

# XT-500 Operational Description

## 1 PRODUCT INTRODUCTION

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XT-500 is a slim mobile phone brought to you by ShenZhen KDI Communication Co.,LTD, it works at 850Mhz and 1900Mhz frequency band .

XT-500 colour screen mobile phone is designed for use on the GSM/GPRS networks. Not only does the XT-500 provide you with basic calling functions, but also with many practical functions such as double SIM cards mode, smart input method, a name card style phonebook, 64 chord rings, SMS, MMS, camera and video, MP3 and movie player, TV, recorder, clock/alarm, calculator, automatic power On / power Off, calendar, world clock, GPRS surfing, STK, Keypad lock.

## 2 HARDWARE

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The main board includes RF circuit(use MT6139 and TQM6M4038) , base band circuit(use MT6225) , power management circuit(use MT6318), bluetooth circuit(MT6601),TV tuner circuit(use TLG1100), some keyboard LEDs, etc.....The processors used in XT500 are MTK MT6225.

## 3 APPEARANCE AND STRUCTURE

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*Table 1 Appearance and structure*

Item	XT-500	Remark
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Appearance		Color here is only for reference, the real product maybe different.
Dimension	<b>118.4*55.2*17.5</b>	
Weight	<b>140g</b>	Including Battery
Material	PC	
Display	<b>320xRGBx240</b>	

## 4 FUNCTIONS

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### 4.1 TALKING PARAMETERS

**Table 2 TALKING PARAMETERS**

Item	Discription
Speech codec	FR / EFR / AMR / HR
Talk time	<b>Up to 3 hrs (Estimation)</b>
Standby time	<b>Up to 120 hrs (Estimation)</b>
Phonebook	<b>500 units</b>
Call Forwarding	CFU \CFB \CFRy \CFRc
Other GSM Phase 2 Function	CB\CW...

### 4.2 SHORT MESSAGE

**Table 3 SHORT MESSAGE**

Item	Discription
SMS(Chinese/English)	Supported
EMS	Supported(Only Multi page SMS)

MMS	Supported
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### 4.3 PERSONALISED SPEC.

**Table 4 PERSONALISED SPEC.**

Item	Discription
Voice recording and Voice memo	Supported
Pre-Set 64-tone polyphonic ringers	64 tones polyphony(Software MIDI)
Themes Switch	Supported
User Profiles	Supported
Wall-papers	Supported
Screen savers	Supported
Self-Edit Greeting text	Supported (Welcome)

### 4.4 OTHER SPEC.

**Table 5 OTHER SPEC.**

Item	Discription
SIM Tool Kit	Supported
Application	Supported Alarm clock, Organizer, Calculator, Unit converter, Stopwatch, Universal timer...
Pre-loaded game	Supported
TV	Support analog mode
Bluetooth	Version 1.2

## 5 TECHNICAL SPECIFICATION

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**Table 6 GSM850**

RF Item	Parameter
PCL	Level 5: 31dBm ~ 32.5dBm Level 6: 31dBm ±3dBm

	Level 7: 29dBm $\pm$ 3dBm Level 8: 27dBm $\pm$ 3dBm Level 9: 25dBm $\pm$ 3dBm Level 10: 23dBm $\pm$ 3dBm Level 11: 21dBm $\pm$ 3dBm Level 12: 19dBm $\pm$ 3dBm Level 13: 17dBm $\pm$ 3dBm Level 14: 15dBm $\pm$ 3dBm Level 15: 13dBm $\pm$ 3dBm Level 16: 11dBm $\pm$ 5dBm Level 17: 9dBm $\pm$ 5dBm Level 18: 7dBm $\pm$ 5dBm Level 19: 5dBm $\pm$ 5dBm
Frequency error	< $\pm$ 0.1ppm
Phase error	< 5 (RMS) < 20 ° (Peak)
Power v Time	$\pm$ 10us < -6dBc $\pm$ 18us < -30dBc $\pm$ 28us < -70dBc
Switching Transient	PCL 11: fc $\pm$ 400kHz:-23dBm fc $\pm$ 600kHz:-26dBm fc $\pm$ 1200kHz:-32dBm fc $\pm$ 1800kHz:-36dBm  PCL 7: fc $\pm$ 400kHz:-23dBm fc $\pm$ 600kHz:-25dBm fc $\pm$ 1200kHz:-25dBm fc $\pm$ 1800kHz:-28dBm

	PCL 5: $f_c \pm 400\text{kHz}$ : -19dBm $f_c \pm 600\text{kHz}$ : -21dBm $f_c \pm 1200\text{kHz}$ : -22dBm $f_c \pm 1800\text{kHz}$ : -24dBm
Modulation	$f_c \pm 200\text{kHz}$ :< -30dBc or -36dBm $f_c \pm 250\text{kHz}$ :< -33dBc or -36dBm $f_c \pm 400\text{kHz}$ :< -60dBc or -36dBm $f_c \pm 600\text{kHz} \sim 1800\text{kHz}$ :< -60dBc or -51dBm $f_c \pm 1800\text{kHz} \sim 3000\text{kHz}$ :< -63dBc or -46dBm $f_c \pm 3000\text{kHz} \sim 6000\text{kHz}$ : < -65dBc or -46dBm $f_c \geq \pm 6000\text{kHz}$ : < -71dBc or -46dBm
Spurious Emission at Receiver band	925 MHz ~ 935 MHz:< -67dBm 935 MHz ~ 960MHz:< -79dBm 1805 MHz ~ 1880MHz:< -71dBm
Conducted spurious emissions - MS allocated a channel	100kHz ~ 1GHz:< -36dBm 1GHz ~ 12.75GHz:< -30dBm
Conducted spurious emissions - MS in idle mode	100kHz ~ 1GHz:< -57dBm 1GHz ~ 12.75GHz:< -47dBm
Radiated spurious emissions - MS allocated a channel	30MHz ~ 1GHz:< -36dBm 1GHz ~ 4GHz:< -30dBm
Radiated spurious emissions - MS in idle mode	30MHz ~ 880MHz:< -57dBm 880MHz ~ 915MHz:< -59dBm 915MHz ~ 1000MHz:< -57dBm 1GHz ~ 1710MHz:< -47dBm

	1710MHz~1785MHz:< -53dBm 1785MHz~4GHZ:< -47dBm
sensitivity	Class II:-100dBm BER < 2.4%
Blocking	Class II:<-96dBm BER < 2.4% Blocking level: Fr ±600kHz ~ 1.6MHz :- 43dBm Fr ±1.6MHz ~ 3MHz:-33dBm 915MHz ~ Fr-3MHz:-23dBm Fr+3MHz ~ 980MHz:-23dBm 835MHz ~ 915MHz:0dBm 980MHz ~ 1000MHz:0dBm
Adjacent channel rejection	Class II:-82dBm BER < 2.4% Interference level: Fr ±200kHz:-73dBm Fr ±400kHz:-41dbm Fr ±600kHz:-33dbm
Intermodulation rejection	Class II:-96dbm BER < 2.4% Interference level = -49dbm
Co-channel rejection	Class II:-82dbm BER < 2.4% Interference level = -91dbm
Receiver / Reference sensitivity	GSM 850: -102dBm

**Table 7 PCS1900**

Item	Description
PCL	Level 0: 28 dBm ~ 31dBm Level 1: 28 dBm $\pm$ 3dBm Level 2: 26 dBm $\pm$ 3dBm Level 3: 24 dBm $\pm$ 3dBm Level 4: 22 dBm $\pm$ 3dBm Level 5: 20 dBm $\pm$ 3dBm Level 6: 18 dBm $\pm$ 3dBm Level 7: 16 dBm $\pm$ 3dBm Level 8: 14 dBm $\pm$ 3dBm Level 9: 12 dBm $\pm$ 4dBm Level 10:10 dBm $\pm$ 4dBm Level 11: 8 dBm $\pm$ 4dBm Level 12::6 dBm $\pm$ 4dBm Level 13: 4 dBm $\pm$ 4dBm Level 14: 2 dBm $\pm$ 5dBm Level 15: 0 dBm $\pm$ 5dBm
Frequency error	$< \pm 0.1\text{ppm}$
Phase error	$< 5^\circ$ (RMS) $< 20^\circ$ (Peak)
Power v Time	$\pm 10\mu\text{s} < -6\text{dBc}$ $\pm 18\mu\text{s} < -30\text{dBc}$ $\pm 28\mu\text{s} < -70\text{dBc}$
Switching Transient	PCL 15: $f_c \pm 400\text{kHz}:-23\text{dBm}$ $f_c \pm 600\text{kHz}:-26\text{dBm}$ $f_c \pm 1200\text{kHz}:-32\text{dBm}$ $f_c \pm 1800\text{kHz}:-36\text{dBm}$

	PCL 0: fc ±400kHz:-22dBm fc ±600kHz:-24dBm fc ±1200kHz:-24dBm fc ±1800kHz:-27dBm
Modulation	fc ±200kHz :< -30dBc or -36dBm fc ±250kHz:< -33dBc or -36dBm fc ±400kHz:< -60dBc or -36dBm fc ±600kHz ~ 1800kHz:< -60dBc or -51dBm fc ±1800kHz ~ 3000kHz:< -63dBc or -46dBm fc ±3000kHz ~ 6000kHz: < -65dBc or -46dBm fc ≥±6000kHz: < -71dBc or -46dBm
Spurious Emission at Receiver band	925 MHz ~ 935 MHz:< -67dBm 935 MHz ~ 960MHz:< -79dBm 1805 MHz ~ 1880MHz:< -71dBm
Conducted spurious emissions - MS allocated a channel	100kHz ~ 1GHz:< -36dBm 1GHz ~ 12.75GHz:< -30dBm
Conducted spurious emissions - MS in idle mode	100kHz ~ 1GHz:< -57dBm 1GHz ~ 12.75GHz:< -47dBm
Radiated spurious emissions - MS allocated a channel	30MHz ~ 1GHz:< -36dBm 1GHz ~ 4GHz:< -30dBm
Radiated spurious emissions - MS in idle mode	30MHz ~ 880MHz:< -57dBm 880MHz ~ 915MHz:< -59dBm 915MHz ~ 1000MHz:< -57dBm 1GHz ~ 1710MHz:< -47dBm



	1710MHz~1785MHz:< -53dBm 1785MHz~4GHZ:< -47dBm
sensitivity	Class II:-100dBm BER < 2.4%
Blocking	Class II:<-96dBm BER < 2.4% Blocking level: Fr ±600kHz ~ 1.6MHz :- 43dBm Fr ±1.6MHz ~ 3MHz:-33dBm 915MHz ~ Fr-3MHz:-23dBm Fr+3MHz ~ 980MHz:-23dBm 835MHz ~ 915MHz:0dBm 980MHz ~ 1000MHz:0dBm
Adjacent channel rejection	Class II:-82dBm BER < 2.4% Interference level: Fr ±200kHz:-73dBm Fr ±400kHz:-41dbm Fr ±600kHz:-33dbm
Intermodulation rejection	Class II:-96dbm BER < 2.4% Interference level = -49dbm
Co-channel rejection	Class II:-82dbm BER < 2.4% Interference level = -91dbm
Receiver / Reference sensitivity	GSM 1900: -100dBm

***Table 8 Bluetooth***

<b>Bluetooth</b>	<b>Parameter</b>
Frequency	2402MHz~2480MHz
Working Frequency	2402MHz~2483MHz
interval of frequency	1MHz
number of singal	79
Voice coding project	Use PCM and CVSD
bandwidth	20 dB bandwidth    1MHz
Modulation Mode	GFSK
working mode	CLASS 2
power grade	6
Transmit power	-6~+4dBm
antenna increasing value	Max Increasing Value: -1.48dBi

***Table 9 Television***

<b>TV</b>	<b>Parameter</b>
TV model	Amalog
System	TLG1100 NTSC/PAL
Working Frequency	50—850MHz
Power	200mW
Power rating (voltage)	2.8V RF, 1.8V digital
Standard	NTSC-M PAL-D, K, B,G, H, I