Control Center
Control for CobraNet Devices
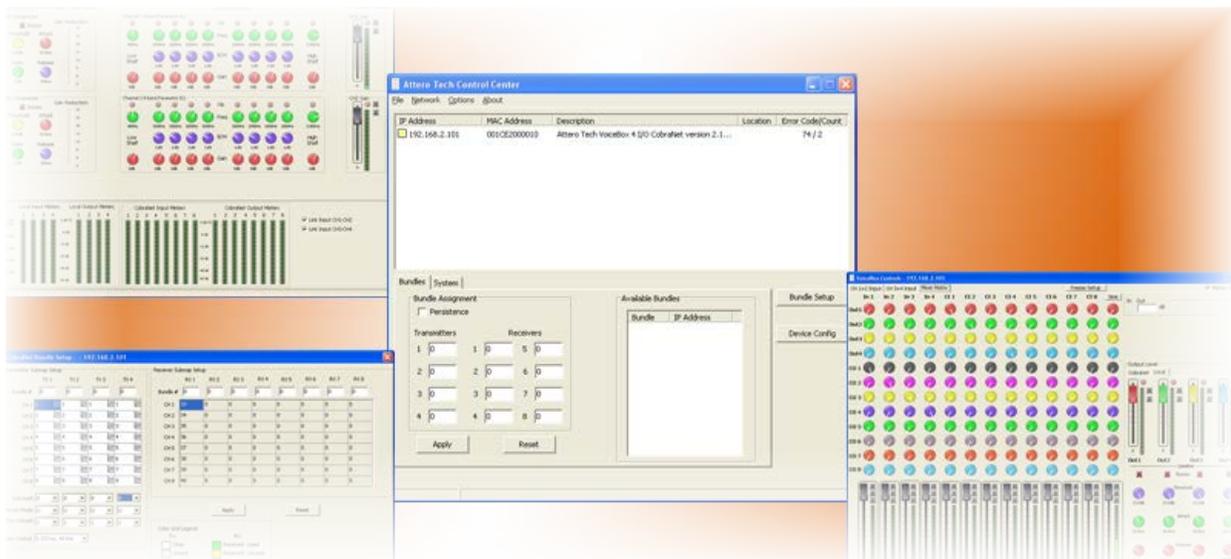
User Manual

Date 01/01/2014

Revision 06_d

Contents

1 – Overview

SoundTube Control Center is an easy to use configuration and monitoring application for CobraNet devices. As well as being usable for configuring the generic parameters of any CobraNet device, such as the bundle setup for audio routing or serial bridge functionality, it also includes device specific setup for SoundTube products such as the STNet switch and the IP series speakers.

Note: Whilst devices from manufacturers other than SoundTube are detected and displayed, use the manufacturers' own software to set up their devices. Using Control Center to control a device from another manufacturer is at the user's own risk. SoundTube bears no responsibility for the results if settings are altered on a non-SoundTube CobraNet device.

1.1 – How to Use SoundTube's Control Center

This manual is designed to give the user a guide on how to use the SoundTube Control Center to view and control CobraNet devices on a network. The steps required to use the software are as follows:
- o   Install the application (see section 2)
- o   Run the application (section 3)
- o   Configure the network adapter (see section 3.1)
- o   Select a device to view its properties
- o   Configure the devices system parameters (if needed)
- o   Configure the devices audio routing and bundle setup (if needed)
- o   Configure the devices setup (SoundTube devices only)

This manual also includes an introduction to CobraNet in the appendices for those who are unfamiliar with CobraNet.

2 – Installing the Software

Note: It is recommended that the installation instructions be read prior to attempting installation of the software.

2.1 – PC Requirements

- o   Windows 2000, XP, Vista (32- or 64-bit) or Windows 7 or Windows 8 (32- or 64-bit)
- o   SNMP services installed and enabled (some versions of Windows 2000 may have SNMP disabled)
- o   10/100 Mbit/s wired Ethernet Network Interface Card

2.2 – Installation Method

Note: There is no requirement to remove any previous versions before installing a newer one. Previous versions should be detected by the installer and removed automatically before the new files are installed.

The software is installed using SoundTubeControlCenter.exe. Please download the latest version from the SoundTube website.

Read the license agreement and if you agree, check the "I accept…" option and click "Next".
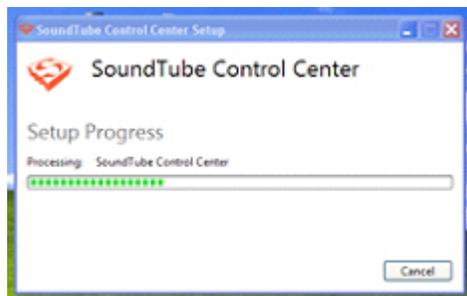
The installer will then begin copying files and display the progress of the installation. After this process is successfully completed, click "Close".

The installation will create a program group and various shortcuts including one to run the program. All of the icons are located under Start Menu -> All Programs ->SoundTube -> SoundTube Control Center.

3 – Running the Application

Control Center runs in one of two modes. There is an online mode (called normal mode) and an offline mode (called demo mode). For configuring devices on a live CobraNet network, normal mode must be used.

Demo mode can be used to demo the features of the software and SoundTube devices without the need for an active CobraNet network and also to provide a method to create device configurations offline for a particular application that can be downloaded to the live system once it's installed and running. Further information on the two operating modes can be found in section 3.3.

If Control Center is to be used in normal mode, before the application can be run, it is necessary to configure a network adapter in the PC to allow it to communicate with CobraNet devices.

3.1 – Setting up the PC Network Adapter

If Control Center is going to be used in Normal mode, it requires that it has access to the CobraNet network through a correctly configured network card (NIC). To be configured correctly, that NIC requires a valid IP address. This IP address can either be given to the NIC manually (known as a static IP address), or be given to it automatically over the network (known as a dynamic IP address). Once the NIC has a valid IP address, the Control Center application can be started. When used with the STNet Switch the computer will be connected through a router on an existing network. Check with your IT department for the correct setting.

Note: If the network card to be used is set to obtain its IP address dynamically and there is no service on the network to supply an IP address, the PC will fall back to either an alternate address that it has been previously supplied or it will give itself an automatic private IP address (known as APIPA). In either case, the entire process can take up to a minute. Control Center will not operate correctly if it is started during this time.

3.2 – The Main Form

The installation adds a program folder to the programs menu. To start the application, locate the Control Center icon under Start->All Programs->SoundTube and click on the Control Center icon. When the application starts, a brief splash screen is shown before the main window appears.

Note: When running the program under Windows 7 or Windows 8 the program must be started as an administrator. To start it in Administrator mode:

        a.   Right click on the SoundTube Control Center program icon
        b.   Select "Run as Administrator"
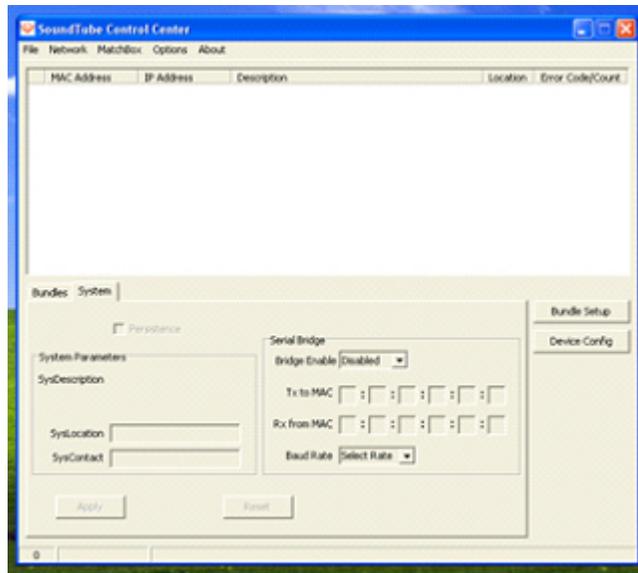
Figure 1 - Initial Main Window

Note: When first run, the available software functions will be restricted until either demo mode is selected or a suitable network card is chosen, CobraNet devices have been located on that network, and one of those devices has been selected.

3.3 – Configuring the Mode of Operation

Control Center runs in one of two modes. There is an offline mode (called demo mode) and there is an online mode (called Normal mode).

Demo mode is designed for two specific purposes.
   1) To demo the features of the software and SoundTube devices without the need for an active CobraNet network.
   2) To provide a method to create device configurations offline for a particular application that can be downloaded to the live system once its installed and running.

Certain functions and features are not available when running in demo mode. Below is a table showing a comparison of Demo mode and Normal mode. Further information on these features can be found later in the manual.

	Demo Mode	Normal Mode
Operate with no Network setup	Yes	No
Active network with active devices	No	Yes
Set System parameters	No	Yes
Change Bundle setup	No	Yes
Device Configuration	Yes (*)	Yes
Save device Settings	Yes	Yes
Load device settings	Yes (**)	Yes

(*) Device Configuration – In normal mode, changes to controls are sent to the device. In demo mode, controls can be changed but they have no effect on anything other than to set a level which can then be saved.
(**) Load device settings – In demo mode, this can be used to load a pre-saved configuration into memory. In normal mode, loading a configuration will also send the settings to the device as well.

Control Center will always run using the same mode of operation that was being used last time it was run. When the software is being run for the first time, the application is set to run in normal mode but does not have a network card selected.

The operating mode and associated settings can be accessed and changed any time while the software is running. This is done by accessing the Network Adapter configuration. Click Network -> Select Adapter to show the current configuration.
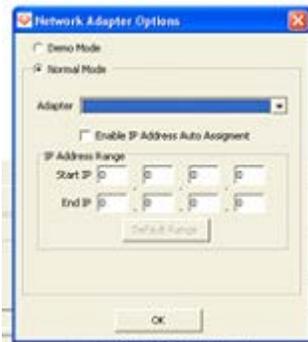
Figure 2 - Select a Network Adapter Form

3.3.1 – Setting up Demo mode

To run the software in demo mode, select the Demo Mode option. All other settings on this form are not applicable for this mode and can be ignored. Click the OK button to confirm the demo mode selection.

Note: This saves the new mode but the application won't use that new mode until it is closed and restarted.

3.3.2 – Setting up Normal mode

In order to communicate with the CobraNet devices on a live CobraNet network, the application needs to know which network interface card (NIC) to use. The adapter combo box shows the currently selected adapter. If this is blank, no adapter is currently in use. Use the adapter drop down box to select the desired NIC from the list of available NIC cards.

Where there is uncertainty regarding which adapter is which, the correct adapter can be found by selecting each adapter in turn from the drop down box and then click the default range button. A default IP range based on the selected adapters IP address will be shown and that should be enough to determine if the correct card is selected. Once the correct NIC has been selected, the options of how IP addresses are allocated to the CobraNet devices needs to be setup. Details of the additional options are below. When those options are correctly configured, click OK to save the setup.

Note: If the mode of operation was not changed, any configuration changes will be immediately applied. However, if mode of operation is changed, the new settings will only take affect after the application is restarted.

3.3.2.1 – IP Auto Assignment

Note: The CobraNet protocol does not require each device is allocated an IP address. Once configured, audio will pass from device to device whether the devices have been allocated an IP address or not as CobraNet audio transfers are done using the device MAC addresses. However, in order to configure a CobraNet device, it must be assigned an IP address.

In order to be configured, each CobraNet device must have an IP address. IP addresses can be set either statically or dynamically. When configured with a static IP address, the device will always use the same IP address every time it is powered up or reset. However, with a dynamic address, the CobraNet node is relying on a service on the network to supply it with its IP address. In a normal STNet network, the STNet switch supplies the IP addresses.

3.3.2.2 – IP address Range

This option only takes affect if automatic IP assignment is enabled. It represents the range of IP addresses that Control Center can give out. The "Default Range" button can be used to select a typical range of compatible addresses for the selected NIC. However, values can be typed in to manually override the defaults if required.

3.4 – Main Form Functions
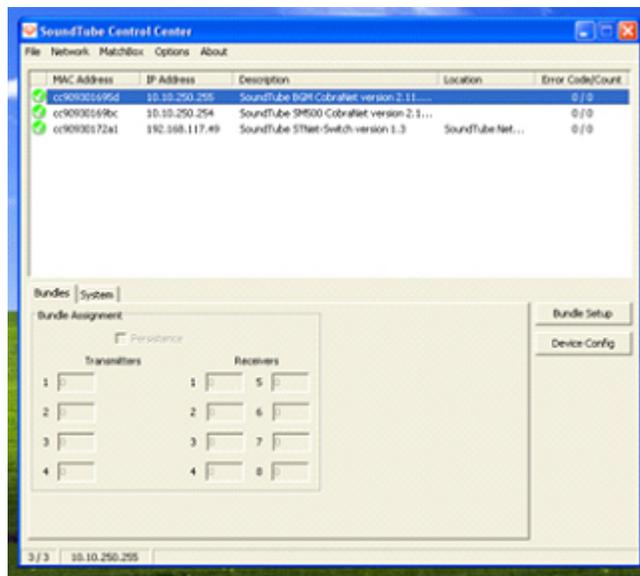
Figure 3 - Main Window with Devices

The upper part of the window is the device list. In online mode, this list will be populated as devices are detected on the active network connection. In demo mode, this list is artificially generated with one of each of the different products AtteroTech makes.

Each device in the device list has an icon next to it. The icon will be one of three colors:

✖	Offline state	Red cross – Device detected previously that is no longer active
⚠	Detected state	Device detected but no communication
✅	Working state	Device detected and communicating

When a device is first detected, it will always show a yellow icon. Once initial contact has been made with it, the icon will turn green and stay green for as long as the device remains active. If the device is turned off or stops responding, it will remain in the list but the icon with turn red. As the device list populates, the device list fields will fill. The device list shows the devices MAC address, current IP address, system description, location, the last error code and the current error count.

Note: If the error count is zero, any value displayed for error code is meaningless.

At the same time, the field in the bottom left hand corner on the status bar will update. If the software is running in demo mode, this will indicate only "Demo". In normal mode, the field shows the number of devices detected (the number before the slash) and those shown on the list (the number after the slash). The numbers should match. It should be noted there is a delay between turning on a device, and its consequent detection and appearance on the device list with a yellow icon. This delay may be several seconds. However, if the device count consistently shows more devices than are shown in the device list, consult the troubleshooting guide.

Once devices appear in the device list, they may be selected. Only devices in the working state will activate the additional main form features. Only one device may be selected at a time. To select a device, click on it in the device list. This will highlight the device in the list and populate the values on the lower portion of the form with all the settings from that particular device. The IP address of the selected device will also appear in the status bar at the bottom of the window.

Once a device is selected, clicking on the Bundle tab will show the bundle number setup for that device. Clicking on the System tab will show the *sysContact* and *sysLocation* parameters as well as serial bridge configuration, if it has any. Only values on the System tab may be changed. Changes to any of the settings are not automatically sent to the selected device. Click the apply button to send the changes to the selected device.. Clicking the Reset button will cause the system parameters to be reset back to the settings the selected device has stored. Any on-screen changes can thus be undone by clicking the Reset button as long as the changes have not been already applied to the device.

Note: Any changes not applied will be overwritten if the Reset button is clicked. Changes to parameters will also be lost if a different device is selected before any changes are applied.

– Setting a Device's IP Address If not using the STNet-switch
There may be occasions when a device shows a yellow icon that never goes green because its IP address setup is incompatible with the IP address setup on the network adapter connected to the CobraNet network in the PC. For example, its IP address is on a different network to the PC's IP address or a device is set to get an IP dynamically but Control Center has the IP auto assignment feature turned off. There may also be times when a device needs to have its IP address temporarily changed, for example, if a device is using a static IP address that is not in the same network range as the PC network interface. Control Center has the ability to change the IP address of a device on the fly.

Note: Changing the IP address of a CobraNet device works irrespective of whether the device has a static IP address, has a dynamically assigned IP address or even if the device has no IP address at all!

To change the IP address of a device, right clicking on a device in the device list and select the "New IP Address…" option. A small edit form appears that allows entry of a new IP address.

Figure 4 - New IP Address Form

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Enter the new IP Address and click OK. If the IP is valid, it will be applied immediately to the device. Its device list parameters will clear and Control Center will attempt to re-establish communications using its new IP address. Click the Cancel button to exit the form without setting a different address.

Note: Control Center does not check to see if the new IP address will allow Control Center to communicate with the device. It only checks the IP address has a valid value and is in a valid format.

3.4.1 – Using Static IP Addresses

Note: Not available in demo mode or with the STNet Switch

Control Center also has the ability to change the way a device gets its IP address by right clicking on a device in the device and hovering over the IP Address Type menu. The submenu that appears allows selection of a dynamic IP address or a static one. If dynamic is chosen, Control Center will erase any settings for static IP and static subnet mask. The device will continue to use its current IP address until such time as the unit is reset or the power is cycled. Selecting static allows the user to enter the static IP address and the static subnet mask for the device. If both entries are validated, the device is immediately configured with the new parameters and the IP address on the unit is reset to the applied static IP address. The devices device list parameters will clear and Control Center will attempt to re-establish communications using the new IP address. Click the Cancel button on either the static IP address or static subnet mask forms to exit without changing the mode or setting any values.

Note: Control Center does not check to see if the new IP address and subnet mask combination will allow Control Center to communicate with the device. It only checks they are have a valid value and are in a valid format. An incorrectly set subnet mask may cause the PC to be unable to contact the device.

3.4.2 – Setting the Static Subnet Mask

Note: Not available in demo mode or with the STNet -switch,

Control Center can view and change the value of the static subnet mask. It can be altered without the need to change the Static IP address. Changing this value will not have any effect on a device unless the device is set to have a static IP address.

3.4.3 – Configuring System Parameters

Note: Not available in demo mode,

The System tab allows modification of various CobraNet system parameters on the selected device.

Figure 5 - Main Form System Tab

The Persistence check box shows if the device has persistence enabled or not. With this setting checked, the device will remember any changes to the settings that are applied. With the check box clear, any changes are lost as soon as the device is powered down or reset and the device will return to the defaults stored in its firmware.

Note: Changes to the persistence parameter only take effect when applied. If persistence is activated, it may take some time for the device to process changes to its parameters. Leave the device turned on for a minute after changing the parameters to ensure persistence has taken effect. Turning the device off before that may result in parameter settings being lost.

The *SysDescription* field is read only. The *SysContact* and *SysLocation* fields are string fields and have no operational effect on the device and are used for operator information only. The *SysLocation* field is the same as appears in the location column of the device list.

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3.4.4 – About

Information about the application can be found by clicking on the Help-> About menu option
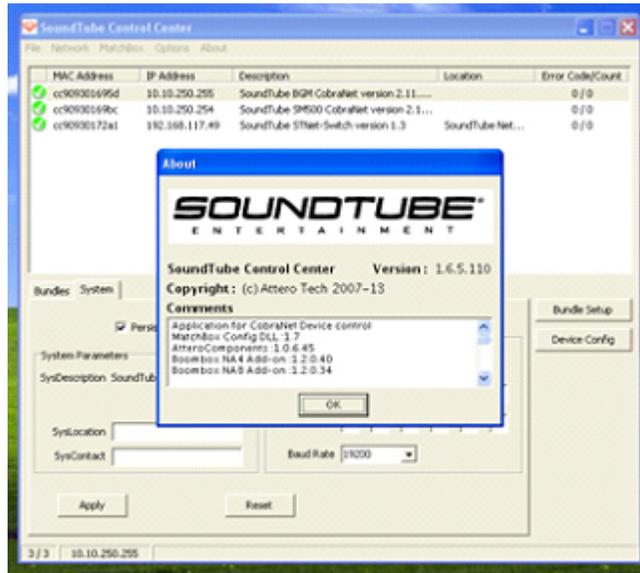
Figure 6 - About form

The form shows the version of Control Center being run and also all the add-ons that are currently installed along with their version.

4 – Bundles

Bundles are the method by which audio is routed around a CobraNet network. Some notes on bundles are included in the relevant sections but for further information on audio routing and bundles in CobraNet, see the Introduction to CobraNet and the reference documents listed.

Figure 7 - Bundle number settings on Main Form

The Control Center main form shows an overview of the bundle setup by displaying the bundle numbers a device is transmitting and receiving. Up to eight transmitters and eight receivers can be displayed. These values are updated each time a device is selected. These are read only fields and only the bundle transmitters and receivers that Control Center determines are available for the selected device will be shown.

The current state of the persistence parameter is also shown. This value only shows what the device is currently set to. If persistence is not set, any bundle information will be lost if the unit is powered down or reset for any reason. In some applications, this is desirable. If bundle values are not going to change, this feature should be turned on.

4.1 – Bundle Setup

Note: Not available in demo mode,

Editing the bundle settings requires using the Bundle Setup form. This not only allows viewing and setting of bundle numbers, but also the configuration of other audio routing parameters. To open the Bundle Setup form, select the device in the device list and click the Bundle Setup button.

Figure 8 - Bundle Setup form showing Bundle Transmitters

The form has two tabs. The Transmit Setup tab contains the device's bundle transmitters while the Receiver Setup tab contains the device's bundle receivers. Depending on the tab selected, up to eight bundle transmitter or eight bundle receivers can be displayed. However, the software limits how many bundle transmitters and receivers are available for editing by interrogating the device to determine how many bundle transmitters and receivers it actually has.

Note: Alterations to any settings on this form have to be applied for them to take effect on the unit. Like the main form, unapplied changes can be reset back to the device's current values by using the Reset button.

4.2 – Transmit Bundles

The bundle transmitter setup tab (see Figure 8) contains all the parameters to set up a device's bundle transmitters.

Edit boxes containing the bundle number used for each bundle transmitter are shown at the top. Below these, the submap grid shows which audio channels are allocated to a bundle. The number in the top right hand corner of each cell is the sample bit depth. Below the submap grid, drop down boxes for setting the Subcount, Unicast Mode, and Max Unicast parameters are given.

Clicking on a bundle edit box or on a cell in the submap grid will select the item so it can be edited. The bundle number accepts values from 0 to 65535 though private bundles (65280 to 65535) are not supported. For the submap, valid values are from 0 to 32 with a zero meaning no audio. See section 4.2.1 for more details about bundle numbers and submap settings.

To alter the bit-depth in the submap grid, right click anywhere within the desired cell. This will display a pop up menu showing the possible options for the bit-depth. The current selection will be ticked. Click on an alternate value or click anywhere except the menu to keep the current one.

Figure 9 - Receiver Submap

Note: Changing the bit depth has consequences. Adding more bits/sample increases the amount data sent over the network and reduces the number of channels a bundle can hold.

Other settings available for each transmitter are:

o Subcount – This drop down list configures the bundle to only use the specified number of audio channels. The cells in the grid above are colored based on this setting. Channels that are being used have a white background and channels which are not being used have a grey background. However, the colors shown relate to the value in the device not the value on the form. If this parameter is changed on the form, it must be applied for the colors in the grid to update.

o Unicast Mode – This drop down menu specifies the transmission mode. It works in conjunction with the Max Unicast value. The table below describes the operation of each mode.

Mode	Value	Description
M	0	Multicast always.
M-U 1	1	Unicast a single channel. Multicast if more.
M-U 2	2	Unicast up to 2 channels. Multicast if more.
M-U 3	3	Unicast up to 3 channels. Multicast if more.
M-U 4	4	Unicast up to 4 channels. Multicast if more.
U	0x7FFFFF	Unicast only. The device can still send to multiple channels using multi-unicast.

o Max Unicast – This drop down menu specifies the maximum number of unicast destinations supported simultaneously by the transmitter[1]. It can be set between 1 and 4. Its actual effect is dependent on the setting on Unicast Mode. If Max Unicast is greater than or equal to Unicast Mode, the bundle will switch to Multicasting before the limitation on unicasts set by this parameter is reached. In this case, Max Unicast has no effect. If Max Unicast is less than Unicast Mode and the number of receivers exceeds Max Unicast, the receivers will not receive audio. However, if the number of receivers exceeds the Unicast Mode value, the bundle switches to Multicasting and this parameter then has no effect. This parameter is ignored if Unicast Mode is set to Multicast only.

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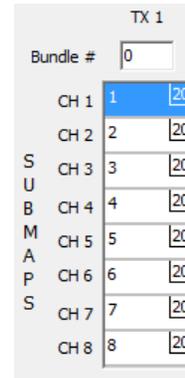
[1] A transmitter can service up to four unicast receivers. The number of unicast destinations transmitted to will never exceed this internal capacity limitation.

4.2.1 – Notes on Transmit Bundles

Setting the correct bundle number for the mode is vitally important. The bundle number should be set based on the transmission type. If the bundle is going to be unicast or multi-unicast, the bundle number should be between 256 and 65279. For multicast bundles, the bundle number should be between 1 and 255. Using a multicast bundle with a bundle number higher than 255, or using a unicast bundle with a bundle number less than 256, may result in the audio not being transmitted across the network.

Transmitter submap assignments in bundles should always be populated in the bundle starting with submap Ch1 and working down. The values in transmitter submap represent the audio from a particular CobraNet output. A value of zero represents no audio. A value of 1 represents the audio from CobraNet output 1. A value of 2 represents the audio from CobraNet output 2 and so on. Each output audio stream can be allocated as many times as required in as many bundles as required. This means the audio can be duplicated multiple times in the same bundle (normally not done as a single copy of the audio is normally enough but may be required given a particular application). It also means the same audio can also be used in more than one bundle too.

Whilst the values 1 through 32 are valid numbers, the actual usable channels on a device will depend on the device being set up. Some devices have up to 32 CobraNet output channels while others are only capable of 2 (refer to the device's manual for information on what CobraNet output channels are available for that device). Care should be taken when allocating channels to submaps to ensure only usable audio channels are included in bundles.

The subcount should also be set based on the number of channels actually needed. Setting up a bundle with a subcount of 8 and only placing four active channels in it with the remaining channels being either being set to zero or a non-used audio channel will still result in eight channels worth of data being sent across the network. The unused channels will simply contain zeroes or random data (depending on exactly how the bundle is set up and what CobraNet output audio the device has available). This wastes network bandwidth and under certain conditions, may cause audio issues due to excessive network bandwidth usage.

Another point to note is that the default settings of 5.33ms latency and 20-bit audio allows the full 8 channels of audio to be used. Changing the bit depth and/or the latency affects the number of channels a bundle may hold. A bundle can never hold more than eight audio channels but adding more bits/sample or decreasing the latency can restrict the maximum number of channels in a bundle to less than 8. More details on the restrictions and how these settings affect the channels count in a bundle can be found in the reference documents.

There can also be bandwidth-related consequences and added congestion when adding Multicast traffic to the network. See Bundle Assignment White Paper at http://www.cobranet.info/support/design/bundle_assignments.

4.3 – Receiver Setup
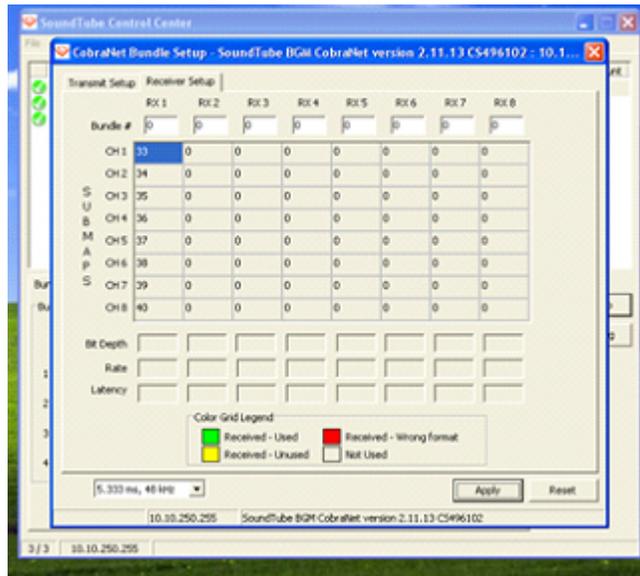
Figure 10 -Bundle receiver setup

The Receiver Setup tab is show in (Figure 11). Like the transmitter tab, bundle edit boxes for each bundle receiver are given above the submap grid. The values in the receiver submap grid represent which of the incoming audio streams from a bundle are assigned to the devices CobraNet inputs.

Clicking on a bundle edit box or on a cell in the submap grid will select the item so it can be edited. The bundle edit boxes accept values from 0 to 65535 though private bundles (65280 to 65535) are not supported. Valid values for the submaps are 33 to 64 or use 0 to ignore the audio in that slot and essentially throw that audio away.

The receiver status is constantly monitored in the background. The background color of each cell is updated based on its value and the receiving state of the bundle. The form contains a legend for quick reference with details of the grid colors. A table of the colurs and what they mean is included below.
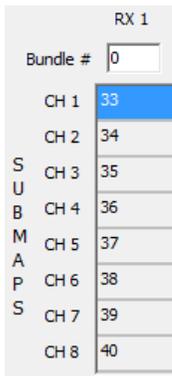
Figure 11 - Receiver Submap

Cell Color	Description
Blue	Cell selected
Green	Active audio is being received and used
Yellow	Active audio not being used
Red	Received audio is in an unusable format (Latency and/or sample rate do not match the device's latency and sample rate)
Grey	Audio not being received

*Note: The grid coloring is only done against the values the device is currently using therefore any changes to the settings that have not been applied won't be taken into account.

In addition to the grid coloration, any active bundle will also populate the fields below the submap grid to be populated.

4.3.1 – Notes on Receive Bundles

The submaps in the receiver submap grid work a little differently to those in the transmit submap grid. Each CobraNet input is assigned a number. The value 33 represents input 1, 34 represents input 2 and so on. However, unlike the transmit grid, each CobraNet input can only receive a single stream. This means that the only a single instance of each input value should be used across the entire submap grid (the only exception being the value 0

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which can be used as many times as necessary). Using the same CobraNet input value on two active streams *WILL NOT* result in the streams being mixed. CobraNet is only a transport mechanism and cannot mix signals enroute.

If two incoming audio streams in a device do have the same CobraNet input assigned to them, whether they are from the same bundle or different bundles, then one stream will be used, the other will not. This may be a desirable use case in certain applications but further reading on which stream the device uses is advised.

Whilst the values 33 through 64 are valid numbers, the actual usable channels on a device will depend on the device being set up. Some devices have up to 32 CobraNet input channels while others are only capable of 2 (refer to the device's manual for information on what CobraNet input channels are available for that device). Care should be taken when allocating input channels to submaps to ensure only usable input channels are used.

4.4 – Mode Rate Control

The Mode Rate Control drop down is below the bundle transmitter setup. The value it contains determines both the sample rate and latency of the device but from a single value. Sample rate of 48 kHz is supported. The STNet does not support 96 kHz. The system can be selected with latencies of 1.333ms, 2.666ms, or 5.333ms.

****** Warning *****
Great caution should be taken before altering this parameter for a device. This is especially true as the value controls two separate variables: sample rate and latency. If a device uses on-board DSP, changing the latency is OK but changing the sample rate may be detrimental to device operation and may stop it from functioning completely..If latency is changed on one device it mush be changed on all devices on the network.
****

For SoundTube products, any latency value can be used provided the sample rate value remains the same. Changing the sample rate (regardless of what latency used) for these devices will be detrimental to the device in question and may cause the device to cease functioning.

For non-SoundTube devices, consult the manual of the device you wish to alter the sample rate of to verify that the sample rate is supported and it is safe to change. If in doubt, do not change this value. SoundTube takes no responsibility for the incorrect operation of a non-SoundTube device if this software is used to alter the device's ModeRateControl parameter.

5 - Device Setup for SoundTube Devices

CobraNet devices from SoundTube utilize on-board DSP processing capabilities and contain additional configurable parameters not covered so far in this manual.

The Control Center application contains interfaces that allow these additional parameters to be viewed and configured.

Each type of device has its own interface. To gain access to these parameters and settings, _either_

A: Right click on the device in the device list and click the Device Config option from the pop-up menu, or
B: Left click on the device in the device list and click the Device Config button.

Details of the settings for each individual device are included in the STNet owner's manual.

6 – Troubleshooting

Ensure your software is the latest version. The latest released version can be obtained from the Control Center Download section of the SoundTube website (www.soundtube.com).

6.1 – Network Setup

Before beginning troubleshooting devices and software, it is worth first checking that the CobraNet Network is correctly constructed and connected.
- o Where multiple CobraNet devices are used, the CobraNet network must be built using STNet or Ethernet Switches. Ethernet Hubs must not be used.
- o The use of 10 Mbit/s connections should be avoided.
- o The use of wireless connections must be avoided.
- o CobraNet is not routable so the use of routers should be avoided (using CobraNet through the embedded switch of a residential type of router is OK as long as audio and control data is not required on the WAN side of the router).
- o CobraNet devices all run at 100 Mbits/s so connections from the CobraNet device to the network must be capable of running at 100 Mbits/s.
- o Connections between individual infrastructure devices (switch to switch, etc.) can run at 100 Mbits/s or above.

Also be wary of having multiple instances of Control Center running on different machines but connected to the same CobraNet network. If both try and access the same device, particularly using the DSP interface with metering enabled, both machines will send multiple refreshes for the metering and will bog the device down under a barrage of SNMP messages.

6.2 – Possible Issues

No devices are detected (status bar device count shows 0)
- o If running Control Center V1.65110 or later, check that other CobraNet software (such as CobraNet Discovery V4.0.0 or later) is not running at the same time
- o If running Control Center V1.6.5.110 or later and the PC running Control Center hibernates[2] while Control Center was active, all devices will seem to disappear when the PC is reactivated. The only known way to get the devices to re-appear is to close the software and run it again.
- o Check the CobraNet devices are powered up and correctly connected
- o Check to ensure the PC is correctly connected to the CobraNet network
- o Ensure the PC has a correctly assigned IP address
- o Ensure the correct network card has been selected that is connected to the CobraNet network
- o Symantec Endpoint. Must be disabled.
- o Firewall, anti-virus and Internet security could be blocking Control Center
- o If using a managed switch turn off all the managed functions especially (It is recommended that unmanaged switches are used on the Cobranet Network).
    - o a. IGMP (internet group managed protocol)

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[2] Hibernation mode is where the PC is essentially turned off but keeps its memory active. Many PCs indicate this mode using the power LED by flashing it. The PC is not in hibernation if the PC runs a screen saver or it turns off the monitor to save energy.

No network cards are available to be selected
- o Check the PC has network cards installed
- o

Devices are detected (yellow icon) but do not show as fully working (green icon).
- o Check for other PCs running Control Center or other CobraNet software (such as CobraNet Discovery). They may have allocated devices a temporary IP address that is not usable with the IP/subnet mask combination of this PC running Control Center. Close any other such software and then cycle power on the device to reset any temporary IP address it may have been given previously.
- o Close the application, disconnect then reconnect the PC Ethernet cable then restart the application.

"SNMP update Failed" message appears in the status bar
- o Check the device is still connected to the network. If it is, change the settings again and retry.
- o Ensure another PC is not attempting to access the same device with metering enabled.

Devices do not remember any updated values
- o Ensure that after making changes, the apply button is clicked.
- o If the device forgets the settings during a power off, ensure that persistence is on.
- o If the settings are DSP-related from one of the Device Setup forms, ensure the Save as Default button is pressed to save the default values to flash.

The switch does not populate on the main screen:
- o The computer could be plugged into the LAN side of the switch.

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