

# **CobraNet Discovery Quick Guide**

(For CobraNet compatible products from Yamaha)

#### Foreword

When using CobraNet compatible products from Yamaha (other than the MY16-C), a software application such as the NetworkAmp Manager or CobraNet Manager Lite for Yamaha must be used to set up the audio routing. Both of these applications, however, are designed to run under Windows XP/2000 and operation is not guaranteed under Windows Vista or later operating systems.

This guide describes how CobraNet Discovery can be used to set up CobraNet compatible products from Yamaha. CobraNet Discovery supports the latest Windows operating systems.

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#### About CobraNet Discovery

CobraNet Discovery is a software application that can be used to set up CobraNet devices provided by Cirrus Logic, Inc. CobraNet Discovery can set up the following parameters, which can also be set up by CobraNet Manager Lite for Yamaha or NetworkAmp Manager applications.

- Audio routing between CobraNet compatible devices (bundle settings)
- Audio latency and bit depth
- Serial data bridge
- Conductor priority

CobraNet Discovery can be downloaded from the following website:

http://cobranet.info/

Refer to license agreement displayed when downloading the software for software license terms and conditions.

#### Setup Procedure Using CobraNet Discovery

A system consisting of the following components will be used as an example throughout this quick guide.

- Computer (Windows 7)
- CobraNet Discovery 4.0.5
- MY16CII (CobraNet Firmware V2.11.11)
- LS9-16 (Firmware V1.30)
- DME4io-C (Firmware V3.84)

#### 1. Connect CobraNet Devices to the Computer

Connect the CobraNet devices to a network switch using Ethernet straight cables.



**NOTE** A CobraNet device can be connected directly to the computer via an Ethernet crossover cable.

### 2. Assign IP Addresses

Before using CobraNet Discovery to set up the connected CobraNet devices it is necessary to set appropriate IP addresses for the computer and CobraNet devices.

#### 2-1. IP address settings for the computer

1 Select [Start]  $\rightarrow$  [Control Panel], then click or double-click [Network and Sharing Center] or [View network status and tasks].

The "Network and Sharing Center" is displayed.

2 Click [Manage network connection] or [Change Adapter settings] from the "Tasks" list located in the left side of "Network and Sharing Center" window, then double-click [Local Area

#### Connection].

The "Local Area Connection Status" dialog box will be displayed.

- **NOTE** The "User Account Control" dialog box may appear. Click [Continue] or [Yes] button.
- **NOTE** If the "Local Area Connection properties" dialog box appears, skip ahead to step 4.

#### **3** Click [Properties].

The "Local Area Connection properties" dialog box will be displayed.

NOTE The "User Account Control" dialog box may appear. Click [Continue] or [Yes] button.

# 4 In the [Network] tab, choose [Internet Protocol Version 4 (TCP/IPv4)], and click the [Properties]

#### button.

The "Internet Protocol Version 4 (TCP/IPv4) Properties" dialog box will be displayed.

#### **5** Click [Use the Following IP Address].

6 Enter "192.168.0.100" into [IP address], and "255.255.255.0" into [Subnet mask].

General You can get IP settings assigned at this capability. Otherwise, you nee for the appropriate IP settings.	utomatically if your network supports id to ask your network administrator
Obtain an IP address automation in the following the address automatic	tically
IP address:	192.168.0.100
Subnet mask:	255.255.255.0
Default gateway:	1
Obtain DNS server address au Obtain DNS server Use the following DNS server	utomatically addresses:
Preferred DNS server:	· · · · · · · · ·
Alternate DNS server:	
Validate settings upon exit	Advanced
	OK Cancel

7 Click [OK].

Use CobraNet Discovery to assign appropriate IP addresses to all CobraNet devices on the network.

1 Select [Options...] from the [Tools] menu in the Discovery window (the Discovery window is the first window that appears when CobraNet Discovery is initially launched).

The "Options" dialog box will appear.

🕼 Options				
Network Adapt	er			
[0] Realtek PCIe GBE Family Controller				
IP Address Ran	ige			
Start:	169 . 254 . 0 . 101 🗑 Enable Auto Assignment			
End:	169 . 254 . 0 . 199 Default			
Database Locat	tion			
C:¥Cirrus Logic	¥CobraNet Discovery¥firmware			
	Default Browse			
	OK Cancel			

2 Select the adapter you will use from the "Network Adapter" menu.

# **3** Click [Enable Auto Assignment] so that a checkmark appears in the checkbox.

IP addresses will automatically be assigned to newly discovered CobraNet devices. When IP addresses are properly assigned all CobraNet devices on the network will be listed in the Discovery window.

# 4 Click [OK].

**NOTE** IP addresses can be manually assigned to individual CobraNet devices by first selecting the devices in the list and then selecting [New IP Address...]. See <u>6-2 Manual IP Address Assignment</u> for details.

Cob	raNet Edit View	Tools Help				
5	IP Address	MAC Address	errorCount	sysDescription		
Ø	192.168.0.102	00a0de25157d	0	Yamaha CNT Mod	ula Cabralia	
Ø	192.168.0.101	00a0de25c45d	0	Yamaha CNT M	Update Firmware	
					New IP Address	
					Close	-0
				Сору	Ctrl+C	
				Select All	Ctrl+A	
					Refresh	F5
					Column Chooser	
					Options	
					Configure	
•					Report	
tatu	IS	Devices: 2 Active: 2		Active: 2	Proference	
_					recenter	

#### 3. Audio Routing Between CobraNet Devices

The procedure for setting up audio routing via CobraNet Discovery is described below. For this example we'll route the channel 1 through 8 outputs from the MY16-CII card installed in the LS9-16 console to DME4io-C inputs 1 through 8.

#### 3-1. Sampling Frequency and Latency Settings

The sampling frequency and latency of the transmitting and receiving devices must be set to the same values.

#### ■3-1-1. Transmitting Device (MY16-CII) Settings



1 Select the MY16-CII in the Discovery window, then select [Configure...] from the [Tools] menu.

#### 2 Click [Advanced].

The "Advanced Configuration" dialog box will appear.

Advanced Configurat	lion	X
Persistence	V	
Name	4D 59 31 36 2D 43 49 49 00	MY16-CI
Location		
Contact		
Conductor Priority	128	
Serial Format	0x0	
Serial Baud	57600	
Serial PPeriod	2560	
Serial RxMAC	01:60:2B:FF:88:AF	
SerialTxMAC	01:60:2B:FF:88:AE	
modeRate Control	48 kHz, 2 2/3 mS	-
Proc Mode	N.A.	
TagEnable	N.A.	
HMI Mode	Motorola	
FreeCycles	68.2%	
NetMask	N.A.	
Refresh Apply	ОК	Cancel

# **3** Select the appropriate sampling frequency and latency pair from the [modeRate Control] pull-down menu.

(The above example shows the 48 kHz + 2 2/3 mS pair selected: 48 kHz sampling frequency and 2.67 millisecond latency).

**NOTE** Set the MY16-CII sampling frequency to 48 kHz, and the host device sampling frequency to either 48 kHz or 96 kHz. Other settings will result in a CobraNet Discovery "Invalid Mode Rate Value" error.

4 Click [Apply], and then [OK].

#### ■3.1.2. Receiving Device (DME4io-C) Settings

Following the same procedure used for the transmitting device, set the receiving device [modRate Control] field values to match those of the transmitting device.

Advanced Configurat	ion				
Persistence					
Name	44 4D 45 34 69 6F 2D 43 00	DME4			
Location					
Contact					
Conductor Priority	32				
Serial Format	0×1				
Serial Baud	57600				
Serial PPeriod	2560 01:60:2B:FF:88:AF				
Serial RxMAC					
SerialTxMAC	01:60:2B:FF:88:AE				
modeRate Control	48 kHz, 2 2/3 mS				
Proc Mode	N.A.				
TagEnable	N.A.				
HMI Mode	Motorola				
FreeCycles	Overloaded				
NetMask	N.A.				
Refresh Apply	ОК	Cancel			

# 4. Audio Routing Settings

Transmit and receive device bundle numbers must be properly matched in order to transfer audio data over a CobraNet network.

#### 4-1. Transmit Bundle Settings

1 Select the MY16-CII in the Discovery window, and then select [Configure] from the [Tools] menu.

Four transmit bundles and eight receive bundles will be shown in a list.

IP Address	Conduc	tor 🔽				
192.168.0.	101	SI	NMP Ad	dvanced	Report	Configure
Bundle	Туре	Number	Status			
11	Tx	1	0			
0	Tx	2	0			
0	Tx	3	0			
0	Tx	4	0			L
2	Rx	1	0			
0	Rx	2	0			
0	Rx	3	0			

2 Double click transmit bundle number 1, or select it and then click [Configure].

🗊 Tran:	smitter 1 Conf	figuration 🗖 🗖 🗙
	Bundle 270	
Ch.	SubMap	SubFormat
1	1	20 🗸
2	2	20 -
3	3	20 -
4	4	20 -
5	5	20 -
6	6	20 -
7	7	20 -
8	8	20 👻
	Clear All	All Same 🔽
	SubCount	8 •
U	IniCastMode	Never Multicast 🗸
	MaxUniCast	4
Ref	fresh	pply OK Cancel

#### **3** Enter an appropriate bundle number in the "Bundle" field.

NOTE Enter a number that is not already used as a transmit bundle number anywhere else on the network.

#### 4 Select the bit depth to be used for audio transfer from the "SubFormat" pull-down menu.

Check the [All Same] checkbox to set all channels in the bundle, and all bundles for the device, to the same value. Bit depth only needs to be set for the transmitting device. No bit depth setting is required for the receiving device.

When latency is set to 5.33 msecs and bit depth is set to 24 bits, the maximum number of channels that can be transmitted per bundle is limited to seven. In such cases set the SubCount field to "7". Refer to the MY16-CII or DME8i-C/DME8o-C/DME4io-C owner's manual for details on the relationship between bit depth and the number of channels that can be handled per bundle.

# 5 Click [Apply] and then [OK].

#### 4-2. Receive Bundle Settings

- 1 Select the DME4io-C (the receiving device) in the Discovery window, and then select [Configure] from the [Tools] window.
- 2 Select receive bundle number 1, and then click [Configure].

	Bundle 270	0
Ch.	SubMap	SubFormat
1	33	48 kHz, 24, 2 2/3 mS
2	34	48 kHz, 24, 2 2/3 mS
3	35	48 kHz, 24, 2 2/3 mS
4	36	48 kHz, 24, 2 2/3 mS
5	37	48 kHz, 24, 2 2/3 mS
6	38	48 kHz, 24, 2 2/3 mS
7	39	48 kHz, 24, 2 2/3 mS
8	40	48 kHz, 24, 2 2/3 mS

# **3** Enter the same bundle number as set for the MY16-CII.

The settings made thus far enable audio data transfer from the MY16-CII installed in the LS9-16 console to the DME4io-C satellite unit. The green indicators on the right side of the window shown above will appear when audio data is being properly received.

# 4 Click [Apply] and then [OK].

# 5. Serial Bridge Settings

The serial bridge settings described below allow asynchronous serial data communication between CobraNet devices. In this example serial bridging will be used to allow DME4io-C head amp gain control from the LS9-16 via the CobraNet network. Only the CobraNet Discovery settings will be discussed here. Refer to the LS9-16 and DME4io-C owner's manuals for details on setting up those devices for remote head amp control.

#### 5-1. Transmitting Device (MY16-CII) Settings

1 Select the MY16-Cll in the Discovery window, and then select [Configure] from the [Tools] menu.

#### 2 Click [Advanced].

The [Advanced Configuration] dialog box will appear.

Advanced Configurat	ion 💷 🔤
Persistence	V
Name	4D 59 31 36 2D 43 49 49 00 MY16-
Location	I
Contact	
Conductor Priority	128
Serial Format	0×1
Serial Baud	57600
Serial PPeriod	2560
Serial RxMAC	01:60:2B:FF:88:AF
SerialTxMAC	01:60:2B:FF:88:AE
modeRate Control	48 kHz, 2 2/3 mS
Proc Mode	N.A.
TagEnable	N.A.
HMI Mode	Motorola
FreeCycles	62.4%
NetMask	N.A.
Refresh Apply	OK Cancel

**3** Referring to the chart below, set the serial channel numbers in the SerialTxMAC (transmit) and SerialRxMAC (receive) fields so that they match.

**NOTE** The SerialTxMAC and SerialRxMAC field values must be entered in MAC address format, corresponding to serial channels 1 through 15.

Serial Channel	SerialRxMAC	SerialTxMAC
OFF	01:60:2B:FF:88 <b>:AF</b>	01:60:2B:FF:88 <b>:AE</b>
1	01:60:2B	:FF:88 <b>:81</b>
2	01:60:2B	:FF:88 <b>:82</b>
3	01:60:2B	:FF:88 <b>:83</b>
4	01:60:2B	:FF:88 <b>:84</b>
5	01:60:2B	:FF:88 <b>:85</b>
6	01:60:2B	:FF:88 <b>:86</b>
7	01:60:2B	:FF:88 <b>:87</b>
8	01:60:2B	:FF:88 <b>:88</b>
9	01:60:2B	:FF:88 <b>:89</b>
10	01:60:2B	:FF:88 <b>:8A</b>
11	01:60:2B	:FF:88 <b>:8B</b>
12	01:60:2B	:FF:88 <b>:8C</b>
13	01:60:2B	:FF:88 <b>:8D</b>
14	01:60:2B	:FF:88 <b>:8E</b>
15	01:60:2B	:FF:88: <b>8F</b>

# 4 Click [Apply] and then [OK].

In the example below, channel 2 is used for serial data transmission from the MY16-CII to the DME4io-C, and channel 1 is used for serial data transmission from the DME4io-C to the MY16-CII.

Advanced Configuratio	n		4 Advanced Configuratio	n	
Persistence			Persistence		
Name	4D 59 31 36 2D 43 49 49 00	MY16-CI	Name	44 4D 45 38 69 2D 43 00	DME8i-C
Location			Location		
Contact			Contact		
Conductor Priority	128		Conductor Priority	32	
Serial Format	0x1		Serial Format	0x1	
Serial Baud	57600		Serial Baud	57600	
Serial PPeriod	2560		Serial PPeriod	2560	
Serial RxMAC	01:60:2B:FF:88:81		Serial RxMAC	01:60:2B:FF:88:82	
SerialTxMAC	01:60:2B:FF:88:82		SerialTxMAC	01:60:2B:FF:88:81	
modeRate Control	48 kHz, 2 2/3 mS	•	modeRate Control	48 kHz, 2 2/3 mS	•
Proc Mode	N.A.		Proc Mode	N.A.	
TagEnable	N.A.		TagEnable	N.A.	
HMI Mode	Motorola		HMI Mode	Motorola	
FreeCycles	64.0%		FreeCycles	64.5%	
NetMask	N.A.			N.A.	
Refresh Apply	ОК	Cancel	Refresh Apply	ОК	Cancel

# 6. Other Settings

#### 6.1. Conductor Priority Settings

Conductor priority determines which network node functions as the conductor. Refer to the MY16-CII owner's manual for information on CobraNet conductors and performers. It is normally not necessary to set conductor priority manually. Refer to the CobraNet Manager Lite for Yamaha owner's manual for information on conditions that make manual setup necessary.

1 In the Discovery window, select [Preference] in the [Tools] menu.

- 2 Check the [Enable SNMP] checkbox.
- 3 Click [OK].
- 4 Select the target device in the Discovery window, and select [Configure] from the [Tools] menu.

#### **5** Click the [SNMP] button.

The [Generic SNMP R/W] dialog box will appear.

4	Generic SNN	1P R/W
	Туре	Integer V RO X Y
	OID	1.3.6.1.4.1.2680.1.3.3.3.1.2.2
	Value	0
	Group	Conductor 🔹
	Variable	condPriority •
	Form OID	Reset OID Put Get OK

6 Enter the following values in each field.

- Type:Integer
- OID:1.3.6.1.4.1.2680.1.3.3.3.1.2.2
- Enter "0" (Zero) for Auto, otherwise enter a value between 0x8000000 and 0x800000ff.

#### 7 Click [Put].

To confirm the currently set value click [Get].

**NOTE** A setting of 0x80000000 results in a priority of 0, and a setting of 0x80000001 results in a priority of 1.

#### 6-2. Manual IP Address Setup

In order to specify an IP address that can communicate with the computer, it is first necessary to know the computer's IP address.

- 1 To find the computer's IP address, first select [Start] → [Control Panel], then click or double-click [Network and Sharing Center] or [View network status and tasks]. The "Network and Sharing Center" is displayed.
- 2 Click [Manage Network Connection] or [Change Adapter Settings] from the "Tasks" list located in the left side of "Network and Sharing Center" window, then double-click [Local Area Connection].

The "Local Area Connection Status" dialog box will be displayed.

NOTE "User Account Control" dialog box may appear. Click [Continue] or [Yes] button.

#### **3** Click [Details ...].

The "Network Connection Details" dialog box will be displayed.

The "IPv4 Address" shown in the details list is the computer's IP address.

Network Connection Detai	ls 💌
Network Connection Details	
Property	Value
Connection-specific DN Description Physical Address DHCP Enabled IPv4 Address IPv4 Subnet Mask IPv4 Default Gateway	Intel(R) 82578DC Gigabit Network Conne 70-71-BC-CD-21-F7 No 192.168.0.100 255.255.255.0
IPv4 DNS Server IPv4 WINS Server NetBIOS over Topip En Link-local IPv6 Address IPv6 Default Gateway	Yes fe80::797d:9e9:d9baf209%10
IPv6 DNS Servers	fec0:0:0#fff::1%1 fec0:0:0#fff::2%1 fec0:0:0#fff::3%1
•	Close

#### 4 Right-click the device you want to update in the Discovery window, and select [New IP

#### Address] from the pop-up menu.

The IP assignment dialog box will be displayed.

🕼 IP Assignment - 0									
	Enter IP Address								
	192		168		0		102		
	ОК				Cancel				

#### 5 Enter the IP address.

The first three numbers should be the same as the computer's IP address. For example, if the computer's IP address is "192.168.0.100", then the first three numbers of the new IP address should be "192.168.0". The fourth number can be any number from 1 through 254 that is *not* the same as the fourth number of the computer's IP address. If the fourth number of the computer's IP address is "100", for example, you could use "102."

# 6 Click [OK].

If a warning message like the one shown below appears, click [OK] to close it.



Yamaha Pro Audio global web site:

http://www.yamahaproaudio.com/

Yamaha Manual Library:

http://www.yamaha.co.jp/manual/

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