Application Note

AN_242

FTDI_UART_Terminal_User_Manual

Version 1.0

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This utility is for use with FTDI USB to UART devices. The utility provides a terminal emulation function for use on Android devices. The Android system must use Android OS version 3.2 or later and provide a USB host port.

Use of FTDI devices in life support and/or safety applications is entirely at the user's risk, and the user agrees to defend, indemnify and hold FTDI harmless from any and all damages, claims, suits or expense resulting from such use.

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1 Introduction

This utility is for use with FTDI USB to UART devices. The utility provides a terminal emulation function for use on Android devices. The Android system must use Android OS version 3.2 or later and provide a USB host port.

1.1 Features

- The application will open automatically when you plug in supported FTDI devices.
- It supports FTDI USB TTL Serial, USB RS232, RS422, RS485 and USB Hi-Speed cables.
- Suitable for use on any Android platform with a USB host port running Android v3.2 or later versions.
- Provide general terminal UART utility.
- Support CTS/RTS, DTR/DSR and XOFF/XON Flow controls.
- Support Baud from 300 to 921600.
- Save file and Send file functions support XModem, YModem and ZModem file transfer protocols.
- USB Plug and Play.
- USB 2.0 Full Speed compatible.

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1.2 Install Application

Find this application in the "Play Store" by searching "ftdi uart" and then install it, by clicking on the icon.

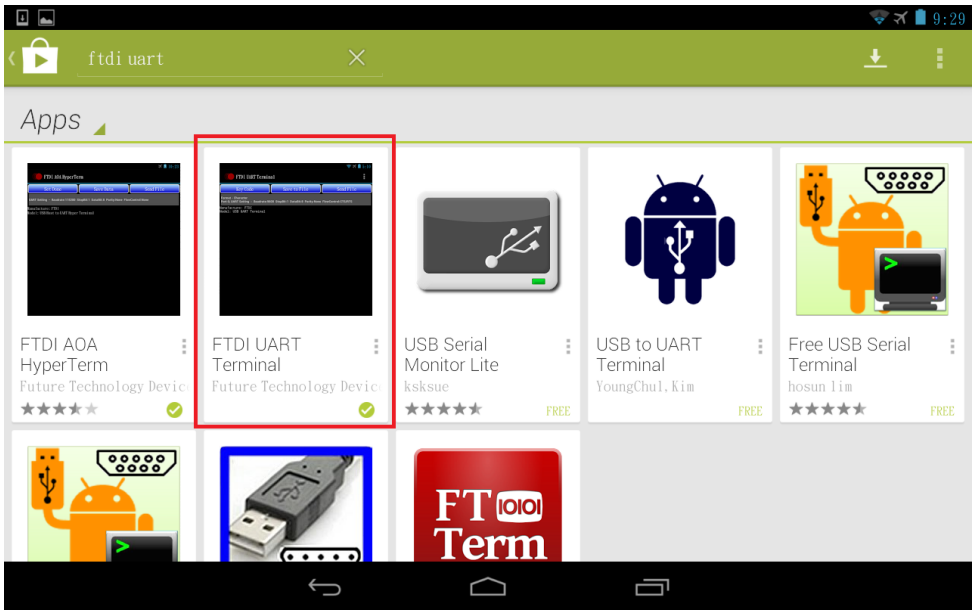

Figure 1 The Application in Play Store

1.3 Launching and Exiting the Application

When the Android device is attached to the FTDI device over the USB port, the Android device will prompt the user to execute this application.

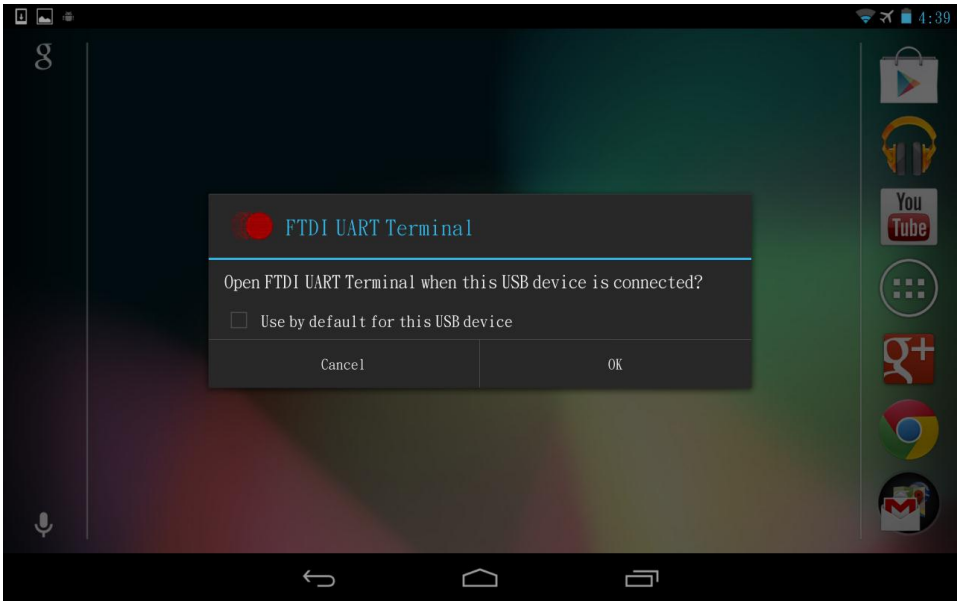

Figure 2 Launch Application

To exit this application, tap the back button and it will show a notification message. Tap the back button again to exit before the notification message disappears.

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2 Functions

This section describes how to use this utility.

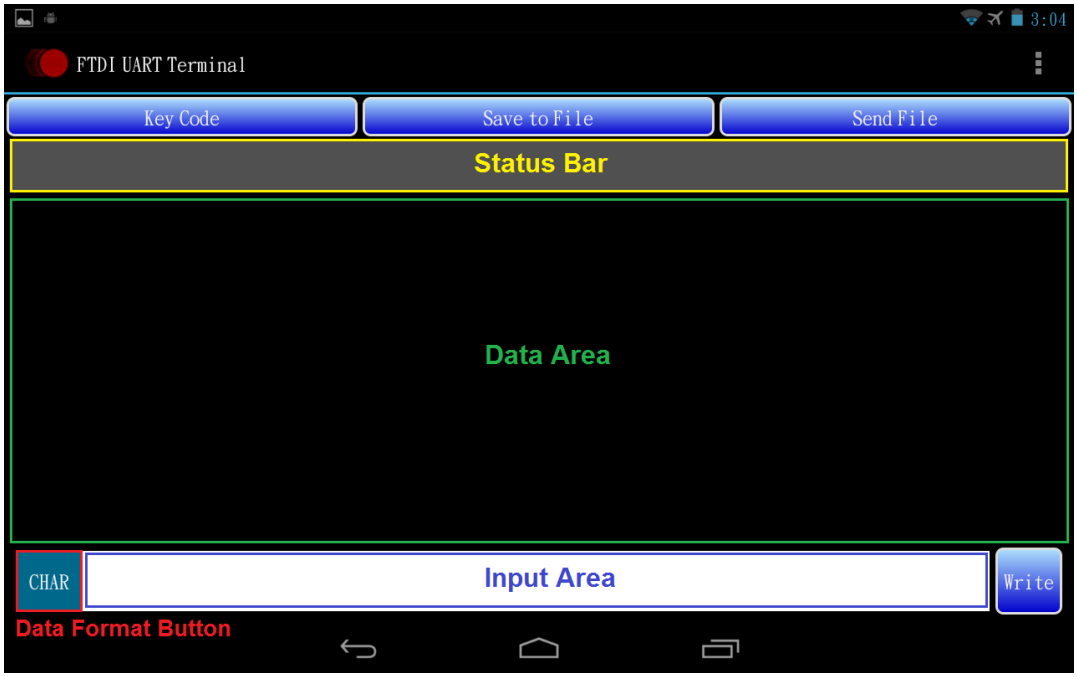

Figure 3 Main Screen

2.1 Serial Settings

The application automatically configures the serial port of the FTDI USB to UART device with default settings: 9600 baud, 1 stop bit, 8 data bit, no parity, CTS/RTS flow control for port 0 when the FTDI device is connected. Please refer to **2.4.1 Setting** for the details of manually configuring the port.

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2.2 Send Data

The sent data is shown in the data area when the content format is character format, otherwise it will show a warning message three times when the "Write" button is tapped. Tapping the data format button toggles CHAR or HEX format for sending data.

2.2.1 Send Plain Text Data

Input data in the input area and tap the "Write" button to send data when the data format button shows "CHAR".

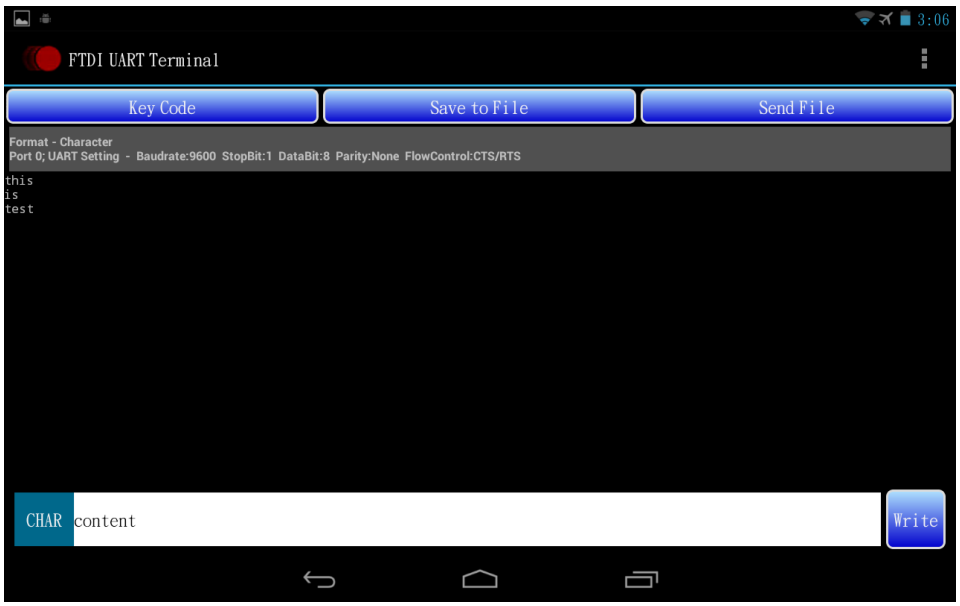

Figure 4 Send Plain Text Data

2.2.2 Send Hexadecimal Format Data

Input data in the input area and tap the "Write" button to send data when the data format button shows "HEX".

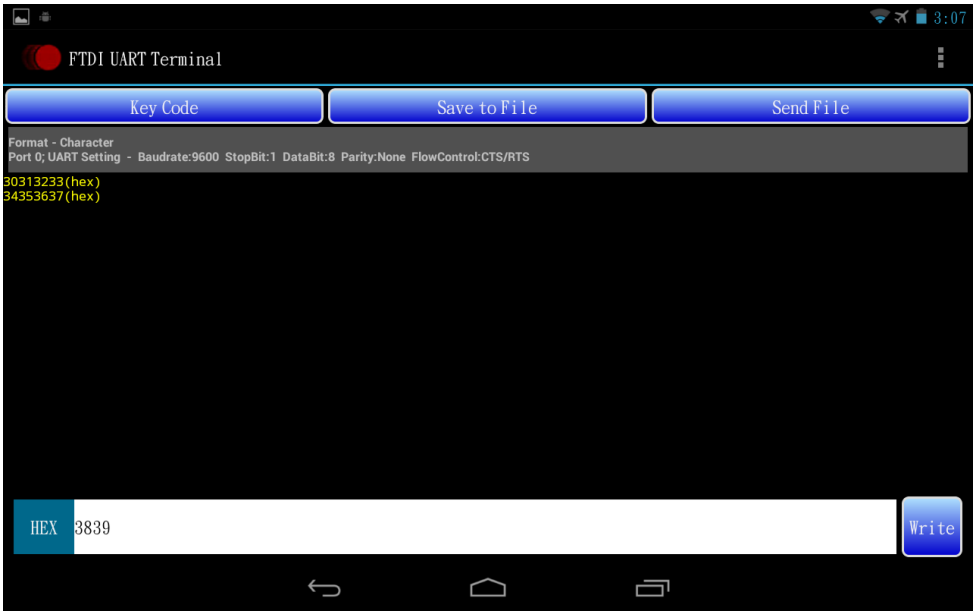

Figure 5 Send Hexadecimal Format Data

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Note the need to input 2 characters for hexadecimal data and both character should be from '0' to '9' or from 'a' to 'f', otherwise the application will show a warning message when the "Write" button is tapped.

2.2.3 Send Special Key Code Data

Tap the "Key Code" button and it will show a row with two buttons: Ctrl-C and ESC.

Tap "Ctrl-C" or "ESC" button to send its corresponding key code data.

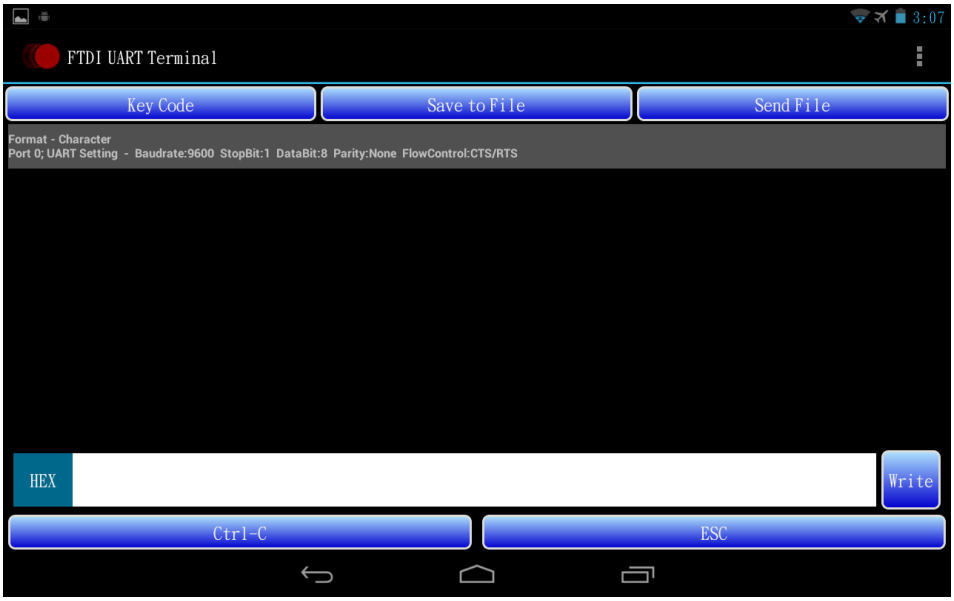

Figure 6 Send Special Key Code Data

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2.3 File Transfer

File transfer functions are allowed after the UART is configured and when the content format is character format, otherwise it will show a warning message when the "Save to File" button or "Send File" button is tapped.

2.3.1 Receive File

Step 1: Tap the "Save to File" button to prepare receiving file.

Step 2: Select protocol.

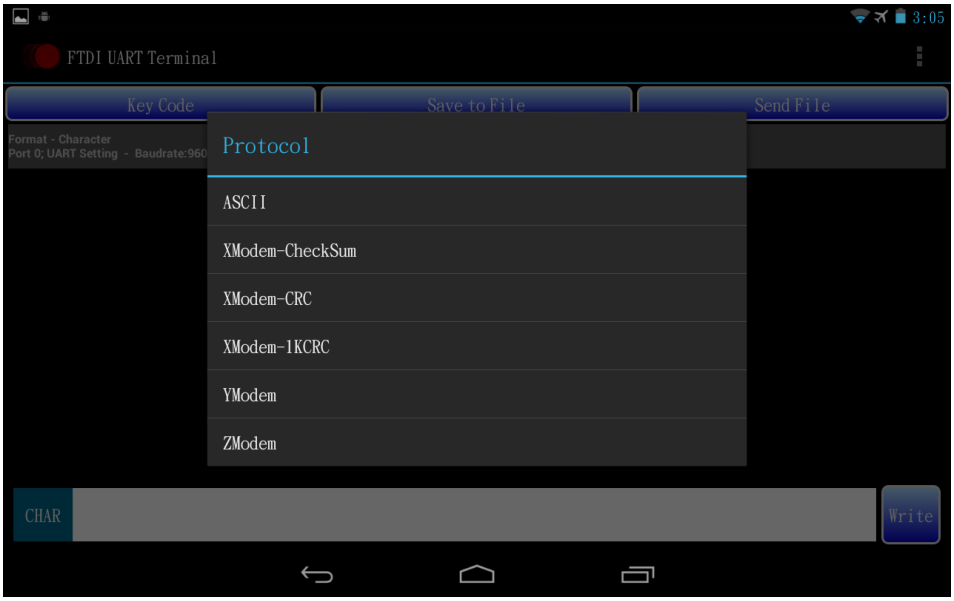

Figure 7 Select Protocol

Step 3: Select file destination.

I. For "ASCII", "XModem-CheckSum", "XModem-CRC" and "XModem-1KCRC" protocol, there is the option to create a new file or select an exist file for saving.

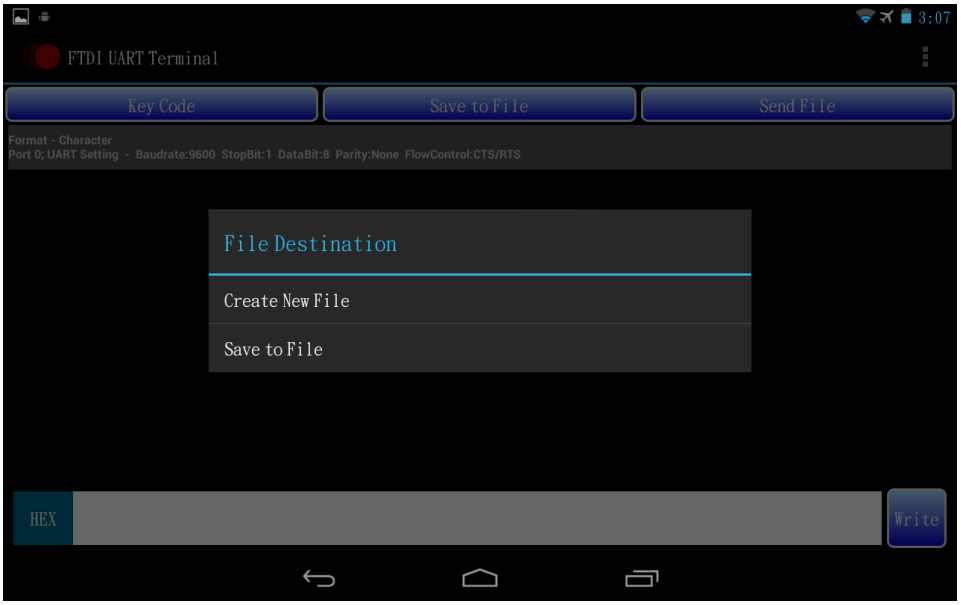

Figure 8 Select File Destination

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(1) Create New File
Tap "Select Directory" to select a directory for the new file to be stored in.

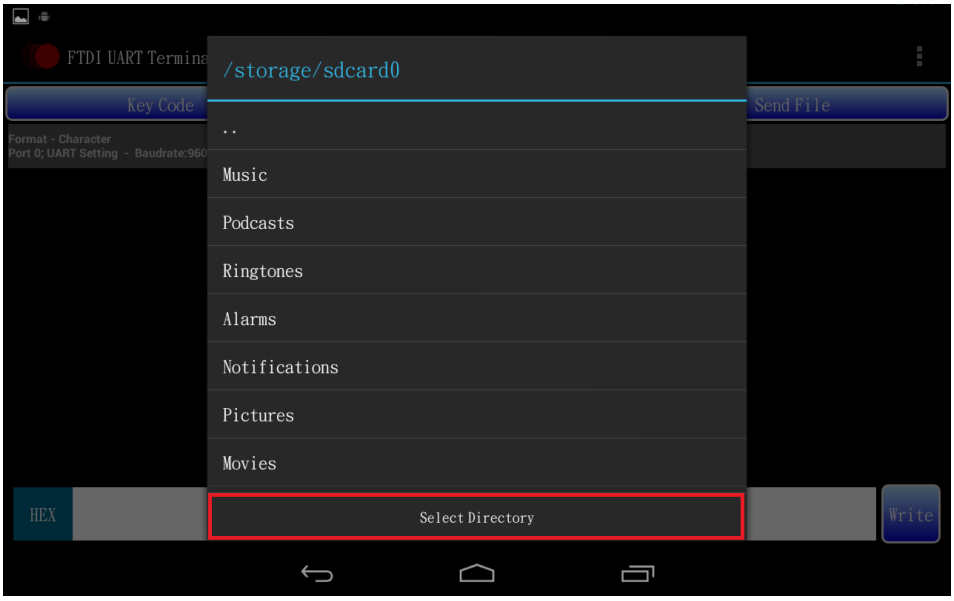

Figure 9 Select Directory

Input the file name and tap "OK" to create a new file.

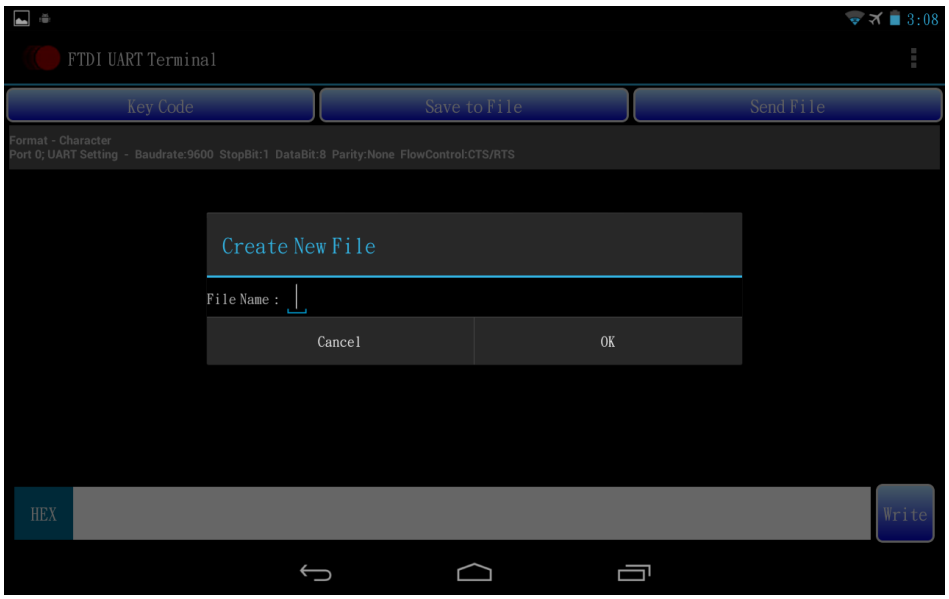

Figure 10 Create New File

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(2) Save to File
Select an exist file.

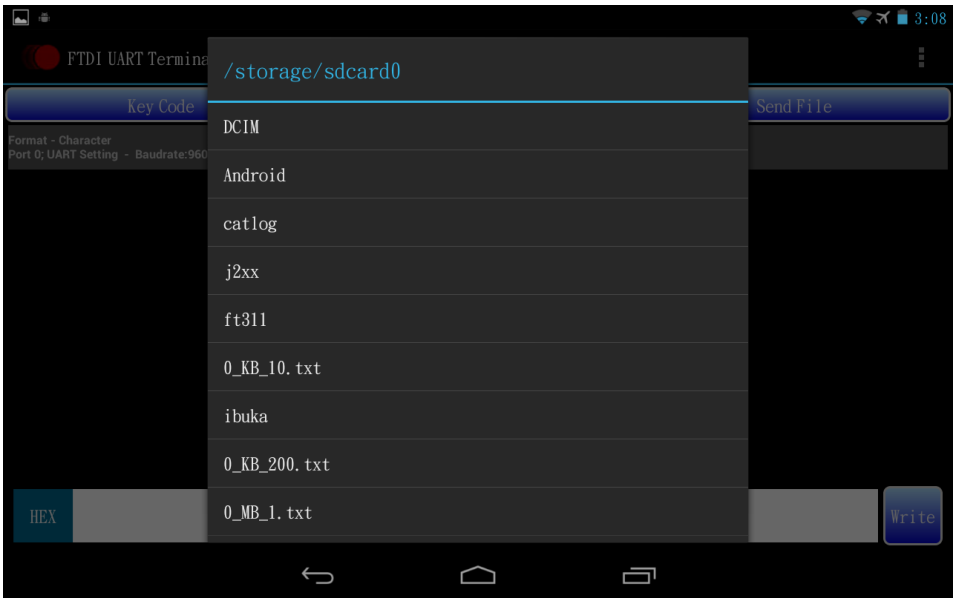

Figure 11 Select a File

II. For "YModem" and "ZModem" protocol, select a directory for file saving.
The file name will be created automatically depending on the content information.

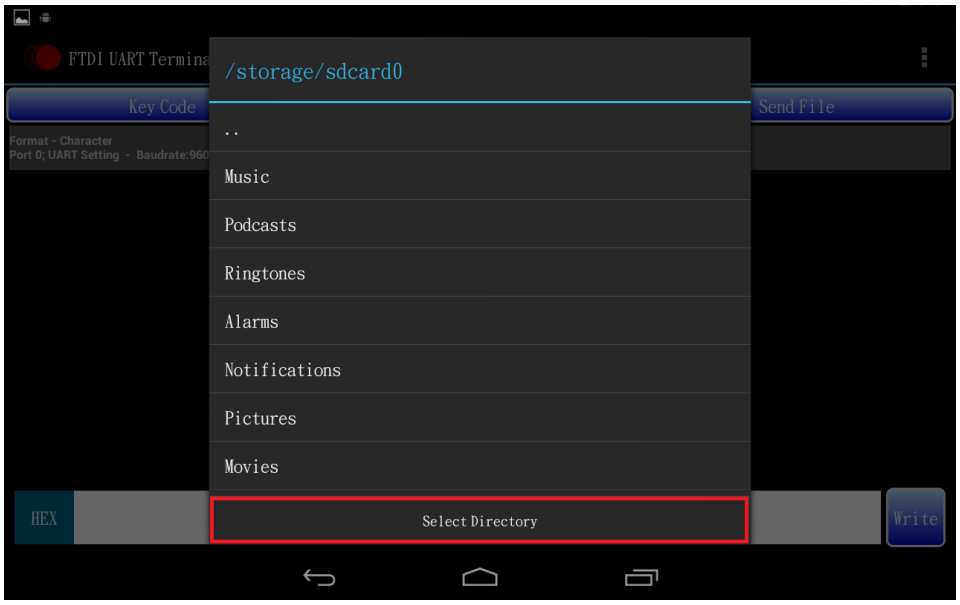

Figure 12 Select Directory

The status bar will show the name of the file being saved and the saving progress.

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2.3.2 Send File

Step 1: Tap the "Send File" button to send a file.

Step 2: Select protocol.

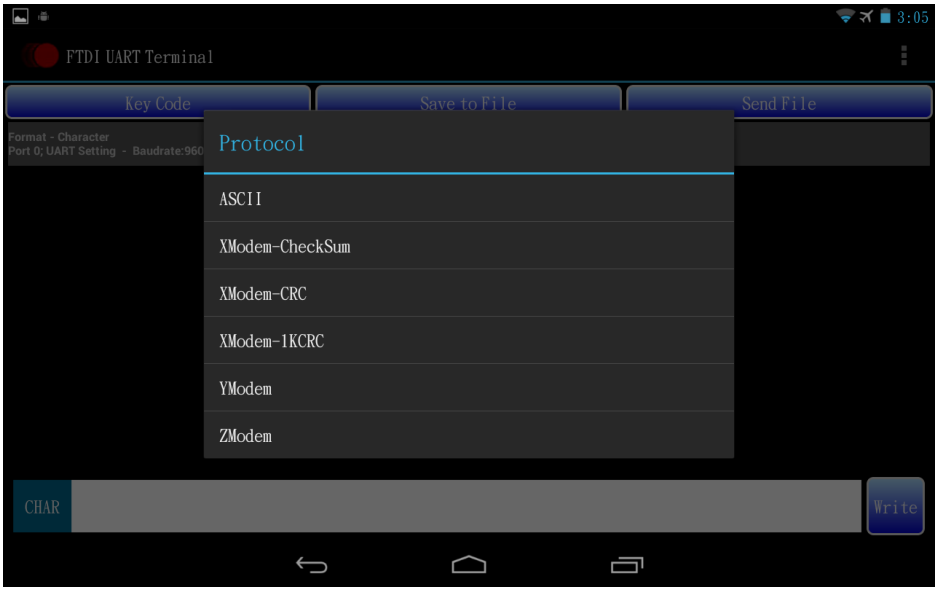

Figure 13 Select Protocol

Step 3: Select a file.

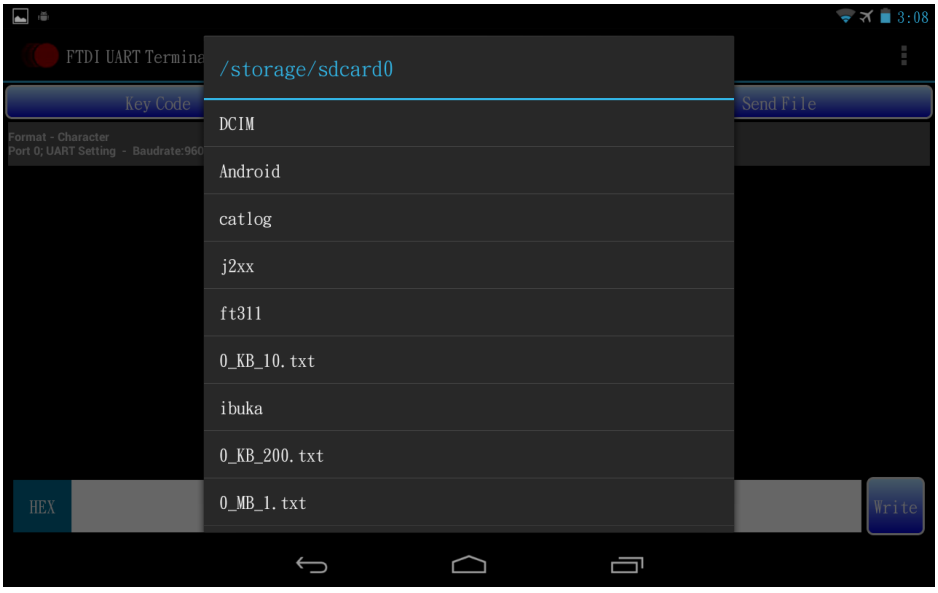

Figure 14 Select a File

The Status bar will show the name of the file to be sent and the sending progress.

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Note:

1. When the file list is not updated, tap ".." to go to its parent folder and enter this folder again, and the file list will be refreshed.

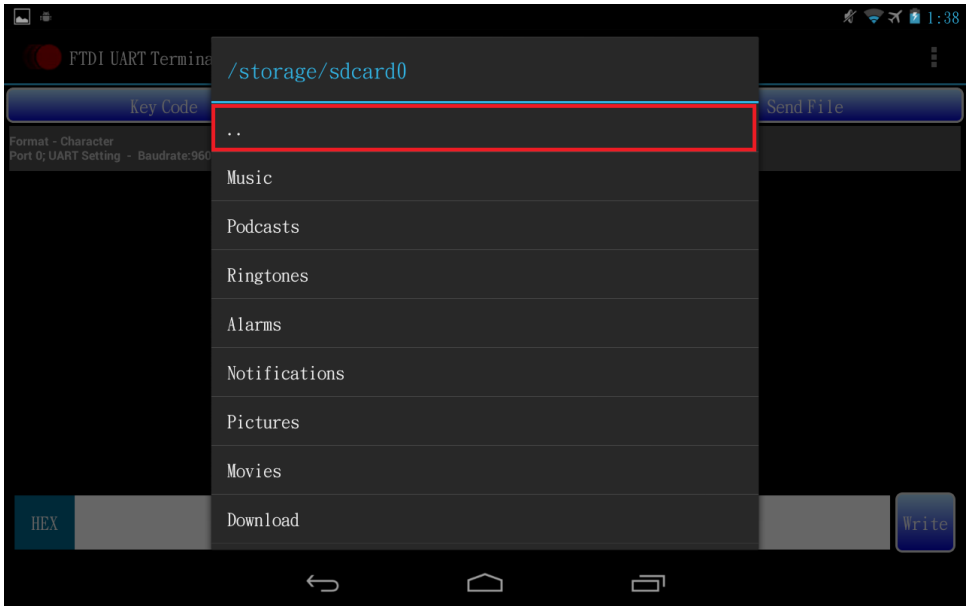

Figure 15 Refresh File List

2. ZModem protocol of FTDI UART Terminal is a simple file transfer protocol. It is implemented and verified with Microsoft XP hyper terminal and Moxa PComm terminal.

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2.4 Menu Functions

For tablet devices, tap the menu icon to launch the menu:

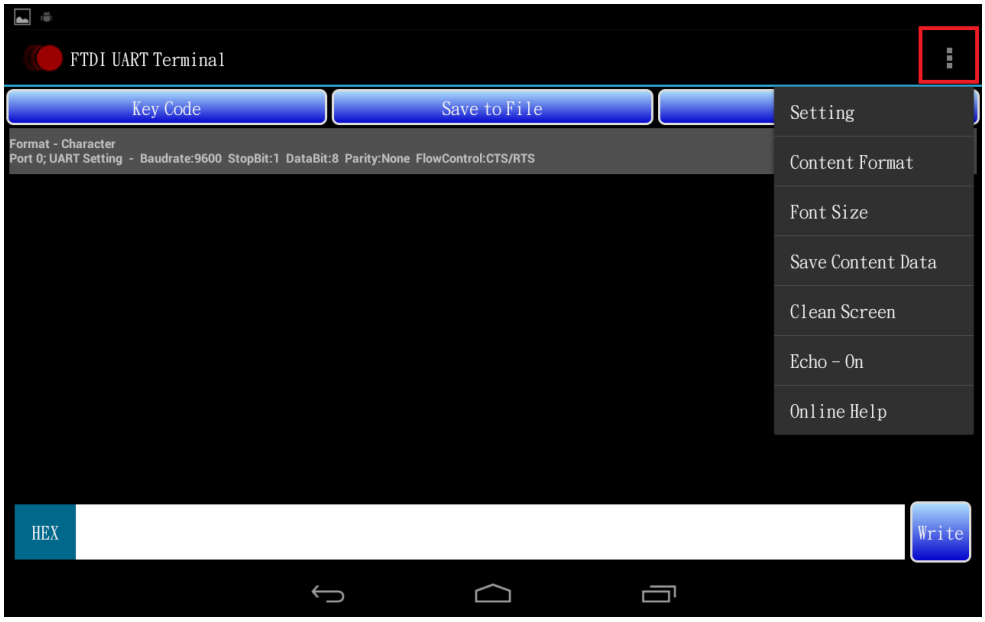

Figure 16 Menu Icon on Tablet Device

For phone devices, press the menu key to launch the menu.

2.4.1 Setting

The setting menu displays a row with several setting items for serial port configuration.

Figure 17 Serial Settings

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The configuration settings allow the baud rate to be set at standard values between 300 and 921600 baud with CTS/RTS flow control and the values between 300 and 115200 baud with or without flow control.

Stop bits may be set for 1 or 2.

Data bits may be set for 7 or 8

Parity may be set for None, ODD, EVEN, Mark or Space.

Flow allows for no flow control, RTS/CTS, DTR/DSR and XOFF/XON flow controls. The application will show a warning message when "none" flow control is selected.

Port number items are dependent on the connected cable/device.

After selecting the required setting for each item, tap the "Configure" button to set it and setting information will be shown on the status bar: content format, target port number and UART setting.

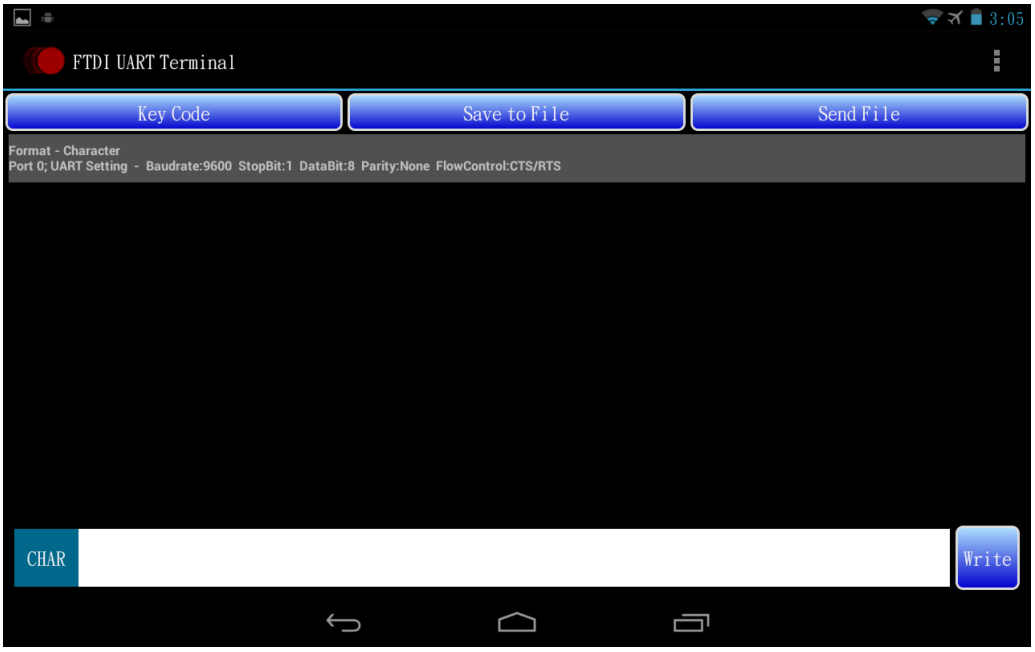

Figure 18 Information on Status Bar

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2.4.2 Content Format

Select the data format of the content shown in the data area. The default content format is character format.

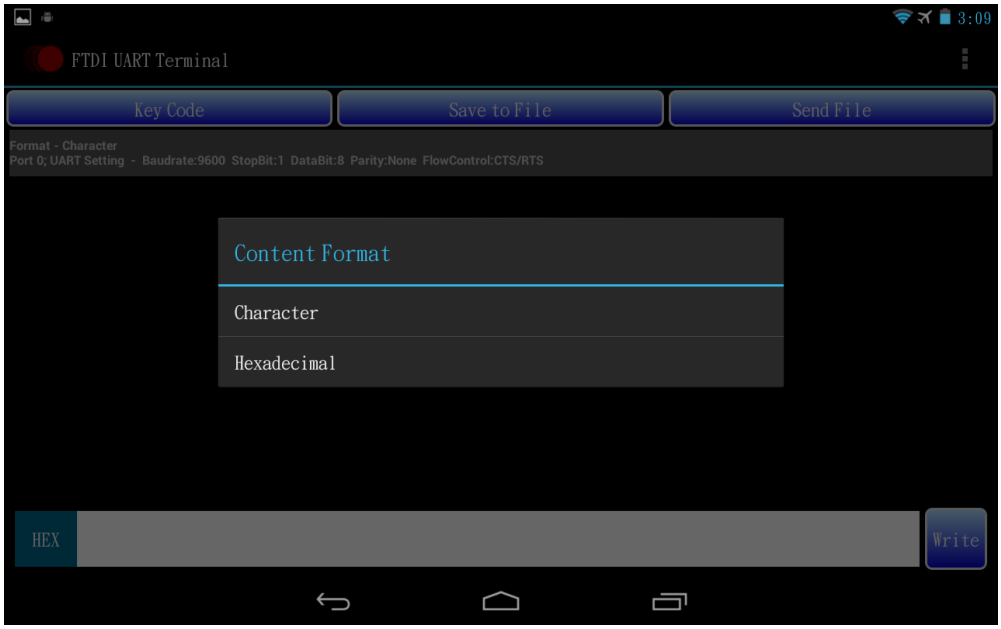

Figure 19 Select Content Format

I. Character
The data is displayed in character format in Figure 20:

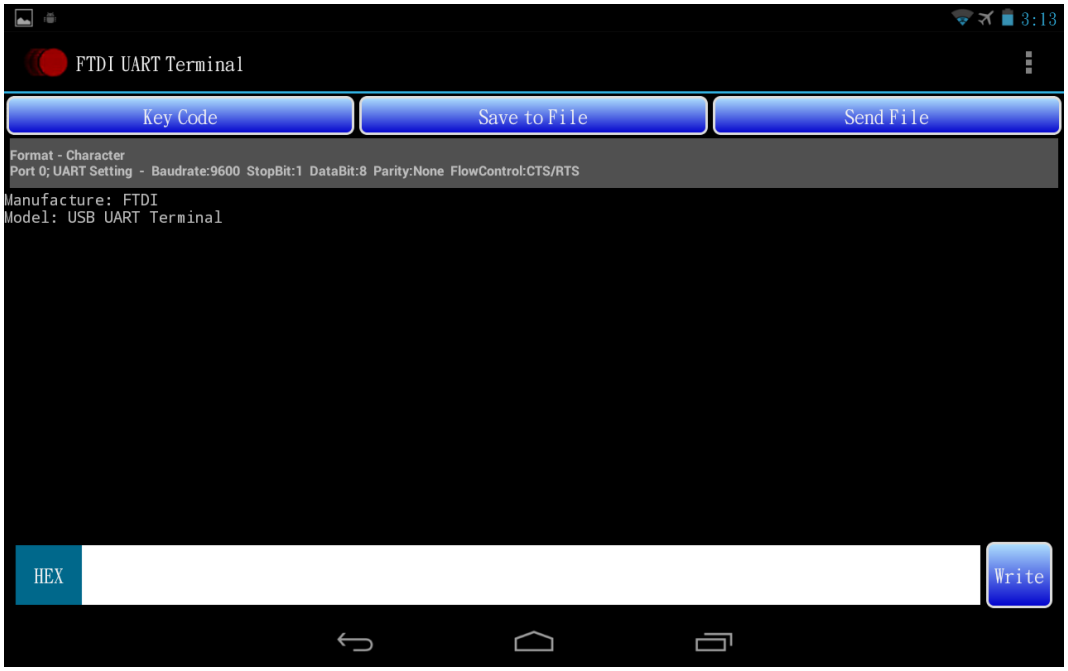

Figure 20 Character Format

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II. Hexadecimal

The data is displayed in hexadecimal format in Figure 21:

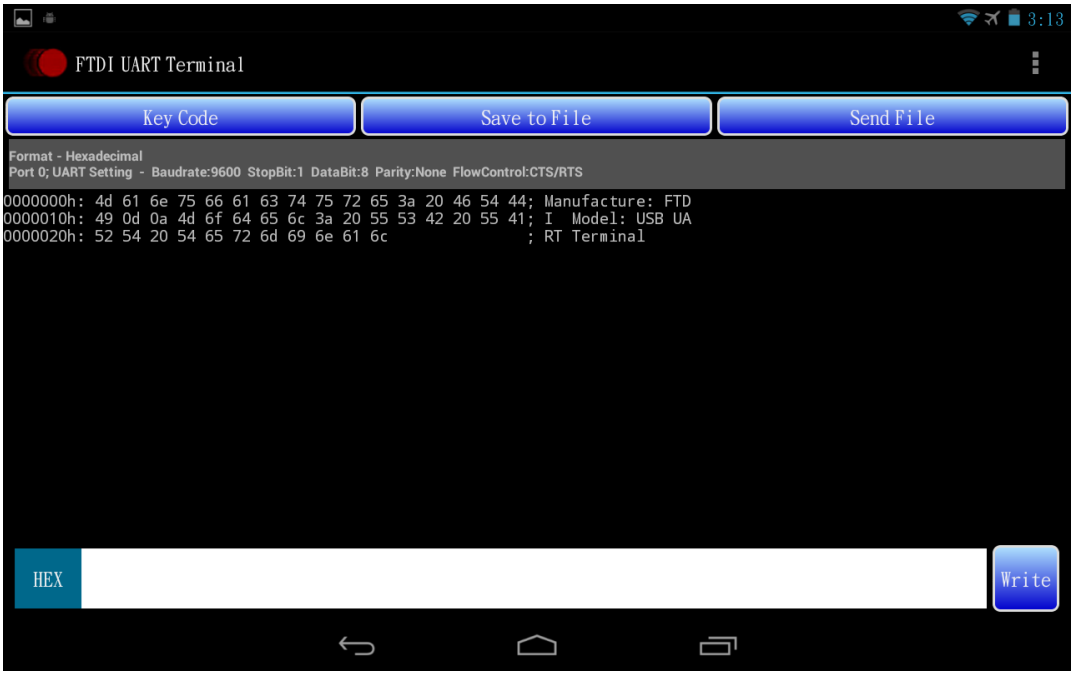

Figure 21 Hexadecimal Format

Note that when content format is hexadecimal format, the new incoming data sent to the Android device is not shown.

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2.4.3 Font Size

Select the font size of the content shown in the data area. Default font size is 12.

Figure 22 Select Font Size

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2.4.4 Save Content Data

Save the data currently shown in the data area into a new file or an exist file. The process is the same with 2.3.1 Receive File - Step 3: Select file destination - I.

2.4.5 Clean Screen

Clear all content shown in the data area.

2.4.6 Echo

Select the echo function to be on or off. Default echo setting is on.

The data sent by tapping the "Write" button is shown in the data area when the echo function is on.

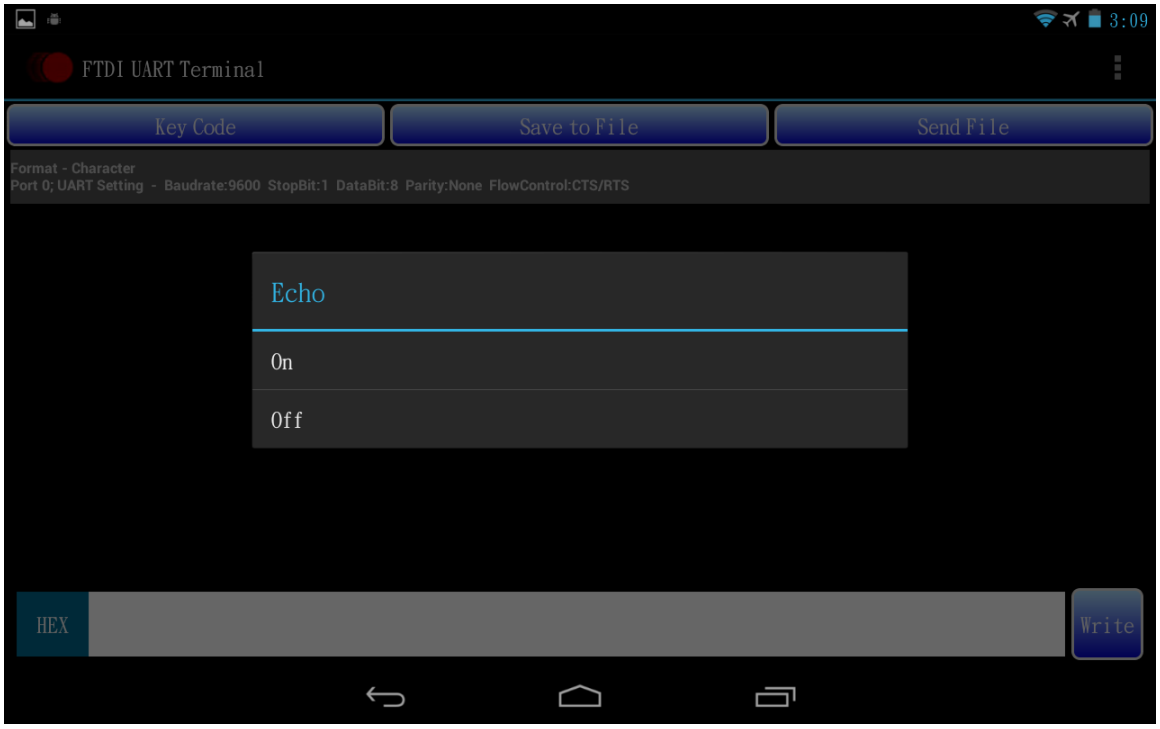

Figure 23 Select Echo Function

2.4.7 Online Help

Get this user manual from the FTDI website (http://www.ftdichip.com/Support/Documents/AppNotes/AN_242_FTDI_UART_Terminal_User_Manual.pdf).

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Appendix A – References

Acronyms and Abbreviations

Terms	Description
CTS	Clear To Send
DSR	Data Set Ready
DTR	Data Terminal Ready
HEX	Hexadecimal
RTS	Request To Send
TTL	Transistor-Transistor Logic
UART	Universal Asynchronous Receiver Transmitter
USB	Universal Serial Bus

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Appendix C– Revision History

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