...arrior Ethernet TAP Probe

Quick Start for Freescale Microcontrollers and Processors

<table>
<tr><td colspan="2" align="center">

SYSTEM REQUIREMENTS

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<tr>
<td>**Hardware**</td>
<td>CodeWarrior Ethernet TAP probe, RJ-11 and RJ-45 cables, 9- and 25-pin adapters, power supply with cable, and surge protector</td>
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<tr>
<td>**Software**</td>
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CodeWarrior Development Studio:

- Power Architecture™
- StarCore Edition
- Microcontroller
- MXC

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This document explains how to set up the CodeWarrior Ethernet TAP probe for Freescale microcontrollers and processors to connect to the host and to the target through a JTAG (MXC, Power Architecture) or ONCE (StarCore) connection.

NOTE   In the procedures that follow, advanced users can use the numbered steps. Novices should use the instructions in the substeps.
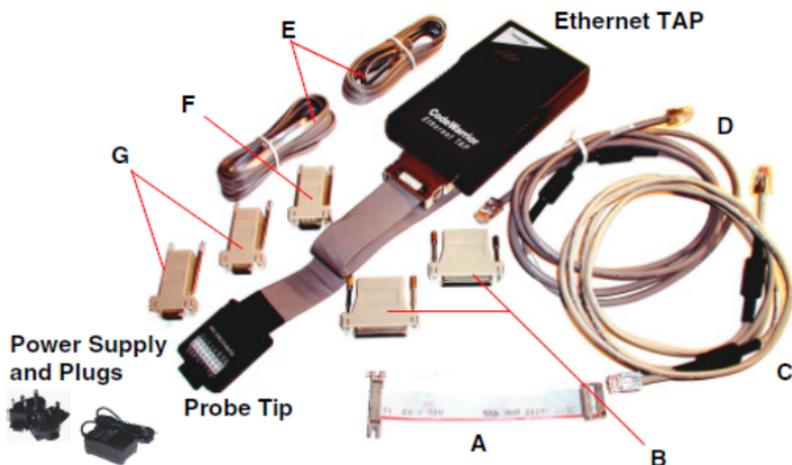
The Ethernet TAP probe includes the following parts, depending upon the configuration. Your shipment may include other parts.

Label	Part Number for StarCore	Part Number for MXC	Part Number for PA	Description
A	600-75448-00	600-75975	600-75262-00 (JTAG)	Flexible Extension Cable
B	210-12502-02 or 210-76065	210-12502-02 or 210-76065	210-12502-02 or 210-76065	RS232 25-Pin Adapters, Female
C	600-11112-00 or 600-75499	600-11112-00 or 600-75499	600-11112-00 or 600-75499	RJ-45 Cable
D	600-11111-02 or 600-75498	600-11111-02 or 600-75498	600-11111-02 or 600-75498	RJ-45 Crossover Cable
E	600-12500-00 or 600-75553	600-12500-00 or 600-75553	600-12500-00 or 600-75553	RJ-11 Cables

	art Number for StarCore	Part Number for MXC	Part Number for PA	Description
F	210-75350-00 or 210-76067	210-75350-00 or 210-76067	210-75350-00 or 210-76067	RS232 9-Pin Adapter, Male
G	210-12503-01 or 210-76066	210-12503-01 or 210-76066	210-12503-01 or 210-76066	RS232 9-Pin Adapters, Female

NOTE   For label A, the part number for ColdFire is 600-75460. For other labels, the part numbers remain same as shown in the table.

CAUTION   For static sensitive components, use proper anti-static protection measures.

Section A: Connecting Power to Ethernet TAP Probe

1. Connect power supply

NOTE   Turn surge protector off until ready to connect to earth-grounded line power.

   a. Connect power supply cable to Ethernet TAP probe
   b. Install correct AC plug for your environment onto power supply
   c. Connect power supply AC plug to surge protector or earth-grounded line power

CAUTION   Line power must be 3-wire AC input with earth ground; always power down before connecting the probe to target.

2. Verify power

   a. If used, press surge protector power switch **ON**
   b. Turn on power supply — probe HEARTBEAT indicator lights

off power supply — probe HEARTBEAT indicator goes out

Section B: Connecting Ethernet TAP Probe to a Network

If your network has a DHCP server, follow the instructions in *Section C*. Otherwise, follow instructions in *Section D*.

- For multi-user mode, connect Ethernet TAP probe to network or hub using RJ-45 cable
- For standalone user mode, connect Ethernet TAP probe directly to host using RJ-45 crossover cable; host must already be configured for networking

Section C: Setting up Ethernet TAP Probe Communication to Network using DHCP

The Ethernet TAP probe's default operation is to acquire its IP address, netmask, and default gateway settings using DHCP. If your DHCP server registers host names to the network's name server, you should be able to access the Ethernet TAP using its default host name once the HEARTBEAT LED starts flashing green.

The factory assigned host name is FSL*XXYYZZ,* where *XXYYZZ* is the last three octets of the Ethernet MAC address that is provided on a label on the bottom side of the probe. For example, if the probe's Ethernet MAC address is 00:00:f6:00:77:31, the host name will be FSL007731.

NOTE   Only an Ethernet TAP probe running firmware v3.4.1 or higher can acquire an IP address using DHCP. The login banner of the Ethernet TAP displays the current version of firmware. For more information on viewing the login banner, refer to the Starting the Setup Utility topic in the *Ethernet TAP Users Guide*. If your Ethernet TAP firmware is older than v3.4.1, you can upgrade it. For more details, refer to the Reprogramming the Ethernet TAP Probe Firmware topic in the *Ethernet TAP Users Guide*.

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1. **Turn on power to Ethernet TAP probe — HEARTBEAT LED will flash green when its network interface is operational**

2. **Verify network connection**

PC host, use Windows Command Prompt or terminal window to `ping` the probe:

```
c:\> ping FSLXXYYZZ
```

where *XXYYZZ* is last three octets of MAC address of probe

b. If you are not able to ping probe using factory assigned host name, try to ping using probe's IP address (not all DHCP servers register a client's host name with network's Name Server):

```
c:\> ping probe_IP_address
```

If you are unsure of probe's IP address, you can identify it by using **efind** search utility located in `ccs\bin` directory of the CodeWarrior installation directory

c. When you are able to ping the probe, follow instructions given in *Section E*

For more information, refer to the `efind` and *Name Servers* topics in the *Network Administration* appendix of the Ethernet TAP Users Guide.

Section D: Setting up Ethernet TAP Probe Communication to Network using Static IP

Perform the following steps to configure a static IP address, netmask, and (optionally) gateway address. To access the Ethernet TAP probe by a host name, you must manually update your Name Servers. For more information on name resolution, refer to the *Name Servers* in the *Network Administration* appendix of the *Ethernet TAP Users Guide*.

NOTE This example uses these IP addresses:
– Host IP: `192.168.0.1`
– Ethernet TAP IP: `192.168.0.2`
– Netmask: `255.255.255.0`
– Gateway IP: `192.168.0.254`
Get the specific values from your network administrator.

1. Configure Ethernet connection

a. Connect Ethernet TAP probe's Config Serial connector to host PC using RJ-11 serial cable and 9- or 25-pin adapter (if required)

ch and configure a terminal or communications software (such as Windows HyperTerminal) to set up a connection as follows:

- 9600 baud rate
- 8 data bits
- 1 stop bit
- no parity
- no handshaking
- no XON/XOFF flow control

2. **Turn on power to Ethernet TAP probe — the terminal window shows a startup message**

3. **Press Enter to show the `core>` prompt**

4. **Assign network settings to Ethernet TAP probe**

   a. Set Ethernet TAP probe to static IP address mode and optionally provide a hostname for the probe:

   ```
   core> netparam bootconfig
   static:hostname
   ```

   The host name can be searched using the `efind` search utility, located in the `ccs\bin` directory of the CodeWarrior installation, to identify probes on your network

   b. Set static IP address and netmask:

   ```
   core> netparam static_ip_address
   192.168.0.2:255.255.255.0
   ```

   c. Reboot Ethernet TAP probe to start using new address:

   ```
   core> reset
   ```

   d. To access the probe over a routed network, set the default gateway address:
   ```
   core> netparam add_route default
   192.168.0.254 1
   ```

   where `192.168.0.254` is the IP address of the default gateway for your network

> **NOTE** Delete any existing, invalid routes stored in the probe before setting a new address: netparam delete_route *host gateway*

5. **Verify network connection**

   a. From PC host, use Windows Command Prompt or terminal window to ping the probe:

      c:\> ping 192.168.0.2

> **NOTE** Some network routers may require a minute to respond.

   b. If ping fails, recheck parameters entered for validity and correctness — if all network parameters are correct, contact Freescale Technical Support

   c. If ping displays packets received, disconnect Ethernet TAP probe from network and repeat the ping command:

      c:\> ping 192.168.0.2

   d. If ping does not fail, IP address already in use on network — see system administrator for new one

   e. Close the terminal window

   f. If disconnected, reattach probe to network

Section E: Connecting Ethernet TAP Probe to Target

1. **Turn off power to Ethernet TAP probe and target system**

2. **Determine connection option you need to connect probe tip to target system**

   - If target has debug port header, you can directly connect probe tip to header
   - If target has debug port header but there is not enough clearance for probe tip, you can use extension cable between probe tip and header

3. **Connect probe to target. Use extension cable, if necessary**

   - Using direct connection:

fully align probe tip socket pins with debug target port header — use label on probe tip as guide

b. Gently press probe tip onto header

- Using extension cable:

a. Attach large multi-pin header end of extension cable to probe tip socket — use label on probe tip as guide so that red stripe on cable identifies pin 1

b. Carefully align other end of cable with debug port header

c. Gently press connector onto header

4. **Apply power to Ethernet TAP probe — probe HEARTBEAT indicator lights; when green, probe has booted and network communication is established**

5. **Apply power to target system**

Congratulations!

You have successfully connected the Ethernet TAP probe to your host PC and target board.

How to Contact Us

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Technical Support	`http://www.freescale.com/support`

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