



Professional Sound Products

Set Up Procedure

DJ-4135

PRECISION DELAY

Refer to back page for Control Record.

Refer to *SYSTEM41 Installation Manual* for general instructions on module installation and wiring.

Refer to **DJ-4135 Data Sheet** for product specifications and functional diagram.

LEVEL CONTROLS AND INPUT FILTER

1. Set the frequency of the 12dB/octave Input Low-Cut Filter by the corresponding rotary switch on the upper PC board (see Module Detail and table below).

SETTING	FREQUENCY	SETTING	FREQUENCY
0	OFF	8	80Hz
1	10Hz	9	90
2	20	A	100
3	30	B	110
4	40	C	120
5	50	D	130
6	60	E	140
7	70	F	150

2. Set INPUT and OUTPUT level controls to "N" (Normal). The INPUT control should be mid-range and the OUTPUT control should be full clockwise. Gain will be unity (0dB) input to output.
3. Input sensitivity (gain) may be increased by clockwise rotation of INPUT control, with a maximum of 10dB gain. If the red CLIP LED flashes, reduce INPUT sensitivity.
4. Rotate OUTPUT control counterclockwise to reduce output level as required. Note: Best signal quality results when input clipping occurs simultaneously with maximum signal level of the sound system. Full dynamic range of the DJ-4135 is then utilized.

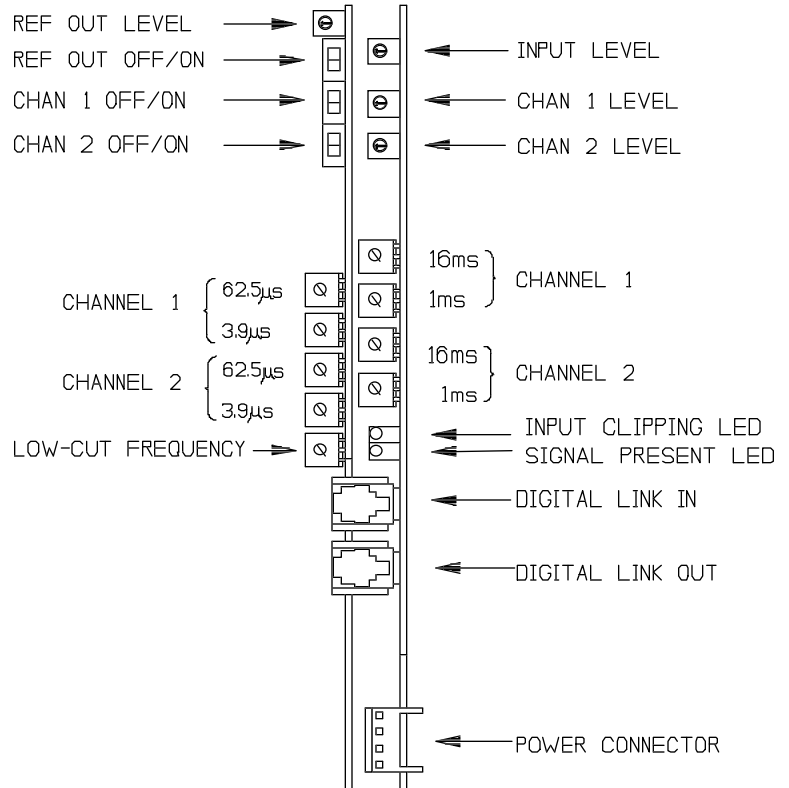
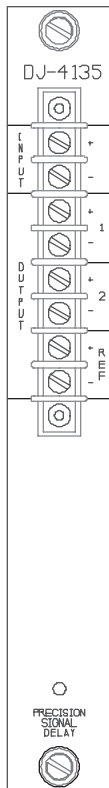
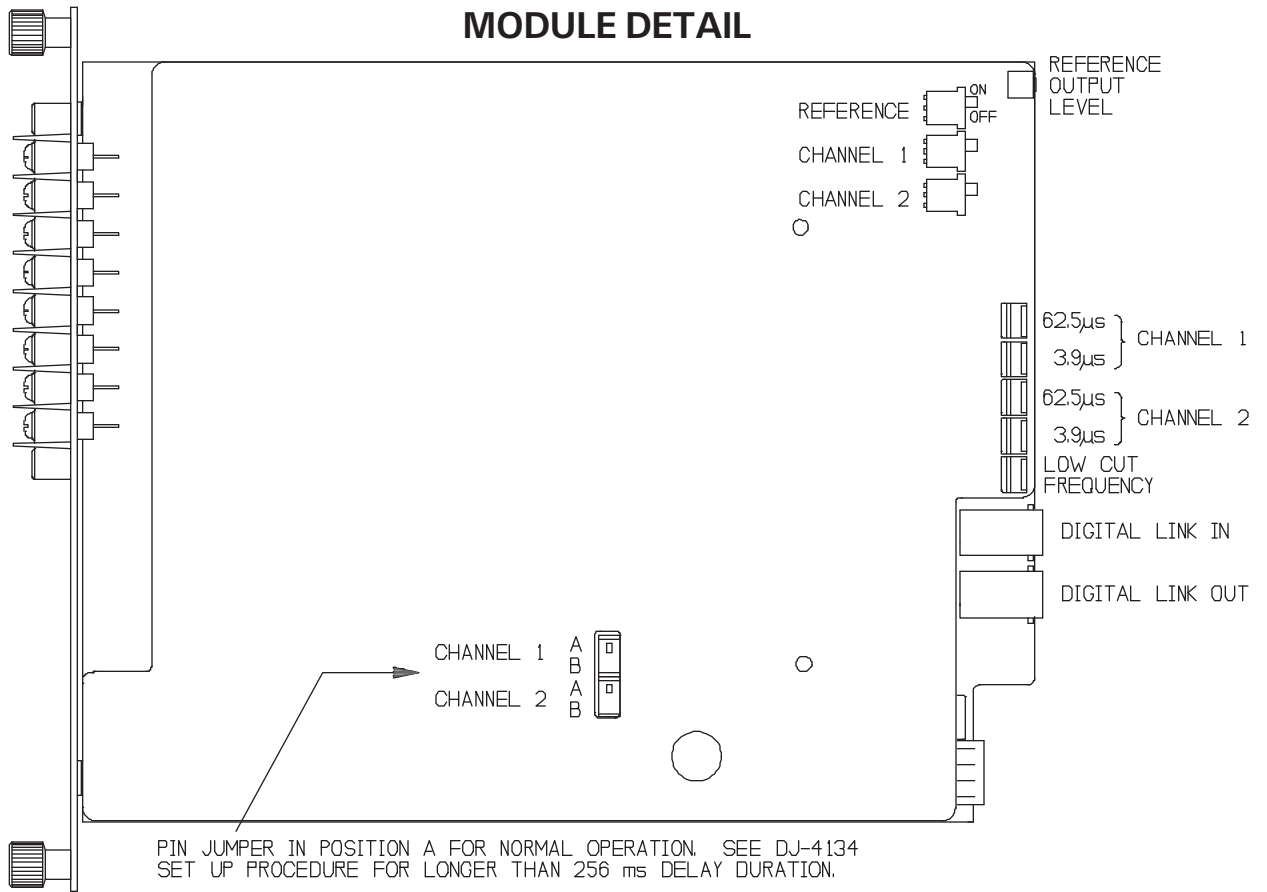
DELAY CONTROLS

1. Delay is set in COARSE (16 milliseconds), FINE (1.0 millisecond), X FINE (62.5 microseconds), and XX FINE (3.9 microsecond) increments (see table below). Total delay is the sum of all four settings, plus a fixed 24 Fs internal A/D/A conversion delay.

COARSE		FINE		X FINE		XX FINE	
SETTING	INCREMENT	SETTING	INCREMENT	SETTING	INCREMENT	SETTING	INCREMENT
0	0ms	0	0ms	0	0μs	0	0μs
1	16	1	1	1	62.5	1	3.9
2	32	2	2	2	125.0	2	7.8
3	48	3	3	3	187.5	3	11.7
4	64	4	4	4	250.0	4	15.6
5	80	5	5	5	312.5	5	19.5
6	96	6	6	6	375.0	6	23.4
7	112	7	7	7	437.5	7	27.3
8	128	8	8	8	500.0	8	31.2
9	144	9	9	9	562.5	9	35.1
A	160	A	10	A	625.0	A	39.0
B	176	B	11	B	687.5	B	42.9
C	192	C	12	C	750.0	C	46.8
D	208	D	13	D	812.5	D	50.7
E	224	E	14	E	875.0	E	54.6
F	240	F	15	F	937.5	F	58.5

2. The REFERENCE OUTPUT is internally compensated for the fixed 24 Fs Analog/ Digital/ Analog conversion delay in the module. When this TIME = ZERO output is used as the starting point for delay computations and measurements, it is no longer necessary to add 24 Fs to the sum of all four switch settings for the total delay value of each output channel. The output channel delay (with respect to the REFERENCE OUTPUT) is exactly the value determined by the four delay switches (from 3.9 Fs up to 255.996 ms).
3. Note that there is an ON/OFF switch for each output channel. This allows the channels to be measured and adjusted independently. Turn OFF the channels which are not of interest during set-up and measurement. Be sure to RESTORE all desired output channels to the ON state when the adjustments are completed.
4. Record all switch, control, and frequency settings in the Control Record section, and on the documentation panel.

MODULE DETAIL



REAR PANEL

FRONT EDGE CONTROLS

DJ-4135 OPTION 1 (OUTPUT FILTERS)

The DJ-4135-1 and DJ-4135-12 modules are factory built with pre-specified LOW-PASS, BAND-PASS, and/or HIGH-PASS filters on each output. These 4th order (24dB/octave) Linkwitz-Riley filters require no set up adjustments. Record the filter frequencies and the LOW-PASS, BAND-PASS, or HIGH-PASS characteristics in the Control Record section.

DJ-4135 OPTION 2 (REMOTE PRESETS)

DELAY SETTINGS

1. Delay is set in COARSE (16 millisecond), FINE (1.0 millisecond), X FINE (62.5 microsecond), and XX FINE (3.9 microsecond) increments (see table on page 2). Delay presets are set in COARSE (16 millisecond) and FINE (1 millisecond) increments, and are used to compensate different cluster locations for varying source and listener positions in the venue. Total delay for each preset is the sum of the X FINE and XX FINE precision adjustments plus the specific COARSE and FINE settings assigned to the preset. Twenty-four microseconds for A/D/A conversion delay is also added whenever the Reference Output is not used as the "zero delay" origin.
2. The DJ-4135 (with Remote Presets Option) is shipped with pin-jumpers installed to link the four remote presets for channel 1 and channel 2. Activation of a preset on either channel will engage the same preset on both outputs when the jumper is in place. Whenever specific delay presets need to be independently selected for either output channel, remove the preset bridging jumper(s) for PRESET 1, PRESET 2, PRESET 3, or PRESET 4 as required.
3. Set the delay for one preset at a time. This is best set (and verified) from the module:
 - A) On the 10-position DIP switch, turn OFF the bottom-most switch (position #1). This disables the remote switch connections.
 - B) Turn ON the position #2 DIP switch to enable Local Preset Activation.
 - C) Starting at the top DIP switch position #10 for PRESET 1 (Channel 1), turn ON one preset at a time, and adjust both the COARSE and FINE controls to the proper delay value for that preset. The corresponding LED will illuminate to display the activation of each preset.
 - D) Turn OFF each preset before proceeding to the next switch position.
 - E) When presets are bridged to the two channels, activation of a preset for either channel will turn on the corresponding preset number for both channels. To measure or adjust only one output at a time, turn ON and OFF the particular channel of interest by using the slide switches mounted behind the DIP switch bank. Note that the REFERENCE OUTPUT also includes a channel ON/OFF switch.

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4. When the adjustments are completed:
 - A) Ensure that the Channel ON/OFF switches for all desired delay outputs are restored to the ON position.
 - B) Turn OFF the "Local Presets Activation" DIP switch (position #2).
 - C) Turn ON the position #1 DIP switch to enable Remote Preset Selection from the 9-pin subminiature "D" socket on the rear panel of the DJ-4135.
 - D) Pin-outs to this connector are listed in the table below. The remote switch logic inputs are internally pulled-up to +15V. A dry contact switch (or open collector transistor logic) closure between the logic input and ground (pin 9) remotely activates a particular preset.

REMOTE CONTROL "DB-9" SOCKET

PIN	DESCRIPTION
1	CH1 PRESET 1
2	CH1 PRESET 2
3	CH1 PRESET 3
4	CH1 PRESET 4
5	CH2 PRESET 1
6	CH2 PRESET 2
7	CH2 PRESET 3
8	CH2 PRESET 4
9	GROUND

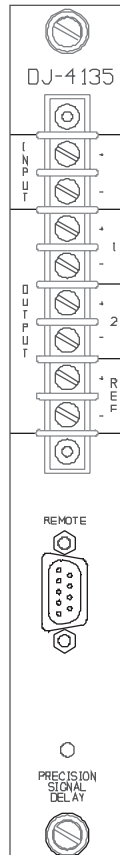
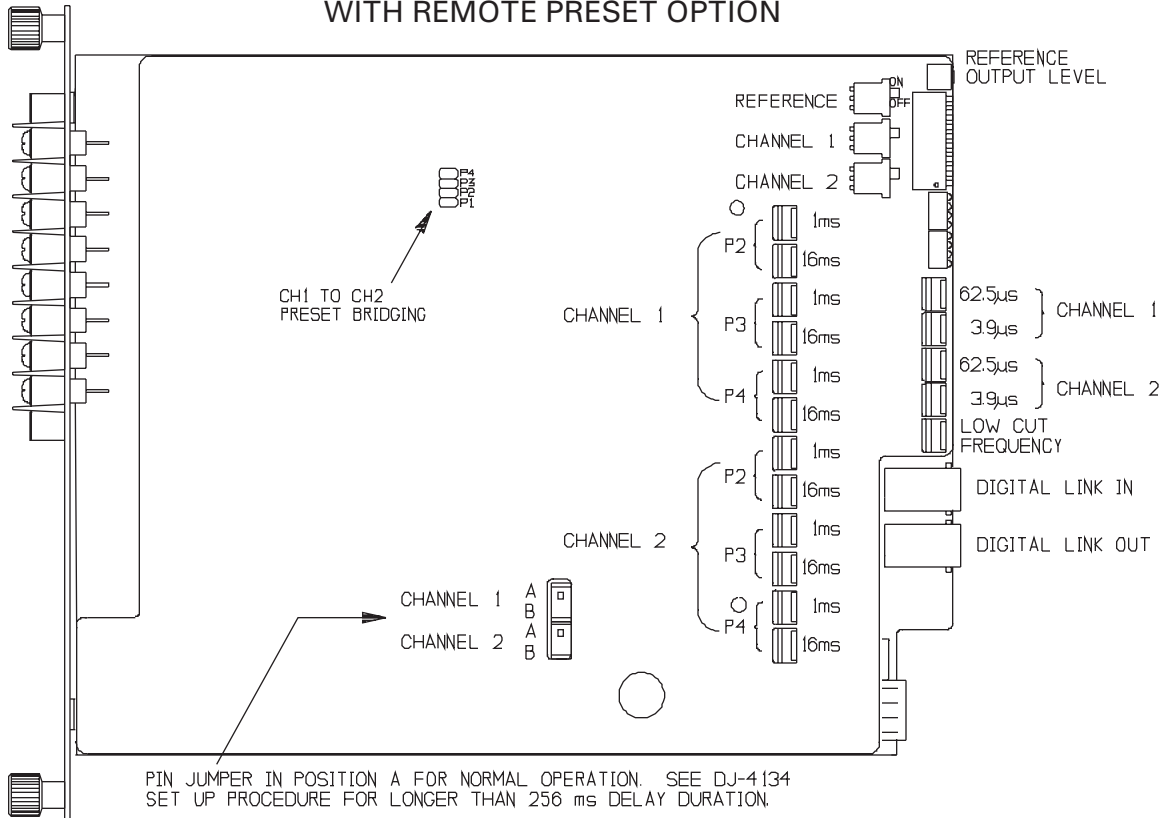
5. In the system wiring, ensure that only one preset for each output is active at any one time. Although no damage will occur, simultaneous activation of multiple presets will not likely result in the desired delay time.

Caution: Always reduce the output level to all corresponding power amplifiers when changing delay presets, and whenever adjusting the delay values during setup. Whenever delay values are changed, existing information in the digital bit-stream must pass through the Digital-to-Analog converter before any new delay value is correctly synchronized. Unsynchronized (old) digital information can create unpleasant, unpredictable noises in the output.

The delay presets are designed for simple re-configuration of source and listener location in an end-use facility. Design parameters for the DJ-4135 do not provide for changing delay presets in a live environment (e.g. As a live performance production technique)!

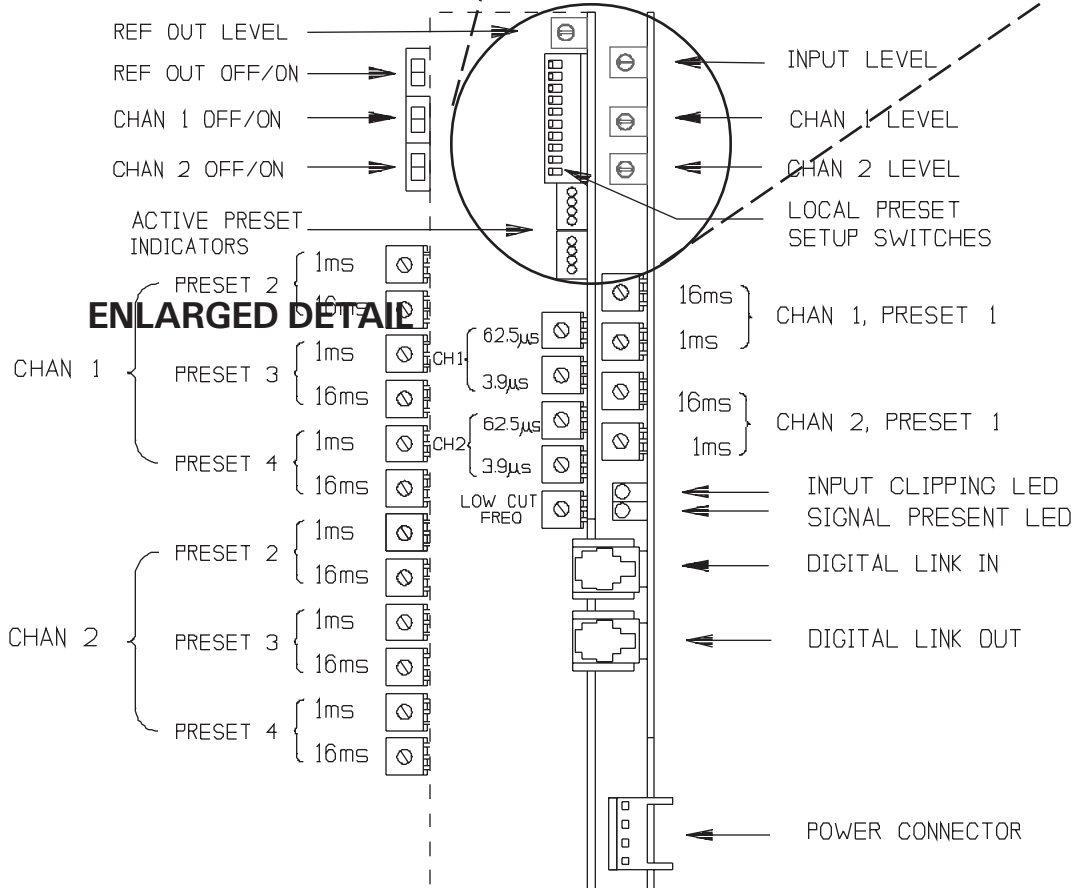
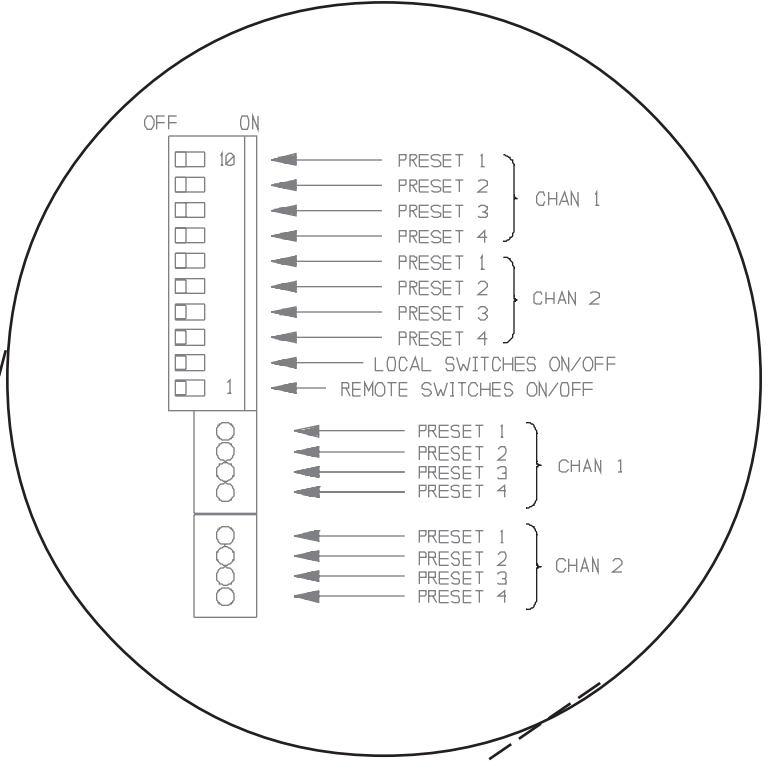
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6. Record all switch, control and frequency settings in the Control Record section, and on the documentation panel.

MODULE DETAIL WITH REMOTE PRESET OPTION



REAR PANEL

**ENLARGED DETAIL
LOCAL PRESET SETUP SWITCHES
& LED INDICATORS**



FRONT EDGE CONTROLS

Control Record

DJ-4135

PRECISION DELAY

Record all control settings on the Documentation Panel pictorial to the right. This should match the documentation panel in the mainframe.

	Coarse	Fine	X Fine	XX Fine	Total
Delay Setting Output 1, Preset 2					
Delay Setting Output 1, Preset 3					
Delay Setting Output 1, Preset 4					
Delay Setting Output 2, Preset 1					
Delay Setting Output 2, Preset 2					
Delay Setting Output 2, Preset 3					
Delay Setting Output 2, Preset 4					

N REF OUT INPUT
 ON OFF N

ON OFF OUTPUT 1 N
 ON OFF OUTPUT 2 N

DELAY SETTINGS
 msec
 16
 μsec
 62.5 1
 3.9

TOTAL
 16
 62.5 1
 3.9

LO CUT TOTAL
 CLIP
 FREQ SIG.

LINK IN
 LINK OUT

OPTIONAL OUTPUT FILTERS PRESENT

DJ-4135
 DUAL PRECISION
 DELAY

OPTIONAL OUTPUT FILTERS

Frequencies

Output 1 _____
 (Type) (Low) (High)

Output 2 _____
 (Type) (Low) (High)

Type is "LP" Low Pass
 "BP" Band Pass
 "HP" High Pass

Mainframe # _____

Module Position # _____

Contractor _____

Installer _____

Job _____

Date _____