CORETEC

COMMUNICATIONS

INSTALLATION AND OPERATING INSTRUCTIONS
Revision Date: June 8, 2012

VCX-7401   Dual H.264/MPEG-4/MPEG-2/JPEG Encoder with
H.264/MPEG-4 Decoder

Table of Contents

Introduction

The model VCX-7401 is the stand-alone H.264/MPEG4/MPEG-2/JPEG version of the VCX family and is housed in a 8.5-inch 1U rack mount case with a control port and a universal AC power supply.

The VCX Digital Video transport system consists of two video encoders, allowing either H.264, MPEG4, MPEG2 or JPEG as well as a built in decoder. This makes up the encoder(selectable)/decoder pair providing the capability for one-way end-end transmission of the compressed digital video stream in the H.264 or MPEG-4 format. The encoding-decoding process is applied to an NTSC (or PAL) video input, selected in software.

Modification of video format and resolution, data sub-channel characteristics, and basic IP parameters is achieved through one of the following means:

a)   Terminal Program
b)   Telnet through the Ethernet connection
c)   Web Interface Applet
d)   SNMP

NOTE: The VCX7401 is optimized for encoder or decoder operation. While both the encoders and decoder can be used simultaneously, it is not recommended as perfomance issues may occur. The exception is using the decoder to view it's own H.264 or MPEG-4 stream, as this has minimal affect on performance.

Familiarization with the VCX-7401

The VCX-7401 Video Encoder accepts one BNC video in, one BNC Video Out and one data sub-channel. The encoder has a programmable reset, which prompts the re-initiation of the video stream. The decoder also has a programmable reset command, tied to errors in the incoming video stream, as well as a reboot command.

Birds Eye view of the VCX-7401

Front Panel

Front view of the VCX-7401

Back Panel

Rear view of the VCX-7401

Com Port Data Interface

There is one bi-directional data interface, RS-232 and RS-422 selectable, on the encoder, which uses a RJ-45 connector. Refer to Table below, in Appendix A, for the correct pin out. <u>When using the RS-232 configuration pin 4 is ground.</u> Com Port parameters are configured through the system software.

<u>Refer to Appendix A for the correct pin out</u>.

Video Input Interface

Connect a BNC-terminated coaxial cable from a composite video source (e.g., CCTV camera) to the BNC connector labeled "VIDEO IN" (encoder). The composite video input should be in NTSC or PAL format. The maximum length of cable that should be interfaced to the encoder or decoder is 100 feet, although the specific installation environment will dictate the actual permissible length.

Ethernet Interface

There is one Ethernet interface for encoder or decoder, which uses a standard RJ-45 connector. The standard method of terminating an ETHERNET cable reflects the TIA568A standard (Telecommunications Industry Association standard).

Refer to Appendix A for the Straight Through and Crossover Ethernet Pin Out.

Power

Power is applied through a standard IEC type detachable line cord at the rear of the unit. The unit automatically senses 110 VAC or 220 VAC supply and will operate with either. The typical current is 1.2 amps from a 110VAC line and drops to 0.9 amps from a 230 VAC line source.

Mounting the Device

The VCX-7401 Encoder is a 8.5 inch wide device and provides holes for mounting onto a chassi. The unit can be mounted in any orientation.

Updating Firmware with TFTP

TFTP is a simple and reliable way of updating the firmware on any device. All that is required is to have access to a TFTP server which will be used as the host and contain the update file, which is named vcx7401.tgz.

Via Telnet, enter the following command in order to update the firmware for the device that is being used.

TFTP <Server IP Address>

Operation

The VCX-7401 is capable of encoding up to 2 simultaneous streams of video, or decode a single video stream. When encoding, the video streams can be set to a multicast or unicast IP.

Limitations

There are limitations imposed on the user when configuring the VCX-7401. They are as follows.

- Only the encoder or the decoder can be configured for operation at the same time.
- When using both encoders H264 and MPEG4 cannot be used together at this time.

- The CPU load should be observed (Telnet or Web) when configuring the bitrates.
- The MPEG-2 stream is elementary.
- Both the H.264 and MPEG-4 streams are RTP.
- The JPEG images are uploaded using FTP to server.

Decoding on 3rd Party Decoders

There are several methods that allow decoding on non- Coretec decoders.
- SAP – H.264, MPEG-4, and MPEG-2 are supported.
- RTSP/RTP – H.264 and MPEG-4 are supported
- UDP – MPEG-2 is supported.

The freely available no-cost media player called VideoLan Client or VLC is compatible with the VCX-7401. It is available from www.videolan.org.

Using RTSP

RTSP (Real Time Streaming Protocol) is the protocol that many decoders use to access the encoded stream. RTSP establishes a TCP connection with the VCX-7401 and requests the data necessary to determine the type of stream and the connection IP/Port. The information to create the RTSP request is provided by the user in the form of a URL. The following is an example URL based on an example IP address used for the VCX-7401.

- rtsp://192.168.0.253/stream1 – Accesses the stream from the 1st encoder.
- rtsp://192.168.0.253/stream1 – Accesses the stream from the 2nd encoder.
- rtsp://192.168.0.253 – Accesses the stream from the 1st encoder.

RTSP only works with the encoder set to H.264 or MPEG-4.

IP Configuration

Overview

> The commands contained in this section provide the means to configure critical network, com ports, encoder, and decoder parameters. The user should consult the factory if specific functions of interest do not appear to be supported.

Initial IP Addressing

> To set the device parameters properly, encoder and decoder units must be given appropriate IP addresses, compatible with the network on which they are to be connected. There are two methods for setting the network address.

- Set your computer's IP address to the subnet of the default IP of the VCX-7400. The default IP and subnet are 192.168.0.253 and 255.255.240.0. You can set your computer to any other address on the subnet. After putting your computer on the subnet, use telnet to set VCX-7401 network parameters as decided by you or your network administrator.
  a. IP
  b. Subnet mask
  c. Optional the gateway.

- The software module **VXNETCONFIG** was developed to allow a network administrator to set the IP and Subnet in the VCX-7401 without having to modify the computer's network address.

VcxNetConfig
Contact Core Tec to download VcxNetConfig. Select VcxNetConfig by double clicking on the program. The following window will open:
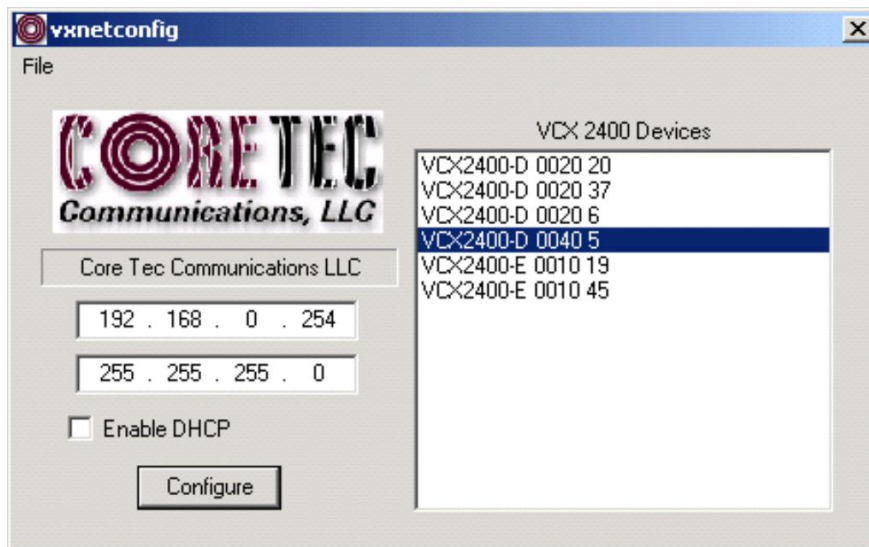
VCXNETCONFIG Window

Description of Program Functions

(a)   The first box on the left hand side of the window displays the current IP address of the CORE TEC device being interrogated. Type the new IP address into this space

(b)   The second box is used to change the SUBNET address. Note that the address displayed is always 255.255.255.0. Type the new SUBNET address into this space.

(c)   The Enable DHCP box is checked when DHCP is to be enabled.

NOTE: DHCP is not currently enabled on the VCX-7401. Selecting DHCP will have no affect.

(d)   The Configure button is to execute the requested changes to the IP and SUBNET information. Note that future queries of the SUBNET will indicate 255.255.255.0. Therefore, the correct SUBNET address should always be entered prior to using the Configure button.

(e)   The box on the right hand of the window displays all VCX-7401 devices (encoders and decoders) on the network.

(f)   To make a change to the equipment addressing perform the following steps:

(g)   Select the Core Tec device address from the list in the box on the right side of the window.

(h)   Move the cursor to the IP box and select the first octet by highlighting the octet. Enter the new IP data for the selected octet. As the 3 digits are entered, the software will automatically highlight the next octet for change.   Complete entering the IP address and then switch to the SUBNET data.

(i)   Move the cursor to the SUBNET box and select the first octet by highlighting the octet. Enter the new SUBNET data for the selected octet. As the 3 digits are entered, the software will automatically highlight the next octet for change. Complete entering the SUBNET data.

(j)   To execute the change press the configure button. The IP address and the SUBNET will be updated in the selected Core Tec equipment.   The new IP address will be displayed. The SUBNET will display a default class C- SUBNET there is no read back of the changed SUBNET displayed.

(k)   Repeat this process for all the CORE TEC equipment requiring change.

Connecting to the Unit

There are currently three ways to connect to the VCX-7401.

1. **Telnet**

   Password: admin (default)
   To change the default password perform the following:

   Type: PASSWORD <followed by your password (up to 11 characters)>

   Where <your password> equals the new password.

For configuration using an Ethernet connection, activate the Telnet function by the following:

- Initiating from the Command Prompt - Telnet nnn.nnn.nnn.nnn
- Use the MS Windows – START – RUN Telnet nnn.nnn.nnn.nnn

(where nnn.nnn.nnn.nnn is the IP address of the unit being configured)

Employ the command set as described below.

Note that the initial IP addresses (factory default) are:

  Encoder 192.168.0.253

  Decoder 192.168.0.254

  Subnet Mask 255.255.255.0

2. **Terminal Program**

NOTE: The following procedure is valid for standalone units only and is not applicable to rack mount units.

The Terminal Program, such as HyperTerminal, configuration procedure uses the serial connection on the front of the unit.

Using the PCA-2400 programming cable, connect to the control port. This cable should be attached to the serial port of an attached PC and the Hyper Terminal program launched. The PC should have its Com Port configured as:

Baud rate	115,200 kbps
Data bits	8 bits
Parity	No Parity

11

       Stop Bits   1 Stop Bit
       Flow control   None

Activate the HyperTerminal function, normally found in a sub-menu under ACCESSORIES. Employ the command set as described in the following section.

Password: admin (default)

To change the default password perform the following:

Type: PASSWORD <followed by your password (up to 11 characters)>

Where <your password> equals the new password

3.   Web Interface

The web interface works with Internet Explorer, Mozilla Foxfire, and Google Chrome. The web interface is capable of viewing the streaming video in the H264, MPEG-4, and MPEG-2 formats. However this functionality requires the installation of VLC and either the Firefox or Chrome browser. Please refer to the appendex section on VideoLan Client before installing VLC.

To get to the Login Page of the web interface, the user needs to type in the IP address of the device into the address bar. On the Login Page, shown below, the user will need to type in the password to login successfully.

Login Page of Web Interface Applet

When the unit accepts the log in (default password: admin), the following web page will be displayed.

On the top of the screen is a front view image of the device. If you click on any of these ports the associated tab will appear below the image inside the tabbed pane. Also an animation will appear for a few seconds on the bottom right corner. The user may click here in order to to be sent to tutorial page. The user will find here, all the associated documents to the VCX-7401, such as the manual and video tutorials on how to use the device and the web applet. Aside from clicking on the ports in the image of the device at the top of the applet, they can click directly on the tabs below. There are currently ten tabs to choose from: Main, Network, Subchannel, OSD, Video, Encoder1, Encoder2, Decoder SNMP, and Miscellaneous. To the right the user will see 7 buttons: Logout, Commit, Commit/Reboot, Reboot, Open Manual and two other buttons that allow you to view either the Encoder1 or Encoder2 video stream on a new web page.

Main Tab

Device Name: VCX7401E 0404 70
MAC: 00:0a:fc:04:04:46
Password: •••••
CPU Load (%): 47

Configure Settings

Network Tab

DHCP Enable: ☐

Device IP: 192.168.1.8

Subnet Mask: 255.255.240.0

Gateway: 0.0.0.0

DNS IP: 0.0.0.0

Command Port: 5000

Configure Settings

Logout

Commit

Reboot

Commit/Reboot

Manuals/Tutorials

View Encoder 1 Video

View Encoder 2 Video

CORETEC
VCX-7401

Main
Network
Subchannel
OSD
Video
Encoder 1
Encoder 2
Decoder
SNMP
Miscellaneous

Subchannel Tab

	Logout
	Commit
	Reboot
	Commit/Reboot
	Manuals/Tutorials

Main
Network
Subchannel
OSD
Video
Encoder 1
Encoder 2
Decoder
SNMP
Miscellaneous

Enable: ☑

Baud Rate: 2400

Line Type: RS422

Stop Bits: ONE

7/8 Bit: Eight

Parity: None

Destination IP: 192.168.11.54

Port: 5002

TCP: ☑

Server: ☑

View Encoder 1 Video

View Encoder 2 Video

Configure Settings

OSD Tab

Video Tab

Encoder1 Tab

Encoder2 Tab

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Logout	
Commit	
Reboot	
Commit/Reboot	

Manuals/Tutorials

View Encoder 1 Video

View Encoder 2 Video

- Main
- Network
- Subchannel
- OSD
- Video
- Encoder 1
- Encoder 2
- Decoder
- SNMP
- Miscellaneous

Enable: ☐
Encoder: MPEG4 ▾
SAP Name:
SAP Info:
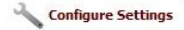
Video IP: 239.5.6.9
Video Port: 4570
Resolution: D1 ▾
FPS: 30 ▾
Bitrate: 2000

🔧 Configure Settings
🛑 Stop

Decoder Tab

SNMP Tab

Miscallaneous Tab
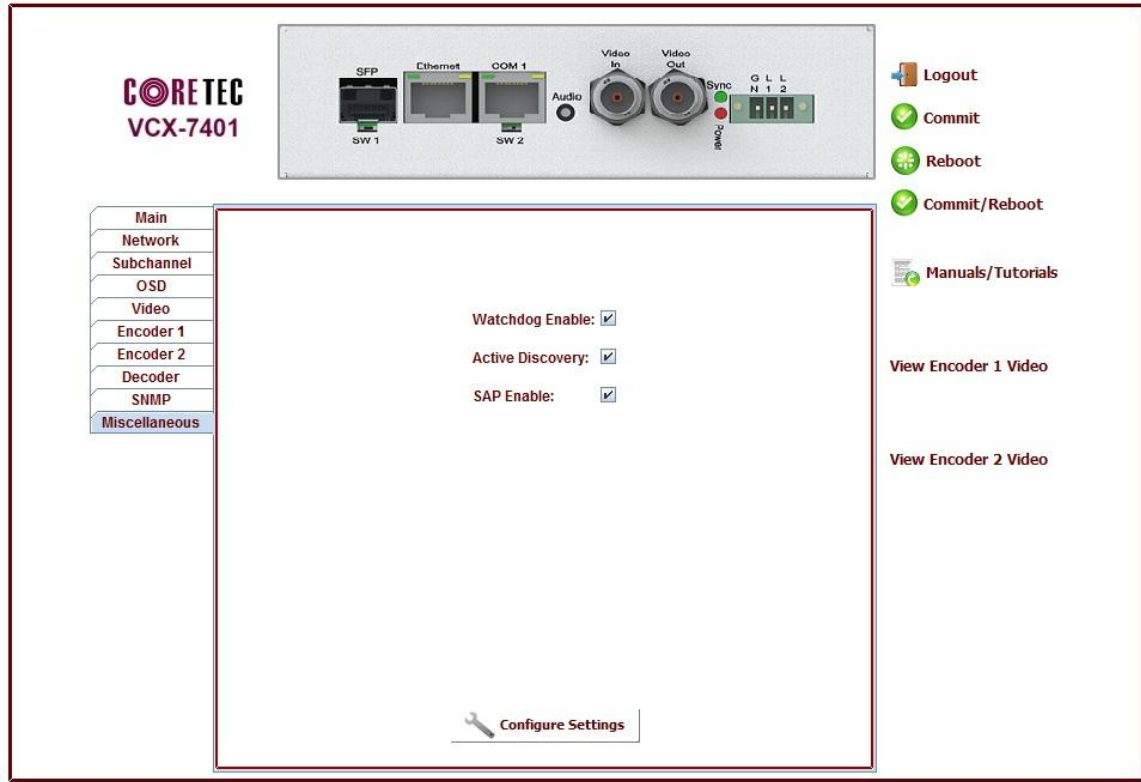
Logout Button

The logout button will log the user out with out commiting any changes that may have been made during the current session. Any changes that were made will stay until the device has been rebooted.

Commit Button

The commit button will commit any changes that may have been configured in the current seesion. If you reboot after pressing the commit button, then all changes will be commited and saved and viewable upon reboot.

Commit/Reboot Button

The commit/reboot button will also log out the user and also commit any changes that may have been configured in the current seesion. This means that when the devices shuts down and reboot the changes that were made will still be in effect.

Reboot Button

The reboot button will immediately shut down the device and reboot. If any changes were made during the session and not commited, then they will not stay in effect after reboot completes.

NOTE: This is good to use if the user has made many new configurations but doesn't wish to keep them.

Open Manual

The open manual button is just a shorcut to open this manual.

View Encoder1 Video

This button will open a new page where the Encoder1 video stream may be viewed.

View Encoder2 Video

This button will open a new page where the Encoder2 video stream may be viewed.

4. SNMP

Please refer to document titled **SNMP Commands for VCX-7401**.

Program Commands

IMPORTANT NOTES:
- o After entering one or more commands, it is necessary to enter COMMIT to save the settings so they will remain valid after a reboot or power cycle.
- o You must issue a REBOOT for many of the new settings to take effect.
- o Typing "?" displays a listing of all commands.
- o The command terminal prompt will tell you if commands related to the encoder and decoder are applied to one or the other. If the prompt is "Decoder>" then the commans applies to the decoder. If the promp shows a video type like H264> then the command applies to the encoder. The current selection can be changed by typing MPEG4, H264 or DECODER at the prompt.

Command Legend:

The commands often have one or more parameters that are required or optional. The following explains the meaning of the symbols in the parameter list.

- <> - Angled brackets surround required parameters.
- [] – Square brackets surround optional parameters.
- | - Separates a list of valid entries. MPEG2|H264 means MPEG2 or H264.
- a…z – The parameter is a text string.
- n – the parameter is a number.
- IP – the parameter is an IP address.
- 0|1 – 0 = disable or off, 1 = enable or on.
- 1…100 – Two values separated by elipses specify an allowable range.

Network Settings

IP <IP> - The IP address setup is in the form of decimal dotted notation. The selection of an IP should come from the person who administrates the network. The current IP selection is static. A dynamic IP setting using DHCP is planned for future enhancement.

Default:

Encoder - 192.168.0.253
Decoder - 192.168.0.254

Example command:
IP 192.168.0.10 (sets IP address to 192.168.0.10)

IPMASK <IP> - The IP Subnet Mask is in the form of decimal dotted notation. The selection of an IP subnet mask should come from the network administrator. It is used to represent the number of bits in the current IP subnet.

Default: 255.255.255.0

Example command: IPMASK 255.255.240.0

GATEWAY <IP>
The GATEWAY command programs a gateway into the VCX-7410. The parameter is the IP address of the host that is the gateway.

Default: No Gateways

Example command: GATEWAY 192.168.0.1

The following example indicates that all packets sent to hosts on the 62.41.1.0 subnet should be routed though the gateway at 192.168.0.2

Example command:
GATEWAY 192.168.0.2 62.41.1.0 255.255.255.0

CLEARGATEWAY - This command will clear the gateway table. There are no parameters. This command clears all entries.

CMDPORT <n> - The TCP command port selection is configurable. However, the default setting should be adequate for normal operation.

>   Default: 5000

>   Example Command:
>   CMDPORT<sp>5010 (sets TCP command port to 5010)

VIDEOIP < IP> - The video destination IP is an address that allows the reception of the stream by a single (unicast) or multiple (multicast) device(s).

NOTE: Class D IP addresses, in the range 224.0.0.0 to 239.255.255.255 are called multicast addresses. The range 224.0.0.0 to 224.0.0.255 is reserved for local purposes and the range 239.0.0.0 to 239.255.255.255 is reserved for administrative scooping. Both the encoder and decoder should be set to the same Video IP for correct operation together.

>   Default: 239.5.6.8

>   Example Command:
>   VIDEOIP 234.5.6.10 (sets multicast IP to 234.5.6.10)

VIDEOPORT <n> - The video multicast port selection is configurable. However, the default setting should be adequate for normal operation. The port number should use even numbers only for proper operation with some video playback software.

>   Default: 4568

>   Example Command:
>   VIDEOPORT   4570 (sets multicast port to 4570)

TTL <n> - The TTL (Time To Live) is the time that the datagram is allowed to exist on the network. A router that processes the packet decrements this number by one. Once the value reaches 0, the packet will be discarded. The acceptable range is from 0-255.

>   Default: 10

>   Example Command:
>   TTL 9 (sets the TTL to 10)

COM Port Settings

The VCX-7401 supports one sub-channel that allows two-way transmission of serial data to selected target devices. The sub-channel can be configured for either RS232 or RS422 operation. It is not necessary for both ends to use the same configuration. The following is a list of the configuration items for the sub-channel:

        Channel Enable
        Baud rate
        Parity
        IP address of target
        TCP port for operation
        RS422 or RS232

COM <0|1> - This command sets the active state of the com port. The parameter is "0" or "1", where "1" enables and "0" disables the com port function. At this time, the com port is always enabled and this command has no effect.

    Default: 0 (OFF)

    Example Commands: COM 1 (enables com port 1)

COM BAUD <Comm Port Baud Rate> - This command sets the baud rate for the comm port. Valid values are 2400, 4800, 9600, 19200, and 38400. Other data rates may be functional but are not tested.

    Default: 9600

    Example Command: COMBAUD 4800
    (sets baud rate for com port at 4800 bps)

COM PARITY <O|E|N> - The parity for the com port can be set to Odd, Even, or None. The parameters for the COM[1|2]PARITY command are N,O,E, which correspond respectively to None, Odd, Even.

    Default: None

    Example Command: COMPARITY N (sets com port to no parity)

COM IP < IP> - The IP address of the destination for the com port data is set by this command. A typical setup would have an encoder and a decoder. The decoder would have a com port IP address that is the same as the encoder. In addition, likewise, the encoder's com port IP would be the same as the decoder. Notice that the default com ports IP's are the opposite of the default device IP's.

    Default:

    Encoder com ports - 192.168.0.253

Decoder com ports- 192.168.0.254

Example Command: COMIP 192.168.0.10   (points the com port data to an encoder, decoder, or other device whose IP address is 192.168.0.10)

COM PORT <n> - The com port selection is configurable. However, the default setting should be adequate for normal operation.

Default:
Com port - 5002

Example Command: COMPORT 5010 (sets com port to port 5010)

COM RS422 <0|1> - The com port data-format is configurable. The parameter is "0" or "1", where "1" enables RS-422 and "0" enables RS-232 format.

Default: 0 (RS-232)

Example Command: COMRS422 0 (sets com port for RS-232)

COM TCP <0|1> - The Com port can use either TCP or UDP to transfer serial data. TCP provides more reliable transfer, but requires that the device be configured for server or client. See the **COM SERVER** command for this setting.

1= Use TCP, 0=Use UDP

COM SERVER <0|1> - When using TCP to transfer Com serial data the device needs to be configured for client or server. The recommended convention is to set the Encoder, which is connected to the camera PTZ to the server.

1 = server, 0 = client

OSD COMMANDS (On Screen Display)

These permit the configuration of the On-Screen-Display(OSD) properties of the encoder. This section is for labeling the video stream. The OSD is only supported in D1 resolution streams . The same OSD will be on both MPEG-4 and H.264 encoders at D1 resolution.

OSDENABLE <0|1> - Enables of disables display of the on screen display.

There are two OSD lines of display. The following commands have the first parameter specific which of the two lines followed by a parameter specific to the command.

OSD <1|2> <a…z> - This specifies the text for the selected OSD line.

Example:
osd 1 This is the first line of text.

osd 2 This is the second.

This is the first line of text.
This is the second

OSDX <1|2> <1...60> - Specifies the horizontal location of the beginning of the text line.

Example:
osdx 1 50 will set the first character of the line of text 1 to x position 50.

OSDY <1|2> <1...22> - Specifies the horizontal location of the beginning of the text line. re the available Y locations.

OSDCLEAR - This command will clear all the fields configured by the previous commands.

Video Settings & Commands

These are associated with the quality of video being encoded. The resolution both in frame size and in the time domain are supported in this command set.

ENCODER <1 | 2> - This command switches the command mode to ENCODER 1 or 2. Any video commands apply to the encoder in this mode. The choices for either Encoder1 or Encoder2 are H.264, MPEG4, MPEG2 or JPEG.

COMPRESSION <H264|MPEG4|MPEG2|JPEG> - This command switches the currently selected ENCODER (1 or 2) to a specific compression.

DECODER - This command switches the command mode to the DECODER. Any video commands apply to the decoder in this mode.

BITRATE <n> - This command adjusts the bit rate (in kbits/sec) of the encoded H.264 video.

Default: The default is set by the Profile command

Example Command: BITRATE 2000 (Sets max bit rate to 2 Mbits/sec)

Notes: This command should be issued AFTER the Profile command if the Profile command is used.

FPS <n> - Sets encoded frames/second. Where n = frames per second of the video stream
For NTSC: (i.e. 30, 15, 10, 7, 6, 5, 3, 2, 1)
For PAL: (i.e. 25, 12, 8, 6, 5, 3, 2, 1)

RES <D1|CIF|QCIF> - Sets encoder resolution. The MPEG-4 encoder supports all listed resolutions. Currently, H.264 and MPEG2 only support D1 and CIF.

QCIF - 176x120
CIF - 352x240

D1 - 720x480

BRIGHT <n> - This command adjusts image brightness. The acceptable range is from 0 to 255, where a higher number provides more brightness.

Default: 128

Example Command: BRIGHT 170 (increases brightness from default setting)

CONTRAST <n> - This command adjusts image contrast. The acceptable range is from 0 to 255, where a higher number provides more contrast.

Default: 63

Example Command: CONTRAST 90 (increases contrast from default)

SATURATION <n> - Adjusts color saturation. The acceptable range is from 0 (no color) to 255.

Default: 63

Example Command: SATURATION 75 (increases color saturation from default)

TINT <n> - Adjusts color tint. The acceptable range is from –128 to 127.

Default: 0

Example Command: TINT 10 (adjusts tint)

TOS <n> - Type of Service is how the datagram should be used, e.g. delay, precedence, reliablility, minimum cost, throughput ext. The acceptable range is from 0 to 7F (Hexadecimal).

Default: 0

Example Command: TOS 1A

SAP Settings

The encoder is capable of multicasting SAP (Session Announcement Protocol RFC-2974) packets with SDP (Session Description Protocol RFC-2327) content. There are a number of parameter settings for configuring SAP. They are presented in this section. The user should refer to the referenced RFCs to understand the significance of the SAP/SDP parameter settings.

The following SAP parameters are global settings and the VCX-7401 must be rebooted before they take affect.

SAP <0|1>- This command is used to enable or disable the SAP multicast. ON or OFF are the permitted parameters.

Default: OFF
Example: SAP ON

SAPINTERVAL <n> - This command sets the interval between SAP packet transmissions. The parameter is the number of seconds between transmits. The minimum value is 5 seconds.

Default: 5 (5 seconds)
Example: SAPINTERVAL 10 (10 seconds)

SAPIP <IP>- This command sets the IP address of the destination host for SAP packets. This address is a multicast address defined in RFC-2974. It is unlikely that the user will need to change this setting.

Default: 224.2.127.254

SAPPORT <n> - This command sets the destination port for SAP packets. The port number is defined in RFC-2974. It is unlikely that the user will need to change this setting.

Default: 9875

The following SAP parameters are based on the currently slected encoder (as indicated by the prompt). When these parameters are changed, the encoder must be restarted for them to take affect.

SAPINFO <a…z> - This command is used to set the SDP (RFC-2327) info information. The parameter is an ASCII string with a limitation of 62 characters.

Default: Core Tec VCX7401
Example: SAPINFO Intersection of 1st and main

SAPNAME <a...z> - This command is used to set the SDP (RFC-2327) name information. The parameter is an ASCII string with a limitation of 30 characters.

Default: Core Tec Communications, LLC
Example: SAPNAME Main Street Camera #1

SNMP Settings

SNMPMANAGER <add|remove> <IP> <a…z>- This command allows the encoder to set the SNMP trap receiver. You may add or remove the receiver from the encoder. The first parameter specifies add or remove the trap receiver. The second parameter is the IP of the device to receiver SNMP traps. The third parameter is the community string of the receiver when added.

Example add: SNMPMANAGER ADD 192.168.0.10 public
Example remove: SNMPMANAGER REMOVE 192.168.0.10

RWCOMMUNITY <a…z> - This command sets the read/write community name. (The SNMP Manager must know this Community name in order to "Get" or "Set" messages.) It allows the SNMP manager to issue "Get" and "Get Next" messages as well as "Set" messages.

Example: rwcommunity private

ROCOMMUNITY <a…z> - This command sets the read only community name. (The SNMP Manager must know this Community name in order to "Get" messages.) It allows the SNMP manager to issue "Get" and "Get Next" messages only.

Example: rocommunity public

Miscellaneous Settings & Commands

The following commands apply to both encoders and decoders.

COMMIT - This command saves the parameter changes in permanent memory. A commit command must be issued before a reboot or power cycle if the new device settings are to be maintained.

DEATHBLOW - This command causes a reboot of the device. The purpose of this command is to cause a reboot from the password prompt. If you cannot login into the command, prompt because of the "Another administrator is logged in." message, then you can use DEATHBLOW as the password to return the unit to the power up state.

EXIT - Exits from the command prompt and releases the current login. You may also use the following alternatives… LO (Log Off) and QUIT.

NTSC - This command sets unit for NTSC video operation.

PAL - This command sets unit for PAL video operation.

REBOOT - This command restarts device from power-up state. Most changes in device settings require a reboot after a commit.

START - This command starts encoding or playback (video out).

STOP - This command stops encoding or playback (video out).

VER - This command displays the software version/build date, BSP (board support package) version/build date, and board revision.

Example response:

Version: VCX7401 v1.6a, Date: 29JUN11

DISPLAY <ENCODER|DECODER|COM|IP|SAP|OSD|SNMP|NAME|MISC> - This command displays current encoder settings. Entering DISPLAY only provides all settings. Adding the the second word displays those respective settings specifically.

Example Command: DISPLAY IP (displays current IP encoder settings)

JVM <1|0> - This command causes the encoder to join the IGMP multicast group for it's own stream. It was implemented because some switches will broadcast the video multiple cast to all ports when no decoder has joined the multicast stream.

Example: JVM 1

1=on
0=off

Specifications

PHYSICAL AND ENVIRONMENTAL

Dimensions
6" x 5.75" x 1.5"

Mounting
R-12 Card Cage Enclosure

Weight
.6 pounds

Temperature
-20 degrees to + 70 degrees Centigrade
(-4 to 158 degrees Fahrenheit)

Humidity
0 to 95% non-condensing

POWER REQUIREMENTS
From Enclosure

CONNECTORS

Video
NTSC/PAL   BNC

Power
From Back-plane (36 pin Molex)

Data
Network   RJ-45
Comm ports RJ-45

ELECTRICAL

Video Input (NTSC/PAL)
Impedance: 75 ohm unbalanced, return loss $\geq$ 30 dB

Dynamic
Range: .   5 volts to 2.0 volts peak to peak

Video Output (NTSC/PAL)
Impedance: 75 ohm unbalanced, return loss ≥ 30 dB

Output Level: 1.0 volts peak to peak nominal
 (.9 volts minimum to 1.1 volts maximum)

Sync Level: 257 mV (36 IRE) to 314 mV (44 IRE)

Bar Level: 642 mV (90 IRE) to 785 mV (110 IRE)

Burst Level: 257 mV (36 IRE) to 314 mV (44 IRE)

Resolution: Full D1: 720h x 480v (NTSC); 720h x 576v (PAL)
                        1/2 D1: 352h x 480v (NTSC); 480h x 576v (PAL)
                        CIF: 352h x 240v (NTSC); 352h x 288v (PAL)

Frame Rate: 1 to 30 frames per second maximum

Data (Network)
Format: Ethernet IEEE 802.3; 10/100 Base T

Line Rate: down to 64kbps

Data (Sub-channels)
Format: RS-232 or RS-422 (programmable)   (2)

Data Rates: 2400, 4800, 9600, 19200, 38400 bps

Programming Data
Format: EIA RS-232C (primary data lines)

Rate: 38.4 kbps

Form: 8-bit data, 1 stop bit, no parity

Models

BASE MODELS

VCX-7401   H.264 encode and decode, MPEG-4 encode and decode, MPEG2 encode, JPEG encode

Appendex A - Pinouts

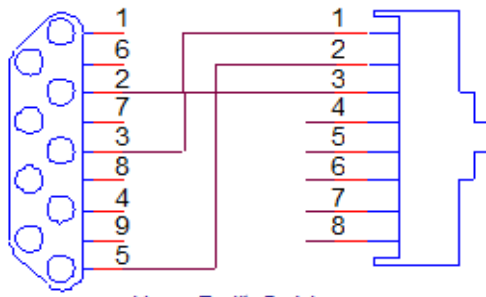### RS-422/RS-232 Serial Data Port Pin-out (uses RJ-45 Plug)

Pin	Description
1	RS-232 Receive (Input)
2	Ground
3	RS-232 Transmit (Output)
4	Ground
5	RS-422 RX+
6	RS-422 TX-
7	RS-422 RX-
8	RS-422 TX+

RS-232 Programming Port Pin-out (uses RJ-45 Plug)

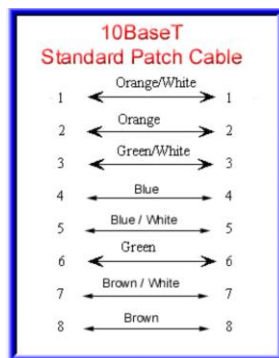| Pin	Description
1	Receive (Input)
2	Ground
3	Transmit (Output)
4	Ground
5	Unused
6	Unused
7	Unused
8	Unused

9 PIN DIN PLUG Ethernet Cable

User Built Cable
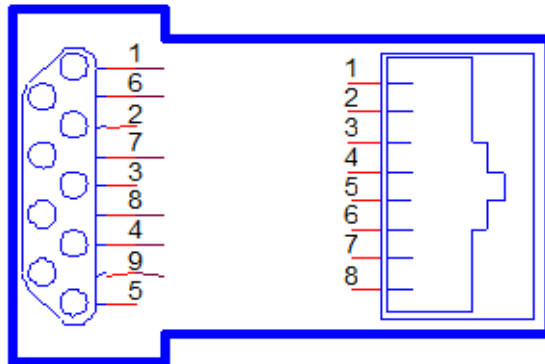
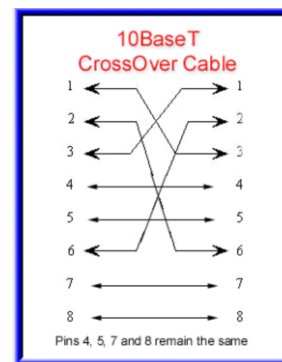
Manufacturer Supplied Serial Adaptor

Standard Ethernet Pin Out

Straight Through Ethernet Pin Out

Cross Over Ethernet Pin Out

T-568B

RJ-45 Plug
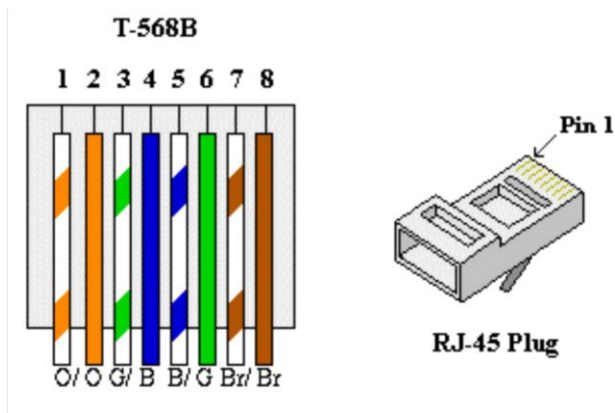
Appendex B – VideoLan Client

VideoLan Client (aka VLC) is free software that can be used to view video streams from the VCX-7401 encoder. You can download it from www.videolan.org. The web interface for the VCX-7401 uses VLC for displaying video. If you want to be able to view the video in the web interface then VLC must be installed on your computer.

NOTE: on some installations of VLC, the "Mozilla Plugin" must be manually selected during the installation. The VCX-7401 web interface uses the Mozilla Plugin to display video.

To view a stream from VLC directly you select from the menu "Media/Open Network Stream". Then enter the "Network URL" as follows…

- rtsp://192.168.0.253/stream1 (H.264 or MPEG-4 on encoder 1)
- rtsp://192.168.0.253/stream2 (H.264 or MPEG-4 on encoder 2)
- url://@239.5.6.8:4568 (MPEG-2 video ip and port)

The above examples use 192.168.0.253 as an example host address, and 239.5.6.8 as an example streaming video ip address.

H.264 and MPEG-4 are accessed differently through VLC than MPEG-2. An alternative is to select from the menu "View/Playlist". In the playlist access SAP under Local Network. This requires SAP be enabled in the VCX-7401.