Drag Net™ is the best customizable DSP solution for small to medium installations.

- Drag Net™ drag and drop software is used to configure, control and monitor Rane’s Programmable Multiprocessor (RPM) family of fully-configurable DSP products.
- Uses standard 10Base-T Ethernet connectivity for PC to RPM unit communication.
- Windows® 98, 2000, XP, Vista & 7 compatibility.

**Inputs:** Up to 8 mic/line plus AES3 digital (depending on the RPM model). Daisy-chain more with AES3 I/O.

**Remotes:** End-user Levels and Presets can be assigned to Remotes, installed near the source or inside the zone.

**Outputs:** Up to 8 balanced line outputs plus an AES3 digital output (depending on the RPM model).

**Device Configuration window**
- What you see is what you get – If a control is shown and DSP usage <100%, use it!
- Multi-select cut/copy/paste and block alignment tools.
- Remotely addressable Level & Preset recall controls.
- Tags on processing blocks display the last recalled preset.
- View the Preset elements from the Processing Map or from the Preset block list.

**Project window**
- Easy project management for Drag Net configurations, proposals, drawings and web links using the Shortcuts folder.
- Allows offline setup at the office for later download into live devices.

**Preset window**
- Preset overlay feature allows changing one, some, or all parameters.
- Settings can be stored in 24 internal, non-volatile Presets.
- Recall the first 8 Presets via remote contact closures (see Remote Mapping).

**Parameter window**
- Displays a tree structure view of all used signal processing and control blocks.
- Associates parameters to remote controls (contact closures, Smart Remotes).
- Drag-and-drop into the Preset window to quickly build Presets.

**Palette window**
- Lists signal processing blocks used to create the audio flow.
- Drag and drop blocks from the Palette to the Device Configuration window to build your custom audio system.
Inputs and Outputs
- Input block features vary depending on RPM hardware.
  - RPM 88/44/22/2m: mic or line, +48V Phantom Power.
  - RPM 88/44/22: AES3 digital I/O with sample rate conversion.
  - RPM 26z: line-level only, analog gain trim.
  - RPM 2: line-level only.
- Software controlled mic/line Inputs (RPM 88/44/22/2m):
  - -128 dBu EIN (mic) with +48 VDC Phantom Power.
  - Coarse Gain from +15 to +60 dB in 15 dB steps.
  - Fine Trim from +16 to -20 dB in 1 dB steps.
- Line-level Balanced Output Trim maintains highest signal-to-noise for all gain settings.
- Intuitive gain structure GUI.

Priority Auto Mixer / Ducker
- Advanced music and paging processor, with all the elements for multi-zone paging and priority program management.
- A variety of In/Out combinations are available, up to 8 x 8.
- Automatic detection of input signal with noise immunity.
- Push-to-Talk operation from VIP Port contact closure.
- Forced on from properties window.
- Cross-point assignment of any input to any output.
- Eight priority levels for each input, arbitrated at each crosspoint.
- Priority based Ducking at each crosspoint.
- Priority dependent NOM mode preserves gain-before-feedback.

Applications:
- Automatic, priority paging with auto detection or Push-to-Talk.
- Automatic, priority based program selection.
- Simple, priority based ducking.
- NOM-based automatic mixing.

More Select and Mix Blocks
- Mix N x 1
- Select 1 of N
- Matrix Mixer
- Deluxe Stereo or Mono Side-Chain Compressor
  - Smooths out program dynamics, with soft knee adjustment.
  - Uses true rms level detection. A side-chain allows filters in the detector path as well as an input for ducking applications.
  - Provides initial default settings for music and speech.

Ambient Noise Compensator
- Automatically boosts program levels to match changes in background noise level.
- Connect any music or paging source to the Program input, and the noise sensing microphone to the Ambient input.

Automatic Gain Control (AGC)
- Versatile gain riding block helps maintain the appropriate signal level and dynamic range for an application.
- Allows transparent control of both speech and music levels.
- Uses a side-chain with true rms level detection, allowing filters in applications that benefit from band-limited detection for voice or instrument AGC. It is also possible for the detector to use signals other than the gain-controlled-signal.
Parametric Equalizer (PEQ)
- Add/Remove Filter feature easily changes the number of filters without deleting the block or recreating settings. Up to 15 filters can be added to each PEQ block. Adjust filter quantities offline without redrawing blocks and signal flow.
- Each numbered icon in the graph represents an available EQ filter. These icons can be selected and dragged about the graph to adjust the frequency (horizontal) and level (vertical) parameters, or precise values may be entered.
- Separate views for Magnitude, Phase, Composite, and individual filters. Tab display of all filter parameters in list form.

Feedback Suppressor
- 5, 10 & 15 filter versions for optimum use of DSP resources.
- Fixed, floating and user-adjustable PEQ filter types.
- Reset floating filters on power up or user-defined timeout.
- Speech and music modes.
- Auto-setup mode with limiter for fast setup.
- Dynamic level control.

True Response Graphic Equalizer with Perfect-Q™
- Rane’s patent-pending Perfect-Q technology means Drag Net equalizers have no band interaction, even with drastic adjustments of adjacent bands (blue line). But you can still select traditional Proportional Q if desired (red line).

2-way or 3-way Crossover
- Adjust crossover frequencies by selecting and dragging the crossover point icon to a new location, or type in values. Filters may be linked and adjusted simultaneously.
- In Simple Mode, all crossovers are Linkwitz-Riley, 24 dB per octave.
- Advanced Mode may include any combination of:
  - Linkwitz-Riley 12 or 24 dB per octave
  - Butterworth 12/18/24 dB per octave
  - Bessel 12/18/24 dB per octave
  - 1st-order 6 dB per octave filter.

Additional Processing Blocks
- Compressor
- Limiter
- Delay
- Signal Generator
- Level
- Meter
- Text Labels
Live Remote Mapping

- The Remote Map sets up the assignments, parameters and remote devices used for control.
- Signal processing parameters (a Source Selector’s Input parameter, for example) are linked to Remotes by creating Groups. These Groups are created by dragging items from the Parameter window into the Group Assignment section of the Remote Map.
- From the Versatile Input Port, control almost any parameter from pot-on-a-wall, contact closures, or pre-made Remotes.
- For more control, up to 8 optional Smart Remotes (SR 2, SR 3, SR 4) can be connected to an RPM unit via the RW 485 Remote Interface Port.

Remote Controls

Depending on which remote is selected for the application, the end user is presented easy access to a variety of functions such as source selection, preset recall, and level adjustment. All remotes mount in a standard U.S. electrical box with a minimum depth of 2¼ inches, and covered with a standard Decora® plate cover. Because of the display width, the SR 3 is the only remote that can’t fit next to itself in a 2-gang electrical box, but will fit next to any other remote.

Smart Remotes

Smart Remotes are compatible with the RPM 88, RPM 44, RPM 22’s Remote Interface Port, and electrically compatible with standard RS 485 interfaces.

The various modes and parameters (e.g., Backlight Timer) are set directly when connected to a live device. Configurations can be created offline and saved as Storage files or user templates for subsequent upload to the remote at the job site.

It is possible to assign a single remote to one or more parameters – to control a mono or stereo zone level, for example. It is also possible to assign multiple remotes to control the same parameter, as in a primary/secondary arrangement. Remotes linked in this manner automatically track each other’s changes, remaining in sync at all times.

Smart Remotes require shielded CAT 5 cable with two twisted pairs.

VIP Remotes

Using any of the RPM series Versatile Input Port (VIP) voltage-controlled level inputs, the VR 2 provides a simple “pot-on-a-wall” solution, and the LRS 4 and MRS 4 provide 4-way radio button “switch-on-a-wall” solutions.

Only three wires are required for connection.
## Parameter Specification Limit Units Conditions/Comments

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
<th>Limit</th>
<th>Units</th>
<th>Conditions/Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compressor</td>
<td>.....Threshold Range</td>
<td>+0 to -40</td>
<td>1 dB</td>
<td>rms detector</td>
</tr>
<tr>
<td></td>
<td>.....Ratio Range</td>
<td>1:1 to 20:1 plus infinity:1</td>
<td>typ</td>
<td>29 steps between 1:1 &amp; 20:1</td>
</tr>
<tr>
<td></td>
<td>.....Attack Time</td>
<td>0.5 to 100 typ msec</td>
<td>typ msec</td>
<td>16 steps †</td>
</tr>
<tr>
<td></td>
<td>.....Release Time</td>
<td>1 msec to 5.0 sec typ</td>
<td>typ 15 steps †</td>
<td></td>
</tr>
<tr>
<td></td>
<td>.....Gain reduction meter</td>
<td>Inverted peak response</td>
<td></td>
<td>indicates instantaneous minimum gain setting</td>
</tr>
<tr>
<td>Limiter</td>
<td>.....Threshold Range</td>
<td>+0 to -40</td>
<td>1 dB</td>
<td>peak detector</td>
</tr>
<tr>
<td></td>
<td>.....Attack Time</td>
<td>0.5 to 100 typ msec</td>
<td>typ msec</td>
<td>16 steps †</td>
</tr>
<tr>
<td></td>
<td>.....Release Time</td>
<td>1 msec to 5.0 sec typ</td>
<td>typ</td>
<td>15 steps †</td>
</tr>
<tr>
<td>Parametric EQ</td>
<td>.....Frequency Range</td>
<td>20 to 20,000 typ Hz</td>
<td></td>
<td>Bandwidth ref. to 3 dB from peak/notch level</td>
</tr>
<tr>
<td>Band-pass (Presence)</td>
<td>.....Filter Level Range</td>
<td>+12 to -15 db</td>
<td>Q of 57.71 to 0.66; 80 steps total</td>
<td></td>
</tr>
<tr>
<td></td>
<td>.....Bandwidth Range</td>
<td>0.025 to 2.025 oct.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shelving</td>
<td>.....Filter Level Range</td>
<td>+12 to -15 db</td>
<td>Q of 57.71 to 0.66; 80 steps total</td>
<td></td>
</tr>
<tr>
<td>High cut &amp; low cut</td>
<td>.....Filter type</td>
<td>Butterworth 2nd-order</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All-pass 1st-order</td>
<td>.....Phase shift</td>
<td>-90 Deg.</td>
<td>unity gain magnitude response</td>
<td></td>
</tr>
<tr>
<td>All-pass 2nd-order</td>
<td></td>
<td>Bandwidth refers to frequencies where the phase is +90 and -90 degrees with respect to the center frequency. Maximum phase shift is ±180 degrees.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.....Bandwidth Range</td>
<td>0.025 to 2.025 oct.</td>
<td>Q of 57.71 to 0.66; 80 steps total</td>
<td></td>
</tr>
<tr>
<td>CD Horn EQ</td>
<td>Frequency Range</td>
<td>2k to 5k typ Hz</td>
<td>+3 dB corner freq.; 6 dB/octave slope</td>
<td></td>
</tr>
<tr>
<td>Crossover Filter Types</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.....Bessel Corner Frequency/Attenuation</td>
<td>-4.5 dB</td>
<td>at selected frequency</td>
<td></td>
</tr>
<tr>
<td></td>
<td>.....3rd-order</td>
<td>-6.25 dB</td>
<td>at selected frequency</td>
<td></td>
</tr>
<tr>
<td></td>
<td>.....4th-order</td>
<td>-7.5 dB</td>
<td>at selected frequency</td>
<td></td>
</tr>
<tr>
<td></td>
<td>.....Butterworth corner frequency.</td>
<td>-3 dB</td>
<td>12, 18 &amp; 24 dB/octave, respectively</td>
<td></td>
</tr>
<tr>
<td></td>
<td>.....Butterworth orders</td>
<td>2nd, 3rd &amp; 4th</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.....Linkwitz-Riley frequency.</td>
<td>-6 dB</td>
<td>12 &amp; 24 dB/octave, respectively</td>
<td></td>
</tr>
<tr>
<td></td>
<td>.....Linkwitz-Riley orders</td>
<td>2nd &amp; 4th</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.....Crossover frequency range</td>
<td>20 to 20,000 Hz</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.....Crossover freq. step size</td>
<td>1 Hz typ</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mix</td>
<td>.....Input Range</td>
<td>-30 to 0 dB</td>
<td>½ dB steps plus Mute</td>
<td></td>
</tr>
<tr>
<td></td>
<td>.....Output Range</td>
<td>30 to +16 dB</td>
<td>½ dB steps plus Mute</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Level</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.....Input Range</td>
<td>-30 to +16 dB</td>
<td>½ dB steps plus Mute</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Delay</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.....Delay Range</td>
<td>0 to 500 msec</td>
<td>48 kHz sampling rate</td>
<td></td>
</tr>
<tr>
<td></td>
<td>.....Minimum Step Size</td>
<td>0.02083 msec</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.....Temperature Range</td>
<td>-20º to 120º F</td>
<td>-29 to 49 C; 1º F minimum step size</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sine Wave Generator</td>
<td>20 to 20,000 Hz</td>
<td>1 Hz steps</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pink Noise: Type</td>
<td>Pseudo Random (average)</td>
<td>½ dB error</td>
<td>The phase between individual generators is likely to be uncorrelated, but not guaranteed.</td>
</tr>
<tr>
<td></td>
<td>.....Period</td>
<td>167 typ sec</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.....Crest Factor</td>
<td>4.9 typ</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Meter: Range</td>
<td>60 dB</td>
<td>Peak Response</td>
<td></td>
</tr>
</tbody>
</table>

**Minimum System:** Pentium 2 PC (266 MHz), 30 MB available disk space, 128 MB RAM, Windows 98(SE), 2000, XP, Vista or 7, Internet Explorer 6 or higher, 10Base-T capable Ethernet Network Interface Card (NIC)

**Recommended System:** Pentium 4 PC (>1.5 GHz), 512 MB RAM, Windows XP, Vista or 7.
Basic Church System

Rane SR 4 Remote at Pulpit to change Levels and Presets

Wireless Lavalier Mic

Pulpit Mic

Choir Mic

Choir Mic

Wireless Receiver

Rane RPM 44 Programmable Multiprocessor

Rane MA 4 Amplifier

Main 3-Way Central Cluster

Cry / Overflow Room

Rane VR 2 Remote in Cry Room to change Level

Rapture Basic Church System
Restaurant System with 10 Zones

Rane RPM 88 Programmable Multiprocessor

Amplifiers

Six Zones share one of four input sources: Mic (for meetings); Radio; CD & MP3/ computer music. A Rane MRS 4 selects what’s heard in these six zones.

Using two Rane SR 4 remotes (one in the rack, one at the Host station) permits independent Level control of each of these six zones.

Three more SR 4 remotes, one in each of the remaining zones, allow independent source selection & Level control from within the zone.

Additional Drag Net system examples can be found in the Applications section at www.rane.com.