

Overview

The host CDC-ECM project is a simple demonstration program based on the MCUXpresso SDK . It demonstrates Ping and UDP echo server, it also join into a multicast group. The application periodically sends the ICMP echo request to a PC and processes the PC reply and always forwarding UDP message on echo port.

System Requirement

Hardware requirements

- Mini/micro USB cable
- USB A to micro AB cable
- Hardware (Tower module/base board, and so on) for a specific device
- Personal Computer (PC)

Software requirements

- The project path is:
<MCUXpresso_SDK_Install>/boards/<board>/usb_examples/usb_host_cdc_ecm/<rtos>/<toolchain>.

Note

The <rtos> is Bare Metal or FreeRTOS OS.

Getting Started

Hardware Settings

For detailed instructions, see the appropriate board User's Guide.

Note

Set the hardware jumpers (Tower system/base module) to default settings.

Prepare the example

1. Connect a USB cable between the PC host and the USB port on the target board with these settings:
 - 115200 baud rate
 - 8 data bits
 - No parity
 - One stop bit
 - No flow control
2. Connect the target board to the external power source (the example is self-powered).
3. Download the program to the target board.
4. Power off the target board, then power on again.

Note

For detailed instructions, see the appropriate board User's Guide.

Run the example

1. Connect serial port to board and run the example `host_cdc_ecm`, then plug in USB CDC-ECM device to the board. The log will printed like below:

```
USB host init success.
Device CDC-ECM attached: PID=0x1790, VID=0xB95, Address=1.
USB CDC-ECM device is attached.
```

Figure 1: Host enumerates CDC-ECM device

2. If network link of CDC-ECM device is up, the example `host_cdc_ecm` will start DHCP service and join into a multicast group using IGMP. The example `host_cdc_ecm` will always listening on UDP port 7 and echo message to sender, then start Ping. The log will printed like below:

```
USB host init success.
Device CDC-ECM attached: PID=0x1790, VID=0xB95, Address=1.
USB CDC-ECM device is attached.
Device network connection is connected.
Network speed have been changed to DL 1000000000 bps / UL 1000000000 bps.
Get IPv4 information from DHCP
Waiting DHCP server process... 6 1 10 OK!

*****
Network Interface Information
*****
IPv4 Address      : 10.193.102.219
IPv4 Subnet mask  : 255.255.255.0
IPv4 Gateway      : 10.193.102.254
IPv4 DNS 0        : 165.114.89.4
IPv4 DNS 1        : 134.27.184.42
IPv4 Group        : 239.0.0.1
MAC Address       : 20:7B:D2:40:38:5C

Server listening on UDP port 7

Start resolving domain name (nxp.com)...
Domain name resolution success

Try to ping nxp.com
Start pinging [192.88.156.33]:
ping: send 192.88.156.33
ping: recv 192.88.156.33 237 ms
ping: send 192.88.156.33
ping: recv 192.88.156.33 237 ms
```

Figure 2: Host running