Model 5030/5035
System Control Module

User Guide

Revision 3.3   SW v2.2.14

ENSEMBLE
D E S I G N S

Purveyors of Fine Video Gear—Loved by Engineers Worldwide

Clearly, Ensemble wants to be in the broadcast equipment business. It's so rare anymore to find a company of this caliber that has not been gobbled up by a large corporation. They are privately held so they don't have to please the money people. They really put their efforts into building products and working with customers.

I'm really happy with the Avenue products and Ensemble's service, and even more important my engineers are happy. We've continued to upgrade the product and add more cards. We will be rebuilding our production control room and we will use Avenue again.

~ Don McKay, Vice President Engineering, Oregon Public Broadcasting

## Who is Ensemble Designs?

By Engineers, For Engineers

In 1989, a former television station engineer who loved designing and building video equipment, decided to start a new company. He relished the idea of taking an existing group of equipment and adding a few special pieces in order to create an even more elegant ensemble. So, he designed and built his first product and the company was born.

Avenue frames handle 270 Mb/s, 1.5 Gb/s and 3 Gb/s signals, audio and MPEG signals. Used worldwide in broadcast, mobile, production, and post.

Focused On What You Need

As the company has grown, more former TV station engineers have joined Ensemble Designs and this wealth of practical experience fuels the company's innovation. Everyone at the company is focused on providing the very equipment you need to complete your ensemble of video and audio gear. We offer those special pieces that tie everything together so that when combined, the whole ensemble is exactly what you need.
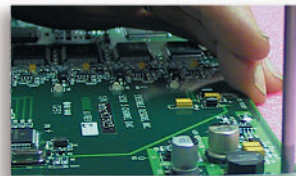
We're focused on processing gear– 3G/HD/SD/ASI video, audio and optical modules.

Notably Great Service for You

We listen to you – just tell us what you need and we'll do our best to build it. We are completely focused on you and the equipment you need. Being privately held means we don't have to worry about a big board of directors or anything else that might take attention away from real business. And, you can be sure that when you call a real person will answer the phone. We love this business and we're here to stay.

Come on by and visit us. Drop in for lunch and a tour!

Bricks and Mortar of Your Facility

The bricks and mortar of a facility include pieces like up/downconverters, audio embedders, video converters, routers, protection switches and SPGs for SD, HD and 3Gb/s. That's what we're focused on, that's all we do – we make proven and reliable signal processing and infrastructure gear for broadcasters worldwide, for you.

Shipped with care to television broadcasters and video facilities all over the world.

Contents

Module Overview

The optional 5030/5035 System Control module provides the Ethernet, AveNet (our proprietary Local Area Network communication) and Serial interface connections required for networking, remotely configuring and controlling the frame modules from the Avenue remote control options. Ethernet can be used instead of, or in conjunction with, AveNet and Serial.

As shown in *Figure 1* below, the System Control module interfaces to the frame backplane for controlling the 10BaseT Ethernet TCP/IP connection, the AveNet LAN connection, and the serial communications port between frames. The System Control module is also used for distributing a master timing reference from the rear backplane BNC to all modules in a frame.

Any combination of Avenue equipment including 3RU frames, 1RU frames, Router Panels, Touch Screen Panels and Intersection frames can be used together on a network.
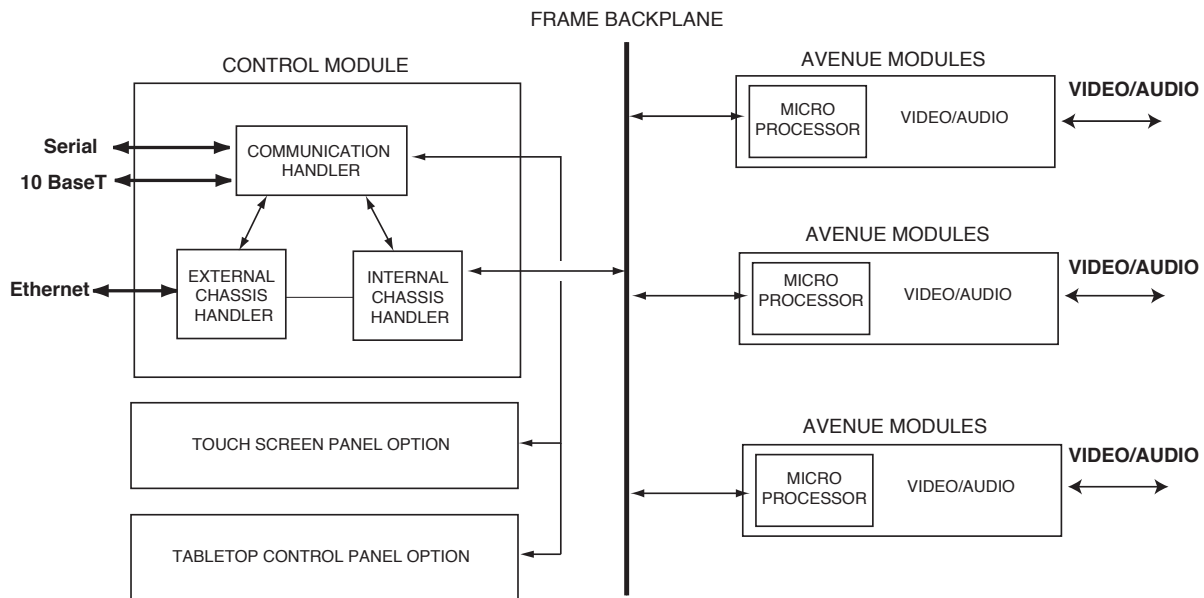

Figure 1. The control modules interface to the frame backplane for controlling the Ethernet TCP/IP connection, the AveNet LAN connection, the AveNet Over IP function and the serial communications port.

Module Networking Examples

This 5030/5035 System Control Module manual provides two basic examples of networking that address most users' needs. However, for a more detailed discussion of networking options, please refer to the Networking section of the Avenue System Overview document available through our web site.

Example One: Ethernet Star Configuration

The first example illustrates the most commonly used approach. Each frame or control panel is networked over Ethernet using IP addresses and AveNet addresses. An Ethernet cable from the hub or switch is connected directly to each frame or control panel's Ethernet port, creating a star configuration. The AveNet ports are not used.

Note the example configuration settings for AVIP, AveNet addresses, lower and upper AveNet addresses and IP addresses as shown below in Figure 2.
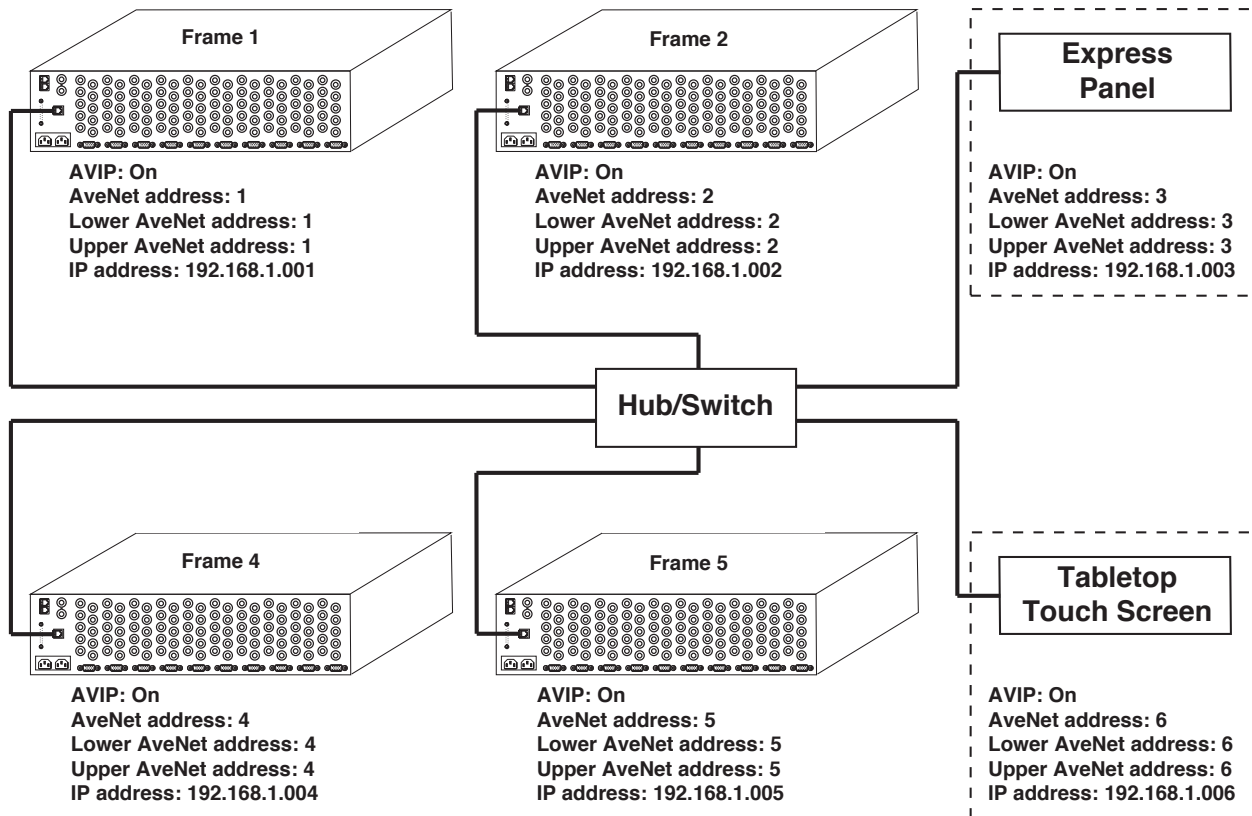
Frame 1

AVIP: On
AveNet address: 1
Lower AveNet address: 1
Upper AveNet address: 1
IP address: 192.168.1.001

Frame 2

AVIP: On
AveNet address: 2
Lower AveNet address: 2
Upper AveNet address: 2
IP address: 192.168.1.002

Express Panel

AVIP: On
AveNet address: 3
Lower AveNet address: 3
Upper AveNet address: 3
IP address: 192.168.1.003

Hub/Switch

Frame 4

AVIP: On
AveNet address: 4
Lower AveNet address: 4
Upper AveNet address: 4
IP address: 192.168.1.004

Frame 5

AVIP: On
AveNet address: 5
Lower AveNet address: 5
Upper AveNet address: 5
IP address: 192.168.1.005

Tabletop Touch Screen

AVIP: On
AveNet address: 6
Lower AveNet address: 6
Upper AveNet address: 6
IP address: 192.168.1.006

Figure 2

Example Two: Ethernet with AveNet

In the second example, shown below in Figure 3, Ethernet is used in conjuction with AveNet, and fewer IP addresses are needed. Ethernet ports are used only for the first frame in a series of frames or control panels. AveNet ports are used to chain together the remaining frames in each series.

Note the example configuration settings for AVIP, AveNet addresses, lower and upper AveNet addresses and IP addresses.
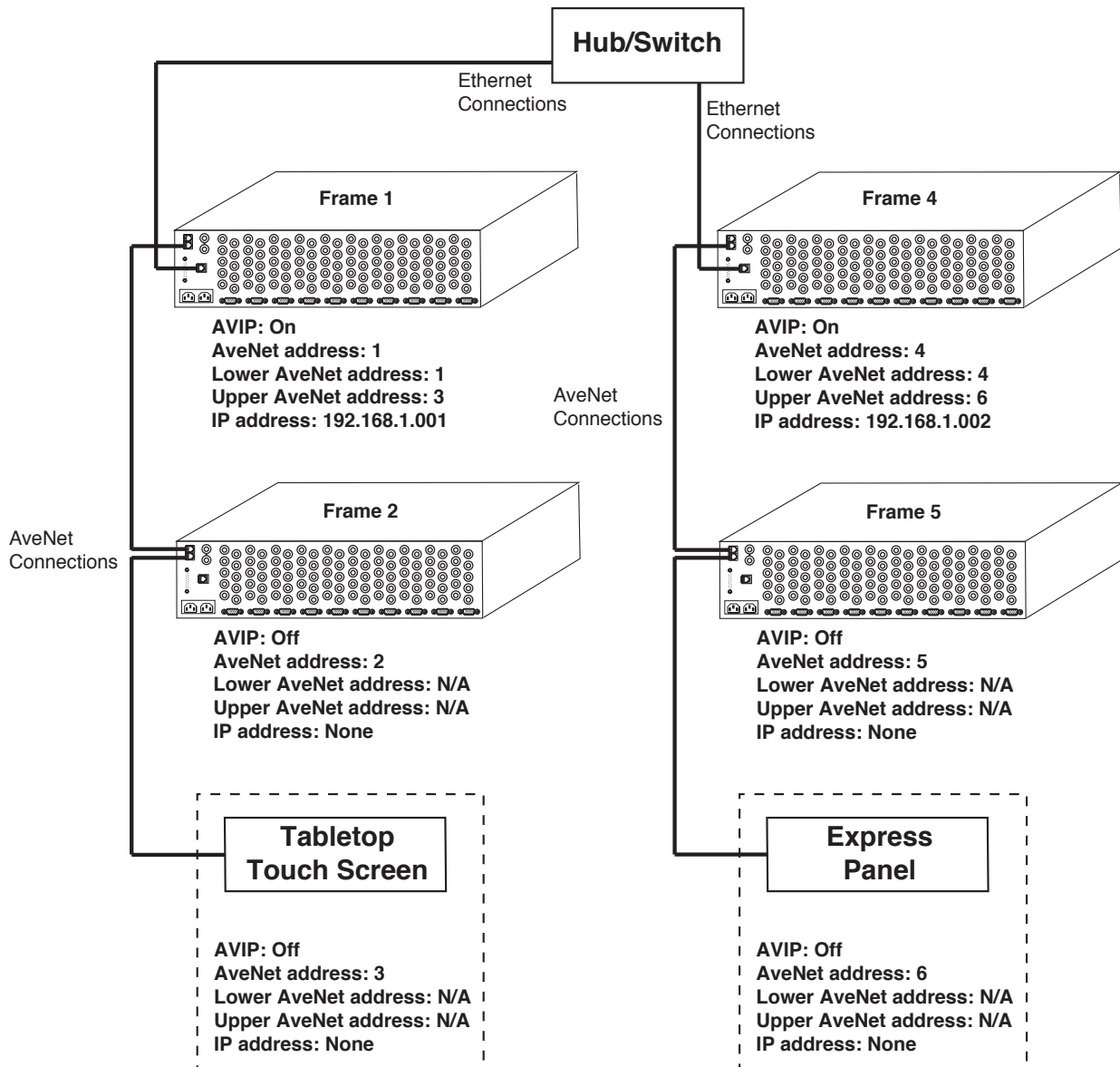
Hub/Switch

Ethernet
Connections

Ethernet
Connections

Frame 1

AVIP: On
AveNet address: 1
Lower AveNet address: 1
Upper AveNet address: 3
IP address: 192.168.1.001

Frame 4

AVIP: On
AveNet address: 4
Lower AveNet address: 4
Upper AveNet address: 6
IP address: 192.168.1.002

AveNet
Connections

Frame 2

AveNet
Connections

AVIP: Off
AveNet address: 2
Lower AveNet address: N/A
Upper AveNet address: N/A
IP address: None

Frame 5

AVIP: Off
AveNet address: 5
Lower AveNet address: N/A
Upper AveNet address: N/A
IP address: None

**Tabletop
Touch Screen**

AVIP: Off
AveNet address: 3
Lower AveNet address: N/A
Upper AveNet address: N/A
IP address: None

**Express
Panel**

AVIP: Off
AveNet address: 6
Lower AveNet address: N/A
Upper AveNet address: N/A
IP address: None

Figure 3

Installation

3RU Frame

The 5030 module controls the 3RU frame. It is installed in a dedicated slot to the right of the 3RU frame's ten video and audio modules, as shown in *Figure 4*.

Touch Screen Option

If you have a Touch Screen Door, the 5030 connects to the front door via a ribbon cable for communications with the Touch Screen. Connect the ribbon control cable from the 5030 System Control module to connector J3 on the front door, as shown in *Figure 5*.
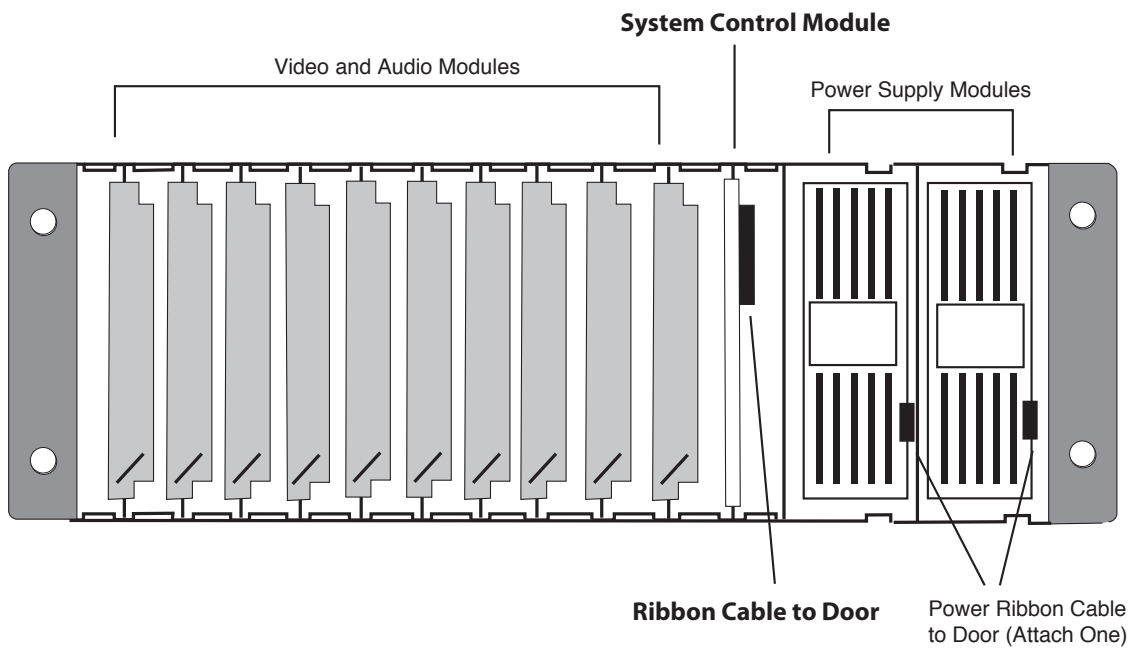
System Control Module

Video and Audio Modules

Power Supply Modules

Ribbon Cable to Door   Power Ribbon Cable to Door (Attach One)

Figure 4

Inside Front Door

Ribbon Cable from System Control Module

Door Hinges

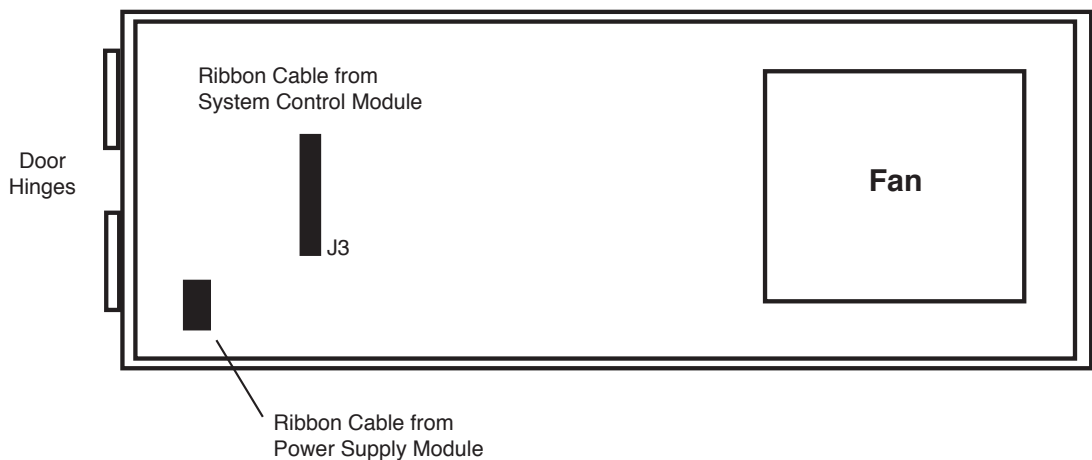**Fan**

J3

Ribbon Cable from Power Supply Module

Figure 5

1RU Frame

The 5035 module controls the 1RU frame. It is installed in a dedicated slot to the right of the 1RU frame's three video and audio modules, below the power supply, as shown below in *Figure 6*.
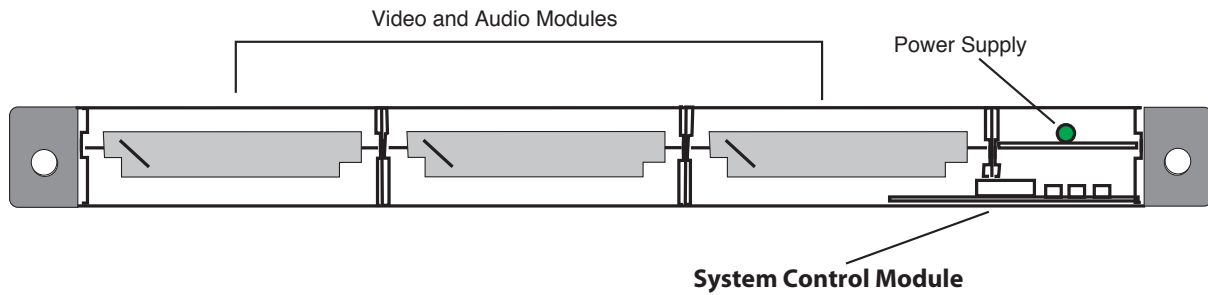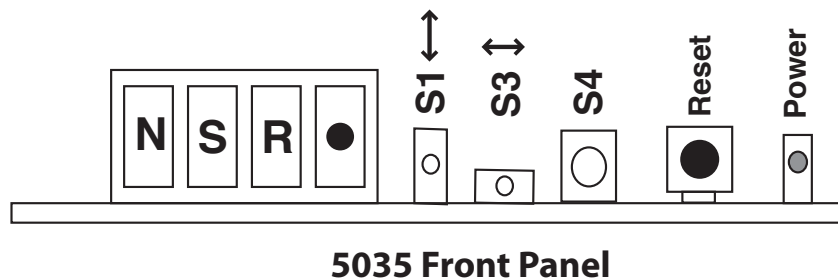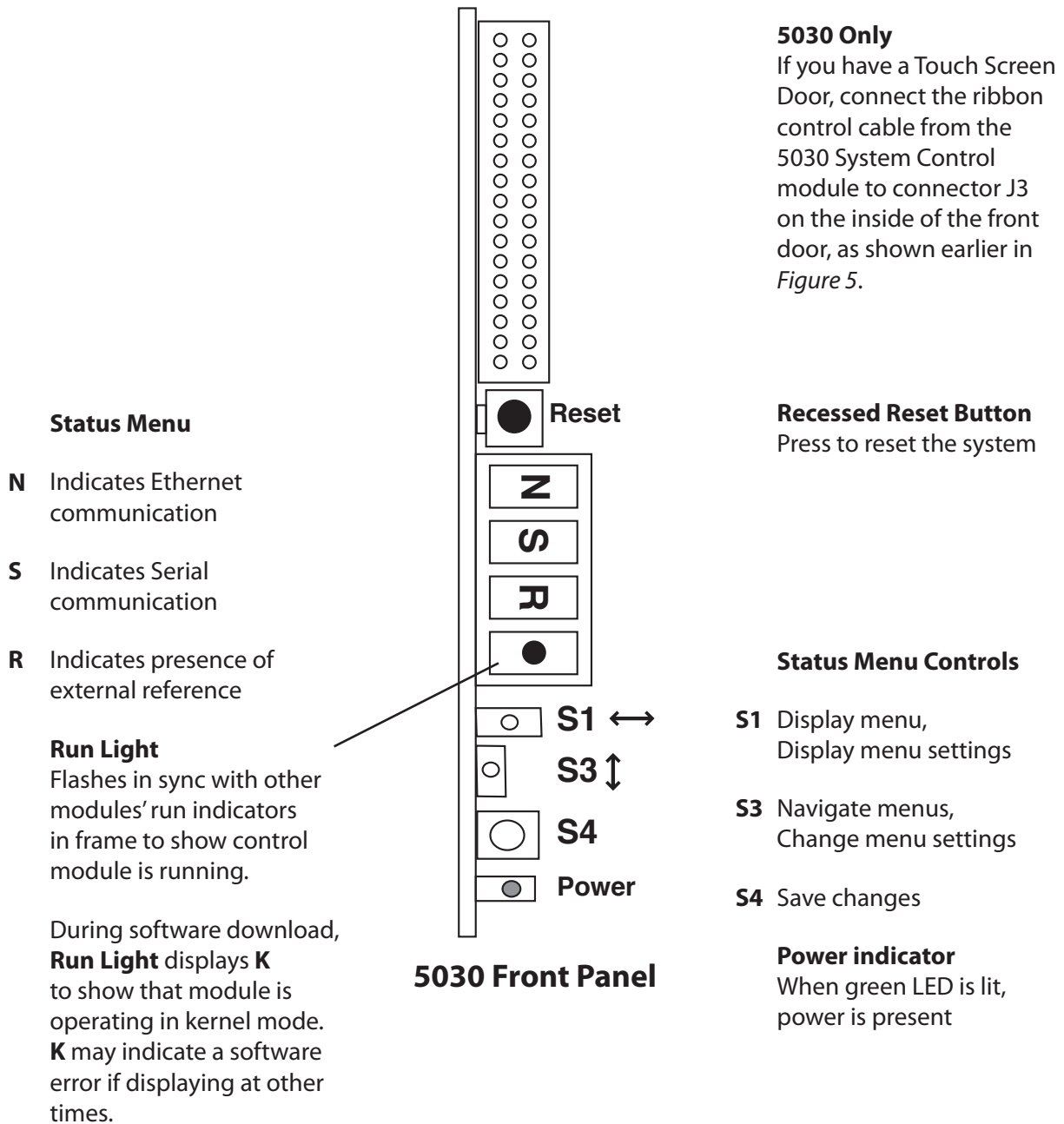

Figure 6

Front Panel Controls and Indicators

The status indicators and controls on the front edge of the 5030/5035 System Control modules are shown on the next page.

The Status menu display is used for various purposes. It acts continuously as a status indicator for showing system communication between the Avenue frame and external Ethernet, Serial, and External Reference connections.

A series of menu functions can also be accessed through the Status menu as listed on page 11. Through the Status menu controls, you can do the following:

- Display current software version running on this Control Module

- View and change AveNet addresses, IP address, Subnet Mask address, Gateway address, Distant IP address

- Reset the Touch Screen Panel calibration to factory default. (Note this can also be done from the Touch Screen panel if you have one installed on the 3RU frame.)

- Set the Fan to Auto or Full

- Enable or disable AVIP (AveNet over IP), set lower and upper AveNet addresses in frame group

5030 Only
If you have a Touch Screen Door, connect the ribbon control cable from the 5030 System Control module to connector J3 on the inside of the front door, as shown earlier in *Figure 5*.

Status Menu

N   Indicates Ethernet communication

S   Indicates Serial communication

R   Indicates presence of external reference

Run Light
Flashes in sync with other modules' run indicators in frame to show control module is running.

During software download, **Run Light** displays **K** to show that module is operating in kernel mode. **K** may indicate a software error if displaying at other times.

Reset

Recessed Reset Button
Press to reset the system

Status Menu Controls

S1   Display menu, Display menu settings

S3   Navigate menus, Change menu settings

S4   Save changes

Power indicator
When green LED is lit, power is present

5030 Front Panel

5035 Front Panel

Control Module Configuration Menus

| Menu	Definition	Value Range or Function
Ver	system software version	Reports current software version
Adr	AveNet address	1 - 1023
V Ip	IP address	0 - 255 for each segment
V Ma	SubNet Mask address	0 - 255 for each segment
V Ga	Gateway address	0 - 255 for each segment
V Di	Distant IP address	0 - 255 for each segment
Tch	Touch Screen	Press S4 (Enter) to reset calibration
Fan	Fan settings	Auto, Full
AVIP	AveNet Over IP	On, Off
Lo A	Lowest AveNet address in frame group	1 - 1023
Up A	Upper (highest) AveNet address in frame group	1 - 1023
ip1	first segment of IP address	0 - 255
ip2	second segment of IP address	0 - 255
ip3	third segment of IP address	0 - 255
ip4	fourth segment of IP address	0 - 255
Mas1	first segment of SubNet Mask address	0 - 255
Mas2	second segment of SubNet Mask address	0 - 255
Mas3	third segment of SubNet Mask address	0 - 255
Mas4	fourth segment of SubNet Mask address	0 - 255
Gat1	first segment of Gateway address	0 - 255
Gat2	second segment of Gateway address	0 - 255
Gat3	third segment of Gateway address	0 - 255
Gat4	fourth segment of Gateway address	0 - 255
Dis1	first segment of Distant IP address	0 - 255
Dis2	second segment of Distant IP address	0 - 255
Dis3	third segment of Distant IP address	0 - 255
Dis4	fourth segment of Distant IP address	0 - 255

Updating Software for the 5030 or 5035

Software upgrades for the Avenue 5030 and 5035 modules are available for free. Use the AvenuePC software to install the software update to your Avenue module. If you do not have Avenue PC software, you can send modules back to the factory for software upgrades.
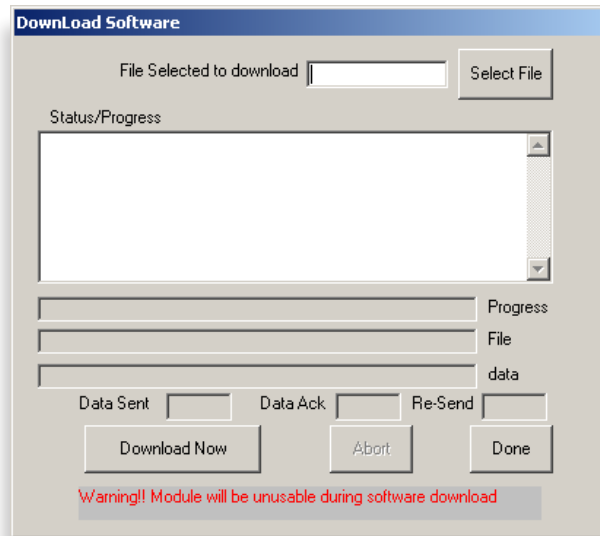
1.   Download the current version of the 5030/5035 software to your desktop from the following link:

     http://www.ensembledesigns.com/support/avenue-support/avenue-software

2.   From Avenue PC, select **Update Frame Software** from the **Frame** menu. The initial Download Software window displays.
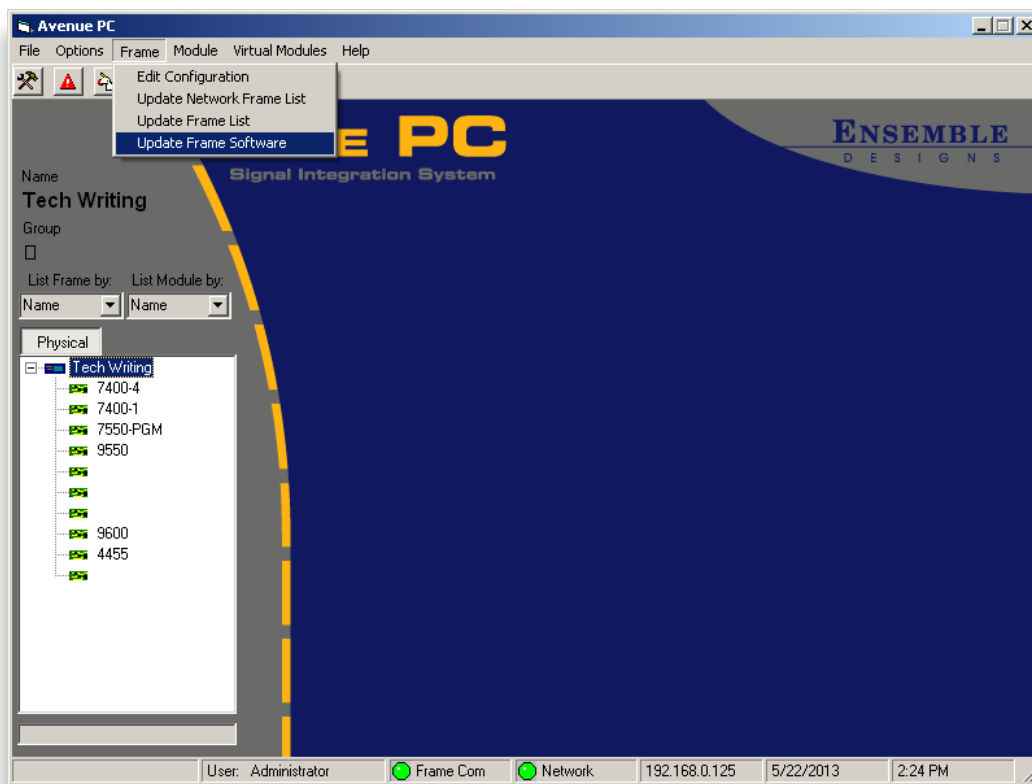
*Selecting **Update Frame Software** from the **Frame** menu*

The initial Download Software window

3. From the initial Download Software window, click **Select File**. A navigation window opens.

4. Navigate to the downloaded software file and select it. It will have the file extension ".msf".

5. With the downloaded software file selected, click **Open**. The Download Software window displays again. This time, it has the filename of the software update file showing next to the **Select File** button.
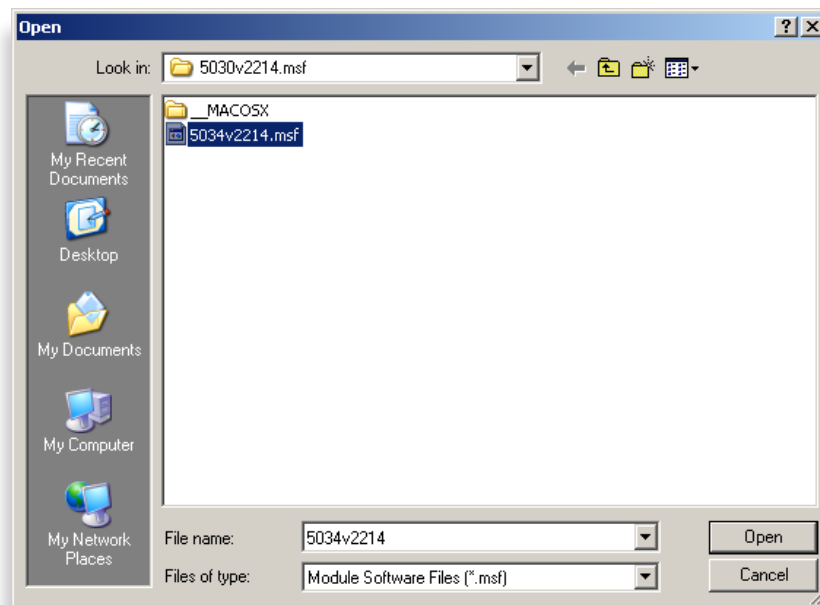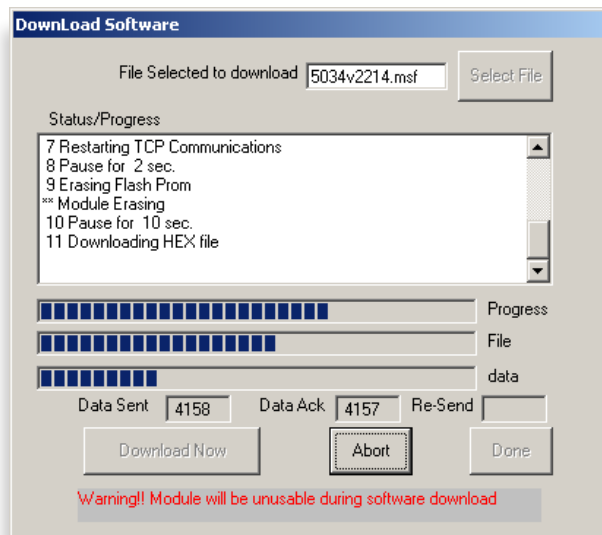

*Navigating to and selecting the downloaded software file*
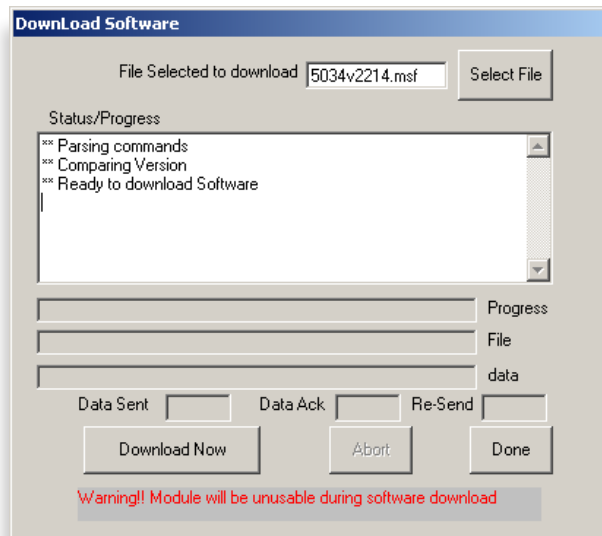
The Download Software window showing the selected software update file

6. Click **Download Now**. The Download Software window displays, showing the progress of the download from your computer to the 5030 or 5035.


The Download Software window showing its progress

7. When the software has finished downloading to the module, it will display "**** End ****" as shown in the screen capture below.
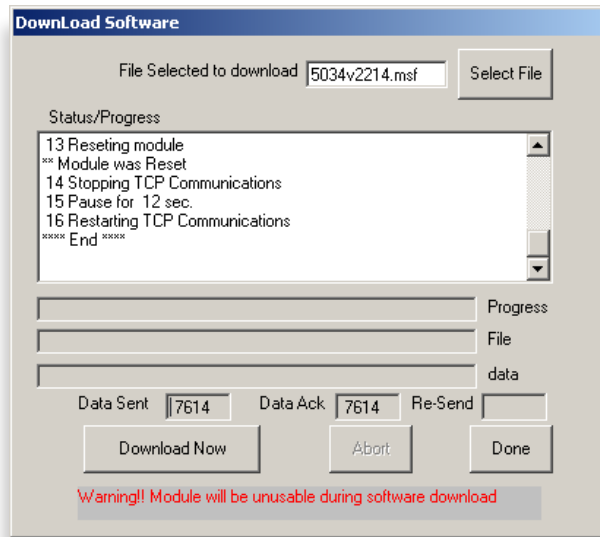
The software has finished downloading to the 5030 or 5035

8. If you have a Touch Screen, you can verify that the software update has completed. From the Home screen, select Configuration. The Configuration screen displays, as shown below.
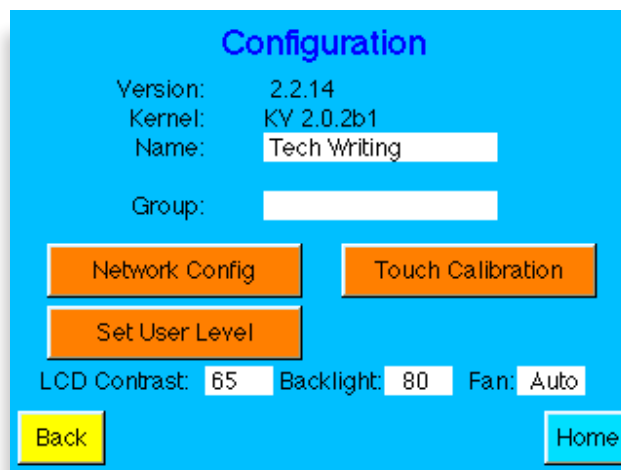
The Touch Screen Configuration Screen showing the software version installed on the 5030

Troubleshooting

To aid in troubleshooting, the network, serial, reference and frame communication indicators can be monitored from the front panel of this module as explained in the previous section.

You may also refer to the technical support section of the Ensemble Designs web site for the latest information on your equipment at the URL below:

http://www.ensembledesigns.com/support

Warranty

This module is covered by a five-year limited warranty. If you require service (under warranty or not), please contact Ensemble Designs and ask for customer service before you return the unit. This will allow the service technician an opportunity to provide any other suggestions for identifying the problem and to recommend possible solutions.

Factory Service

If you return equipment for repair, please get a Return Material Authorization Number (RMA) from the factory first.

Ship the product and a written description of the problem to:

> Ensemble Designs, Inc.
> Attention: Customer Service RMA #####
> 870 Gold Flat Rd.
> Nevada City, CA 95959 USA
>
> tel +1 530.478.1830
> fax +1 530.478.1832
>
> service@ensembledesigns.com
>
> www.ensembledesigns.com

Be sure to put your RMA number on the outside of the box.