSCDMA: Band34/39  
GSM/GPRS/EDGE: Band3/8  
GPRS/EDGE Class 12  
CDMA2000 (EVDO) 800
- User interface  
Display: Up to Full HD 1080P (1080x1920)  
Touch Panel: Captive Touch Panel  
Front Camera: 13MP  
Rear Camera: 13MP



## Product Spec.

- Main Board design: Core board & Mother board.
- Supply Voltage: 3.6V~4.5V
- dimension: 40mm \* 50mm \*2.8mm
- Package: 168 pin LCC
- Operation Temperature (-20°~+70°Centigrade)
- Four Antenna interface (WIFI/BT, GPS, LTE Main, LTE Diversity Rx)

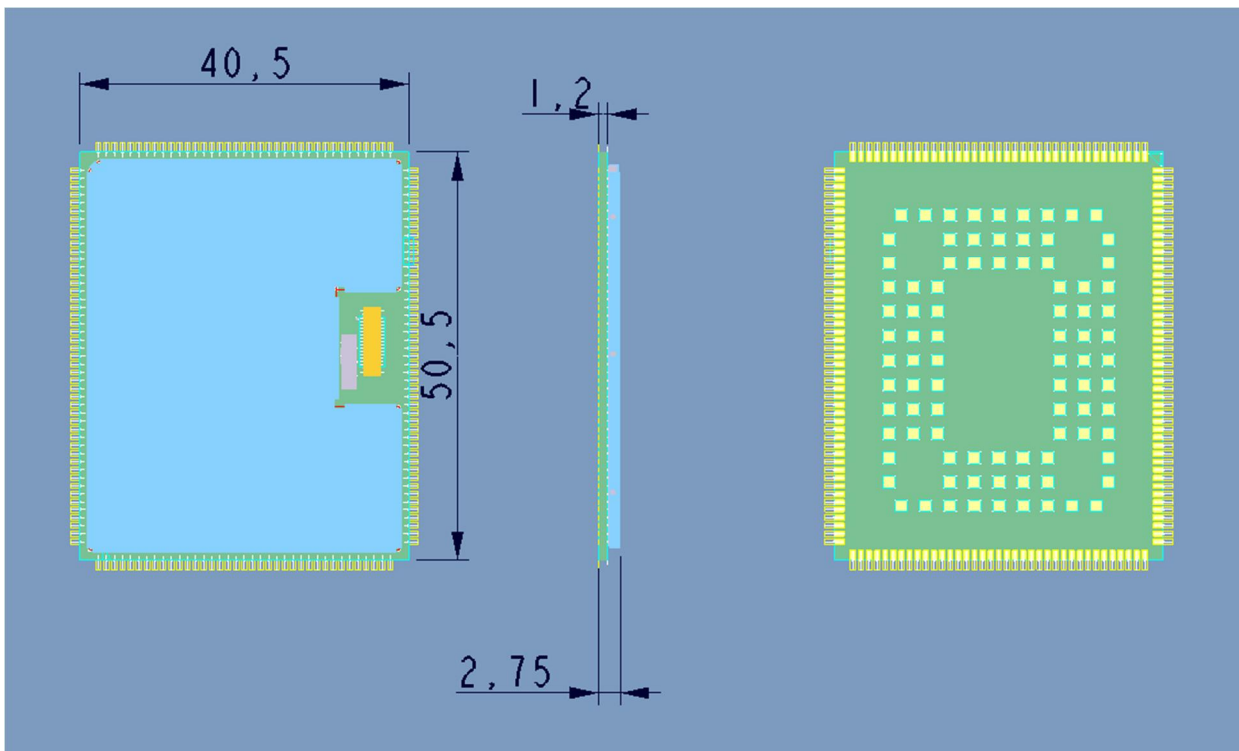
## Peripheral Interface

- 1x SDIO2.0
- 1x SPI
- 2x SIM Card
- 4x UART
- 4x I2C
- Audio: 2x MIC input, 1x Speaker output, 1x Receiver output, 1x Earphone output.
- 1x USB OTG
- 3\*3 matrix keyboard interface.
- Multiple external interrupt input.

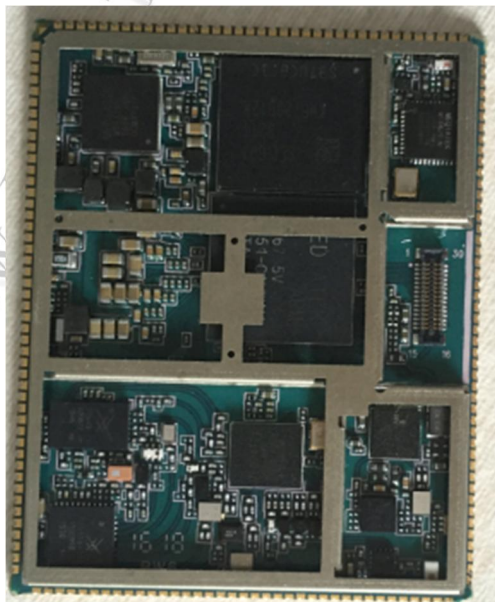
## Application Scenarios

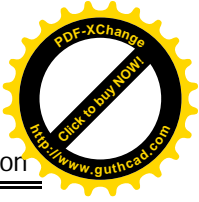
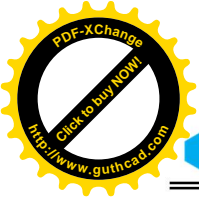
- Handheld POS machine
- Mobile Data Terminal Equipment
- Industry Control
- Vehicle Navigator

Dimension (millimeter):

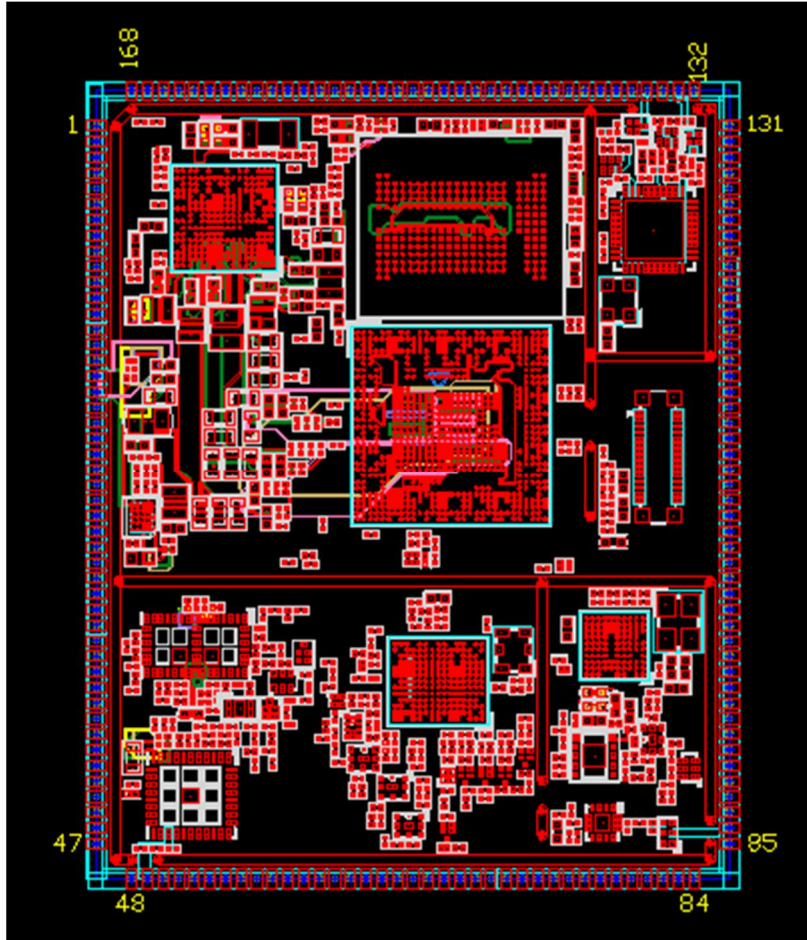


Product show:

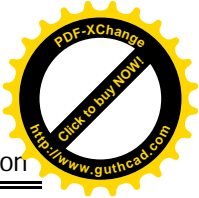
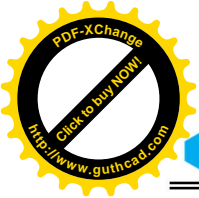




### Pin Assignment



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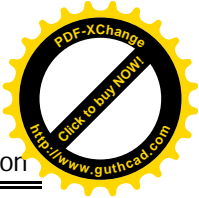
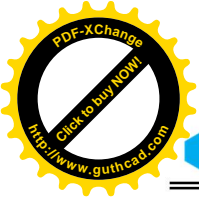


**Core board pin function description**

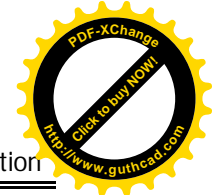
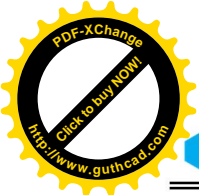
Abbreviation

Abbreviation	detail
AI	Alog input
AO	Analog output
AIO	Analog bi-dirction
DI	Digital input
DO	Digital output
DIO	Digital bi-direction
P	Power
G	Ground

Pin NO	Pin name	Type	Description	Power domain
1	GND	G	Ground	
2	MICBIAS1	P	Microphone bias 1	
3	AU_VIN1_N	AI	Microphone channel1 negative input	
4	AU_VIN1_P	AI	Microphone channel1 positive input	
5	GND	G	Ground	
6	AU_HPL	AO	Earphone L channel output	
7	AU_HPR	AO	Earphone R channel output	
8	GND	G	Ground	
9	AU_HSP	AO	Handset positive output	
10	AU_HSN	AO	Handset negative output	
11	GND	G	Ground	
12	AU_SPK1P	AO	Positive output of internal speaker amp	
13	AU_SPK1N	AO	negative output of internal speaker amp	
14	GND	G	Ground	
15	CS_N	AI	Fuel gauge ADC input	
16	CS_P	AI	Fuel gauge ADC input	
17	VBAT	P	Battery	0~4.5V
18	VBAT	P	Battery	
19	GND	G	Ground	
20	TDP2	DO	DSI0 lane2 P	DVDD18_MIPITX

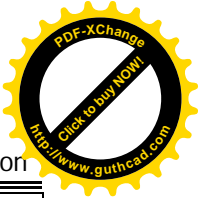
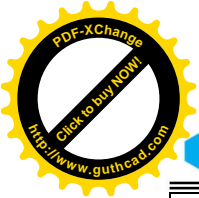


Pin NO	Pin name	Type	Description	Power domain
21	TDN2	DO	DSI0 lane2 N	DVDD18_MIPITX
22	GND	G	Ground	
23	TDP1	DO	DSI0 lane1 P	DVDD18_MIPITX
24	TDN1	DO	DSI0 lane1 N	DVDD18_MIPITX
25	GND	G	Ground	
26	TCP	DO	DSI0 CK lane P	DVDD18_MIPITX
27	TCN	DO	DSI0 CK lane N	DVDD18_MIPITX
28	GND	G	Ground	
29	TDN0	DO	DSI0 lane0 N	DVDD18_MIPITX
30	TDP0	DO	DSI0 lane1 P	DVDD18_MIPITX
31	GND	G	Ground	
32	TDN3	DO	DSI0 lane3 N	DVDD18_MIPITX
33	TDP3	DO	DSI0 lane3 P	DVDD18_MIPITX
34	GND	G	Ground	
35	LCM_RST	DIO	LCM Reset	DVDD18
36	DSI_TE	DIO	LCM TE	DVDD18
37	DISP_PWM0	DIO	LCM BL PWM output	DVDD18
38	VBUS	P	Charger input	0~5V
39	VBUS	P	Charger input	
40	GND	G	Ground	
41	USB_DM	DIO	USB port differential data line	AVDD33_USB
42	USB_DP	DIO	USB port differential data line	AVDD33_USB
43	GND	G	Ground	
44	ADC_IN2	AI	SIM1 Power	0~1.5V
45	GPIO127	DIO	GPIO127	DVDD18
46	GPIO122	DIO	GPIO122	DVDD18
47	GPIO120	DIO	GPIO120	DVDD18
48	GND	G	Ground	
49	MAIN_ANT	AIO	2G,3G,4G main Antenna	
50	GND	G	Ground	
51	GPIO123	DIO	GPIO123	DVDD18



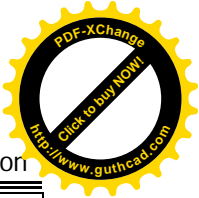
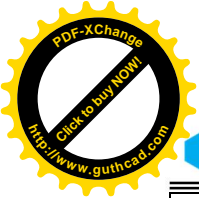
Pin NO	Pin name	Type	Description	Power domain
52	GPIO124	DIO	GPIO123	DVDD18
53	GPIO121	DIO	GPIO121	DVDD18
54	BPI_BUS16	DIO	GPIO98 Or BPI_BUS16	DVDD18
55	BPI_BUS14	DIO	GPIO96 Or BPI_BUS14	DVDD18
56	BPI_BUS12	DIO	GPIO94 Or BPI_BUS12	DVDD18
57	BPI_BUS9	DIO	GPIO91 Or BPI_BUS9	DVDD18
58	BPI_BUS15	DIO	GPIO97 Or BPI_BUS15	DVDD18
59	BPI_BUS17	DIO	GPIO99 Or BPI_BUS17	DVDD18
60	BPI_BUS13	DIO	GPIO95 Or BPI_BUS13	DVDD18
61	SRCLKENAI	DIO	26MHz co-clock enable input	DVDD18
62	KPCOL2	DIO	Keypad Column2	DVDD18
63	KPCOL0	DIO	Keypad Column0	DVDD18
64	KPROW1	G	Keypad Row1	DVDD18
65	KPROW2	DI	Keypad Row2	DVDD18
66	KPROW0	DI	Keypad Row0	DVDD18
67	KPCOL1	DIO	Keypad Column1	DVDD18
68	GND	DIO	GND	DVDD18
69	GPIO80	DIO	GPIO80	DVDD18
70	GPIO78	DI	GPIO78	DVDD18
71	GPIO79	G	GPIO79	DVDD18
72	EXT_26M	DIO	Output 26M	DVDD18
73	PCM_CLK	DIO	GPIO61 & PCM_CLK	DVDD18
74	PCM_TX	DO	GPIO64 & PCM_TX	DVDD18
75	PCM_RX	DIO	GPIO63 & PCM_RX	DVDD18
76	PCM_SYNC	DIO	GPIO62 & PCM_SYNC	DVDD18
77	EINT2	DIO	External interrupt2	DVDD18
78	EINT6	DIO	External interrupt 6	DVDD18
79	EINT5	DIO	External interrupt 5	DVDD18
80	EINT7	DIO	External interrupt 7	DVDD18





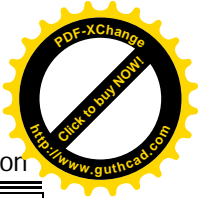
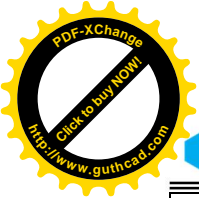
81	EINT0/USB_ID	DIO	USB ID or External interrupt 0	DVDD18
82	EINT1	DIO	External interrupt 1	DVDD18

Pin NO	Pin name	Type	Description	Power domain
83	EINT4	DIO	External interrupt 4	DVDD18
84	EINT3	DIO	External interrupt 3	DVDD18
85	GND	G	Ground	
86	C2K_MAIN_ANT	AIO	DRX and CDMA Antenna	
87	GND	G	Ground	
88	SPI_CS	DIO	GPIO65 & SPI chip select	DVDD18
89	SPI_CK	DIO	GPIO66 & SPI clock	DVDD18
90	SPI_MI	DIO	GPIO67 & SPI input	DVDD18
91	SPI_MO	DIO	GPIO68 & SPI output	DVDD18
92	GND	G	Ground	
93	UTXD0	DO	UART0 TX	DVDD18
94	URXD0	DI	UART0 RX	DVDD18
95	URXD1	DO	UART1 RX	DVDD18
96	UTXD1	DI	UART1 TX	DVDD18
97	UTXD2	DO	UART2 TX	DVDD18
98	URXD2	DI	UART2 RX	DVDD18
99	URXD3	DI	UART3 RX	DVDD18
100	UTXD3	DO	UART3 TX	DVDD18
101	GND	G	Ground	
102	SDA3	DIO	I2C3 Data	DVDD18
103	SCL3	DIO	I2C3 Clock	DVDD18
104	SDA1	DIO	I2C1 Data	DVDD18
105	SCL1	DIO	I2C1 Clock	DVDD18
106	GND	G	Ground	
107	RDN3_A	DIO	CSI1 lane3 N	DVDD18_MIPIRX
108	RDP3_A	DO	CSI1 lane3 P	DVDD18_MIPIRX
109	SDA2	DIO	I2C2 Data	DVDD18



110	SCL2	DO	I2C2 clock	DVDD18
111	SCL0	DO	I2C0 clock	DVDD18
112	SDA0	DIO	I2C0 Data	DVDD18
113	RDN2_A	DIO	CSI1 lane2 N	DVDD18_MIPIRX

Pin NO	Pin name	Type	Description	Power domain
114	RDP2_A	DO	CSI1 lane2 P	DVDD18_MIPIRX
115	GND	G	Ground	
116	CMPCLK	DO	Camera pclk	DVDD18
117	CMDAT1	DI	Camera data1	DVDD18
118	CMDAT0	DI	Camera data0	DVDD18
119	GND	G	Ground	
120	GPIO19_IRTX_O UT	DIO	GPIO19	DVDD18
121	GPIO20	DIO	GPIO20	DVDD18
122	GPIO21	DIO	GPIO21	DVDD18
123	GND	G	Ground	
124	MSDC1_CLK	DO	MSDC1 clock	DVDD28_MC2
125	MSDC1_CMD	DO	MSDC1 command	DVDD28_MC2
126	MSDC1_DAT3	DIO	MSDC1 data3	DVDD28_MC2
127	MSDC1_DAT1	DIO	MSDC1 data1	DVDD28_MC2
128	MSDC1_DAT0	DIO	MSDC1 data0	DVDD28_MC2
129	MSDC1_DAT2	DIO	MSDC1 data2	DVDD28_MC2
130	VMCH_PMU	P	Power for T-Card	0~3.3V
131	GND	G	Ground	
132	GND	G	Ground	
133	WIFI_RF	AIO	WIFI Antenna	
134	GND	G	Ground	
135	GPS_RF	AIO	GPS Antenna	
136	GND	G	Ground	
137	VIO28_PMU	P	2.8V power for IO interface	DVDD28
138	VIO18_PMU	P	1.8V power for IO interface	DVDD18



139	GND	G	Ground	
140	SIM1_SRST	DO	SIM1 reset	VSIM1_PMU
141	SIM1_SCLK	DO	SIM1 clock	VSIM1_PMU
142	SIM1_SIO	DIO	SIM1 data	VSIM1_PMU
143	VSIM1_PMU	P	SIM1 Power	0~3.1V
144	GND	G	Ground	
145	SIM2_SCLK	DO	SIM2 clock	VSIM2_PMU

Pin NO	Pin name	Type	Description	Power domain
146	SIM2_SRST	DO	SIM2 reset	VSIM2_PMU
147	SIM2_SIO	DIO	SIM2 data	VSIM2_PMU
148	VSIM2_PMU	P	SIM2 Power	0~3.1V
149	PWRKEY	DI	Power key	0~4.5V
150	SYSRSTB	DI	System reset	DVDD18
151	HOMEKEY	DI	Home key	DVDD18
152	VGP1_PMU	P		2.8V
153	VIBR_PMU	P	Power for vibrator	
154	VRTC	P	Power for RTC	2.8V
155	ISINK0	AI	Current sink channel 0	
156	ISINK1	AI	Current sink channel 1	
157	GND	G	Ground	
158	MICBIAS0	P	Microphone bias0	
159	AU_VIN0_P	AI	Microphone channel0 negative input	
160	AU_VIN0_N	AI	Microphone channel0 positive input	
161	AU_VIN2_N	AI	Microphone channel2 negative input	
162	AU_VIN2_P	AI	Microphone channel2 positive input	
163	GND	G	Ground	
164	FM_ANT	AI		
165	FM_RX_N_6625	AI		
166	GND	G	Ground	
167	EINT_EAR	DI	Earphone EINT	DVDD18
168	ACCDET	DI		DVDD18

System Block Diagram:s

The System Block Diagram

