




QUICK GUIDE

DIGITAL FILTER PROCESSOR model e07



use of controls

4-BAND EQ MODE - LOW/HIGH BAND

FREQUENCY	turn	changes frequency adjustment
FREQUENCY	push&turn	changes shelving/peaking mode Q adjustment in peaking mode display symbol for peaking mode: 
RANGE	turn	changes range adjustment (cut or boost)
RANGE	push	switches band on/off

4-BAND EQ MODE - both MID BANDS

FREQUENCY	turn	changes frequency adjustment
WIDTH	turn	changes Q adjustment
RANGE	turn	changes range adjustment (cut or boost)
RANGE	push	switches band on/off

4-BAND EQ MODE - DYNAMIC FILTER

filter setting as described above, after switching to dynamic mode by pushing DYNAMIC knob (max. two bands at the same time):

FREQUENCY	turn	changes filter operation threshold level adjustment
RANGE	turn	changes range adjustment (enhancement or reduction)
RANGE	push	switches dynamic filter band on/off

LOW/HIGH CUT FILTER

switching between 4 band EQ and low/high cut filter by pushing FILTER button

FREQUENCY	turn	changes frequency adjustment
RANGE	turn	changes slope adjustment
RANGE	push	switches cut filter on/off

See reverse for features, principal setup modes and display information!
Read the operation manual for more detailed information!

DIGITAL FILTER PROCESSOR

model e07



QUICK GUIDE

- two channel digital 4-band parametric equaliser
 - two full parametric sections (20Hz...20kHz)
 - low and high peaking/shelving sections
 - separate low and high cut filter
- each filter band can be used as dynamic equaliser
 - frequency selective compression or expansion
- integrated digital limiter prevents clipping
- extremely high signal quality
 - high definition audio processing for 24 bit and up to 96 kHz
 - double sampling processing for 44.1 and 48 kHz input signals
- conventional front panel
 - rotary knobs for direct access to all parameters
- user friendly preset and recall function, menu setup

features

MODE	changes between 4-band EQ mode and MENU mode
A/B	changes between A and B memory (see 4.5 OpMan)
CAPTURE or L/R	activates capturing of snapshots (see 4.7 OpMan) changes between left/right channel in 2-channel mode (see 4.3 OpMan)
FILTER	changes between 4-band EQ mode and low and high cut filter adjustment (see 4.4 OpMan)

setup section

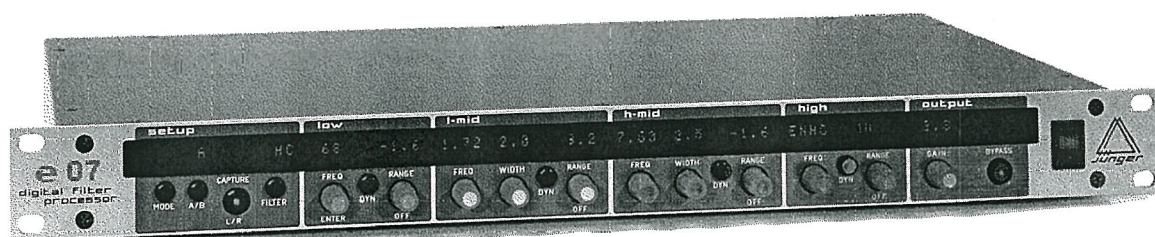
setup section	current setup informations as recalled preset, current memory A or B, current channel left or right, activated low or high cut filter
4-band EQ sections	parameter values above dedicated controls
in dynamic filter mode	type of compression (enhancement or reduction) and current amplification/reduction as bargraph
in MENU mode	functions/selections above knobs for switching
level meter	output level as green bargraph from left to right limiter reduction as red bargraph from right to left

displays

See reverse for control features! More detailed information in the operation manual!

DIGITAL FILTER PROCESSOR

model e07



operation manual

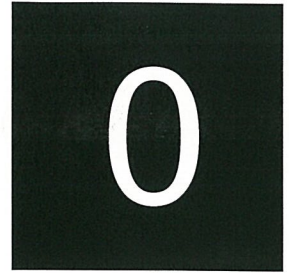
rev. 0.41

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INTRODUCTION



The digital filter processor **e07** is a high quality studio device for audio production and mastering. It brings the sound of the best analogue filters into the digital world.

The primary feature of this new unit lies in it's ability to process audio in the digital domain using digital filters operating at higher sample rates. Increasing the sample rate to 88.2 or 96 kHz, the "High Sampling Mode" does not limit the magnitude and phase response of the filtering process to 22 or 24 kHz as most digital filters do. Doubling the sample rate increases the audio range that can be processed. High frequencies are faithfully reproduced in the same vibrant and natural manner as the finest analogue filters.

The digital filter processor Model **e07** is a 4-band parametric equaliser. It is possible to use each filter band as a normal parametric or as a dynamic equaliser, ie. a digital de-esser. An integral digital limiter prevents clipping of boosted signals. The Model **e07** is a 24 bit device sampling at 96kHz and is designed specifically for the highest quality, high resolution recording and reproduction.

- * Outstanding signal quality achieved by high sampling processing
- * Conventional operation from the front panel with rotary knobs for direct control of all parameters
- * Each filter band can be used as a dynamic filter, ie. de-esser
- * Integral digital limiter prevents clipping
- * Stereo or dual channel mode
- * Timecode snapshot automation
- * User-friendly preset and recall functions
- * Ready for integration into 96 kHz systems

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INSTALLATION

2

The digital filter processor e07 was carefully packed in the factory and the packaging was designed to protect the equipment from rough handling. Please examine carefully the packaging and its contents for any signs of physical damage, which may have occurred in transit.

2.1 UNPACK THE UNIT

The digital filter processor e07 is manufactured under the safety category *Schutzklasse 1* in keeping with the VDE 0804 standards.

Check the voltage details printed at the rear panel are the same as your local mains electricity supply.

2.2 POWER SUPPLY

The digital filter processor e07 is equipped with standard connectors (see chapter 3).

Before connecting the digital filter processor e07 switch the power off at all connected units.

2.3 CONNECTIONS

The digital filter processor e07 is made as standard 19" unit (EIA format). It occupies 1 RU (44 mm height) space in a rack. Please allow at least additional 3" depth for the connectors on the rear panel.

When installing the unit in a 19" rack the rear side of the unit needs some support, especially for mounting in flight cases.

2.4 RACK MOUNTING

The filter processor should not be installed near units which produce strong magnetic fields or extreme heat. Do not install the filter processor directly above or below power amplifiers.

If, during operation, the sound is interrupted or displays no longer illuminate, or if abnormal odor or smoke is detected immediately disconnect the power cord plug and contact your dealer or Jünger Audio.

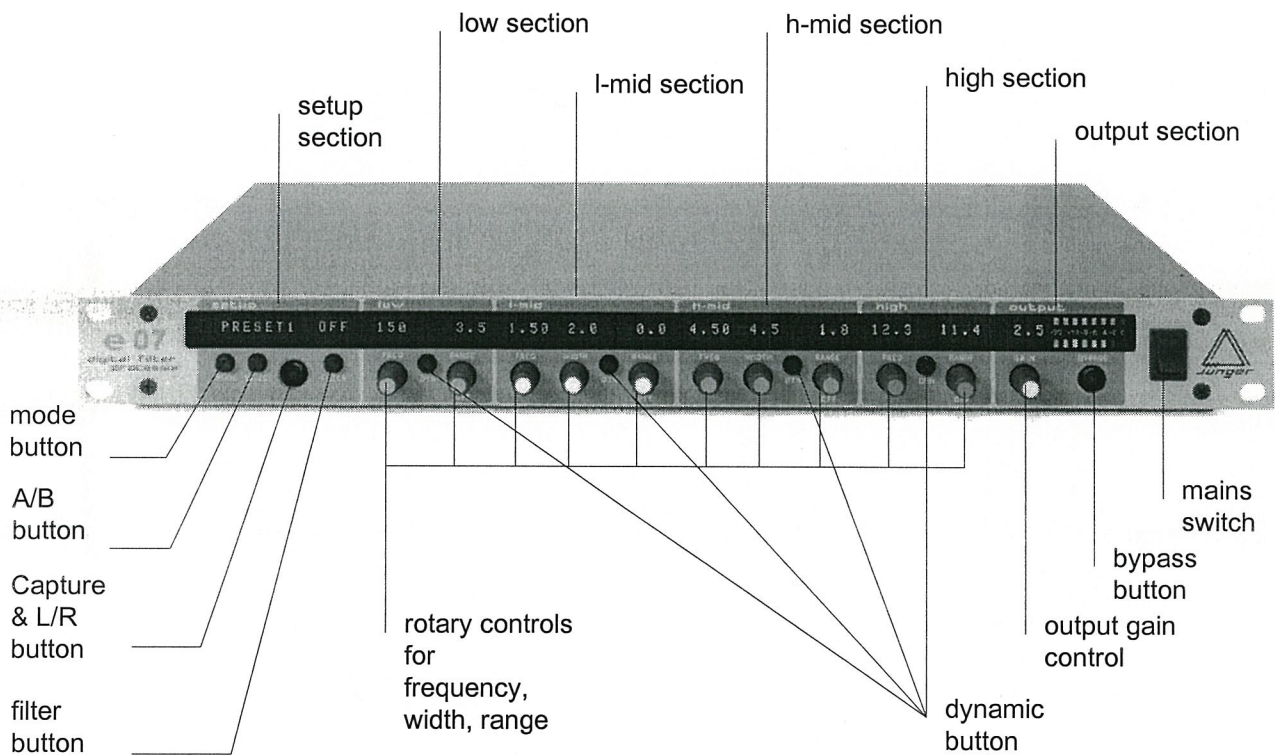
2.5 OPERATION SAFETY

LOCATION OF PARTS AND CONTROLS

3

All control elements give direct access.
In menu modes the alphanumeric display above the related button or rotary knob shows the specific function.

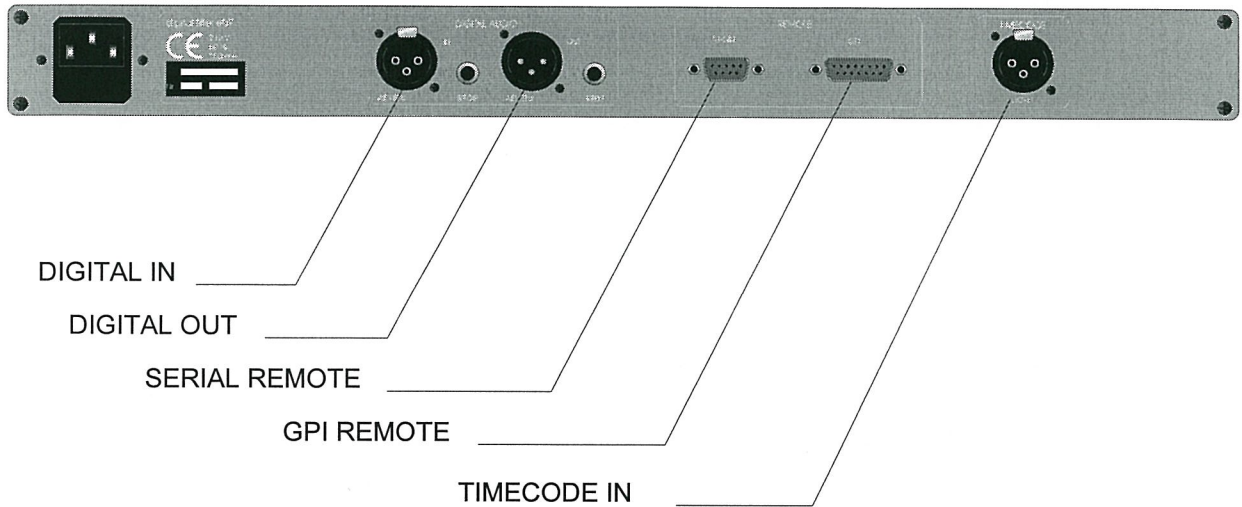
3.1. FRONT PANEL



SETUP SECTION

MODE	switches between normal user mode (4 band EQ) and MENU mode
A/B	switches between A and B memory (see 4.5)
CAPTURE L/R	activates capturing of snapshots (see 4.7) switches between left/right channel in 2-channel mode (see 4.3)
FILTER	switches between normal user mode (4 band EQ) and low and high cut filter adjustment (see 4.4)

3.2.
REAR PANEL



POWER INPUT

IEC mains input connector 230 V, 50 Hz (UK: 240 V, 50 Hz; JAPAN: 100 V, 60 Hz; USA: 127 V, 60 Hz) with integrated fuse

DIGITAL IN

input for AES/EBU standard format
input: XLR female panel jack
1- open, 2-3 signal, balanced, max. 5 Vpp
input for S/PDIF standard format
RCA socket

DIGITAL OUT

output for AES/EBU standard format
output: XLR male panel jack
1- open, 2-3 signal, balanced, max. 5 Vpp
output for S/PDIF standard format
RCA socket

TIMECODE IN

input for LTC timecode format
input: XLR female panel jack
1- open, 2-3 signal, balanced, more than -10 dBu

REMOTE

serial remote interface RS-232
connector: 9pin SUB-D, male

GPI remote interface
connector: 15pin SUB-D, female

OPERATION






The operation of the digital filter processor e07 is described in the following chapters.

The description is made related to the main functions of the unit.

- 4.1 equaliser
- 4.2 dynamic equaliser
- 4.3 equaliser (2-channel mode)
- 4.4 low cut / high cut filters
- 4.5 A / B comparison
- 4.6 presets
- 4.7 snapshot automation
- 4.8 utilities

4.0 DESCRIPTION OF OPERATIONS RELATED TO FUNCTIONS

Following syntax is used:

SYMBOL	NAME	ACTIVITY
<p>describes how to use button or rotary knob</p>  <p>push</p>  <p>turn</p>  <p>push + turn</p>	<p>describes the name of button or rotary knob</p> <p>NAME name, as printed on front panel</p> <p><i>NAME</i> name, as displayed on alphanumeric display above button or knob</p>	<p>describes action or function by use of button or rotary knob</p>







DISPLAY:

describes the status or information shown on the display	
<i>NAME</i>	status/name as displayed
<NAME>	sort of status/name on display

4.1 EQUALISER

For use as 4-band parametric equaliser in stereo mode.
 All settings are identical for each of the two channels.
 Each section can be switched off individual.
 A/B comparison is available for two stereo parameter sets.
 Limiter is working in stereo mode.
 All adjustments are storable in presets.

FILTER BANDS

 turn	FREQ	fine resolution frequency adjustment, related to max. boost/cut
↓		
 push+turn	FREQ	selection of filter type for low and high filter and adjustment of Q-factor shelving filter or peak filter Q = 0.4 ...8 (minimum center frequency for low peak filter is 50 Hz.)
↓		
 turn	RANGE	boost/cut control (-15 ...+15 dB), <i>display: -15.0 ... 15.0</i>
 push	RANGE	bypass for the filter band, <i>display: OFF</i>
↓		
 turn	GAIN	output level control (-15 ...+15 dB), <i>display: -15.0 ... 15.0</i>
 push	GAIN	bypass for gain control (gain = 0dB) <i>display: OFF</i>

OUTPUT

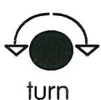
For use as dynamic equaliser in stereo mode. A maximum of **two sections** can be used **in dynamic mode** at the same time. All settings are identical for each of the two channels.

Each section can be switched off individual.

A/B comparison is available for two stereo parameter sets.

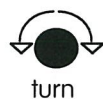
Limiter is working in stereo mode.

Dynamic equaliser adjustments are storable in presets.



FREQ

fine resolution frequency adjustment,
related to max. boost/cut



GAIN

output level control (-15 ... +15 dB),
display: -15.0 ... 15.0



GAIN

bypass for gain control (gain = 0dB)
display: OFF

dynamic mode



DYN

set the dynamic function for filter band
display: RDUC
if cut is adjusted (-15 ... 0 dB)
ENHC
if boost is adjusted (0.1 ... +15 dB)



FREQ

threshold level and range display
display: -50 ... -00 and -15.0 ... 15.0



FREQ

threshold level adjustment (-50 ... 0 dBFS)
display: -50 ... -00



RANGE

boost/cut control (-15 ... +15 dB),
display: RDUC and bargraph
if cut is adjusted (-15 ... 0 dB)
ENHC and bargraph
if boost is adjusted (0.1 ... +15 dB)



RANGE

bypass for the filter band,
display: OFF (if filter band is bypassed)

4.2 DYNAMIC EQUALISER

see also
chapter 6
APPLICATION NOTES

FILTER BANDS

OUTPUT

DYNAMIC MODE

For use as 4-band parametric equaliser in 2-channel mode.
 All settings can be different for each of the two channels.
 Each section can be switched off individually.
 A/B comparison is available for two pairs of L/R parameter sets.
 Limiter is working unlinked in 2-channel mode.
 All adjustments are storable in presets.
 Dynamic equaliser is not working in 2-channel mode.

display above L/R button

L 2-ch mode, left channel selected
R 2-ch mode, right channel selected
 blank stereo mode



MODE

Selection of *MAINMENU*



UTIL

Selection of *UTILITY* menu



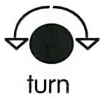
2-CH

Selection of 2-channel mode



FREQ

fine resolution frequency adjustment,
 related to max. boost/cut



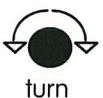
RANGE

boost/cut control (-15 ...+15 dB),
display: -15.0 ...15.0



RANGE

bypass for the filter band,
display: OFF



GAIN

output level control (-15 ...+15 dB),
display: -15.0 ...15.0



GAIN

bypass for gain control (gain = 0dB)
display: OFF

2-channel mode



L/R

switching between left and right channel
display: L (if left channel is selected)
R (if right channel is selected)

4.3 2-CHANNEL MODE

STATUS DISPLAY

MODE SETTING

FILTER BANDS

OUTPUT

SELECTION LEFT CHANNEL / RIGHT CHANNEL

Filters for removal of disturbances and for bandwidth limiting.
All settings are identical for each of the two channels.
Each filter can be switched off individually.
All adjustments are storable in presets.

Display above FILTER button

<i>LCHC</i>	low cut and high cut active
<i>LC</i>	only low cut active
<i>HC</i>	only high cut active
<i>OFF</i>	low cut and high cut bypassed



FILTER

push

Selection of LOW CUT / HIGH CUT
filter adjustments
display: *LCUT* and parameters
HCUT and parameters

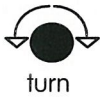
frequency range 2 ... 120 Hz
-6, -12 or -18 dB per octave



FREQ

turn

frequency adjustment (2 ...120 Hz),
fine resolution,
display: *2 ... 120*



RANGE

turn

slope control (-6, -12 or -18 dB per octave)
display: *6dB ...18dB*

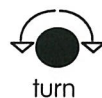


RANGE

push

bypass for the low cut filter,
display: *OFF* (if low cut is bypassed)

frequency range 2.000 ... 20.000 Hz
-6, -12 or -18 dB per octave



FREQ

turn

frequency adjustment (2.000 ...20.000 Hz),
fine resolution,
display: *2.00 ... 20.0*



RANGE

turn

slope control (-6, -12 or -18 dB per octave)
display: *6dB ...18dB*



RANGE

push

bypass for the high cut filter,
display: *OFF* (if high cut is bypassed)

4.4 LOW CUT / HIGH CUT FILTER

STATUS DISPLAY

SETTING FOR ADJUSTMENT

LOW CUT LOW SECTION

HIGH CUT HIGH SECTION

4.5 A/B COMPARISON

There are existing two memories for fast and convenient comparison of adjustments.

A - memory, parameter are adjustable

B - memory, parameter are adjustable

Note! If the filter is working in 2-channel mode both memories A and B contains left channel **and** right channel parameters. The selected channel is displayed in the status display above L/R button (see 4.3), the selection can be changed by L/R button.

Display above A/B button

A memory A selected
all adjustments possible,
standard working mode

B memory B selected
all adjustments possible,



push

A/B

Selection of A or B memory
display: A or B

See following chapter:

4.6 OPERATION - PRESETS
- LOADING PRESETS -

STATUS DISPLAY

MEMORY SELECTION

LOADING OF ADJUSTMENTS INTO A OR B MEMORY

The filter processor e07 offers a convenient preset storage system for saving and loading of parameters. Following parameters are stored in presets:

- equaliser bands (also dynamic equaliser)
- 2-channel mode equaliser bands
- low cut / high cut filter
- output gain (also for 2-channel mode)
- bypass functions (also for 2-channel mode).

Until 50 presets can be stored into the unit. In 2-channel mode both parameter sets for left and for right channel are stored in one preset.

Presets can be named by the user.

Presets can be used for A/B comparison and for snapshot automation.




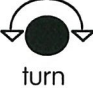






Display above MODE button *P*** preset no.** loaded (into A or B)

↓ ● push	MODE	Selection of MAINMENU
↓ ● push	<i>SAVE PRST</i>	Selection of PRESET - SAVE MODE <i>display: SAVE ⇨ PRST ** <name P**></i> [** = number of last loaded preset (or 01, if no preset was loaded before)]
↻ ● turn	FREQ/ENTER (low section)	Selection of preset number xx for parameter saving. <i>display: SAVE ⇨ PRST xx <name Pxx> or ST DATA or 2-CH DATA</i> Attention! Preset was used before and will be overwritten after saving. or <i>SAVE ⇨ PRST xx NO DATA</i> Free preset for data saving (unused before).
↓ ● push	FREQ/ENTER (low section)	Saving of actual parameter set into preset xx Push two times to save with default name. <i>display: NAME PRST xx PRESETXX</i> or
↻ ● turn	ALL KNOBS (low RANGE ... output GAIN)	Changing of the default name (PRESETxx) into an individual name (10 digits), push the knobs to generate space
↓ ● push	FREQ/ENTER (low section)	Saving preset xx with individual name

4.6 PRESETS

STATUS DISPLAY


**SAVING
PRESETS**
(saving of actual
work parameter
[memory A or B]
into preset xx)

	MODE	Selection of MAINMENU
	LOAD PRST	Selection of PRESET - LOAD MODE
	<i>display:</i> LOAD A ⇐ PRST ** <name P**>	[** = number of last loaded preset (or 01, if no preset was loaded before)]
	A/B	Selection of A or B memory
	<i>display:</i> as before or LOAD B ⇐ PRST ** <name P**>	
	FREQ/ENTER (low section)	Selection of preset number xx
	<i>display:</i> LOAD A ⇐ PRST xx <name Pxx>	
	or	
	LOAD A ⇐ PRST xx NO DATA	no parameter saved in preset, not loadable!
	LOAD A ⇐ PRST xx 2-CH DATA	2-ch preset in stereo mode, not loadable
	LOAD A ⇐ PRST xx ST DATA	2-ch preset in stereo mode, not loadable
	FREQ/ENTER (low section)	Loading of preset xx into memory A or B
	MODE	Selection of MAINMENU
	LOAD PRST	Selection of PRESET - LOAD MODE
	<i>display:</i> LOAD A ⇐ PRST ** <name P**>	[** = number of last loaded preset (or 01, if no preset was loaded before)]
	A/B	Selection of A or B memory
	<i>display:</i> as before or LOAD B ⇐ PRST ** <name P**>	
	FREQ/ENTER (low section)	Selection of preset PRE0 (DEFAULT)
	<i>display:</i> LOAD A or B ⇐ PRE0	
	FREQ/ENTER (low section)	Loading of default parameter values into memory A or B


LOADING PRESETS into A or B

LOADING FACTORY PRESET into A or B

COPY PRESETS


- 

MODE Selection of MAINMENU

push
- 


LOAD PRST Selection of PRESET - LOAD MODE

push


*display: LOAD A ⇐ PRST 01 ** <name P**>*
 [** = number of last loaded preset (or 01, if no preset was loaded before)]
- 

FREQ/ENTER Selection of preset number xx
(low section)


turn

display: LOAD A ⇐ PRST xx <name Pxx>
- 

FREQ/ENTER Loading of preset xx into memory A
(low section)


push
- 

MODE Selection of MAINMENU

push
- 


SAVE PRST Selection of PRESET - SAVE MODE

push

display: SAVE ⇐ PRST xx <name Pxx>
- 


FREQ/ENTER Selection of preset number yy for preset
(low section) copy.

turn


display: SAVE ⇐ PRST yy <name Pyy>
Attention! Preset was used before and will be overwritten after saving.
 or
SAVE ⇐ PRST yy NO DATA
 Free preset for copy (unused before).
- 

FREQ/ENTER Copy of preset xx into preset yy.
(low section) Push two times to save with default name.

push










display: NAME PRST yy <name Pxx>
 or
- 

ALL KNOBS Changing of the source name (PRESETxx)
(low RANGE into an individual name (10 digits), push
... output GAIN) knob to generate space

turn
- 

FREQ/ENTER Saving of copied preset xx with individual
(low section) name into preset yy.

push

	MODE	Selection of MAINMENU
push		
	LOAD PRST	Selection of PRESET - LOAD MODE
push		
	<i>display: LOAD A ⇔ PRST 01 ** <name P**></i>	
	[** = number of last loaded preset (or 01, if no preset was loaded before)]	
	FREQ/ENTER (low section)	Selection of preset number xx
turn		
	<i>display: LOAD A ⇔ PRST xx <name Pxx></i>	
	FREQ/ENTER (low section)	Loading of preset xx into memory A
push		
	MODE	Selection of MAINMENU
push		
	SAVE PRST	Selection of PRESET - SAVE MODE
push		
	<i>display: SAVE ⇔ PRST xx <name Pxx></i>	
	FREQ/ENTER (low section)	Copy (save back) of preset xx into preset xx.
push		
	<i>display: NAME PRST xx <name Pxx></i>	
	ALL KNOBS (low RANGE ... output GAIN)	Changing of the source name <name Pxx> for a new individual name (10 digits)
turn		
	FREQ/ENTER (low section)	Saving of new name for preset xx.
push		

**RENAME
PRESETS
(COPY PRESETS
AT SAME PLACE
WITH NAME
CHANGE)**

The filter processor e07 offers a convenient timecode snapshot automation. Following parameters will be stored as snapshot.

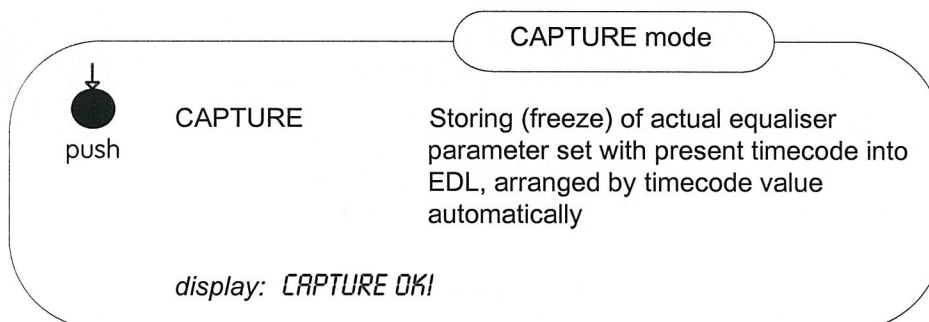
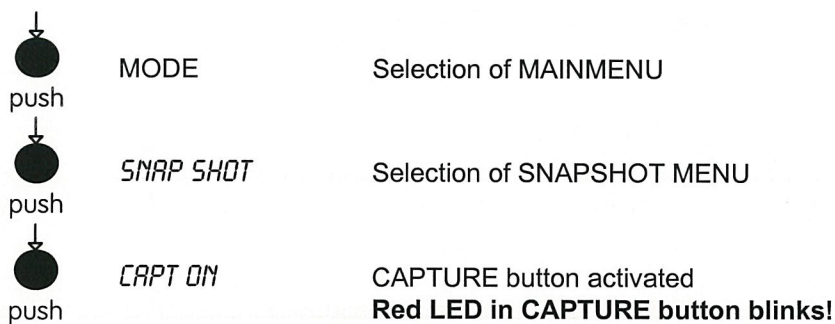
- equaliser bands (also dynamic equaliser)
- low cut / high cut filter
- output gain
- bypass functions .

Until 50 snapshots can be stored into the edit list (EDL).

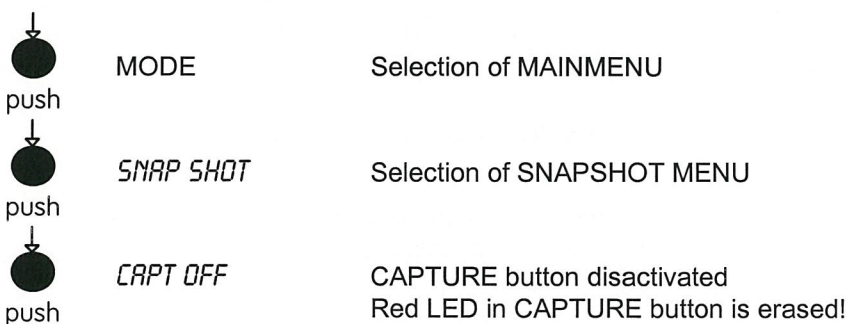
EDL can only used in the channel status of first generated entry (stereo or 2-channel mode). In case of working in another mode as the original EDL mode only the CLEAR function is available. After clearing the EDL one can generate a new EDL.

In 2-channel mode both parameter sets for left and for right channel are stored as one snapshot.

Without timecode the snapshot edit list (EDL) can be used as event list. Events are arranged by time code values.



Note: All snapshots in the EDL will be arranged by time code automatically. The record of a new take will be inserted in the EDL in order of stored timecode values automatically.



Capture mode is disactivated automatically by switching power off. (Capture mode is not stored for restart of the unit.)

4.7 SNAPSHOT AUTOMATION

**GENERATING
SNAPSHOTS BY
CAPTURE MODE
(only working
with timecode!)**

**DISACTIVATING
CAPTURE MODE**

↓ ● push	MODE	Selection of MAINMENU
↓ ● push	<i>SNAP SHOT</i>	Selection of SNAPSHOT MENU
↓ ● push	<i>EDIT</i>	Selection of EDIT MODE
	<i>display: SNAPSHOT</i>	<i>ETR NEW HH:MM:SS:FF</i>
↺ ● turn	<i>HH</i> (h-mid FREQ)	Selection of hours value
	<i>MM</i> (h-mid WIDTH)	Selection of minutes value
	<i>SS</i> (h-mid RANGE)	Selection of seconds value
	<i>FF</i> (high FREQ)	Selection of frames value

Note: Caused by arrangement of snapshots by time code it is necessary to create different timecode values for each snapshot, even if EDL is only used as event list (playback without timecode, see: playback EDL without timecode)!

To place a new snapshot or to replace an existing snapshot at a defined position the timecode value is to be set between the timecode values of snapshot before and snapshot behind.

↓ ● push	<i>ETR</i> (low FREQ)	Saving the generated timecode and switching to filter parameter setting
----------------	--------------------------	---

*display: EDIT *** and filter parameter set
[** snapshot no.]
adjustment of filter parameter like described in 4.1 - 4.3

↓ ● push	MODE	Saving created snapshot and selection of snapshot EDIT MODE
----------------	------	---

*display: SNAPSHOT ETR ** EDIT HH:MM:SS:FF DEL*
[** number of last snapshot in EDL]

more editing of snapshots or (selection by turning *low RANGE*)

or

↓ ● push	MODE	Selection of SNAPSHOT MENU
----------------	------	----------------------------

↓ ● push	MODE	Selection of MAIN MENU
----------------	------	------------------------

↓ ● push	<i>SNAP SHOT</i>	Selection of SNAPSHOT MENU
----------------	------------------	----------------------------

↓ ● push	<i>EDIT</i>	Selection of EDIT MODE
----------------	-------------	------------------------



display: SNAPSHOT NEW HH:MM:SS:FF

CREATING SNAPSHOTS BY EDIT MODE

DEFINED PLACEMENT AND INSERTION OF SNAPSHOTS


EDITING OF FILTER PARAMETER

EDITING SNAPSHOTS BY EDIT MODE


 turn	<p><i>NEW</i> (low RANGE)</p> <p><i>display: 01 ... 50</i></p>	<p>snapshot selection for editing (only selectable if EDL is not empty)</p> <p>selection of snapshot 01 ... 50 for editing</p>
 turn	<p><i>HH</i> (h-mid FREQ) <i>MM</i> (h-mid WIDTH) <i>SS</i> (h-mid RANGE) <i>FF</i> (high FREQ)</p>	<p>Adjustment of hours value Adjustment of minutes value Adjustment of seconds value Adjustment of frames value</p>

Note: Caused by arrangement of snapshots by time code it is necessary to create different timecode values for each snapshot, even if EDL is only used as event list (playback without timecode, see: playback EDL without timecode)!

To place a new snapshot or to replace an existing snapshot at a defined position the timecode value is to be set between the timecode values of snapshot before and snapshot behind.

 push	<p><i>EDIT</i> (l-mid WIDTH)</p>	<p>Recall of filter parameter set for sound rehearsal and on-line editing</p>
---	--------------------------------------	--

*display: EDIT *** and filter parameter set
[** snapshot no.]
readjustment of filter parameter like described in 4.1 - 4.3

 push	<p>MODE</p>	<p>Saving of edited filter parameter and return to SNAPSHOT EDIT MENU</p>
---	-------------	---

 push	<p>ENTER (low FREQ)</p>	<p>Saving the edited snapshot and return to SNAPSHOT MENU</p>
---	-----------------------------	---


display: SNAPSHOT SNAPSHOT MENU

or

 push	<p><i>DEL</i> (high RANGE)</p>	<p>Deleting the selected snapshot and return to SNAPSHOT MENU</p>
---	--------------------------------	---


display: SNAPSHOT SNAPSHOT MENU

or

 push	<p>MODE</p>	<p>Return to SNAPSHOT MENU without saving</p>
---	-------------	---

display: SNAPSHOT SNAPSHOT MENU

to escape snapshot menu

 push	<p>MODE</p>	<p>Selection of working mode</p>
---	-------------	----------------------------------








**EDITING OF
TIMECODE
PARAMETER**

**DEFINED
PLACEMENT AND
INSERTION OF
SNAPSHOTS**

**RECALL AND
EDITING OF FILTER
PARAMETER**


**SAVING EDITED
SNAPSHOT**

**DELETING OF
SNAPSHOTS**


 push	MODE	Selection of MAINMENU
 push	SNAP SHOT	Selection of SNAPSHOT MENU
 push	EDIT	Selection of EDIT MODE
	<i>display: SNAPSHOT</i>	<i>ETR NEW HH:MM:SS:FF</i>
 turn	NEW (low RANGE)	snapshot selection for copy (only selectable if EDL is not empty)
	<i>display: 01 ... 50</i>	for selected snapshot
 push	EDIT	loading filter parameter set of selected snapshot as active parameter set for sound rehearsal and for copy
	<i>display: EDIT</i>	<i><snapshot no> <filter parameter></i>
 push	MODE	Selection of SNAPSHOT EDIT MENU
 turn	<i>01..50</i> (low RANGE)	Selection of NEW snapshot, turn knob until <i>NEW</i> is displayed
	<i>display: SNAPSHOT</i>	<i>NEW HH:MM:SS:FF</i>
	<i>HH</i> (h-mid FREQ)	Selection of hours value
	<i>MM</i> (h-mid WIDTH)	Selection of minutes value
	<i>SS</i> (h-mid RANGE)	Selection of seconds value
	<i>FF</i> (high FREQ)	Selection of frames value

Note: Caused by arrangement of snapshots by time code it is necessary to create different timecode values for each snapshot, even if EDL is only used as event list (playback without timecode, see: playback EDL without timecode)!

To place a new snapshot or to replace an existing snapshot at a defined position the timecode value is to be set between the timecode values of snapshot before and snapshot behind.

 push	ETR (low FREQ)	Saving loaded filter parameter and timecode as new snapshot
---	--------------------------	--

*display: EDIT *** and filter parameter set
 [** snapshot no.]

 push	MODE	Return to SNAPSHOT EDIT MENU
	more editing or	




 push	MODE	Return to SNAPSHOT MENU
---	-------------	-------------------------

**COPYING
 SNAPSHOTS BY
 EDIT MODE**


**RECALL OF FILTER
 PARAMETER**




**EDITING OF
 TIMECODE
 PARAMETER**



**DEFINED
 PLACEMENT AND
 INSERTION OF
 SNAPSHOTS (COPY)**

- 
 MODE Selection of MAINMENU
 push
 - 
 SNAP SHOT Selection of SNAPSHOT MENU
 push
 - 
 PLAY Selection of PLAY MODE
 push
- display: *PLAY XX* and equaliser parameter display
 [xx -snapshot number]
- No parameter is adjustable!**
Takes are recalled following timecode automatically.


to escape PLAY MODE

- 
 MODE Selection of working mode
 push

- 
 MODE Selection of MAINMENU
 push
 - 
 SNAP SHOT Selection of SNAPSHOT MENU
 push
 - 
 PLAY Selection of PLAY MODE
 push
- display: *PLAY XX* and equaliser parameter display
 [xx - snapshot number]
- No parameter is adjustable!**
Takes are recalled manually.

- 
 CAPTURE manual recall of next snapshot
 push (one step forward)
- 
 A/B manual recall of previous snapshot
 push (one step backward)

to escape PLAY MODE

- 
 MODE Selection of working mode
 push

The playback stepwise can be controlled remotely using GPI remote control.
 See also 4.9 Remote operation - GPI control!

PLAYBACK AN EDL BY PLAY MODE (with timecode = autoplay)

PLAYBACK AN EDL STEPWISE (only working without timecode)

↓ ● push	MODE	Selection of MAINMENU
↓ ● push	<i>SNAP SHOT</i>	Selection of SNAPSHOT MENU
↓ ● push	<i>CLEAR</i>	Selection of PLAY MODE
	<i>display: TAKELIST CLR? YES NO</i>	
↓ ● push	<i>YES</i>	Clearing the EDL Attention! No undo possible.
↓ ● push	<i>NO</i>	Escaping clearing mode without delete. Selection of working mode.

CLEARING AN EDL

4.8 UTILITIES SELECTION OF 2-CHANNEL MODE

The digital filter processor e07 can be used in stereo or in 2-channel mode. Changing of the channel mode requires rebooting of the unit.

In stereo mode all parameters are the same for left and for right channel. The limiter is working in linked mode. All functions are available.

In 2-channel mode all parameters can be different for each of the two channels. The limiter is working unlinked. Dynamic equaliser is not working in 2-channel mode.

A/B comparison is available for two pairs of L/R parameter sets
L/R parameter sets are storable in presets.

display above L/R button

L 2-ch mode, left channel selected
R 2-ch mode, right channel selected
blank stereo mode



MODE

Selection of *MAINMENU*



UTIL

Selection of *UTILITY* menu



2-CH

Selection of 2-channel mode

or



ST

Selection of stereo mode

2-channel mode



L/R

switching between left and right channel
display: L (if left channel is selected)
R (if right channel is selected)

Note:

Changing of the channel mode requires rebooting of the unit.

After changing the channel mode A and B memory are cleared and loaded with default adjustments.

Loading of presets stored originally in another channel mode is not possible.

Loading of EDL created originally in another channel mode is not possible.

STATUS DISPLAY

MODE SETTING

For setting of sort of timecode, which is used for snapshot automation.

(Timecodes are different regarding resolution in frames. Framing can be set by this utility function.)

↓
●
push **MODE** Selection of *MAINMENU*

↓
●
push **UTIL** Selection of *UTILITY* menu

↓
●
push **TIME CODE** Selection of timecode setting

display: *TIME CODE ACT: <frame stat> 24 F 25 F 30 F*
 <frame stat>: actual frame setting
 24 F = 24 frames per second
 25 F = 25 frames per second
 30 F = 30 frames per second

↓
●
push **24 F** Selection of 24 frames per second

↓
●
push **25 F** Selection of 25 frames per second

↓
●
push **30 F** Selection of 30 frames per second

SELECTION OF TIMECODE

Channel status bits are defined in the AES/EBU data stream .
 With the digital filter processor e07 it is possible to transmit this information without changing or to set these information defined.
 (Sometimes it is helpful to change the channel status, f.i. if following units don't want to accept incoming signals.)

SELECTION OF CHANNEL STATUS



MODE

Selection of *MAINMENU*



UTIL

Selection of *UTILITY* menu



CHAN STAT

Selection of channel status setting

display: CHANNEL STAT ACT: <chan stat> CONS PROF TRNS
<chan stat>: actual channel status setting
cons = consumer status
prof = professional status
trns = transparent (input = output)



CONS

Selection of consumer mode



PROF








Selection of professional mode



TRNS

Selection of transparent mode

DATA SAVE is a function for saving and restoring existing preset data and editlist by using external storage devices. All data will be transferred via AES/EBU interface. It is possible to use all storage medias which can be connected via AES/EBU and which don't change or manipulate audio data of AES/EBU signal (f.i. DAT, audio file on workstation). The data block has a duration of appr. 10 seconds. The header of data dump block is containing number and name of data block. This is to be used to address determined data block for saving or loading.






-  push
 MODE Selection of *MAINMENU*
-  push
UTIL Selection of *UTILITY* menu
-  push
DATA Selection of DATA SAVE menu
-  push
SAVE EDL Selection of data saving mode
- display: NAME EDL MRXX EDITLIST*
-  turn
XX (FREQ low section) Selection of data block (EDL) number for data saving (01...99)
-  turn
 ALL KNOBS (low RANGE ... output GAIN) Changing of the default name (EDITLIST) into an individual name (10 digits), push to generate space
- or proceed without name changing (use of default name).
- Start record function of connected external storage device (f.i. DAT recorder)
-  push
 FREQ/ENTER (low section) Saving of data block

*display: SAVE EDL NR** < name >*

After appr. 10 seconds data saving is finished. The unit returns automatically to normal working mode. Then you can stop recording of data at external storage device.

DATA SAVE

SAVING PRESET AND EDL DATA

	MODE	Selection of <i>MAINMENU</i>
push		
	UTIL	Selection of <i>UTILITY</i> menu
push		
	DATA	Selection of <i>DATA SAVE</i> menu
push		
	NRXX	Selection of data block (EDL) for loading
turn		
	LOAD EDL	Selection of data loading mode
push		

Starting of external storage device which is connected to the AES/EBU input and which is playing back formerly saved data.





*display: LOAD EDL NR++ NR** < name >*
 ++ - number of selected data block
 ** - number of actual running data block
 <name > - name of actual running data block

The unit is detecting the selected data block automatically. It is loading the selected data block automatically.

display: LOAD EDL NR++ O.K.
 ++ - number of loaded data block

After a few seconds the unit returns automatically to normal working mode. Then you can stop playback of data at external storage device.

LOADING PRESET AND EDL DATA

 ● push	MODE	Selection of <i>MAINMENU</i>
 ● push	<i>UTIL</i>	Selection of <i>UTILITY</i> menu
 ● push	<i>DATA</i>	Selection of <i>DATA SAVE</i> menu
 ● push	<i>SHOW EDL</i>	Selection of data block showing mode

Starting of external storage device which is connected to the AES/EBU input and which is playing back formerly saved data. The unit is detecting actual running data blocks automatically.

display: *SHOW EDL NR** < name >*

** - number of actual running data block

<name > - name of actual running data block

To escape *EDL SHOW* mode

 ● push	MODE	Return to normal working mode
--	------	-------------------------------

SHOWING NUMBER AND NAME OF STORED DATA BLOCK

4.9
REMOTE
CONTROL

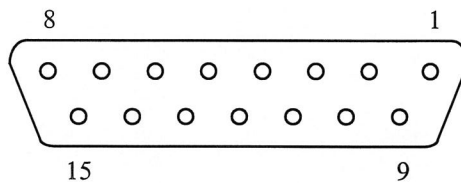
GPI REMOTE
CONTROL
(15 PIN
PARALLEL
REMOTE)

The digital filter processor e07 can be remote controlled by GPI control.

Use: Control from other remote controls

Connector: D-SUB 15pin

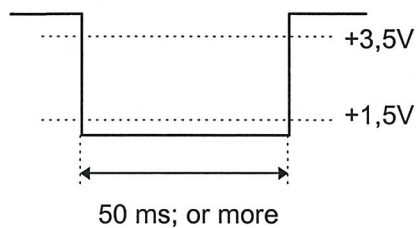
Pin assignment of the connector



Pin	Signal name	Logic	I/O	Functions
1	GND			GND
2	RESET	L	I	reset EDL to take 01
3	UP	L	I	next EDL take
4	DOWN	L	I	previous EDL take
5	BYPASS	L	I	general bypass
6	CAPTURE	L	I	captures snapshot+LTC
7	reserved			
8	not used			
9	not used			
10	not used			
11	not used			
12	not used			
13	not used			
14	not used			
15	not used			

Electrical specifications:

Command input Level L: 1,5V or less, 50ms or more
 Level H: 3,5V or more



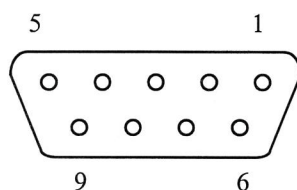
Pulse signals

The digital filter processor e07 can be remote controlled by serial remote control (RS-232).

Use: Control from the personal computer
Control from other remote controls

Connector: D-SUB 9pin

Pin assignment of the connector



Pin	Signal name	Functions
1	not used	
2	TXD	Transmit data
3	RXD	Receive data
4	not used	
5	GND	GND
6	DSR	Data set ready
7	not used	
8	DTR	Data terminal ready
9	not used	

Electrical specifications:

Command input ON: +5V or more
 OFF: -5V or less

SERIAL REMOTE CONTROL (RS-232)

BOOT DISPLAY AND TROUBLE SHOOTING



5.1 BOOT DISPLAY

display	meaning/explanation
<i>DIGITAL EQ</i>	display of unit type part one
<i>JÜNGER E07</i>	display of unit type part two
<i>VERSION E07</i> <i>C.X.X E: Y.Y</i>	display of loaded software versions x.x and y.y

display	error/message	remedies
<i>NO SYNC</i>	no sync at digital input	<ul style="list-style-type: none"> connect the digital input with valid input signal
<i>NO TIMECODE</i>	no timecode at timecode input	<ul style="list-style-type: none"> connect the timecode input with valid LTC input signal
<i>NO DATA</i>	empty preset, no data stored before	<ul style="list-style-type: none"> use another preset for loading parameter
normal working display, B above A/B button	no adjustments possible	<p>B memory (reference memory) for A/B comparison is active, B memory is not adjustable.</p> <ul style="list-style-type: none"> Push A/B button to switch to A memory (normal working mode)
<i>ERROR 1..5</i>	error level 1..5	<ul style="list-style-type: none"> switch power off, reboot the unit by switching power on

5.2 ERROR DISPLAY AND TROUBLE SHOOTING

APPLICATION NOTES

6

6.1 DIGITAL FILTER AT 96 KHZ

Reputation has it that digital filters sound hard and metallic, that there is no warmth and clarity and the dynamic and stereo imaging is flat. Many sound engineers consider that "high quality analogue filters simply sound better". The difference between analogue and traditional digital filters is, in the final analysis, related to the frequency range of the filters. The frequency range is clearly wider in the case of analogue filters than the traditional digital filter which is sharply limited to half of the sampling rate of 40 or 50 kHz, ie. around 22kHz. As a result, non-linearities in amplitude and phase characteristics occur well before the cut-off frequency which lead to coloration at high audio frequencies.

In order to implement a digital filter whose sound qualities are comparable with a good analogue filter, the corresponding transmission characteristics must be designed in digital form. High quality digital filters should sound as good at high frequencies as good analogue filters and in order to achieve this a higher sampling frequency is required. The distortion of the frequency axis is reduced the higher the sampling rate becomes relative to the audio range.

The Jünger Audio digital filter processor Model e07 works internally at twice the sampling rate of the input signal and can therefore provide filtering up to around 40kHz moving any distortion of the signal away from the audio spectrum. This results in a much cleaner audio signal. Listening tests show remarkable results with a more realistic and "authoritative" sound. Stereo imaging is preserved and reverberation decays naturally without any "metallic" components. This situation can be proved technically by measuring the results which clearly show an improvement at higher frequencies together with improved phase characteristics.

6.2 DYNAMIC EQUALISER

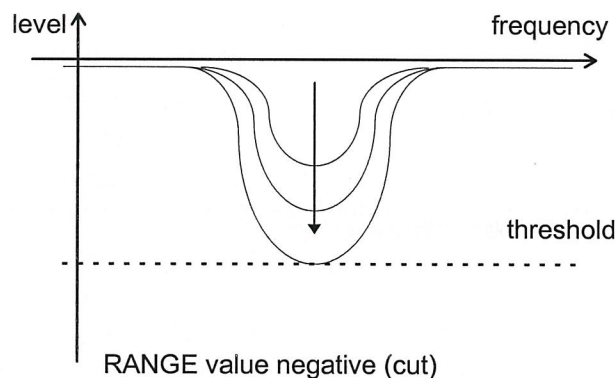
In dynamic mode the filter activity is controlled by the audio level. The filter get active only if the level of incoming audio signal reaches a defined threshold level. A typical application for a dynamic equaliser is the de-esser function.

There are two basic modes for the dynamic equaliser, dependent on adjusted RANGE value.

Negative values for RANGE (cut function) switches into REDUCE mode. In REDUCE mode signals will be reduced if their level is higher as the threshold level.

All spectral parts of the signal (filtered by the filter band) which has more level as the adjusted threshold level will be reduced by the RANGE value. The level reduction never comes below the threshold level.

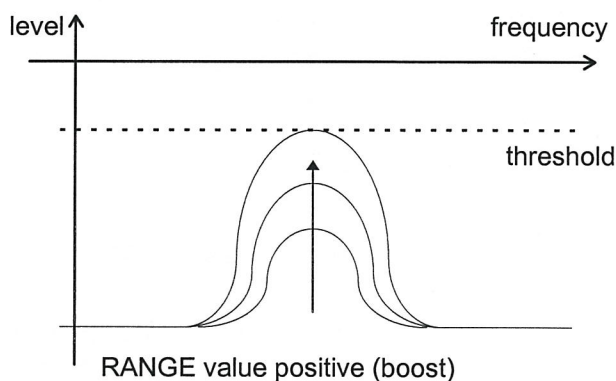
REDUCE MODE



Positive values for RANGE (boost function) switches into ENHANCE mode. In ENHANCE mode signals will be increased (or enhanced) if their level is below the threshold level.

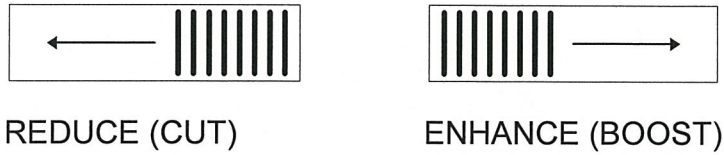
All spectral parts of the signal (filtered by the filter band) which has less level as the adjusted threshold level will be increased by the RANGE value. The increased level never comes over the threshold level.

ENHANCE MODE



The activity of the filter is displayed by a bargraph above RANGE knob. The intensity of the bar shows the activity of the filter, dependent on signal level and RANGE adjustment.

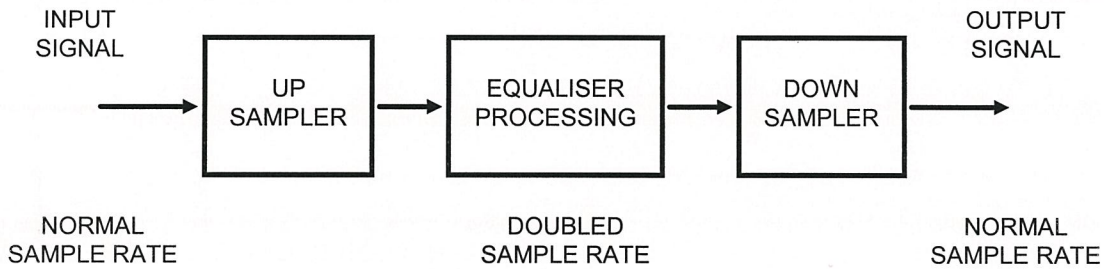
BARGRAPH DISPLAY



Caused by the limited DSP power of the unit two bands can be switched as dynamic equaliser at the same time only. The other bands can be used as normal equaliser bands. All equaliser bands are calculated at doubled sample rate or 96 kHz. In 2-channel mode dynamic equaliser function is not available.

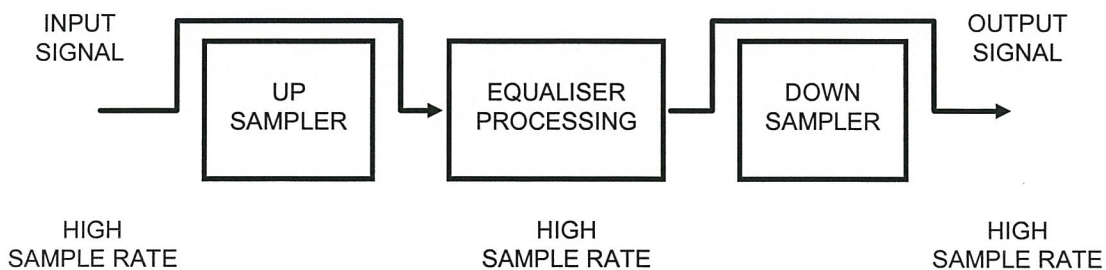
The Digital Filter Processor e07 is working internally with doubled sample rate. That means that the filter calculation is proceed at doubled sample rate of the input signal (88.2 kHz for 44.1 kHz input or 96 kHz for 48 kHz input).

**6.3
HIGH SAMPLING
MODE**



The unit is prepared for operation with high sampling signals at 96kHz.

In case of connection with high sampling signal sources the unit switches automatically into HIGH SAMPLING MODE. All operations will proceed at 96 kHz and high sampling signal is feed to the output of the unit.



It is not possible to convert the sample rate between input and output of the unit in any direction.

The audio signal delay through the digital filter processor is approx. 2ms due to delaying of the audio signal using internal memory. A small delay is deliberately introduced to the audio signal in order to allow limiter and filter algorithms which can 'preview' the audio signal before changing it.

This delay must be considered before attempting to mix signals processed by the dynamics processor with other undelayed signals.

When mixing together a delayed signal and a direct signal there may be cancellation of the signal waveform at some frequencies and re-inforcement of the waveform at other frequencies (comb filter effect). Corresponding 2ms delay of direct signals should therefore be carried out before mixing them with delayed processed signals.

6.4 INFLUENCE OF SIGNAL DELAY TIME

TECHNICAL SPECIFICATIONS

sampling rate : 44.1 kHz ... 96 kHz
 audio data format : 24-bit (AES/EBU and S/PDIF)

AES/EBU

level : 5 Vpp / 110 Ohm, balanced
 connector : XLR
 input format : AES professional, AES consumer
 output format : same as input

SPDIF

level : 0.5 Vpp/ 75 Ohm, unbalanced
 connector : RCA
 input format : AES professional, AES consumer
 output format : same as input

static or dynamic filter mode for each band selectable
 OFF switches for each band
 overall bypass

low cut filter	frequency range	2 Hz ... 120 Hz
		-6, -12, -18 dB per octave
high cut filter	frequency range	2 kHz ... 20 kHz
		-6, -12, -18 dB per octave
low filter	frequency range	20 Hz ... 500 Hz
		-15 ...+15 dB boost or cut shelving characteristic
l-mid filter (mid1)	frequency range	50 Hz ... 20 kHz
		-15 ...+15 dB boost or cut shelving characteristic
h-mid filter (mid2)	frequency range	50 Hz ... 20 kHz
		-15 ...+15 dB boost or cut shelving characteristic
high filter	frequency range	2 kHz ... 20 kHz
		-15 ...+15 dB boost or cut shelving characteristic
dynamic mode	threshold	0 ... -50 dBFS
		-15 ... +15 dB enhancement or reduction bar-graph indicates dynamic activity



digital
input / output

filter

7. TECHNICAL SPECIFICATIONS

output gain	-15 ... +15 dB, resolution 0.1 dB	output
digital limiter	threshold 0 dBFS, fixed attack and release times adaptive controlled by the program signal (program signal dependent)	
time code	LTC level > -10 dBu connector: XLR 10 kOhm, balanced	timecode input
serial remote	RS-232 TTL level, 9 pin SUB D	remote
GPI	TTL level, 15 pin SUB D	
power supply	IEC mains input socket AC 25 VA 230 V, 50 Hz (EU version) 240 V, 50 Hz (UK version) 100 V, 60 Hz (JP version) 127 V, 60 Hz (US version)	general
size	482 mm x 44 mm x 251 mm (19", 1 RU)	
weight	appr. 5 kg	



KONFORMITÄTSERKLÄRUNG

DECLARATION OF CONFORMITY

Geräteart: Digital Filter Processor
Type of equipment: digital filter processor

Produkt / Product: **model e07**

Das bezeichnete Produkt stimmt mit den Vorschriften folgender
EU-Richtlinie(n) überein:

The aforementioned product complies with the following European Council Directive(s):

89/336/EWG (geändert durch 91/263/EWG und 92/31/EWG)
(changed by 91/263/EWG and 92/31/EWG)
Richtlinie der Rates zur Angleichung der Rechtsvorschriften der
Mitgliedsstaaten über die elektromagnetische Verträglichkeit
Council Directive 89/336/EC on the approximation of the laws of the
Member States relating to electromagnetic compatibility

Zur vollständigen Einhaltung dieser Richtlinie(n) wurden folgende Normen
herangezogen:

To fully comply with this(these) Directive(s), the following standards have been used:

EN 55022 :1987
EN 50082-1 :1993

Dieser Erklärung liegt zugrunde: Prüfbericht(e) des EMV - Prüflabors
This certification is based on: Test report(s) generated by EMC-test laboratory

MEB Messelektronik Berlin Kalibrier- und Prüflabor
accredited EMC laboratory

Aussteller / Holder of certificate: Jünger Audio - Studioteknik GmbH
Justus - von - Liebig - Straße 7
12489 Berlin

Berlin, 02.04.1999
(Ort/Place) (Datum/Date)

.....
(Rechtsgültige Unterschrift/Legally Binding)

WARRANTY AND SERVICE INFORMATION



JÜNGER AUDIO grants a two-year warranty on the

digital filter processor MODEL e07

If the unit has to be serviced, please send it, ideally in the original box, to:

JÜNGER AUDIO - Studioteknik GmbH

Justus - von - Liebig - Straße 7

**12489 Berlin
GERMANY**

**Tel.: (*49) - 30 - 67 77 21 - 0
Fax.: (*49) - 30 - 67 77 21 - 46**