Ethernet Head Configuration Guide

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Table of contents

| 1 | IN | ГRO | DUCTION | 4 |
|---|-----|-----|---|----|
| 2 | HC | W A | A ETHERNET HEAD WORKS WITH A WINDOWS XP PC | 5 |
| | 2.1 | Eth | ernet head IP address sections | 5 |
| | 2.2 | Co | nnect the Ethernet head | 5 |
| | 2.2 | .1 | Option 1: set the MS1000 Windows PC IP address | 5 |
| | 2.2 | .2 | Option 2: configure the Ethernet head | 8 |
| 3 | HC | W A | A ETHERNET HEAD WORKS WITH A WINDOWS 7 PC | 13 |
| | 3.1 | Eth | ernet head IP address sections | 13 |
| | 3.2 | Co | nnect the Ethernet head | 13 |
| | 3.2 | .1 | Option 1: set the MS1000 Windows PC IP address | 13 |
| | 3.2 | .2 | Option 2: configure the Ethernet head | 17 |

1 INTRODUCTION

This document describes network setup of the 1071/1171 Ethernet sonar head and the Windows PC to communicate with these heads.

The examples used in this document are based on Windows XP Pro and Windows 7 Pro Operating Systems.

2 HOW AN ETHERNET HEAD WORKS WITH A WINDOWS XP PC

2.1 Ethernet head IP address sections

Each Ethernet head has 2 factory-programmed sections:

- IP addresses section: This is the IP address of the Ethernet head. The default factory-programmed IP addresses is 192.168.0.254
- Remote Host IP address section: This is the IP address of the MS1000 Windows PC. Once the Ethernet head is powered up, it will keep issuing connection request to this Remote Host IP address to establish a TCP/IP connection. The default factory-programmed "Remote Host IP address" is 192.168.0.1.

2.2 Connect the Ethernet head

There are two options to connect the Ethernet digital sonar head to the MS1000 software:

2.2.1 Option 1: Set the MS1000 Windows PC IP address

Set the MS1000 Windows PC IP address to 192.168.0.1. This is applicable to:

- The MS1000 Windows PC is a stand-alone computer which does not have an IP address.
- The MS1000 Windows PC is a stand-alone computer has an IP address which is not 192.168.0.1

Step 1: On a MS1000 Windows XP Pro computer, go to "Control Panel" and double click "Network Connections" See Fig. 2.1



Figure 2-1

Step 2: Right click the Ethernet interface (Local Area Connection "n") that you wish to connect with the Ethernet head, and select properties. See Fig. 2.2



Figure 2-2

Step 3: Double click "Internet Protocol (TCP/IP)" in the "Local Area Connection Properties" page to set up the IP address. See Fig. 2.3

| 🕹 Local Area Connection 3 Properties 🛛 🔹 💽 | | | |
|---|--|--|--|
| General Authentication Advanced | | | |
| Connect using: | | | |
| Intel(R) PRO/1000 MT Server Adapte | | | |
| This connection uses the following items: | | | |
| 🗹 💂 QoS Packet Scheduler 🛛 🔼 | | | |
| SPARTA Protocol Test Driver | | | |
| Internet Protocol (TCP/IP) | | | |
| | | | |
| Install Uninstall Properties | | | |
| Description | | | |
| Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks. | | | |
| ✓ Show icon in notification area when connected ✓ Notify me when this connection has limited or no connectivity | | | |
| | | | |
| OK Cancel | | | |

Figure 2-3

Step 4: In the "Internet Protocol (TCP/IP) Properties" dialog box, select "Use the following IP address:" type in "192.168.0.1" for IP address and "255.255.255.0" for Subnet mask. Leave the rest of the fields empty and click OK to accept changes. E.g. Fig. 2.4

| iternet Protocol (TCP/IP) P General | ropernes 💽 |
|--|--|
| | automatically if your network supports ed to ask your network administrator for |
| O Obtain an IP address autom | atically |
| O Use the following IP address | £ |
| JP address: | 192 . 168 . 0 . 1 |
| Sybnet mask: | 255 . 255 . 255 . 0 |
| Default gateway: | |
| O Obtain DNS server address | automatically |
| • Use the following DNS serv | er addresses: |
| Preferred DNS server: | |
| Alternate DNS server: | |
| | Advanced |
| | OK Cancel |

Figure 2-4

2.2.2 Option 2: Configure the Ethernet head

Use "ConfigE.exe" utility to configure the Ethernet head. "ConfigE.exe" is installed in the MS1000 installation folder during the MS1000 installation. This is applicable to:

- The MS1000 Windows PC is part of the network with specific IP address (other than 192.168.0.1), and is not allowed to be changed.
- There are more than one Ethernet digital sonar head on the network which they all have the same IP address from the factory.

Configure the Ethernet head can be done through a Windows PC on the same subnet or on a different subnet.

2.2.2.1 Assign Ethernet head IP addresses from a Windows PC on the same subnet.

- Step 1: Power on the Ethernet head, and connect it to the network.
- Step 2: Run "ConfE.exe" from the MS1000 installation directory. Click the "Search" button. The Ethernet heads (e.g. 192.168.0.254) will be displayed under the IP address of the Windows PC (e.g. 192.168.0.1).

| Ethernet Configuration | X |
|------------------------|--|
| Search | IP Assign MAC Address 00-20-4A-A5-04-6A IP Address 192 . 168 . 0 . 254 Subnet Mask 255 . 255 . 0 Assign IP Change settings |
| | ОК |

Figure 2-5

• Step 3: Change the IP address of the port to a new IP address within the same subnet. E.g. in Fig. 2.6, change IP address 192.168.0.254 to a new IP address 192.168.0.253

| Ethernet Configuration | |
|--|--|
| Ethernet Configuration Search - 192.168.0.1 - 00-20-4A-A5-04-63 (192.168.0.254) | IP Assign MAC Address 00-20-4A-A5-04-6A IP Address 192 , 168 , 0 , 253 Subnet Mask 255 , 255 , 0 Assign IP Change settings |
| | OK |

Figure 2-6

• Step 4: Click the "Assign IP" button. The Ethernet head port settings dialog will pop up after the new IP address has been assigned. E.g. Fig. 2.7

| Port Settings | × |
|---|---|
| IP Address 192 . 168 . 0 . 253 Serial setting Baud Rate 921600 V Data Bits 8 V Parity None V Stop Bits 1 V Flow Control None | |
| Connection Setting Remote Host IP Addr 192 . 168 . 0 . 1 | |
| Apply Settings Exit | |

Figure 2-7

- Step 5: Verify Ethernet head Port Settings
 - IP Address: IP address shows the IP address of the Ethernet head.
 - Serial settings: The serial settings section displays the serial protocol, flow control, baud rate, data bits, and parity and stop bits. The serial settings should not be changed.
 - Remote Host IP Addr: This should be set to the IP address of the MS1000 Windows PC (e.g. 192.168.0.1)
 - Apply settings: Click "Apply Settings" to continue or click "Exit" to cancel.

2.2.2.2 Assign Ethernet head IP addresses from a Windows PC on a different subnet.

- Step1: Power on the Ethernet head, and connect it to the network.
- Step 2: Run "ConfE.exe" from the MS1000 installation directory. Click the "Search" button. The Ethernet head will be displayed under the IP address of the Windows PC (e.g. 10.0.0.2), and shows IP on different subnet.

| Ethernet Configuration | \mathbf{X} |
|---|--|
| Search Image: | IP Assign MAC Address 00-20-4A-A5-5F-7A (IP on IP Address 0 . 0 . 0 . 0 Subnet Mask 255 . 0 . 0 . 0 |
| | Re-Assign IP Change settings |

Figure 2-8

- Ethernet Configuration

 Search

 Image: Display the system of the system o
- Step 3: Select a port and type in an IP address within the same subnet. E.g. Fig 2.9

Figure 2-9

• Step 4: Click the "Assign IP" button. The Ethernet head port settings dialog box will pop up after the new IP address has been assigned. E.g. Fig. 2.10

| Port Settings | × |
|---|---|
| IP Address 10 , 1 , 0 , 72 Serial setting Baud Rate 921600 V Data Bits 8 V Parity None V Stop Bits 1 V Flow Control None | |
| Connection Setting Remote Host IP Addr 192 . 168 . 0 . 1 | |
| Apply Settings Exit | |

Figure 2-10

• Step 5: Change the "Remote Host IP Addr" to the MS1000 Windows computer IP address. E.g. Fig. 2.11, the current computer (10.0.0.2) will be used to run MS1000.

| Port Settings | 3 |
|---|---|
| IP Address 10 . 1 . 0 . 72 Serial setting Baud Rate 921600 V Data Bits 8 V Parity None V Stop Bits 1 V Flow Control None | |
| Connection Setting Remote Host IP Addr 10 , 0 , 0 , 2 | |
| Apply Settings Exit | |

Figure 2-11

Fig. 4.4

• Step 6: Click "Apply Settings" button.

3 HOW AN ETHERNET HEAD WORKS WITH A WINDOWS 7 PC

3.1 Ethernet head IP address sections

Each Ethernet head has 2 factory-programmed sections:

- IP addresses section: This is the IP address of the Ethernet head. The default factory-programmed IP addresses is 192.168.0.254
- Remote Host IP address section: This is the IP address of the MS1000 Windows PC. Once the Ethernet head is powered up, it will keep issuing connection request to this Remote Host IP address to establish a TCP/IP connection. The default factory-programmed "Remote Host IP address" is 192.168.0.1.

3.2 Connect the Ethernet head

There are two options to connect the Ethernet digital sonar head to the MS1000 software:

3.2.1 Option 1: Set the MS1000 Windows PC IP address

Set the MS1000 Windows PC IP address to 192.168.0.1. This is applicable to:

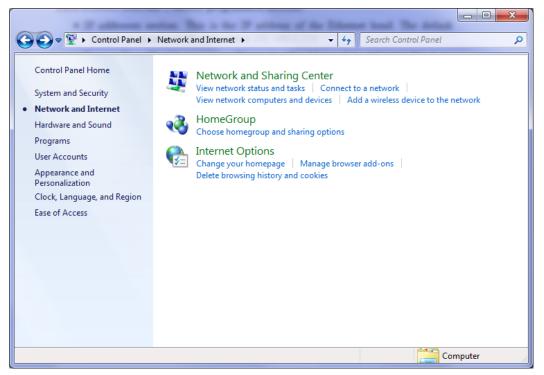
- The MS1000 Windows PC is a stand-alone computer which does not have an IP address.
- The MS1000 Windows PC is a stand-alone computer has an IP address which is not 192.168.0.1

Step 1: On a MS1000 Windows 7 Pro computer, go to "Control Panel" select "Network and Internet"



Figure 3-1

Step 2: Select "Network and Sharing Center"



| Control Panel Home | | |
|----------------------------------|--|--|
| control and the first of the | View your basic network informat | ion and set up connections |
| Change adapter settings | 📃 🔍 — 🔍 | See full map |
| Change advanced sharing settings | CAVANPC165 Multiple netw (This computer) | vorks Internet |
| | View your active networks | Connect or disconnect |
| | master.int Domain network | Access type: Internet Connections: 🎴 Local Area Connection 2 |
| | Unidentified network Public network | Access type: No Internet access Connections: Local Area Connection VirtualBox Host-Only Network |
| See also | Change your networking settings | |
| HomeGroup | Set up a new connection or netwo | rk |
| Internet Options | Set up a wireless, broadband, dial-up, ad hoc, or VPN connection; or set up a router or access point. | |

Step 3: Select "Change adapter settings"

Figure 3-2

Step 4: Right click the Ethernet interface (Local Area Connection "X") that you wish to connect with the Ethernet head, and select properties.

| C V Vetwork and Internet Vetwo | rk Connections > - 49 Search Networ | k Connections 🔎 |
|---|---|-----------------------|
| Organize Disable this network device | Diagnose this connection » | s= ▼ □ 0 |
| Local Area Connection Unidentified network Broadcom NetXtreme Gigabit Eth VirtualBox Host-Only Network Unidentified network VirtualBox Host-Only Ethernet Ad | Local Area Connection 2 master.int Broadcom NetXtreme 57xx Gigabi | No preview available. |
| 1 item selected | | |

Figure 3-3

Step 3: Double click "Internet Protocol Version 4(TCP/IP)" in the "Local Area Connection Properties" page to set up the IP address.

| Local Area Connection Properties | X | | |
|--|---------|--|--|
| Networking Sharing | | | |
| Connect using: | | | |
| Broadcom NetXtreme Gigabit Ethernet | | | |
| <u>C</u> onfigure | ٦l | | |
| This connection uses the following items: | - | | |
| | * III * | | |
| Description Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication | | | |
| Cancel Ca | xel | | |

Figure 3-4

Step 4: In the "Internet Protocol (TCP/IP) Properties" dialog box, select "Use the following IP address:" type in "192.168.0.1" for IP address and "255.255.255.0" for Subnet mask. Leave the rest of the fields empty and click OK to accept changes.

| Internet Protocol Version 4 (TCP/IPv4) Properties | | | | |
|---|---------------------|--|--|--|
| General | | | | |
| You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings. | | | | |
| Obtain an IP address automatical | ly | | | |
| Use the following IP address: | | | | |
| IP address: | 192.168.0.1 | | | |
| Subnet mask: | 255 . 255 . 255 . 0 | | | |
| Default gateway: | · · · | | | |
| Obtain DNS server address auton | natically | | | |
| Use the following DNS server add | resses: | | | |
| Preferred DNS server: | · · · | | | |
| Alternate DNS server: | • • • | | | |
| Vaļidate settings upon exit | Ad <u>v</u> anced | | | |
| | OK Cancel | | | |

Figure 3-5

3.2.2 Option 2: Configure the Ethernet head

Use "ConfigE.exe" utility to configure the Ethernet head. "ConfigE.exe" is installed in the MS1000 installation folder during the MS1000 installation. This is applicable to:

- The MS1000 Windows PC is part of the network with specific IP address (other than 192.168.0.1), and is not allowed to be changed.
- There are more than one Ethernet digital sonar head on the network which they all have the same IP address from the factory.

Configure the Ethernet head can be done through a Windows PC on the same subnet or on a different subnet.

3.2.2.1 Assign Ethernet head IP addresses from a Windows PC in the same subnet.

- Step 1: Power on the Ethernet head, and connect it to the network.
- Step 2: Run "ConfE.exe" from the MS1000 installation directory. Click the "Search" button. The Ethernet heads (e.g. 192.168.0.254) will be displayed under the IP address of the Windows PC (e.g. 192.168.0.1).

| Ethernet Configuration | × |
|--|--|
| Search | |
| □- 192.168.0.1 ^{00-20-4A-95-85-88 (192.168.0.254)} | IP Assign MAC Address 00-20-4A-95-85-88 (192. 168.0.254) IP 192 . 168 . 0 . 254 |
| | Sub Net 255 . 255 . 255 . 0 |
| | Assign IP Configure |
| | |
| | |
| | OK |

Figure 3-6

• Step 3: Change the IP address of the port to a new IP address within the same subnet. E.g. in Fig. 3.7, change IP address 192.168.0.254 to a new IP address 192.168.0.253

| × |
|--|
| |
| IP Assign MAC Address 00-20-4A-95-85-88 (192. 168.0.254) IP 192 . 168 . 0 . 253 |
| Sub Net 255 . 255 . 0 |
| Assign IP Configure |
| |
| ОК |
| |

Figure 3-7

• Step 4: Click the "Assign IP" button. The Ethernet head port settings dialog will pop up after the new IP address has been assigned.

| Settings X |
|--|
| IP Addr 192 . 168 . 0 . 253 Serial setting Baud Rate 921600 V Data Bits 8 V Parity None V Stop Bits 2 V Flow Control None |
| Connection Setting Remote Host IP Addr 192 . 168 . 0 . 1 |
| Apply Settings Exit |

Figure 3-8

- Step 5: Verify Ethernet head port settings
 - IP Address: IP address shows the IP address of the Ethernet head.
 - Serial settings: The serial settings section displays the serial protocol, flow control, baud rate, data bits, and parity and stop bits. The serial settings should not be changed.
 - Remote Host IP Addr: This should be set to the IP address of the MS1000 Windows PC (e.g. 192.168.0.1)
 - Apply settings: Click "Apply Settings" to continue or click "Exit" to cancel.

3.2.2.2 Assign Ethernet head IP addresses from a Windows PC on a different subnet.

- Step1: Power on the Ethernet head, and connect it to the network.
- Step 2: Run "ConfE.exe" from the MS1000 installation directory. Click the "Search" button. The Ethernet head will be displayed under the IP address of the Windows PC (e.g. 10.0.0.2), and shows IP on different subnet.

| Ethernet Configuration | | | × |
|------------------------|----------------|----------------|----------------|
| Search | | | |
| | IP Assign | | |
| □·· 10.0.0.1 | MAC Address | | |
| | 00-20-4A-95-85 | -B8 (IP on dif | ferent subnet) |
| | IP | 0.0 | . 0 . 0 |
| | ' | I | |
| | | | |
| | Sub Net | 255 . 0 | . 0 . 0 |
| | | | |
| | | | |
| | Assign IP | | Configure |
| | Assign IF | | Comigure |
| | | | |
| | | | |
| | | | |
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| | | | |

Figure 3-9

- x Ethernet Configuration Search IP Assign ⊡ 10.0.0.1 MAC Address 00-20-4A-95-85-B8 (IP on different subnet) 00-20-4A-95-85-B8 (IP on different subnet) IP [10 . 1 . 0 . 72 Sub Net 255 . 0 . 0 . 0 Assign IP Configure .€ Ш ОК
- Step 3: Select a port and type in an IP address within the same subnet.

Figure 3-10

• Step 4: Click the "Assign IP" button. The Ethernet head port settings dialog box will pop up after the new IP address has been assigned.

| Settings |
|--|
| IP Addr 10 . 1 . 0 . 72 Serial setting Baud Rate 921600 V Data Bits 8 V Parity None V Stop Bits 2 V Flow Control None |
| Connection Setting Remote Host IP Addr 192 . 168 . 0 . 1 |
| |

Figure 3-11

• Step 5: Change the "Remote Host IP Addr" to the MS1000 Windows computer IP address. E.g. Fig. 3.12, the current computer (10.0.0.1) will be used to run MS1000.

| Settings X |
|--|
| IP Addr 10 . 1 . 0 . 72 Serial setting Baud Rate 921600 Data Bits 8 Parity None Stop Bits 2 |
| Flow Control None Connection Setting Remote Host IP Addr 10 . |
| Apply Settings Exit |

Figure 3-12

• Step 6: Click "Apply Settings" button.