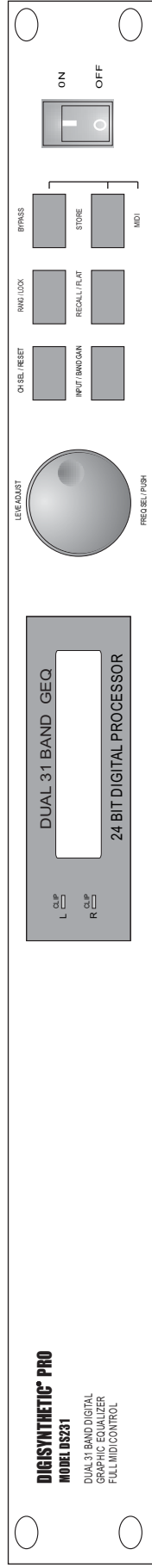


DIGISYNTHETIC[®] PRO

24-BIT DUAL 31 BAND DIGITAL GRAPHIC EQUALIZER PROCESSOR MODEL DS231



Instruction Manual

ATTENTION!

All DIGISYNTHETIC PRO products are carefully packed and designed to protect the units from rough handling before shipping out from the factory. Examine your good before using, to ensure no damage during transportation. Any damage claim should be inform & notify to relative dealer within 14 days of good received. The dealer will not except failing of such. The consignee must make all shipping claims.

The DS 231 fits into a standard 19" rack unit of space (1 3/4"). Allow at least an additional 4" depth for the connectors on the back panel. Be sure that there is enough air space around the unit for cooling and ventilation. DO NOT place the DS 231 on high temperature devices like power amplifiers etc. to avoid overheating.

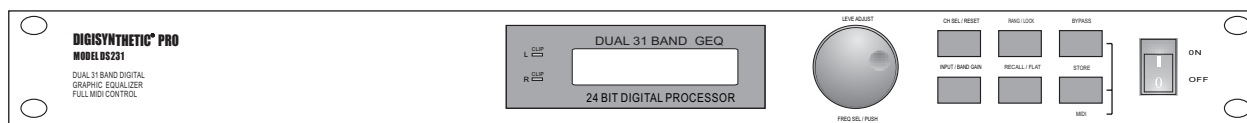
The mains connection of the DS 231 is made by using a mains cable and a standard IEC receptacle. It meets all of the international safety certification requirements.

Please make sure that all units have a proper ground connection. For your own safety, do not remove the ground connection within the unit or at the supply, or fail to make this connection at all.

Before switching voltage for local supply requirement, correct fuse type and rate must be installed. Refer to 5.Appendix, 5.1 for specifications.

This machine is only intended for qualified personnel to operate & install. Do not attempt to repair and service yourself but referred to qualified technical service personnel. The user must have sufficient electrical contact to earth. Electrostatic charges might affect the operation of the DS 231.

DIGISYNTHETIC[®] PRO MODE DS231



- ◆ 24-bit dual DSP
- ◆ 24-bit sampling rate, Σ - Δ , A/D, D/A
- ◆ Dual 31 band equalizer display
- ◆ Gain control: 16dB, 0.5dB
- ◆ Internal digital Noise Gate
- ◆ 100 memory program back up by a durable battery
- ◆ Left/Right channel copy & flat function
- ◆ Lock function
- ◆ 16x2 back light LCD display
- ◆ Total real time MIDI control

Table of contents

1. FRONT CONTROL PANEL	4
1.1 Operation display & illustration	4
1.2 Operation guide	4
2. REAR PANEL	6
3. MIDI CONTROL	7
4. APPLICATION	8
4.1 Application in Aux bus with DS 231	8
4.2 Application in MIDI system with DS 231	8
5. APPENDIX	9
5.1 Technical Specifications	9

1. FRONT CONTROL PANEL

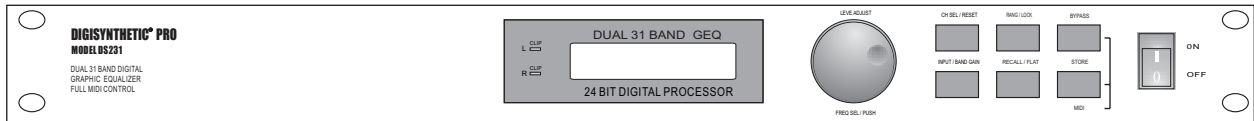
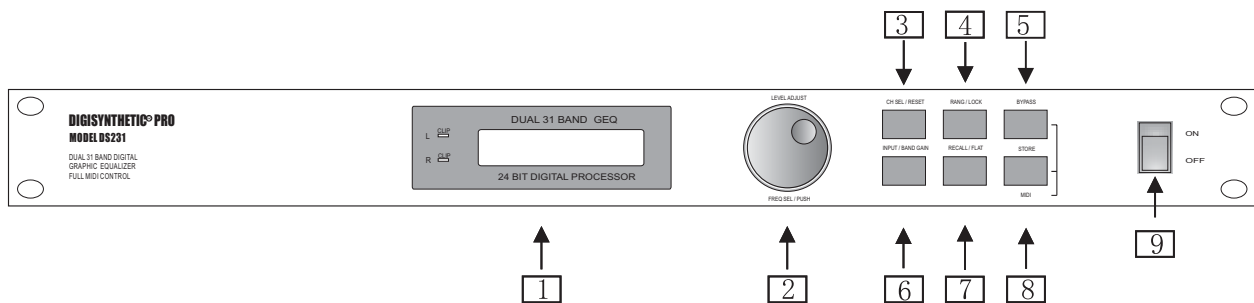


Fig.2.1 DS 231 Front Panel

DS 231 is control by 6 function buttons and editing is easy by a rotary jog wheel through a LCD display screen.

1.1 Control panel introduction



1. **LCD display screen-** To display function manual and operation status.
2. **Frequency Select/Gain control/Program Edit-** Rotary jog wheel is able to change values after " : ".
3. **Program select/Query Display A-** P:1~100 memory programs.
4. **Channel Select/Query display B-** CH: L, R, L & R, select.
5. **Editing Button/Query display C-** To copy L or R channel and Flat respond editing.
6. **Frequency/Gain Control select/MIDI transmission--** Hold this button shortly, " : " symbol will display before Frequency & gain parameters, to indicate selectable item. Holding this button for about 3 seconds to ON/OFF MIDI function.
7. **Lock/Channel edit--** Hold this button shortly to cancel previous button and editing status. Hold this button for about 3 seconds to activate LOCK function. LCD screen will display "LOCK", this action will also LOCK all the other function button. To UNLOCK this action by holding this button for 3 seconds. "LOCK" will disappear from LCD screen.
8. **BYPASS Button--** Press this button to 'BYPASS' or 'EQ on' from Filter.
9. **Power ON /OFF**

1.2 Operation Guide

LCD screen will display as Fig. 1 once power on. User may select frequency range from -16dB ~ +16dB for frequency respond. Press button 6 again to select frequency by turning jog wheel. Press this button 6 again, able to adjust 2^d Gain level by turning jog wheel. By repeating this process, user is able to adjust gain level between 20Hz ~ 20kHz. Press button 6 for about 3 seconds to enable MIDI transmission. LCD display 'MIDON', MIDI is in progress. Press this button 6 again for another 3 seconds, LCD shows 'MIDOF', MIDI is disables at this time.

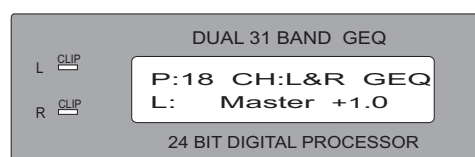


Fig.1 Main Menu(initial on)

2. While LCD display the main menu, press button 3 to display information as Fig. 2, press 3 again to select A for LOADING memory process from P: 1~100. As shown in Fig. 3 (if select 4 during Fig 2 process) : means to select B, user is able to store and save present data to any program P: 1~100. Program sequence is selectable by rotary jig wheel from P: 1~100 (as Fig. 3).

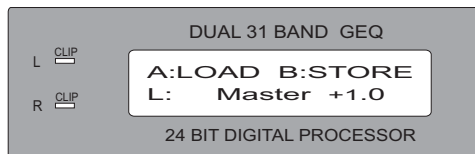


Fig.2 Select/save program memory

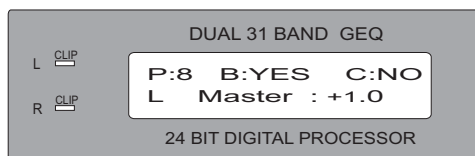


Fig.3 Select/program memory sequence

3. During status display as Fig/ 3, press B to select require program sequence no., "SAVE..." will display 1st line in the screen, after 3 seconds, display panel will resume to main menu page (Fig. 4).

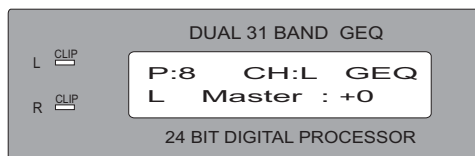


Fig.4 Master volume control menu

4. Hold button shortly during main menu to select "L", "R" mono channel. Holding button 4 for longer period to select "L & R" channel (stereo mode). While "L & R" appear in screen, usr can edit both channels "L & R" at the same time.
5. Press button 5 during main menu (as Fig. 5) to enter Flat respond and gain level for frequency respond with L, R copy selection. Select B (as Fig. 6) to set 0 dB gain for Flat respond. Select C to exist to main menu and disable the program.

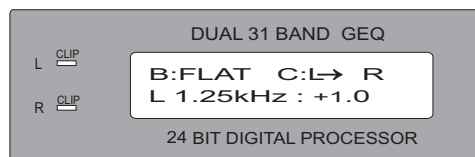


Fig.5 Editing select(Flat/Copy)

5. Press button 5 during main menu (as Fig. 5) and select C to enter COPY frequency from Left channel to Right channel. Display as Fig. 7 : Press B to copy gain level of left channel to right channel. Display back to main menu: Press C to disable operation.

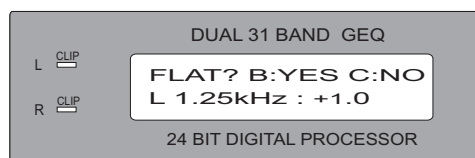


Fig.6 Flat respond setting

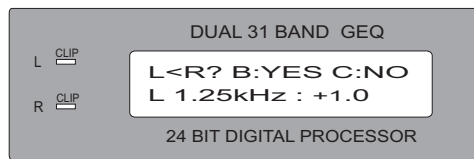


Fig.7 Copy function

7. Press button 7 for about 3 seconds during main menu to LOCK all function keys & jog wheel. As shown in Fig. 8, press button 7 for about 3 seconds to disable LOCK and back to main menu. (Remarks: MIDI transmission is not allowed during LOCK mode).

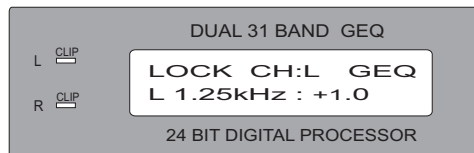


Fig.8 LOCK mode

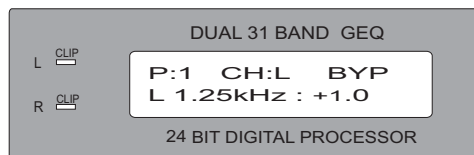


Fig.9 Bypass

8. Press button 7 shortly in ANY menu function to disable previous selection and back to main menu.
 9. Press button 8 in main menu to activate "BYPASS" mode for present channel (as Fig. 9). Press 8 again to resume to EQ mode. Display as main menu.
 10. Hold button 6 for 3 seconds to display information as Fig. 10, hold button 6 again for longer time to display information as Fig. 11. During "MIDON", you are ready for real time MIDI control now.

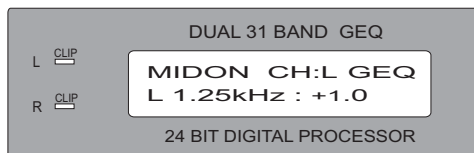


Fig.10 MIDION display

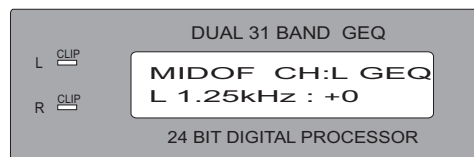
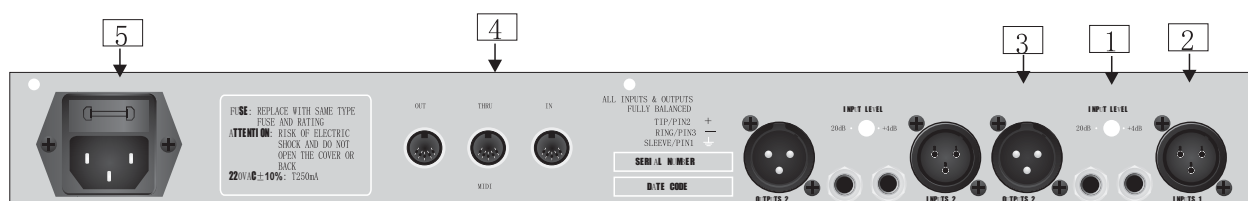


Fig.11 MIDIOFF display

2. REAR PANEL



- (1) **INPUT LEVEL ADJUSTER:** From -20dB ~ +4dB
- (2) **ANALOG INPUT:** XLR or TRS input socket, Parallel between XLR & TRS input. Balance & Unbalance configuration.
- (3) **ANALOG OUTPUT:** XLR or TRS output socket, Parallel between XLR & TRS input. Balance & Unbalance configuration.
- (4) **MIDI OUT/MIDI IN/MIDI THRU:** Able for total Remote Control via MIDI Channel.
- (5) **MAIN CONNECTOR/FUSE HOLDER/VOLTAGE SELECTOR:** Before you connect the unit, please make sure that the displayed voltage corresponds to your Mains supply, Please note that the AC voltage selection is defined by the position of the Fuse Holder. If you intend to change the two markers monitors the selected voltage, Please note that, depending on the mains voltage supplied to the unit, the correct fuse type and rate must be installed(see 5.1 Technical Specifications) . Please use the enclosed main cable to connect the unit to the mains power supply.

3. MIDI

Able to transmit & receive REAL TIME transmission data through MIDI connection.

MIDI IN

Any MIDI data sent to the DS 231 (sequencer, MIDI footswitch, etc) are received via the MIDI IN jack. For example, when you wish to use the DS 231 as an effects devices for our guitar rack, you can connect the MIDI IN jack to a MIDI footswitch that allows for selecting program presets. If your rack includes another MIDI effects devices (e.g. a multi-effects processor), the data sent from the MIDI footswitch can be routed via the DS 231 MIDI THRU jack to your multi-effects processor.

MIDI THRU

The MIDI THRU jack is used to loop through incoming MIDI data, i.e. any control received at the MIDI IN of the DS 231 can be transmitted via MIDI THRU jack to other MIDI devices or instruments.

MIDI OUT

The MIDI OUT jack allows for transmitting MIDI data that originate from the DS 231.

4. APPLICATION

4.1 Connection & Application in Aux bus by DS 231

By using the DS 231 in an aux bus of your mixing console, you can feed the channel signals of aux busses to separately determine the reverb levels of, for instance, various drum sounds: while lots of reverb is applied to the snare drum, the effect intensity could be reduced in the channels assigned to the tom-toms. To use the DS 231 in the aux bus, the unit must be wired as follows:

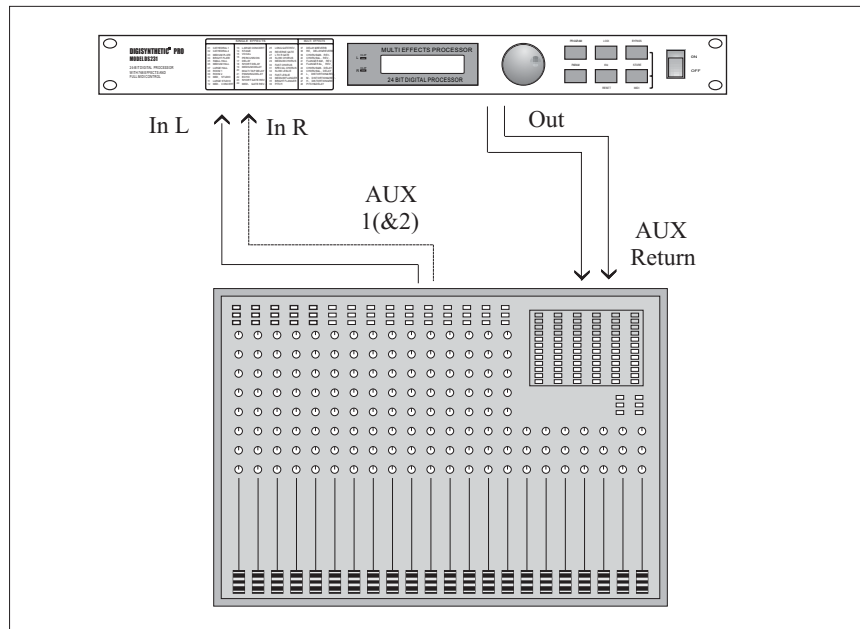


Fig.4.1 Aux Connection with DS 231

4.2 MIDI APPLICATION WITH DS 231

With its built-in MIDI interface the DS 231 can be integrated into any MIDI system, where it transmits and receives both program change and controller change information to perform program changes via MIDI from a sequencer or any other MIDI device. MIDI connection set up as Fig 4.2.

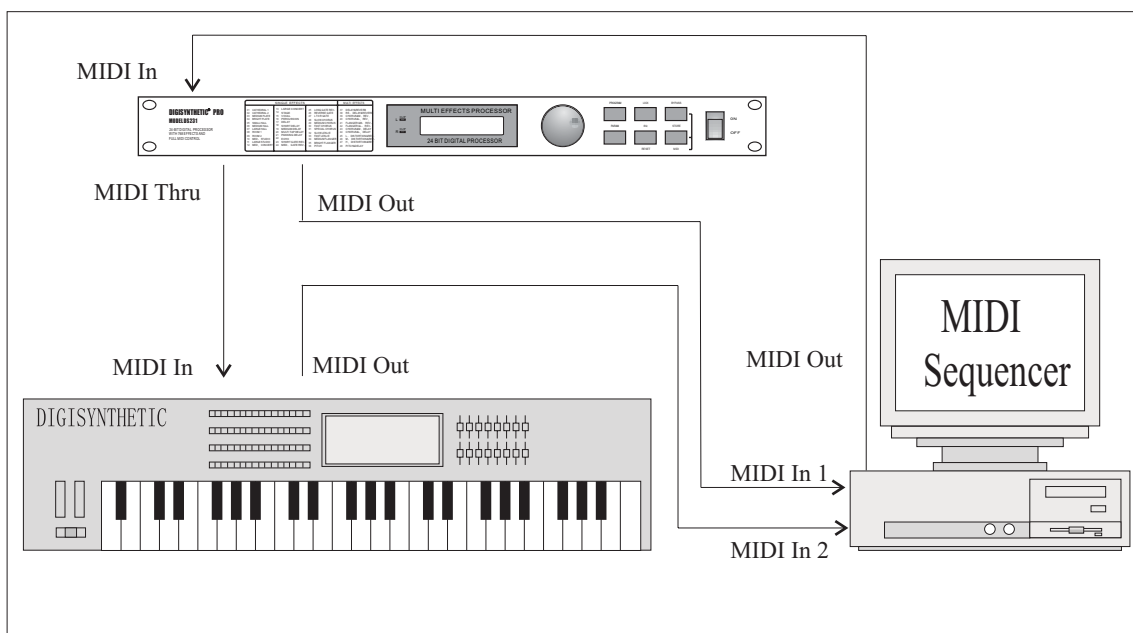


Fig.4.2 Connection the DS 231 via MIDI to a sequencer/computer and a keyboard

5. Appendix

5.1 Technical Specifications

Analog Inputs

Connectors	XLR and 1/4" jack
Type	RF filtered, servo balanced , 20kOhms unbalanced
Impedance	40kOhms balanced, 20kOhms unbalanced
Nominal Operating Level	-20dB to +4dB
Max. Input Level	+16dB at +4dB nominal level, +2dB at -20dB nominal level

Analog Outputs

Connectors	XLR and 1/4" jack
Type	Electronically servo-balanced output stage
Impedance	66Ohms balanced, 33Ohms unbalanced
Max. Output Level	+16dB at +4dB nominal level, +2dB at -20dB nominal level

System specifications

Bandwidth	20Hz to 20KHz
S/N	98dB, weighted, 20Hz to 20KHz
THD	0.065%typ. @+4dB, 1KHz, Gain 1
Crosstalk	-95dB, 20Hz to 20KHz

MIDI Interface

Type	5-Pin-DIN-Socket IN/OUT/THRU
------	------------------------------

Digital Processing

Converters	24-bit Sigma-Delta, 64/128-times Over-sampling
Sampling Rate	48KHz

Display

Type	LCD-Display
------	-------------

Power Supply

Mains Voltages	General Export Model 220 VAC \pm 10%, 50-60Hz
Fuse	250mA

Power Consumption	10 Watts
Mains Connection	Standard IEC receptacle

Physical

Dimensions(H*W*D)	41.6mmX481mmX152mm
Shipping Weight	3kg

All technical specifications in DIGISYNTHETIC products are subject to changes for product improvement *with or without* NOTICE.