

DST-825 *Rules Breaker*

Programmable Guitar Amplifier



USER'S GUIDE

ART DST-825 Rules Breaker User's Guide Contents

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Introduction - Congratulations on purchasing the DST-825!

The DST-825 is a unique guitar amplifier in that, in addition to possessing its own sound, it offers the ability to model classic amplifier tones. The DST-825 offers the familiarity of conventional guitar amplifier functions and controls with the convenience of programming and an on-board digital effects processor. Dan Pearce has added the perfect compliment to the tube preamp stage with his 130 watt stereo power amp design. The power amp is custom designed for the Celestion-loaded closed back cabinet. The amplifier's preamp section may be used without the amplifier and speakers as an exceptional tool for direct recording and live use. With its powerful, yet friendly programmability and full MIDI control, the DST-825 guitar amplifier provides maximum flexibility for creating "your" sound.

Features

- Celestion-loaded, Stereo Guitar Combo
- 7-Ply, Void-Free closed-back cabinet
- Five analog preamp circuits: Xtreme, Roar, Stack, Clean Tube, and Crystal
- Hand selected 12AX7 preamp tube
- Incredible sound and the ability to model classic amp tones
- 130 Watt Stereo, Dan Pearce designed, Power Amp
- Selectable Power Amp damping (Loose or Tight)
- 3-band storable EQ with sweepable mid frequency control
- All knobs, switches, and parameters are programmable
- 25 digital effect chains - up to three effects at once!
- Each digital effect is adjustable and storable
- 75 user programmable presets can store any sound you create or modify
- Easy programming - Grab a knob and store your custom settings instantly
- Full MIDI compatibility - Program Change and Real-time control of all parameters
- A R T's exclusive "Send and Remember" MIDI program change programming
- Separate Stereo Preamp and Direct recording output with Speaker Simulator circuit
- Stereo Headphone output
- **Three year** parts and labor warranty
- *Designed and manufactured* in the United States of America

The DST-825 provides you with five preamp circuits plus 25 digital effect algorithms containing some of the finest studio-quality reverbs, delays, chorus, flanging, tremolo, single and dual pitch-shifting, and multi-effects combinations. Incredibly easy to use, ART designed a powerful combination of tone and signal processing into the DST-825. We suggest that you read and refer to this manual while getting used to your new amplifier.

This is a great time to fill out the User Registration card to become a completely informed A R T Artist. Returning the card to us ensures you of becoming the first to know about new A R T products as well as any further developments from A R T.

Fill in the following information for your reference:

Date of purchase _____

Purchased from _____

Serial number 825- _____

AC Power Hookup

The DST-825 has an internal power supply designed to operate at 95 to 125 volts AC, 50 to 60 Hz. Units manufactured for use outside the United States of America have been modified to comply with the required electrical specifications. A permanently attached power cable is supplied. Under no circumstances should the cable be altered. If the cable becomes cut or damaged, discontinue its use and contact ART Customer Service for repair information.

External Audio Connections

All audio connections to and from the DST-825 are 1/4" unbalanced TS (Tip = Hot, Sleeve = Ground). The exceptions are: The Direct Out which uses an XLR connector (Pin 1 = Ground, Pin 2 = hot (+), Pin 3 = cold(-)). The headphone output and footswitch are 1/4" stereo TRS (Tip/Ring/Sleeve) jacks. We recommend using only high-quality shielded cables equipped with high-quality connectors. (See Footswitch, page 13 for information on using the Footswitch jack).

Safety Precautions

Warning: To avoid the risk of shock or fire, do not expose this amplifier to moisture. Do not remove metal covers from chassis parts. Removing the front or top panel from the chassis exposes extremely dangerous high voltages and voids the manufacturer's warranty. There are no user-serviceable parts inside. Hazardous voltages are present inside the chassis. Refer all servicing to A R T's Customer Service Department.

Quick Tour

Start with the Output Level controls fully counter-clockwise (off). Plug in your guitar, switch on the power, and set the DST-825's input to respond best to the type of pickup you are using with the button directly below the Input jack (see Input Selector Switch on page 6 for further details on this cool feature). Turn up the Output Level controls to a good listening level and ROCK! Access the different factory sounds by turning the Encoder knob. After you've cruised through some presets, press the Effects Bypass button. This turns off the effects portion of the DST-825 (we'll turn it back on after we've explored the preamp section). Let's check out the DST-825's killer preamp sounds...

Select different preamp circuits by pressing the Preamp Select button to the right of the Xtreme LED. Each time you press this button, another preamp circuit is chosen (it cycles through from Xtreme to Roar, Stack, Cln Tube, Crystal, and then back to Xtreme). Pressing the Preamp Bypass button bypasses the analog preamp section of the DST-825. You'll notice none of the preamp type LEDs are lit. Press Bypass again (or press the Preamp Select button) to activate the preamp again.

Modify Gain, Output, EQ, and effects Blend with the seven knobs on the top panel's left half. As you turn any of the knobs or press any of the buttons, you'll notice that the Tweak LED lights. This means the DST-825 is in Tweak (edit) mode. The Tweak LED informs you that the current sound is not what is stored in memory. To exit Tweak mode you must either save your setting or press the Tweak button (this tells the DST-825 it's O.K. to "bail" (i.e.- don't save) on the changes you've made).

Now let's explore the effects processor. Press the Effects Bypass button so that its LED turns off (if it is still "on"). When this LED is off, it indicates that the effects are active. The Tweak LED should be on. The number shown in the Display tells you which one of the 25 effects algorithms is currently chosen. Turning the Encoder allows you to change the effect algorithm (from 1 to 25) selected. As you turn the Encoder, various parameter LEDs light indicating what parameters are available in that particular algorithm. Once you've selected the effect algorithm you want, press the Parameter Select button. The upper most parameter will begin blinking to indicate that its value can be modified by turning the Encoder. Each effect has one editable parameter, so algorithms with multiple effects (such as 25, Chorus + Delay + Reverb) have multiple editable parameters (i.e. Chorus speed, Delay time, and Reverb Decay). Turn the Encoder clockwise to increase the value, or counter-clockwise to decrease it (parameter values range from 00 to 20). Notice that the two-digit number in the Numerical Display reflects the changes you are making to the blinking parameter. Pushing the Parameter Select button cycles through the various parameters and eventually back to the effect algorithm select mode (no blinking parameter LEDs). Refer to the following list of Effects Algorithms:

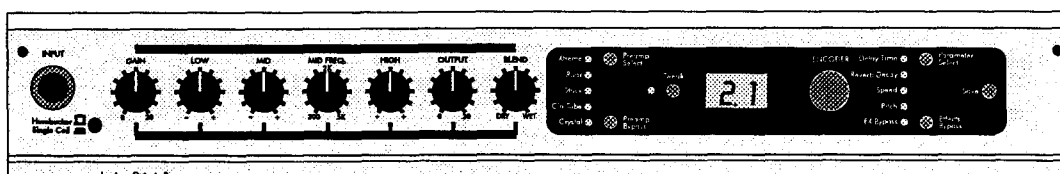
Effect Algorithms

Algorithm #	Description
1	Chorus
2	Short Delay no regen
3	Medium Delay medium regen
4	Long Delay high regen
5	Flange
6	Inverted Flange
7	Room Reverb
8	Hall Reverb
9	Pitch Transposer
10	Tremolo
11	Short Delay no regen + Chorus
12	Medium Delay low regen + Chorus
13	Long Delay medium regen + Chorus
14	Medium Delay low regen + Flange
15	Long Delay medium regen + Flange
16	Medium Delay + Room Reverb
17	Medium Delay + Hall Reverb

Algorithm #	Description
18	Chorus + Room Reverb
19	Chorus + Hall Reverb
20	Tremolo + Room Reverb
21	Flange + Hall Reverb
22	Dual PT voice 2 octave up
23	Dual PT voice 2 octave down
24	Medium Delay no regen + Chorus + Room Reverb
25	Medium Delay low regen + Chorus + Room Reverb

Note: When you are adjusting an effect algorithm with multiple parameters (i.e. Reverb + Chorus + Delay) you can also adjust each individual effect's mix in relation to the other effects. This is accomplished by simply turning the Blend control while the the appropriate LED is blinking. Example: ALgorithm 19 has a Reverb and a Chorus. When the Decay Time LED is blinking, turning the Blend control adjusts the Reverb Mix level. Likewise, when the Speed LED is blinking turning the Blend Control adjusts the Chorus Mix level. This is a very powerful feature when you are customizing your own sounds. You can, for example, have a nice lush chorus (mix set high) with just a hint of reverb (mix set low). When you exit the Parameter Select mode, use the Blend Control to set just the right overall mix of the digital effects.

Once you've fine-tuned the preamp and effects to your taste, you can save your settings (see page 12 for details).



Operation

Selecting Presets

Make sure the DST-825 is in Preset mode (Tweak LED off). Now select from the DST-825's 75 presets by turning the Encoder (clockwise to advance). Notice that as you turn the Encoder, the display's number changes to reflect the new preset, plus the Preamp LEDs will change to reflect the type of preamp used in each sound.

Controls & Indicators

The upper left half of the DST-825's face panel includes the controls for the preamp circuitry. The upper right side is the digital effects section. Keep in mind that the preamp section can be used with or without digital effects. The Amp Volume controls are located below the preamp section.

Input Jack

Plug your guitar into the front-panel Input jack. Always use a good-quality, shielded cable with quality plugs.

Input Selector Switch (Humbucker/Single Coil)

Set the DST-825's input to respond best to either Humbucker or Single Coil pickups with the Input Selector button located directly below the Input jack. The Single Coil setting adds 3dB of boost and a touch of Low EQ to compensate for the lower output common to single-coil pickups (as compared with humbuckers). The Pickup Select switch is a great feature which allows you to switch between guitars with different pickup configurations without having to adjust your presets. If your guitar has hot-rodded pickups, an active preamp, or uses a combination of standard pickups and piezo transducer, try using the Humbucker setting. If you use the DST-825 with single coil pickups or an acoustic guitar, try the Single Coil setting. Using either setting will not harm the DST-825. (Keep in mind that "more gain" can mean "more noise"). Try both settings to see which sounds best to you.

Gain

The Gain control sets the amount of gain into the preamp circuits. Its range is from 00 (none) to 20 (We warned you!). *When turned, you'll notice the display will change to show a value from 0 to 20. This represents the pot position.* Use lower settings for cleaner, bluesy overdrive sounds, and dial up higher settings when you want your guitar to kill. *Note: The Xtreme Preamp does not "clean up".*

Low

The Low control adjusts the amount of low end in your guitar's sound, letting you add thump to the bottom, or thin it out for a sharper edge. The range is from a cut of 15dB to a boost of over 15dB. *When turned, you'll notice the display will change to show a value from 0 to 20. This represents the pot position.* When set at 12 o'clock, the Low EQ band is "flat" (no boost or cut). This is indicated by "10" in the Display. If you feel the need to crank up the Low control, make sure the amp is seated firmly on a stable surface.

Mid & Mid Freq

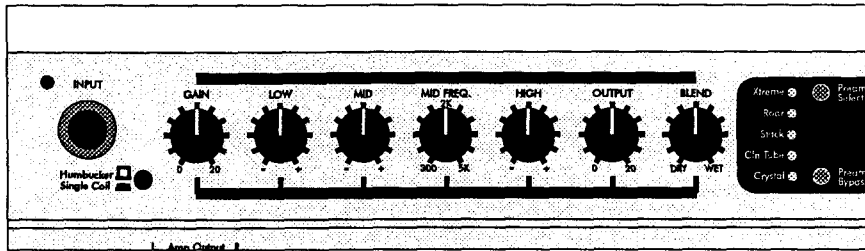
The Mid control adjusts the amount of boost or cut to the "body" of your sound. The Mid Freq control sets the frequency range you want to boost or cut. Its range is from 300 Hz to 5kHz. *When turned, you'll notice the display will change to show a value from 0 to 20. This represents the pot position.* To obtain proper "suck" or "scoop" for maximum shred, set the Freq control somewhere between 12 and 3 o'clock (10 to 16 in the Display) and cut the midrange by setting the Mid control to between 7 and 9 o'clock. You can also select a frequency to boost, making it easy to sustain — or even to feed back — at certain notes or when you play in certain ranges.

High

The High control adjusts the amount of high end in your guitar sound. Its range is from a cut of 15dB to a boost of 15dB. *When turned, you'll notice the display will change to show a value from 0 to 20. This represents the pot position.* When set at 12 o'clock, the High EQ band is "flat" (no boost or cut). This is indicated by "10" in the Display. To splinter glass, boost the High control. To get rid of the edge, cut the High control.

Output

The Output control is the output level control of the *preamp section* of the DST-825. This level control is *before* the digital effects section. The Output level setting is stored with each preset so you can match preset levels or have some presets provide a boosted level for solos. If you are experiencing excessive noise, or if you are running the amp levels excessively high, you may want to check your Output level. This is accomplished by toggling between the Preamp Bypass and Active states. If your presets are *way louder* (or *way lower*) than the bypass level, this is probably the source of your noise. Your preset level can be louder, or softer, than the bypass level - but not by a huge amount for proper signal to noise performance.



Blend

The Blend control adjusts how much of the digital effects are added to the DST-825's sound. The Blend knob's range is from Dry (100% preamp) to Wet (full effect). The Display indicates the setting, from 00 (Dry) to 20 (Wet). The Blend setting is stored with your preset.

Viewing Current Control (knob) Settings

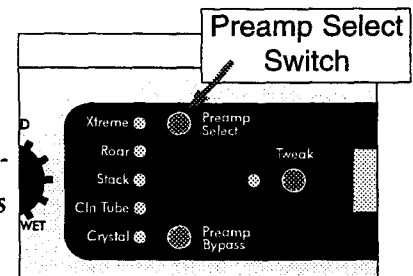
To view the current value of any of the seven front panel pots, press *and hold* the Parameter Select Switch. While pressing the Parameter Select Switch, turn any of the front panel knobs. The Display will show the value of that pot. When finished, release the Parameter Select Switch and the display will return to its prior status.

Preamp Select Switch

The DST-825 provides you with five preamp types, Xtreme, Roar, Stack, Clean (Cln) Tube, and Crystal; each has its own personality. With over 100dB of gain, and complete tonal control, virtually any clean, overdrive or distortion sound—no matter how subtle or explosive—is available with the DST-825. Here are descriptions of the five preamp types:

Xtreme

This is the ultimate distortion. If your playing style demands a tone beyond the distortion-formerly-known-as-shred, then this is your setting. Don't try to clean up this sound; it won't happen. Nail down your amp and blast!



Roar

The Roar preamp provides a unique distortion that blends the clean signal from your guitar with a tasty dose of high-gain distortion. The resulting sound is smooth and intelligible yet demands attention, especially in a live situation.

The Gain control lets you to clean up the sound at lower settings and produce great sustain when it's driven harder. The Roar distortion is primo when you want to be heard and not absorbed.

Stack

The Stack preamp's distortion offers enough versatility to produce a wide range of textures, from fat, overdriven vintage (can you say "800 series"?) stacks to down-and-dirty Stones/ Texas Blues distortions. The Gain control allows you to clean up to the faintest of tube rattle to the roar of an overworked white Bassman. If you play with your guitar's volume pot, this is the distortion for you.

Clean (Cln) Tube

Whether you're looking for the ultimate in power surf lead tone, clean 'n' meaty country pickin', or ballsy blues rhythm textures, the Cln Tube preamp settings deliver what you crave. The DST-825's 12AX7 tube provides the warmth and fatness that only a tube can create, plus its unique responsiveness allows it to "dirty-up" and dig in as you pick harder.

Crystal

The Crystal preamp is a clean preamp with complete control over EQ. This preamp is ideal for clean guitar patches, "floating" guitar pads and "edge-like" clean delay lines. The Crystal preamp is a great compliment to the power amp stage of the DST-825. *Note: The Gain control is inactive, to maintain a clean character, when the Crystal preamp is selected*

Preamp Bypass Switch & LED

Pressing the Preamp Bypass Switch bypasses the Preamp stage of the DST-825. The Preamp LEDs will turn off when Preamp Bypass is pressed. You can exit the preamp bypass state by pressing either the Preamp Bypass Switch or pressing the Preamp Select Switch.

Tweak Switch & LED

Think of this as the DST-825's "edit center." Pressing the Tweak button places the DST-825 in or out of Tweak mode (the LED glows when Tweak mode is active). You can also enter Tweak mode from Preset mode by turning any knob – except the Encoder or power amp controls – or pressing the Preamp Select Switch. When the DST-825 is in Tweak mode, you can change any settings in the preamp and effects sections, select preamp types, and select effects algorithms. To exit Tweak mode you can either save the settings or press the Tweak button to return to preset mode.

Power Amp Level Controls

Two controls (stereo) are provided on the lower left hand side of the DST-825. These are level controls (or volume controls) for the power amp stage. Make sure these controls are at their full counter-clockwise ("off") position when turning on and off the DST-825. Like any other amplifier, turning on and off the DST-825 with these controls "up" will result in a "thump" through the cabinet.

Display Window

This display shows a 2-digit number that corresponds to the preset currently in use. It also provides a numerical read-out of a control's setting when the DST-825 is in Tweak Mode. Finally, it guides you during MIDI operations.

Encoder

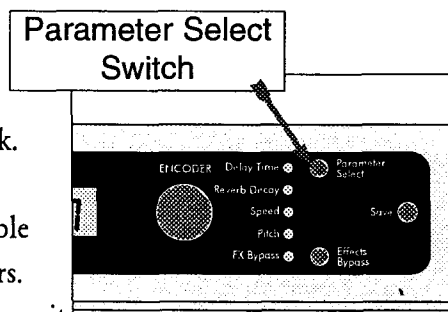
The Encoder is used for selecting presets, selecting effects, adjusting parameters, or choosing locations for saving presets, depending on the DST-825's mode of operation.

Effects Section

The DST-825's high-quality digital effects were specially developed to be useful and impressively musical for guitar.

Parameter Select Switch

The Parameter Select switch is used to select effect parameters for editing. Each of the DST-825's 25 effects algorithms have adjustable parameters. When the Parameter Select switch is pressed, the upper most parameter will begin to blink. This means that its value can be modified by turning the Encoder. Any other editable parameters' LEDs will glow (but not blink). Each effect has one editable parameter, so algorithms with multiple effects have multiple editable parameters. Turn the Encoder clockwise to increase the value, or counter-clockwise to decrease it



(parameter values range from 00 to 20). Notice that the Display reflects the changes you are making to the parameter with the blinking LED. Push the Parameter Select button to cycle through the editable parameters and eventually back to the effect algorithm select mode, where there are no blinking LEDs.

Delay Time

The Delay Time parameter is adjustable for any of the algorithms containing a delay effect. Depending on whether the effect is a short, medium, or long delay (see Effect Algorithm List, page 5), you can create doubling effects—a short delay that gives the illusion of two instruments playing simultaneously—or slapback or echo effects. Regeneration, or recycling of the effect-enhanced signal back through the effect to create more echoes (instead of a single delayed signal), is also employed in some algorithms.

Reverb Decay

The Decay Time parameter is adjustable for any of the algorithms containing a reverb effect. This is the amount of time it takes for reverb to “die away” after the sound entering the reverb ends. The DST-825 includes room and hall reverb algorithms, which as their names imply, are simulations of small and large acoustical spaces, respectively.

Speed

The Speed parameter is adjustable for any of the algorithms containing a chorus, flange, tremolo or panning effect. These are all modulated effects that increase and decrease in intensity at a specific rate. The Speed setting governs that rate.

Pitch

The Pitch parameter is adjustable for any of the algorithms containing a pitch shifting effect. The pitch transposer creates a selectable harmony. In the dual PT (PT is short for "pitch transposer") programs, two harmonies are created. Effects Algorithm 9 is a single harmony, whereas Effects Algorithm 22 produces a fixed harmony an octave above the note you play and another selectable harmony. Effects Algorithm 23 produces a fixed harmony an octave below the note you play, plus a second selectable harmony.

Pitch Shift Intervals

The following list shows the intervals created by the DST-825's Pitch Transposer. They are arranged by the value that is shown in the Numerical Display. Note that the detuned unisons sound like two identical notes played together, but because they are slightly detuned, the tone is thicker and more like the sound of two separate instruments playing in unison.

Number-Interval

00	- octave
01	- major 7th
02	- minor 7th
03	- major 6th
04	- perfect 5th
05	- perfect 4th
06	- major 3rd
07	- minor 3rd
08	- major 2nd
09	- detuned unison 1
10	- detuned unison 2
11	- detuned unison 3
12	+ major 2nd
13	+ minor 3rd
14	+ major 3rd
15	+ perfect 4th
16	+ perfect 5th
17	+ major 6th
18	+ minor 7th
19	+ major 7th
20	+ octave

Individual Effect Blend

When you are editing an algorithm with more than one effect in it you can adjust the mix of each effect relative to the others. While editing an effect parameter simply turn the Blend Control knob until the desired amount of effect is achieved. The range is from 0 (no effect) to 20 (full effect). For example: Algorithm #12 has a delay and Chorus. Press the Parameter Select Switch and the Delay LED will blink. Turning the encoder changes the delay time while turning the Blend Control adjusts the amount of delay effect. Pressing the Parameter select switch again causes the Speed LED to blink. Turning the Encoder allows you to adjust the Chorus speed while turning the Blend Control adjusts the amount of Chorus effect. This is a powerful feature in that you can tweak in just the right amount of effect and control the blending of multiple effects.

Effects Bypass Switch & LED

Pressing the Effects Bypass bypasses the effects section of the DST-825. (the LED glows to indicate Bypass). When Bypass is activated (and the loop is not in use) the preamp's sound goes straight through to the power amp without effects.

Save

Pressing Save places the DST-825 into Save mode. After pressing Save once, the Display will blink on and off showing the current preset location. This indicates the DST-825 is ready to store a preset. You may store the preset at the current location by simply pressing Save again. If you want to save a preset to another location, turn the Encoder to the preset number you want (01 to 75), and then press Save again. After pressing Save a second time, the Numerical display stops blinking and shows "YA," indicating that the preset has been saved.

Note: To abort a save operation at any time during this process (while the Display is blinking), simply turn any of the knobs or press any front-panel button (except Save, Power, Humbucker/Single Coil, or power amp controls).

Note: Preamp Bypass and Effects Bypass states are stored with Presets.

Power

The Power switch supplies and removes power from the unit; the LEDs and Display Window illuminate when power is on. If the unit does not turn on when the switch is toggled, check the AC power cord. Also make sure that the outlet that it is plugged into is "live," by plugging in another piece of equipment that you know works (try plugging into another outlet, too). If the outlet is good but the DST-825 does not turn on, consult your dealer or ART Customer Service.

DST-825 Bottom Panel

AC Power Cord

The DST-825's AC power cord is permanently attached. Do not attempt to alter or remove this power cord. If it is ever damaged, consult your dealer or the ART Customer Service department.

MIDI In & MIDI Out/Thru

The MIDI IN jack should be connected to the MIDI out (or thru) of a device which is capable of sending MIDI data. The MIDI In receives the signal containing Program Change messages, real-time controller information and incoming MIDI program data. It enables you to "talk" to the DST-825 from an external source such as an A R T X-12 or X-15 Ultrafoot, a computer equipped with MIDI ports and associated software, or a sequencer.

The MIDI Out/Thru jack operates in two ways. As a MIDI Out, it transmits MIDI information from the DST-825 to other MIDI-controllable gear such as sequencers or synthesizers, allowing you to save all your preset information to a MIDI data file. As a MIDI Thru, it passes the information reaching the MIDI In along to other equipment.

Power Amp Output Jacks

The lower section of the DST-825's rear panel has two jacks connected to the speakers.

Note: If you are to use the Power amp output jacks to power any speakers other than those included with your DST-825 you must observe the following: The Power Amp Output jacks are capable of providing a continuous 80 watts per channel into a 4 ohm load (speaker resistance). The minimum impedance (load) should not be lower than 4 ohms. Higher than 4 ohms is fine for continuous use (8 ohms or 16 ohms). The DST-825 has a protection circuit that will discontinue output power if the heat of the unit rises to a damaging level. This would happen after continuous, high volume, usage into a lower than specified impedance load. If this "shut down" occurs (the display will read "Ht"), make sure there is no damage to the speaker cables. Disconnect power to the unit and allow it to cool down. The DST-825 will reset itself in about ten to fifteen minutes. Once the unit resets, call A R T Customer Service if the problem continues.

Note: UNDER NO CIRCUMSTANCES SHOULD THESE POWER OUTPUT JACKS BE CONNECTED TO ANY OTHER PIECE OF EQUIPMENT OTHER THAN THE DST-825 ENCLOSURE OR A PROPERLY WIRED SPEAKER CABINET! Damage may occur to other equipment or the DST-825 itself.

Speaker Damping Switch

The Speaker Damping Switch is located next to the Power Amp Output jacks. This switch provides two different settings - Loose and Tight - which effect how the DST-825's power amp interacts with the speakers. Loose is a tube-amp like interaction. The speakers sound a touch sloppy with a definite increase in the low end character. As the name implies, the speakers sound "looser" than the Tight setting. If you've played with a classic tube amp, this is your setting. Tight sounds like a solid state amp. The speakers react fast to your playing and almost sound "restricted" as compared to the Loose setting. If you're into shred, this setting will appeal to you. *Note: The Loose setting is preferred for clean, overdrive and classic emulations.*

Direct Out (XLR)

The Direct Out takes the signal from the DST-825's left (mono) preamp output channel, complete with effects, and adds speaker emulation. Like using a separate direct box, it provides a high-quality, electrically balanced, high-level signal that's ideal for direct connection in the studio or onstage to a line input of a mixing console. For best tone, always use a high-quality microphone-type cable with good XLR connectors.

Speaker Simulator

When you use the Direct Out to send the DST-825's signal to a mixing console, you can choose between two different speaker emulations that add size, shape, and texture to your instrument's preamplified sound. The two choices are: 4x12 (Closed Back) and 2x12 (Open Back). These settings emulate the tightness and focus of a sealed enclosure with four 12" speakers or the looseness and funkiness of an open-backed cabinet housing two 12s.

Footswitch

As a convenient feature, you can increment and decrement through the DST-825's presets with a dual switch footswitch. A footswitch with two Push-on/push-off switches should be used, and make sure the footswitch is wired: (tip = increment, ring = decrement). As another added feature, the footswitch follows the MIDI Program Table so you

can recall presets in any order even in you're not using MIDI! (See page 17 - Editing The MPT) for how to recall presets in a custom order).

Headphone

The sound of the preamp and the effects is output through the 1/4" headphone jack, so you can put on a pair of headphones and practice without disturbing others. The jack is configured in the TRS standard (Tip/Ring/Sleeve) for virtually all headphones. Simply make sure the Power Amp Output controls are turned down when using the headphone output for practicing.

Preamp Output (Left & Right)

Two 1/4" output jacks are included for sending the DST-825's output (from the effects section) to an amp, recording channels, etc. When you use only one Preamp Output (mono), use the Left one. When nothing is plugged into the Right Preamp Output jack, the effect's output reaching the Left Preamp Output is a processed combination of both the left and right signals (that is, the outputs are summed).

Preamp Output Level Switch

This switch selects either a +4 or -10 level for the Preamp Output jacks. When using the DST-825's Preamp Output jacks to connect to another piece of gear, adjust this switch to send the proper operating level to that piece of equipment. The best signal-to-noise ratio and optimum signal quality will be the result of correct level matching between the DST-825 and your other gear. Check with the manual accompanying your other equipment and/or experiment by setting the DST-825 Preamp Output Level switch to its +4 or -10 position.

Loop

The Loop Send and Return jacks are provided for inserting your favorite external processor or stomp box between the DST-825's preamp and digital effects section. Connect the Loop Send jack to the input of your piece of equipment. Connect the mono output of your equipment to the Loop Return jack of the DST-825. If necessary, adjust the Return Loop Level switch to attenuate the signal returning to the DST-825.

Return Loop Level Switch

When using the DST-825's Loop, the best signal-to-noise ratio and optimum signal quality will be the result of correct level matching between the DST-825 and your other gear. Check with the manual accompanying your other equipment and/or experiment by setting the DST-825 Loop Return Level In switch to its +4 or -10 position.

Vent for 12AX7 tube

A small vent is located on the bottom panel for the preamp tube. Never cover this vent or insert anything into it, as it may damage the tube or other circuitry.

Presets In The DST-825

There are 75 preset locations in the DST-825. From the factory, these include amplifier emulations with and without

digital effects. We suggest “surfing” through the factory presets to find a setting close to what you’re looking for and then tweaking and storing it as your own. Any presets you create, or modify, may be stored to any of the 75 preset locations. See page 12 for information on how to save presets.

Restoring Presets To Original Factory Settings (Factory Reset)

If you want to restore all the presets to their factory settings, press the Preamp Select, Parameter Edit, and Save buttons simultaneously. The DST-825 will re-initialize and return all the presets to their original factory settings; this will take several seconds, so be patient. Remember: *Only do this if you want to restore all of the settings to their factory values. It erases all customized presets in the DST-825.* If you have favorite customized presets, either check their parameters and write them down, or use the MIDI Data Dump feature to offload your presets to a MIDI storage device before implementing a full reset. (See page 20 for information on “dumping” your presets via MIDI).

DST-825 MIDI Mode

The DST-825’s MIDI mode allows you to assign MIDI controllers to any of the DST-825’s parameters, edit the MIDI Program Table (MPT), and do full preset dumps via MIDI.

NOTE: Most values in MIDI range from 0 to 127 (although MPT Program Numbers range from 1 to 128). Since the Numerical Display only has two digits, a number greater than 99 is indicated by a glowing middle “decimal point.” For example, the value “123” is displayed as “2.3” where the leading “1” is implied by the decimal point.

Basic explanation of terms:

MIDI Controller - A device that is capable of sending a MIDI message - i.e. an A R T X-15 or a sequencer.

MIDI Controller Number - The number assigned to the MIDI message sent from a MIDI Controller.

MIDI Parameter - A parameter which is adjustable through MIDI. A MIDI controller *sends* a message (assigned to a controller number) to a device. That device *receives* the message *and directs* it to the parameter assigned to that controller number. - simple isn’t it?

Entering MIDI Mode

To enter MIDI mode, press and hold the Effects Parameter Edit button, and then press the Effects Bypass button. Think of the Effects Parameter Edit button as a “shift” key that gives the FX Bypass button its “Enter MIDI Mode” functionality. The Numerical Display now shows an alphanumeric MIDI Parameter (see below for MIDI Parameter description) and all of the Effect LEDs glow. This indicates that you are now in MIDI mode.

Exiting MIDI Mode

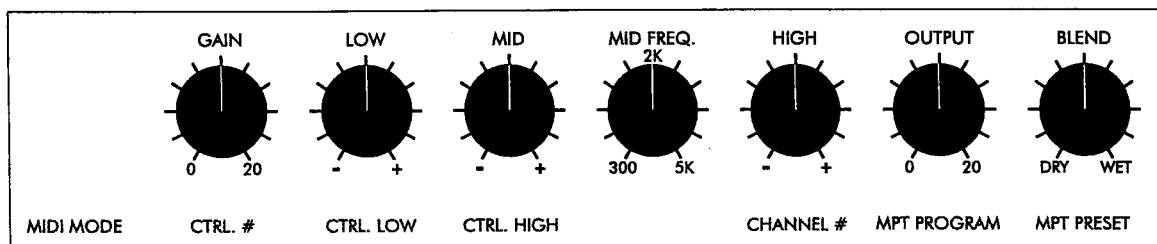
To exit MIDI mode, press either the Preamp Bypass or the Effects Bypass buttons. If a MIDI controller number, controller low value, and/or controller high value was modified, the “Tweak” LED will glow. To store these MIDI settings with the current preset, press the Save button (once to select preset destination, and the second to confirm the save).

MIDI Parameters

When in MIDI mode, the Display shows the current MIDI Parameter that a MIDI controller can control. Any parameter you can control from the front panel (including Preamp Bypass and Effects Bypass) can be controlled via MIDI. The following table describes the two alphanumeric characters shown in the Display and their associated MIDI Parameter:

Display	Parameter Description
"GA"	Preamp Gain pot
"Lo"	Preamp Low EQ pot
"id"	Preamp Mid EQ pot
"Fr"	Preamp Mid EQ Freq. pot
"Hi"	Preamp High EQ pot
"Ou"	Preamp Output pot
"bL"	Effect Blend pot
"UL"	Unit Output Level (master output level)
"d1"	Digital Parameter 1
"l1"	Level Effect #1
"d2"	Digital Parameter 2 (if available in current algorithm)
"l2"	Level Effect #2 (if available in current algorithm)
"d3"	Digital Parameter 3 (if available in current algorithm)
"l3"	Level Effect #3 (if available in current algorithm)
"bA"	Bypass Analog Preamp
"bd"	Bypass (FX) Digital
"bb"	Bypass Both preamp and effects

NOTE: The last "MIDI Parameter" (displayed as "Fd") is a convenient way to initiate a preset dump (see Dumping Your Presets Via MIDI), and is not technically a parameter.



NOTE: "UL", Unit Level is only accessible via MIDI. The difference between Unit Level and the Output pot is this: the Output pot is the output of the analog preamp BEFORE the digital effects. The Unit Level is a digital parameter that adjusts the output of the unit AFTER the digital effects. Both can be used as volume controls, however for improved noise performance use the Unit Level. If you do want to do volume swells into the digital effects (or turn off your volume while letting a reverb decay out), you may use the Output Level.

MIDI Control Elements

The DST-825's control elements (front panel pots, Encoder, and various switches) take on different meanings in MIDI mode, as described in the following table:

Control Element		MIDI Mode Function Range
Gain pot	MIDI Controller Number	"oF" (off), 1-31, 33 - 120
Low pot	MIDI Controller Low value	0 - 127
Mid pot	MIDI Controller High value	0 - 127
Mid Freq. pot	no function	
High pot	MIDI Channel Number	"on" (omni), 1-16
Output pot	(MPT) Program Number	1 - 128
Blend pot	(MPT) Preset Number	1 - 75
Preamp Select	no function	
Preamp Bypass	Exit MIDI Mode	
Tweak button	Saves MPT changes (when flashing) otherwise no function	
Encoder	Scrolls through MIDI Parameters	"GA", "Lo", "id", "Fr", "oU", "bL", "UL", "d1", "d2", "d3", "bA", "bd", "bb", "Fd"
Parameter Select	no function	
Effects Bypass	Exit MIDI Mode	
Save	Initiates full preset dump when MIDI parameter is "Fd", Saves MPT changes (when Tweak LED is flashing), otherwise no function	

Editing The MIDI Program Table

The MIDI Program Table (MPT) allows you to recall presets, from an external MIDI controller (A R T x-12 or X-15), in a different order than how they are stored in the DST-825. By default, there is a one to one mapping of MIDI Program to Preset number. For example, the MIDI Program change message "01" recalls preset number "01", MIDI Program change message "02" recalls preset number "02", and so on.

In some instances, you may want to change what preset is recalled for a specific MIDI Program Change message. For example, you may have a preset that has the sound you love stored at preset "14", but you want to recall that preset when you step on preset "04" on your MIDI pedal. Here's how to set it up: Enter MIDI Mode. Turn the Output pot (MPT Program number) until the display reads "14", then turn the Blend pot (MPT Preset number) to "04". Notice that the Tweak LED is flashing. This indicates that you have made a change to the MPT. To confirm and save this change, press the Tweak button (the Save button will also work). If you've made a mistake or don't want to save the changes, press either the Preamp Selector or the Parameter Edit switches. That's it! You can "arrange" all your presets in the DST-825 like this without having to move all the presets to different locations.

NOTE: The easiest way to make changes to the MPT is using "Send and Remember" features of Smart MIDI .

Smart MIDI Mode

Smart “Send and Remember” MIDI mode is an easy way to program the DST-825’s MIDI program table. With the Encoder, select the preset you want to recall, and then press both Parameter Edit (which acts like a “shift” key) and Save together to enter “send and remember” mode (all four Effects LEDs blink on and off in unison). Send a program message from your MIDI controller. The DST-825 automatically maps the Program Change message to the selected preset. Repeat the procedure for more presets. This is an extremely easy way to put presets in order without having to program. Note: Once the message is received by the DST-825, the unit returns to its last selected mode of operation (either Tweak or Preset).

Assigning A MIDI Channel Number

MIDI can transmit and receive messages over 16 different channels (1-16) - or on all channels simultaneously. Your DST-825’s factory default is “on,” or “Omni” mode. In Omni mode, the DST-825 looks at *all* MIDI messages received regardless of the MIDI Channel number. To change the MIDI Channel Number to a specific number, turn the High pot (MIDI Channel select in MIDI mode) to select the desired MIDI Channel number. Notice that the Numerical Display changes from showing the MIDI Parameter to displaying the MIDI Channel number (“oF”, 1-16). Once the new MIDI Channel has been selected, the Numerical Display will revert back to the current MIDI Parameter after approximately 2 seconds. Make sure your MIDI device channel and your DST-825’s channel number match before proceeding (or the simply leave your unit in Omni mode).

Assigning MIDI Controllers

As stated above, MIDI Controllers can be assigned to any parameter of the DST-825. The easiest way to describe how to assign MIDI Controllers is to walk through some examples. Note also that MIDI Controllers are local, or stored in each individual preset. This is convenient in that one pedal on your MIDI controller can control different effects in different presets.

NOTE: The following examples assume that your DST-825 is connected to an A R T X-15 Ultrafoot MIDI Control pedal. The left expression pedal of the X-15 is assigned to MIDI Controller #4 and the right expression pedal is assigned to MIDI Controller #11 (by factory default). The X-15’s default MIDI Channel number is #1. You can use other MIDI devices with your DST-825, but the MIDI Controller numbers listed here may differ from your set-up.

NOTE: The default (pre-programmed) MIDI Controller assignments for your DST-825 are:

MIDI Controller #04 controls Unit Level (“UL”), X-15 left expression pedal default.

MIDI Controller #11 controls Blend (“bL”), X-15 right expression pedal default

MIDI Controller #84 controls bypass (preamp) Bypass and FX Bypass (“bb”, bypass both).

Example 1, Assigning a MIDI Controller to control the Mid Freq. pot:

This example will assign the X-15 left expression pedal (MIDI Controller #04) to control the Mid Freq. pot. When the pedal is all the way up, the frequency will be at its minimum (about 300 Hz). When the pedal is fully depressed, the frequency will be at its maximum (about 5 kHz). **Note:** The expression pedal transmits a value of 0 when the pedal is

all the way up and a value of 127 when it is fully depressed.

First enter MIDI mode (see Enter MIDI Mode). Turn the Encoder until “Fr” appears in the Numerical Display. (Note: The unit remembers which MIDI Parameter you last edited, so if you have not changed the MIDI Parameter it will show “GA”). Now turn the Gain pot (MIDI Controller # in MIDI Mode) until the Numerical Display shows “04”. You have now assigned MIDI Controller #04 to the Mid Freq. pot (Note that the display will time-out to re-display “Fr” within about two seconds). The Low and High values are defaulted at 0 and 127, respectively (in a later example we’ll change them). Now exit MIDI Mode by pressing either Bypass button. Sweep the left pedal, and the Mid Frequency will change. Make sure that you have the Mid control boosting or cutting (in your preset), otherwise you won’t hear anything.

Application Note: Use the above setting for a digitally controlled analog “wah” by boosting the Mid pot all the way up, then sweeping the frequency with your expression pedal.

NOTE: If you have changed any MIDI parameter when you exit MIDI mode the Tweak LED will glow indicating that you have made a change. Use the Save button to store these new changes with your preset, or exit Tweak mode to abandon your changes. If you exit Tweak mode (by pressing the Tweak button, and the Tweak LED goes out) and leave the current preset your MIDI Controller changes will be lost.

Example 2: Assigning the same MIDI Controller to control both the Gain and Blend pot:

In this example we will assign the X-15’s left expression pedal (MIDI Controller #04) to both the Gain and Blend parameters simultaneously. When the pedal is all the way up we’ll make the Gain 25% and the Blend 50%. When the pedal is fully depressed (all the way down), Gain will be 100% and the Blend will go to 0% (all dry).

Enter MIDI Mode. The Numerical Display will read “Fr” since in our previous example the MIDI Parameter was Mid Freq. Turn the Encoder counter clockwise until the display reads “GA”. Now turn the Gain pot (MIDI Controller # in MIDI Mode) to “04” in the display. Next, turn the Low pot (MIDI Controller Low value) until the display reads “31” (which is 25% of the range from 0 - 127). Then turn the Mid pot (MIDI Controller High value) until the display reads “2.7” (which is 127, 100% of the parameter range). The Gain pot is now assigned.

Now let’s do the Blend pot. Turn the Encoder until the display reads “bL”. The MIDI Control Number is still #04 from setting the Gain pot, so we don’t have to adjust it. Now turn the Low pot (MIDI Controller Low value) to “63” (50% of the range from 0 - 127). Next turn the Mid pot (MIDI Controller High value) to “00” (lowest Blend setting). Then exit MIDI Mode by pressing either Bypass button. The Tweak LED will be glowing indicating you have made a parameter change. Now when the expression pedal is all the way up the Gain is low and there is a good amount of effects from the 50% Blend. As you sweep the pedal down the Gain increases but the effects “dry up”. Remember to use the Save button to store these settings with this preset.

Application Note: Use the above setting with a distortion and a nice Chorus (Algorithm 01). Use the expression

pedal to back off on the gain and bring in the Chorus during a quieter part of a tune. Then, as the dynamics of the song build, seamlessly morph into a very chunky, “in your face” sound. *Since the XTREME distortion doesn't clean up much, the effect is more dramatic using the Roar or Stack distortions.*

Example 3, Bypass button to bypass Effects.

To use your X-15's bypass button to bypass the effects, first enter MIDI Mode. Turn the Encoder until “bd” (bypass digital effects) appears in the Numerical Display. Next turn the Gain pot (MIDI Controller #) and press the Bypass pad on the X-15. “84”, the default MIDI Controller assigned to the Bypass pad, will be displayed. Set the Low value to “00” and the High value to “2.7” (127). Remember to save your changes.

NOTE: Your DST-825's default setting for MIDI Controller #84 is “bb”, bypass both (preamp) Bypass and FX Bypass (digital effects).

NOTE: If you are using another MIDI Controller with an LED to indicate bypass state, you may have to reverse the mapping to make the pedal's LED match with the DST-825's bypass LEDs (i.e. Low value = “2.7” (127) and High value = “00”).

Dumping Your Presets Via MIDI

If you have a MIDI device capable of storing MIDI data, you can save all of your 825's presets. To do this, first enter MIDI mode. Turn the Encoder until the Numerical Display shows “Fd” (full dump). Make sure you have a MIDI cable connected from your DST-825's MIDI Out jack to the MIDI In jack of the receiving device. Press Save. The flashing “—” in the display indicates that the dump is in progress. The dump will take at the most, 10 seconds.

NOTE: A shortcut to doing a full preset dump is: Enter MIDI mode, then press and hold the Parameter Edit switch, and then the Preamp Selector switch. This will initiate the full dump.

Receiving Presets Via MIDI

If you have a full dump of your presets stored on another MIDI device, you can upload them to your DST-825. Simply connect a MIDI cable to the MIDI In jack of your DST-825 from the MIDI Out jack of the transmitting MIDI device. Then initiate the transfer on the other device. It will take, at the most, 10 seconds, during which the pots and encoder will be “dead” (will not respond). Once the presets have been received, turn the Encoder to load the newly received preset.

NOTE: Be sure to leave and return to the current preset so the unit will reload the newly received preset.

NOTE: Do not dump DST 8080 presets into a DST-825. The format in which the preset are stored is NOT compatible.

ART DST-825 SPECIFICATIONS

Dimensions	11" D x 29.0" W x 24" H
Weight	68.0 lbs
Cabinet Construction	7-Ply, Void-free
Speakers	Celestion G12T-75
Power Amp Output	130 watts RMS Stereo - 65 watts RMS per channel into 8 ohms
Outputs	Stereo 1/4" Preamp Outputs - XLR Direct Recording Out from preamp Stereo 1/4" headphone output
Loop	1/4" Preamp out and Effects Return
Presets	75 factory/user-definable
Effects algorithms:	25
MIDI	MIDI In, MIDI Out/Thru
Footswitch	1/4" TRS for increment/decrement presets
Input impedance	470k ohms
Maximum output level	+20dBu (Preamp outputs)
Power	Internal supply, 95 to 125VAC, 300W, USA - Fuse: 3A slo-blo
Battery (memory protection)	Lithium - Ray-o-vac BR2325 (three to five year lifetime).

We're Online!

For Product information, questions, applications, tips, answers and general discussion with A R T employees look for A R T on the Internet. Check out our Web Page at: <http://www.artroch.com>.

Look for the A R T folder on America Online in Craig Anderton's Stage Studio and Sound (keyword "SSS") under the Manufacturer Supported Forums. Email us at artroch@aol.com

Look for the A R T supported area in the MIDI B Forum area on Compuserve (Go MIDI). Email us at artroch@cis.compuserve.com

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WARRANTY INFORMATION

Limited Warranty

Warranty service for this unit will be provided by Applied Research & Technology, Inc. in accordance with the following warrant statement.

Applied Research & Technology, Inc. (A R T) warrants to the original purchaser that this product and the components thereof will be free from defects in workmanship and materials for a period of **Three years** from the original date of purchase. Applied Research & Technology, Inc. will, without charge, repair or replace, at its option, defective product or component parts upon prepaid delivery to the factory service department or authorized service center, accompanied by proof of purchase date in the form of a valid sales receipt.

EXCLUSIONS: This warranty does not apply in the event of misuse or abuse of the product or as a result of unauthorized alterations or repairs. This warranty is void if the serial number is altered, defaced, or removed.

A R T reserves the right to make changes in design or make additions to or improvements upon this product without any obligation to install the same on products previously manufactured.

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For units purchased outside the United States, service will be provided by an authorized distributor of Applied Research and Technology, Inc.

Service

The following information is provided in the unlikely event that your unit requires service.

- 1) Be sure that the unit is the cause of the problem. Check to make sure the unit has power supplied, all cables are connected correctly, and the cables themselves are in working condition.
- 2) If you find the unit to be at fault, write down the serial number and a complete description of the problem, including how and when the problem occurs. Please write down a description of your complete setup before calling Customer Service.
- 3) Call our Customer Service department for a Return Authorization (RA) number or questions regarding technical assistance. Customer Service hours are 9:00am to 6:00pm Eastern Time, Monday through Friday.
- 4) Pack the unit in its original carton or a reasonable substitute. The packing box is not recommended for a shipping carton. Put the packaged unit in another box for shipping. Print the RA number clearly on the outside of the shipping box. Print your return shipping address on the outside of the box.

5) Include with your unit: a return shipping address (we cannot ship to a P.O. Box), a copy of your purchase receipt, a daytime phone number, and a description of the problem. Keep your manual!

6) Ship your unit to:

APPLIED RESEARCH AND TECHNOLOGY, INC.

215 TREMONT STREET

ROCHESTER, NEW YORK 14608

ATTN: REPAIR DEPARTMENT

RA# _____

ART retains a policy of constant product improvement. ART reserves the right to make changes in design or make additions to or improvements upon this product without any obligation to install the same on products previously manufactured. Therefore, specifications are subject to change without notice.

Applied Research & Technology, Inc.

215 Tremont Street

Rochester, NY 14608 USA

(716) 436-2720

(716) 436-3942 (FAX)

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