

WiFi Technical Specifications and Description Of GSM Dual-band Digital Mobile Phone

Model-X10

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1 Abstract

This document gives brief technical specification & description of WiFi in our product—X10.

2 Abbreviations

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3 Product Features

3.1 General specification

Item	Feature	Remarks
Protocol	SDIO/eHPI16/Ehpi18	
Operating Temp.	Standard: 15°C ~ +35°C Limit: -15°C ~ +55°C	
Antenna	Internal	

3.2 Hardware specification

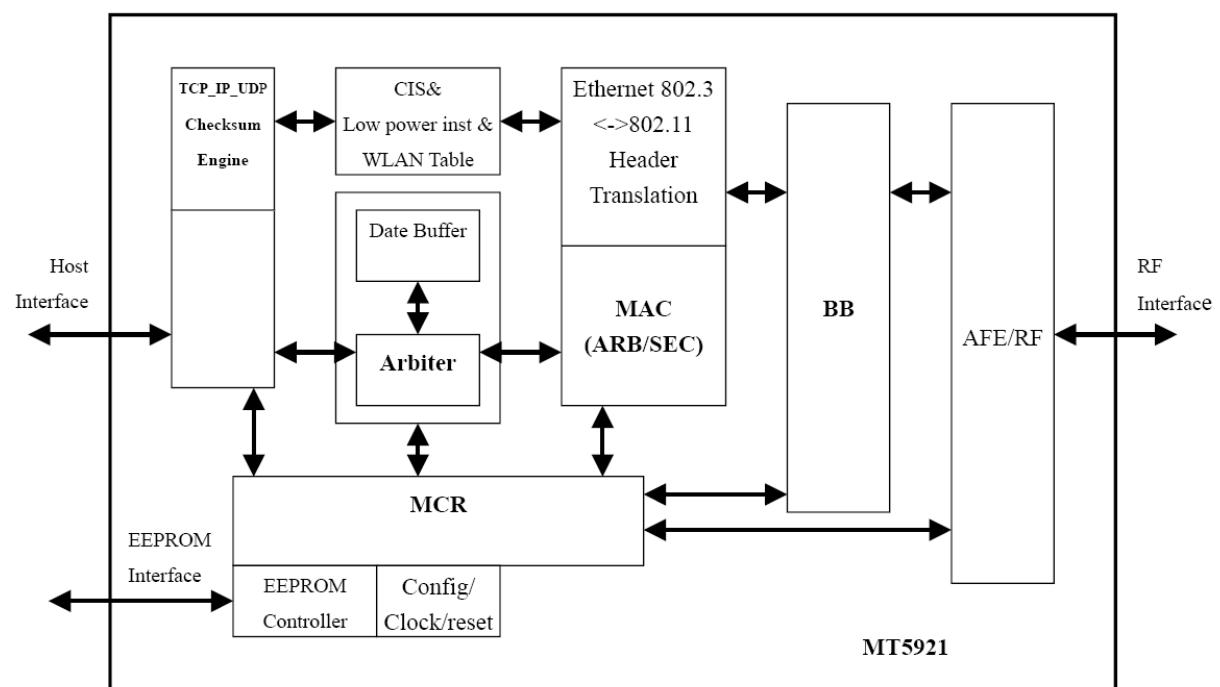
Item	Feature	Remarks
Chipset	Maker: MTK MT5921	
Frequency Range	2.4GHz-2.5GHz;	

Channel spacing	20MHz	
Frequency Step	0.5MHz	
TX output power	Maximum: 15dBm	

4 Solution of the Product

The WiFi of X10 handset hardware uses MTK family chipset-MT5921, which consists of WiFi transceiver unit and WiFi baseband signal processor unit in addition of the peripherals and accessories to build a complete WiFi terminal hardware. Following the functional blocks of the block diagram are described.

Block Diagram



WiFi Block

4.1 Hardware Description

Use MT5921 WiFi chip. MT5921 is an ASIC solution integrating RF, Baseband processor and Medium Access Control(MAC) for 802.11 b/g WLAN.

4.2 WiFi baseband processor

Support Orthogonal Frequency Division Multiplexing (OFDM),Complementary Code Keying(CCK) to provide a variety of data rates.

4.3 RF Specification

4.3.1 RX Specification

Item	Model	Condition	Value	Unit
Input frequency	11b/11g		2400 ~ 2500	MHz
Max input power		For 11b	10	dBm
Noise figure	11b/11g	voltage gain=90dB	3.3	dB
Max voltage gain			90	dB
Min voltage gain			-10	dB
Adjacent channel rejection		Separation of 2 channels with >25MHz	40	dB
Output signal level		For 11b	200	mVMS
		For 11g	120	mVMS
I/Q output load impedance		R to GND from each pin	2.5	Kohm
		C to GND from each pin	20	PF
LO leakage at LAN input		RF=30MHZ to 1 GHz RF=30MHZ to 26.5GHz	-65	dBm
Receiver current consumption	11b/11g		42	mA

4.3.2 TX Specification

Item	Model	Condition	Value	Unit
RF output frequency range			2400 ~ 2500	MHz
RF output power	11b	BB input level=50mVrms	-5	dBm
	11g	BB input level=75mVrms	-8	
RF output power (Max)	11b		15±2	dBm
	11g		13±2	
TX EVM	11b		3.5	%

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	11g		2.5	
Min voltage gain			-10	dB
Adjacent channel rejection		Separation of 2 channels with >25MHz	40	dB
Output power variation		2400 MHz ~2500 MHz	-1~1	dB
Output power range			30	dB
Output power gain step			0.5	dB
RF output return loss			-10	dB
TX spectrum mask for CCK at max power		11MHz<=offset <22MHz offset frequency>20MHz	-36 -56	dBr
TX spectrum mask for OFDM at max power		11MHz<=offset <20MHz 20MHz<=offset <30MHz offset frequency=>30MHz	-36 -36 -49	dBr
TX spurious emission			-45	dBm/ MHz

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