



There are two ways to control a Drag Net device from an Crestron system. Drag Net products can be controlled from Crestron equipment using Ethernet connectivity and control. Or, many Crestron applications require simple Level control and/or Preset recall. This is most easily accomplished using the VIP (Versatile Input Port) found on all Drag Net devices.

[We hate listing things that our devices are not, (for example, a Rane RPM 88 is not a reality TV show), but, the RW 485 ports found on some Drag Net devices do not communicate with Crestron. They are solely for communicating with Rane's RW 485 remotes. It's time to evolve.]

VIP Preset Recall. Connect a switch closure or relay to a VIP pin and short it to the ground (GND) pin to recall the corresponding Preset. For example, shorting VIP pin 1 to the GND terminal recalls Preset 1; pin 2 recalls Preset 2, etc. There are more details about this functionality in the Drag Net Help file and on our Drag Net Applications page. Be certain to appropriately set the VIP Allocation in Drag Net's Parameter Window. If GND contention of two or more pins simultaneously occurs, the highest-numbered VIP pin takes precedence. For example, if pin 3 is shorted closed and pin 6 is then shorted to GND, Preset 6 is recalled. If pin 3 is closed and pin 2 is then shorted, nothing happens -- Preset 2 is NOT recalled. This permits a hierarchy of Presets when using VIP pin closures for tiered priority paging. Since there are only 8 VIP pins, you can only recall up to 8 Presets using switch closure.

There are four ways to recall more than 8 presets:

1. Use the Drag Net software Recall button which is only intended for the system installer/designer.
2. Use the SR 4 remote to recall any 8 Presets.
3. Use the SR 3 remote which can recall any 16 of the available 24 Presets.
4. Use an Ethernet command from a Crestron product (see the Software Basics section below).

[When using Drag Net's Auto Mixer/Ducker block, you have the ability to link a VIP pin closure to a push-to-talk switch in a paging or boardroom application. When using the Ducker block in these applications, the VIP pins act independently provided you Group the appropriate VIP pin with the Auto Mixer/Ducker's Input in Drag Net's Remote Map.]

VIP Level control. Connect a zero to five volt DC voltage to a VIP pin from an Crestron card to adjust any or all Level blocks placed in the Processing Map. Use Groups in Drag Net's Remote Map to link one or more Level blocks so they track each other when using a VIP pin. Be certain to appropriately set the VIP Allocation in Drag Net's Parameter Window. When using VIP pins with Level blocks, set the minimum and maximum for each Level block by double-clicking it while it's in a Remote Map

Group. This keeps the max and min burdens within the Drag Net device -- but only when using the VIP pin to control Levels, not when adjusting Levels from Crestron Ethernet commands.

Since you can Group any or all Level blocks in Drag Net's Remote Map, it's much easier to implement a stereo level control since the Drag Net device is burdened with the task of tracking many Levels. You can use this to your advantage when using VIP pins to adjust multiple zones or multiple levels. Since you can place the Level block anywhere within the Drag Net Processing Map, you can Group Level blocks at the input, at the output or anywhere in-between -- just place the Level block where you want it.

Crestron Hardware Basics

Connect the rear panel 10Base-T Ethernet port on a Drag Net device directly to an Ethernet port on Crestron equipment. At first, use an Ethernet crossover cable. One is included with each Drag Net device, (hopefully you're not at the job site looking for the Rane box which you left and recycled back at the office). This is always the best way to begin when initially wiring a system since it eliminates potential network errors until you're successfully up and running and talking between the Crestron and Drag Net devices. The most expedient way to know that your Crestron code is talking to the Drag Net device when wired with a crossover cable is to recall a Preset via Crestron. When the Drag Net device successfully recalls a preset, it displays the most recently recalled Preset on its front panel LED display.

Once you know the Crestron and the Drag Net devices are talking to each other with a crossover cable, connect both Ethernet ports into a network switch (not a repeater hub) using standard CAT5 Ethernet cables.

Visit the Crestron control module page for Integrated Partner Modules.

Software Basics

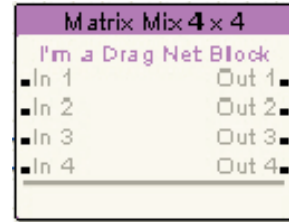
Download the Rane Drag Net Crestron module code from www.rane.com/dragnet.

Rane's Drag Net devices use User Datagram Protocol (UDP). You may have heard that TCP is 'better' than UDP because TCP ensures that a packet is delivered over Ethernet networks and UDP does not. Rane has written a synchronous UDP protocol for Drag Net which provides acknowledgement, packet re-ordering and verification to render our UDP implementation extremely worthy of the task. Like RS-232 communications, diligent programmers send changes to a device, then ask the device what the data is within the device, just to verify that the device accepted the change. Note that this is one step better than assuming or verifying that the data was delivered correctly over the potentially complex network. While TCP may guaran-

tee that the data packets are delivered, it will not verify that the device accepted and interpreted them correctly, which the above approach will do. This is no different than the diligent RS-232 programming approach of yore.

A Few Rane Definitions

Block (or processing block) - a graphical and software code element within Rane’s Drag Net software and hardware. The graphical elements are found in the Palette window and in the Processing Map area of Rane’s Drag Net software. Here’s one now...



Processing Block

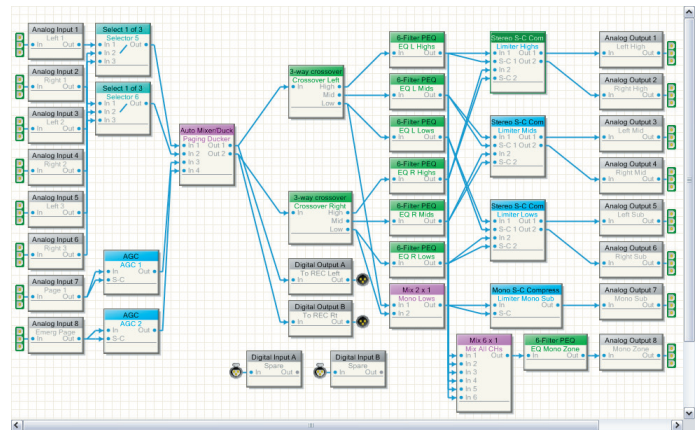
Btypes (or Block Types) - associated with each Block are a group of parameters Rane call PIDs. Each Block in Drag Net has a default Btype value -- each Level block, for example, is Btype \$180 (decimal 384). All occurrences of Level blocks use the same Btype, but each placed block is uniquely identified with a PID value that is assigned by Drag Net when you drop it on the Processing Map.

PID (Processing block IDs formerly called Parameter IDs) - the numeric values within a Drag Net device or configuration file that point to a specific block’s group of indexed parameters. You’ll need to know the unique PID number of each block that contains a parameter that you wish to control. To view a block’s PID, draw the Processing Map you want in Drag Net, save it, then select Generate Report from Drag Net’s File menu. After you verify you’d like the XML report to be generated, your default web browser is opened and the XML file is loaded so you can search for the PID number(s) you’ll need in the AMX code.

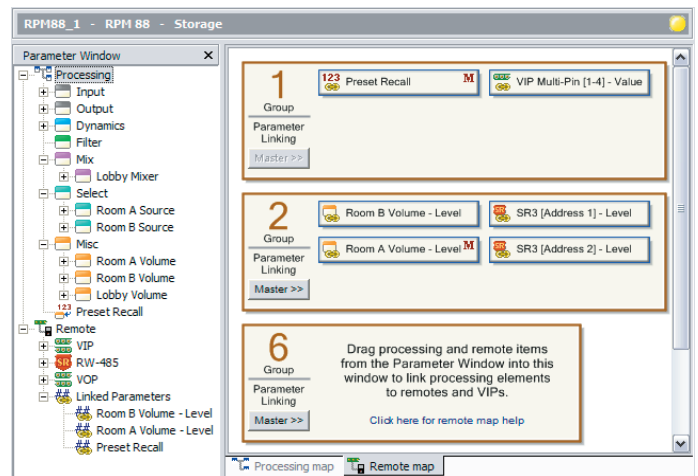
Processing Map - The area in Drag Net software where one draws the audio signal processing flow using blocks and wires.

Remote Map - The area in Drag Net software where one sets up the Remote functionality. The Level blocks previously placed in the Processing Map appear in the Parameter window (when it is open). Once Levels are placed in the Remote Map’s Groups, one can set max and min values for each Level block occurrence. The max and min are then enforced by the Drag Net device when using the VIP pins to control Levels.

Script - In Drag Net, one must Transfer a device configuration from your hard drive (Storage file) into a Live device. During a transfer, we send/receive what Rane calls a ‘script’ file to/from the device. This script file contains all the blocks, wires, PIDs, parameter values, DSP code, Presets, Remote Map data, etc. for everything in a Drag Net device.



Processing Map



Remote Map