



We offer . . . We deliver . . .

Specifications of DTU-450 Data Terminal Unit (450MHz)



R0.1

Author	Revision	Changes	Date
Oliver Liu	R0.1	Initial Draft	2009-11-24

Index

1	INTRODUCTION	1
2	SPECIFICATIONS	1
2.1	MAIN FEATURES	1
2.2	MECHANICAL SPECIFICATION	1
2.3	HW SPECIFICATIONS	2
2.4	RF SPECIFICATIONS	3
2.4.1	Rx Performance	3
2.4.2	Tx Performance	3
2.5	SW SPECIFICATIONS.....	4
3	REFERENCE TECHNICAL STANDARD.....	4

Confidential Material: This document contains information that is proprietary and confidential, copying this document is prohibited without permission from AsiaTelco Technologies Co.

1 Introduction

DTU-450 is a CDMA 2000 1x modem which operates at 450MHz. DTU-450 provides the connection manager to support high speed data service, SMS, voice.

2 Specifications

2.1 Main Features

- ◇ Support CDMA 2000 1X RTT standard,
- ◇ Support high-quality voice services (8 Kbps EVRC, 13Kbps QCELP);
- ◇ Support circuit data service with a max. of transmission rate of 14.4kbps;
- ◇ Support emergency call services;

2.2 Mechanical Specification

Please find below is the appearance of DTU-450. The body is AL extrusion, block with 2 AL sheet metal on both side. The dimensions are 105*65*20 mm.



Figure 1The appearance of DTU-450

2.3 HW Specifications

Item	Description	
Technical Standard	CDMA 2000 1X RTT	
Frequency band	DTU-450A	Block A: Uplink 452.5MHz to 457.5MHz; Downlink 462.5MHz to 467.5MHz
	DTU-450C	Block C: Uplink 450.0MHz to 454.8MHz; Downlink 460.0MHz to 464.8MHz
	DTU-450F	Block F: Uplink 479.0MHz to 483.5MHz; Downlink 489.0MHz to 493.5MHz
External interface	USB port	
	Charger DC Socket	
	Power Switch	
	In-Use Indicator	
	Charging Indicator	
	Data Communication Indicator	
	R-UIM card interface	
	Earphone Jack	
SMA connector for Antenna		
Battery	3.6V 800mAh,Li-Ion	
Charger	Input: AC 90~240V, 50-60Hz Output: 6.6V, 800mA	
Antenna	Gain 4dBi, SMA Connector	
Dimensions	105*65*20 mm	
Operation Temperature	-10℃ ~ 50℃	
Storage Temperature	-30℃ ~ 70℃	
Operation Humidity	5% ~ 95%	

2.4 RF Specifications

2.4.1 Rx Performance

Item	Specification
Frequency range	Block A: 462.5 MHz to 467.475MHz Block C: 460 MHz to 454.8MHz Block F: 479.0MHz to 483.5MHz
Rx Sensitivity	-104dBm(FER \leq 0.5%)
Dynamic range	-25~-104 dBm(FER \leq 0.5%)
Single Tone Desensitization (FC \pm 900KHz@-30dBm)	-101dBm(FER \leq 1%)
Intermediation Spurious Response Attenuation	-101dBm(FER \leq 1%,-43dBm@ \pm 900 KHz/ \pm 1700KHz)
	-90dBm(FER \leq 1%,-32dBm @ \pm 900 KHz/ \pm 1700KHz)
	-79dBm(FER \leq 1%,-21dBm @ \pm 900 KHz/ \pm 1700KHz)
Conducted Spurious Emission	<-76dBm/1MHz (RX band)
	<-61dBm/1MHz (TX band)
	<-47dBm/30KHz (other frequency)

2.4.2 Tx Performance

Item	Specification
Frequency range	Block A: 452.5 MHz to 457.475 MHz Block C: 450 MHz to 454.8 MHz Block F: 489.0 MHz to 493.5 MHz
RF Output Power	Maximum 0.2W (23dBm)
	Minimum 10nW (-50dBm)
Frequency Stability	\pm 300 Hz
Open Loop Power Control Output Power	RX= -25dBm TX = -57.5 ~ -38.5dBm
	RX= -65dBm TX = -17.5 ~ +1.5dBm
	RX= -93.5dBm TX = +10.5 ~ +29.5dBm
Spurious Emission	-42dBc/30kHz (885k< Δ f<1.98MHz)
	-54dBc/30kHz (1.98M< Δ f<4.0MHz)
	-13dBm/1MHz (4.0M< Δ f)

2.5 SW specifications

DTU is a CDMA modem; there is no LCD, no keypad. There is a connection manager to connect to internet, to send or receive the message, to make or receive a call.

For connection manager, the menus are:

- ✧ Connect: To connect to internet
- ✧ Voice Call: To make or receive a voice call
- ✧ SMS: To send or receive SMS, the SMS can be stored in PC and UIM card
- ✧ Phone Book: To store the contacts, make a call or send a SMS from phone book, the contacts can be stored in PC and UIM card
- ✧ History: To record the Data history, Dialed, Received, Missed Calls
- ✧ Settings: To setup the profiles for internet

3 Reference technical standard

- ✧ C.S0011-A Recommended Minimum Performance Standards for CDMA2000 Spread Spectrum Mobile Stations
- ✧ TIA/EIA/IS-95-A Mobile Station-Base Station Compatibility Standard for Dual-Mode Spread Spectrum Systems
- ✧ TIA/EIA/IS-127 Enhanced Variable Rate Codec, Speech Service Option 3 for Wideband Spread Spectrum Digital Systems
- ✧ TIA/EIA/IS-637 Short Message Services for Wideband Spread Spectrum Digital Cellular Systems
- ✧ TIA/EIA/IS-657 Packet Data Services for Wideband Spread Spectrum Digital Cellular Systems
- ✧ TIA/EIA/IS-820 Removable User Identity Module (R-UIM) for Spread Spectrum Systems
- ✧ TIA/EIA/IS-2000-1 Introduction to cdma2000 Standards for Spread Spectrum Systems
- ✧ TIA/EIA/IS-2000-2 Physical Layer Standard for cdma2000 Spread Spectrum Systems
- ✧ TIA/EIA/IS-2000-3 Medium Access Control (MAC) Standard for cdma2000 Spread Spectrum Systems
- ✧ TIA/EIA/IS-2000-4 Signaling Link Access Control (LAC) Standard for cdma2000 Spread Spectrum Systems
- ✧ TIA/EIA/IS-2000-5 Upper Layer (Layer 3) Signaling Standard for cdma2000 Spread Spectrum Systems