CyberData VoIP V2 Speaker with VoIP Clock Kit Configuration Guide for OmniPCX Enterprise

1.0 Introduction

The CyberData VoIP Ceiling Clock-Speaker V2 is a SIP enabled speaker that can be connected to the OmniPCX Enterprise via SIP device or external voice mail to broadcast messages to a campus area such as schools' hallways from any internal or external phone connected to the OmniPCX Enterprise as well. The CyberData V2 Speaker accepts direct RTP packets using codec's G-711 μ- Law or A-Law.

Figure 1. CyberData VoIP Ceiling Clock-Speaker V2

The VoIP Clock Kit has two (2) Status and Activity LEDs:

* Network Link/Activity (yellow): it is a yellow LED indicating the LAN connectivity.

* Speaker Status (green): it is a green LED indicating the status of the board.

1.1 Network Link/Activity (yellow) Description:

This LED indicates the boot phase in the following steps:

1. The yellow LED comes on immediately after power up.

2. If the network link is established it remains on. When there is network activity this LED blinks. The CyberData V2 Speaker sends SIP Register to the OmniPCX Enterprise about 60 seconds after boot.

1.2 Speaker Status LED (green) description:

This LED indicates the boot phase in the following steps:

1. The green LED comes on approximately seven seconds after power up.

2. After about 23 seconds (with a static IP address) or 27 seconds (if the board is set to use DHCP), the green LED will blink six times to indicate that the board is fully booted.

3. After about 56 seconds, the speaker will beep if the parameter **Speaker Beep After Initialization** is enabled.

2.0 Physical Connection

The CyberData V2 Speaker can only be connected to an 802.3af compliant Power over Ethernet (PoE) Switch.

Figure 2 illustrates how to connect the CyberData V2 Speaker to a 802.3af compliant PoE switch via a Cat 5 Ethernet cable.

Figure 2. CyberData V2 Speaker Physical Connection

802.3af Compliant PoE Switch

Cat 5 Ethernet cable
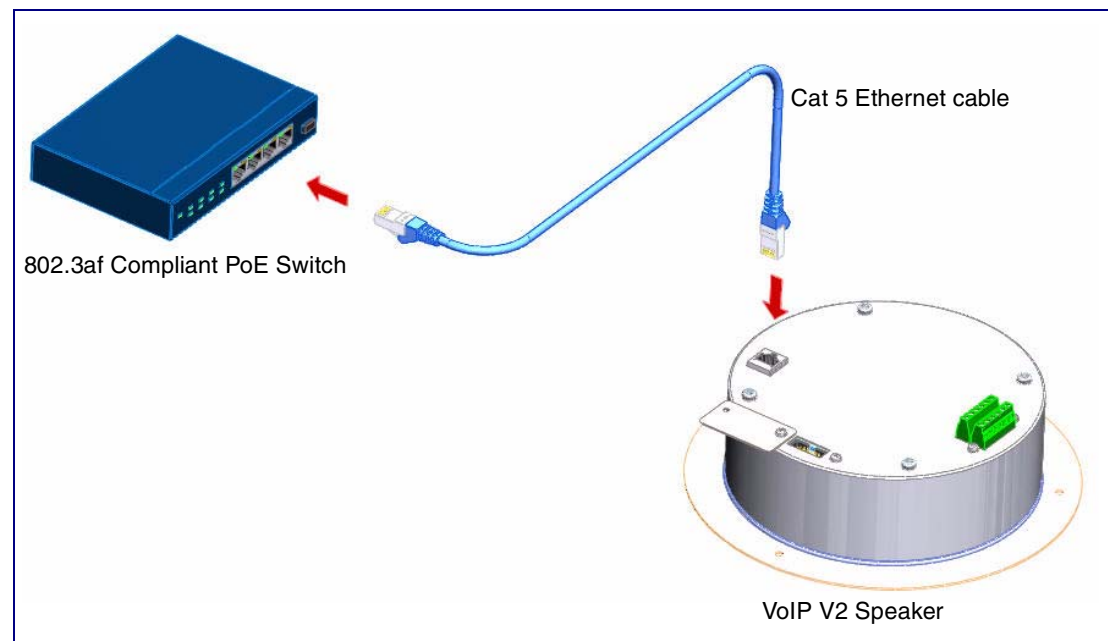
VoIP V2 Speaker

3.0 CyberData V2 Speaker Configuration

The factory default settings of CyberData V2 Speaker are listed below:

- IP Addressing mode: DHCP
- IP Address: determined by DHCP server
- Web Access Username: **admin**
- Web Access Password: **admin**
- Subnet Mask: determined by DHCP server
- Default Gateway: determined by DHCP server

To find out the IP address of the Speaker, you may run the Discover Utility which is available for download at the following page:

http://www.cyberdata.net/support/voip/discovery_utility.html

In Figure 3, the Discovery Utility window displays all of the SIP Speakers within your network after clicking on the **Scan** button .

Figure 3. CyberData V2 Speakers scanned by Discover Utility

Scan button   **Launch Browser** button
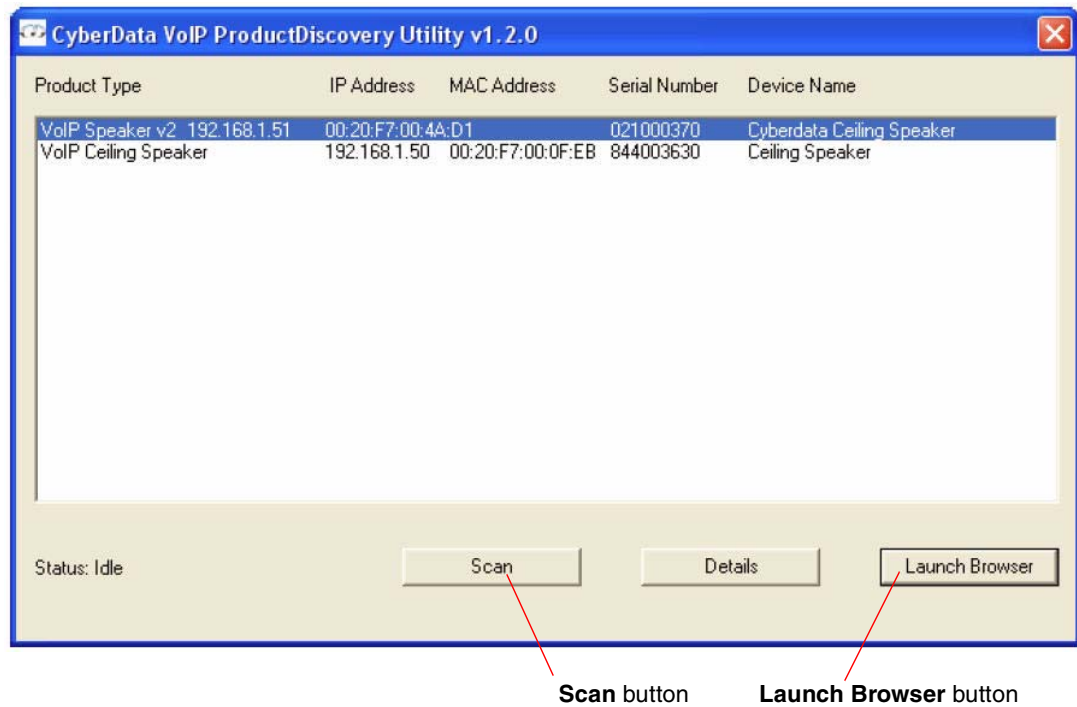
1. After discovering the IP address, click the **Launch Browser** button to open the web browser to access the **Home Page**.

2. When prompted, use the following default **Web Access Username** and **Web Access Password** to access the **Home Page** (Figure 4):

   • Web Access Username: **admin**

   • Web Access Password: **admin**

Figure 4. .**Home Page**

3.1 Network Setup

1. Click on the **Networking** button to go to the **Network Configuration** page.

2. Click on the **Static** radio button to change the IP address to **Static**.

Figure 5. .Network Configuration Page

3. Set the **IP Address**, **Subnet Mask** and **Default Gateway** according to the customer's network architecture.

4. After changing the parameters, click **Save Settings** which updates the changed parameters and reboots the device if appropriate.

3.2 Device Configuration

Click on the **Device Config** button to set the device parameters on the **Device Configuration** page.

Figure 6. Device Configuration Page

1. Check the **Auto-Answer Incoming Calls** box to enable the device to automatically answer incoming calls.

2. After changing the parameters, click the **Save** button. The device will reboot.

3. Click on the **Test Audio** button to test the audio and ensure that the CyberData V2 Speaker is functional.

3.3 SIP Configuration

Click on the **SIP Config** button to change the SIP settings on the **SIP Configuration** page.

Figure 7. SIP Configuration Page

1. Set the following parameters:

- **SIP Server**: The OmniPCX Enterprise Main CPU IP Address (192.168.1.103 in this example)

- **Remote SIP Port and Local SIP Port**: 5060

- **SIP User ID** and **Authenticate ID**: The directory number assigned by the customer to the CyberData V2 Speaker (4001 in this example).

- Click to check the **Register with a SIP Server** box.

- **Re-registration Interval (in seconds)**: 3600 (1 hour).

Note Make sure that the Re-registration interval value is greater than the minimum accepted by the OmniPCX Enterprise under **SIP Registrar**.

2. The CyberData V2 Speaker will reboot after you click on the **Save** button.

3. Check to see whether the SIP Registration was accepted by the OmniPCX Enterprise by entering the command **sipregister**. If the SIP Registration was accepted, you should be able to see something similar to the following on the screen:

```
(4)oxe> sipregister
**************************************************
Dump local registrar base
Address of record : 4001
contact : sip:4001@192.168.1.51, udp, 2225 s
**************************************************
****** registered user number : 1
**************************************************
```

4.0 OmniPCX Enterprise Configuration

The CyberData V2 Speaker can be configured in the OmniPCX Enterprise as a SIP Device or as an External SIP Voice Mail. The CyberData V2 Speaker works properly when the OmniPCX Enterprise sends re-INVITE after the user places the call on hold. The user can actually make a conference with another Speaker. Unlike the version CyberData Version 1 Speaker, the V2 Speaker did not present any issues during some tests that were conducted.

4.1 SIP Subnetwork

Set the parameter **Protocol Type** = ABC_F under the **Translator\Network Routing Table**:

Figure 8. Network Routing Table

```
+-Review/Modify: Network Routing Table-----------------------------+
|                                                                  |
|               Node Number (reserved) : 4                         |
|                  Instance (reserved) : 1                         |
|                     Network Number : 8                           |
|                                                                  |
|       Rank of First Digit to be Sent : 1                         |
|       Incoming identification prefix : --------                  |
|                      Protocol Type + ABC_F                       |
|       Numbering Plan Descriptor ID : 11                          |
|                       ARS Route list : -1                        |
|                      Schedule number : -1                        |
|                       ATM Address ID : -1                        |
|                   Network call prefix : --------                 |
|                       City/Town Name : -------------------       |
|                 Send City/Town Name + False                      |
|           Associated Ext SIP gateway : -1                        |
|             Enable UTF8 name sending + True                      |
|                                                                  |
+------------------------------------------------------------------+
```

4.2 SIP Trunk Group

Set the following parameters under **Trunk Groups**:

- **Remote Network**: The network number under Translator\Network Routing Table reserved to all external SIP devices,

- **Trunk Group Type**: T2,

- **Q931 Signal variant**: ABC-F.

- **T2 Specification**: SIP

Figure 9. Trunk Groups

```
+-Review/Modify: Trunk Groups-----------------------------------------------+
|                                                                           |
|              Node Number (reserved) : 4                                   |
|                      Trunk Group ID : 8                                   |
|                                                                           |
/                    Trunk Group Type + T2                                  /
|                     Trunk Group Name : SIP-GW                             |
|              UTF-8 Trunk Group Name : -------------------------------------- |
|              Number Compatible With : -1                                  |
/                      Remote Network : 8                                   /
|                        Node number : 4                                    |
/                  Q931 Signal variant + ABC-F                              /
| Auto.DTMF dialing on outgoing call + YES                                  |
/                   T2 Specification + SIP                                  /
|  Homogenous network for direct RTP + NO                                   |
|                   Public Network COS  : 31                                |
+---------------------------------------------------------------------------+
```

4. Set the following parameters under **Trunk Groups\Trunk Group**:

- **Quality profile for voice over IP**: Always VoIP,

- **IP Compression Type**: G 711

Figure 10. Trunk Groups

```
+-Review/Modify: Trunk Group------------------------------------------------+
|                                                                           |
|              Node Number (reserved) : 4                                   |
|                      Trunk Group ID : 8                                   |
|                  Instance (reserved) : 1                                  |
|                                                                           |
|                     Trunk Group Type + T2                                 |
|                      T2 Specification + SIP                               |
|          TS Distribution on Accesses + YES                                |
/   Quality profile for voice over IP + Always VoIP                         /
/                    IP Compression Type + G 711                            /
|                Use of volume in system + YES                              |
|                    Routing To Manager + NO                                |
|                            Trunk COS : 31                                 |
|                                                                           |
+---------------------------------------------------------------------------+
```

5. Set the parameter **Number of SIP Accesses**: 2 under **Trunk Groups\Trunk Group\Virtual accesses for SIP**:

Figure 11. Virtual accesses for SIP

```
+-Review/Modify: Virtual accesses for SIP------------+
|                                                    |
|            Node Number (reserved) : 4              |
|                    Trunk Group ID : 8              |
|                Instance (reserved) : 1             |
|                Instance (reserved) : 1             |
|                                                    |
|            Number of SIP Accesses : 2              |
|                                                    |
+----------------------------------------------------+
```

4.3 SIP Gateway

Set the following parameters under **SIP\SIP Gateway**:

- **SIP Subnetwork**: The network number under **Translator\Network Routing Table** reserved to all external SIP devices

- **SIP Trunk Group**: The trunk group number under **Trunk Group**s reserved to all external SIP devices.

- **IP Address**: OmniPCX Enterprise Main CPU IP Address (192.168.1.103 in this example).

Figure 12. SIP Gateway

```
+-Review/Modify: SIP Gateway-----------------------------------------------+
|                                                                          |
|              Node Number (reserved) : 4                                  |
|                 Instance (reserved) : 1                                  |
|                 Instance (reserved) : 1                                  |
|                                                                          |
|                      SIP Subnetwork : 8                                  |
|                     SIP Trunk Group : 8                                  |
|                          IP Address : 192.168.1.103                      |
|                Machine name - Host : oxe.alcatel.office                  |
|              SIP Proxy Port Number : 5060                                |
|         SIP Subscribe Min Duration : 1800                                |
|         SIP Subscribe Max Duration : 86400                               |
|                       Session Timer : 1800                               |
|                   Min Session Timer : 900                                |
|                Session Timer Method + RE_INVITE                          |
|               DNS local domain name : ------------------------------------ |
|                            DNS type + DNS A                              |
|                SIP DNS1 IP Address : -------------------------------------- |
|                SIP DNS2 IP Address : -------------------------------------- |
|                          SDP in 18x + True                               |
|                         Cac SIP-SIP + False                              |
|     INFO method for remote extension + False                             |
|        Dynamic Payload type for DTMF : 97                                |
|                                                                          |
+--------------------------------------------------------------------------+
```

4.4 SIP Proxy

Set the parameter **Minimal authentication method**: SIP None under **SIP\ SIP Proxy**:

Figure 13. SIP Proxy

```
+-Review/Modify: SIP Proxy---------------------------------------------------+
|                                                                            |
|                Node Number (reserved) : 4                                  |
|                    Instance (reserved) : 1                                 |
|                    Instance (reserved) : 1                                 |
|                                                                            |
|                SIP initial time-out : 500                                  |
|                        SIP timer T2 : 4000                                 |
|                    Dns Timer overflow : 5000                               |
|                        Recursive search + False                            |
|        Minimal authentication method + SIP None                            |
|                    Authentication realm : -------------------------------- |
|   Only authenticated incoming calls + False                                |
|                        Framework Period : 3                                |
|        Framework Nb Message By Period : 25                                 |
|            Framework Quarantine Period : 1800                              |
|                                                                            |
+----------------------------------------------------------------------------+
```

4.5 Configuring CyberData V2 Speaker as SIP Device

Set the following parameters under **Users**:

- **Directory Number**: Number selected by the customer that will be used to call the CyberData V2 Speaker
- **Set Type**: SIP device
- **URL UserName**: SIP User ID under SIP Setup of the CyberData V2 Speaker configuration
- **URL Domain**: OmniPCX Enterprise Main CPU IP Address (192.168.1.103 in this example)
- **SIP Authentication**: Authenticate ID under SIP Setup of the CyberData V2 Speaker configuration.

Figure 14. Users

```
+-Review/Modify: Users-------------------------------------------------------+
|                                                                            |
|                Node Number (reserved) : 4                                  |
|                        Directory Number : 4001                             |
|                                                                            |
|                        Directory name : CyberData1                         |
|                Directory First Name : -------------------                  |
|                        Location Node : 4                                   |
|                        Shelf Address : 255                                 |
|                        Board Address : 255                                 |
|                    Equipment Address : 255                                 |
|                            Set Type + SIP device                           |
|                        Entity Number : 4                                   |
|                        URL UserName : 4001                                 |
|                            URL Domain : 192.168.1.103                       |
|                    SIP Authentication : 4001                               |
|                                                                            |
|                        SIP Passwd : ****                                   |
|                            Confirm : ****                                  |
|                                                                            |
+----------------------------------------------------------------------------+
```

4.6 Configuring CyberData V2 Speaker as External SIP Voice Mail

Set the following parameters under **Applications\External Voice Mail**:

- **Voice Mail Dir.No**: Number selected by the customer that will be used to call the CyberData V2 Speaker

- **URL UserName**: SIP User ID and Authenticate ID under SIP Setup of the CyberData V2 Speaker configuration

- **URL Domain**: OmniPCX Enterprise Main CPU IP Address (192.168.1.103 in this example)

Figure 15. External Voice Mail

```
+-Review/Modify: External Voice Mail------------------------------------------+
|                                                                             |
|              Node Number (reserved) : 4                                     |
|                  Instance (reserved) : 1                                    |
|                  Voice Mail Dir.No. : 4001                                  |
|                                                                             |
|                     Directory Name : CyberDataVMAIL1                        |
|                     Connection COS : 0                                      |
|                 Public Network COS  : 2                                     |
|                       Entity Number : 4                                     |
|                      Cost Center ID : 255                                   |
|                        Charging COS + Justified                             |
|                        URL UserName : 4001                                  |
|                          URL Domain : 192.168.1.103                         |
|               SIP Authentication : ------------------------------------- |
|                                                                             |
|                           SIP Passwd : ----------                           |
|                              Confirm : ----------                           |
|                                                                             |
|          Register On Line Number : --------                                 |
|          Register URL (Username) : ------------------------------------- |
|           Register URL (Domain) : ------------------------------------- |
|                                                                             |
+-----------------------------------------------------------------------------+
```