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## Specification of DTE-450 USB Modems (450MHz)



V0.3

Author	Revision	Changes	Date
JD	V0.1	Initial draft	2010-07-01
BS	V0.2	Change Picture, some expression.	2010-07-22
BS	V0.3	Change device picture	

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## 1 Introduction

DTE-450 is a CDMA EVDO Rev.A modem which operates at 450MHz(800MHz, 1900MHz, 800/1900MHz). This series modem provides the connection manager to support high speed data service, SMS.

## 2 Specifications

### 2.1 Main Features

- CDMA 1x EVDO Rev. A
- Backward compatible to CDMA 2000 1x
- Different frequency band optional: 450MHz, 800MHz, 1900MHz, 800/1900MHz
- High Speed Data Rate: 3.1Mbps on download and 1.8Mbps on upload
- USB 2.0 Interface
- Be powered internally by Host PC
- Built-in Driver and Connection Manager
- External Dual-Antenna Receive Diversity
- OS: Windows 2000, Windows XP, Windows Vista, Windows 7
- Microsoft WHQL Certification

### 2.2 Mechanical and Technique Specification

Please find below is the appearance of DTE-450.



Below is the mechanical & technique information:

1. The body is AL extrusion, black, block with 2 AL sheet metal on both side.
2. Dimensions are 105\*65\*20 mm.
3. 2 antennas, one is main antenna, big one, installed by SMA connector, the other one is assistant antenna, small one, installed by TNC connector
4. The left metal panel is shown as following picture:



Here include:

- (1) USB port-----Communicate with PC, data transmit or configure EV-DO module.
- (2) Antenna Secondary-----Secondary antenna
- (3) 4 leds, the definition is as following:

PWR	ON	The device has power and can work
	OFF	No power
CDMA1X	ON	Works in CDMA 1X only or Hybrid mode and CDMA 1X signal exists.
	OFF	Device doesn't work in CDMA1X mode or Hybrid mode
EVDO	ON	Works in EVDO only or Hybrid mode and EVDO signal exists.
	OFF	Device doesn't work in EVDO only or Hybrid mode.
CONNECT	Flashing	The device is dialing to internet
	ON	The device has linked to internet
	OFF	The device doesn't dial.

5. The right metal panel is shown as following picture:



Here include:

- (1) UIM-----Insert UIM card to here.
- (2) ANTENNA Primary-----Install the primary antenna

**2.3 HW Specifications**

Item	Description	
Technical Standard	CDMA EVDO Rev-A, CDMA 2000 1X	
Frequency band	DTE-450A	Block A: Uplink 452.5MHz to 457.5MHz; Downlink 462.5MHz to 467.5MHz
	DTE-450C	Block C: Uplink 450.0MHz to 454.8MHz; Downlink 460.0MHz to 464.8MHz
	DTE-450F	Block F: Uplink 479.0MHz to 483.5MHz; Downlink 489.0MHz to 493.5MHz
	DTE-800	800MHz RX: 869MHz to 894MHz TX: 824MHz to 849MHz
	DTE-900	1900MHZ
	DTE-890	800MHZ/1900MHZ dual band
Data features	CDMA 1X	153.6 Kbps max
	EVDO	Upload 1.8Mbps max Download 3.1Mbps max
External interface	USB port	
	Status Indicator	
	R-UIM card interface	
	TNC connector for Primary Antenna	
	SMA connector for Secondary Antenna	
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	DTE-800 :800MHz, DTE-900 :1900MHz, DTE-450 : 450MHz
Rx Sensitivity	-104dBm(FER0.5%)
Dynamic range	-25-104 dBm(FER0.5%)
Single Tone Desensitization (FC 900KHz@-30dBm)	-101dBm(FER1%)
Intermediation Spurious Response Attenuation	-101 dBm(FER 1 %,-43dBm@ 900 KHz/1700KHz)
	-90dBm(FER 1 %,-32dBm @ 900 KHz/1700KHz)
	-79dBm(FER1%,-21dBm @ 900 KHz/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	DTE-800 :800MHz, DTE-900 :1900MHz, DTE-450 : 450MHz
RF Output Power	Maximum 0.2W (23dBm)
	Minimum 10nW (-50dBm)
Frequency Stability	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<f<1.98MHz)
	-54dBc/30kHz (1.98M<f<4.0MHz)
	-13dBm/1MHz (4.0M<f)

## 2.5 SW specifications

DTE 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.

For connection manager, the menus are:

- Connect: To connect to internet
- 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
- Settings: To setup the profiles for internet

## 3 Reference technical standard

- C.S001 1-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
- TIA/EIA/IS-856-A cdma2000 High Rate Packet Data Air Interface Specification