







www.wharfedalepro.com

FUNCTIONS

- 32 bit DSP processor. 48 KHz sampling rate. 24-bit AD/DA convertors.
- Input processing includes 8PEQ, FIR phase EQ processing, Gain, Mute, Phase, Delay, and Linking.
- Output processing includes IIR and FIR Crossover filter, 9PEQ, Gain, Mute, Peak limiter, Compressor, Phase, Delay, and Linking.
- Digital input and output functions. AES/EBU input and output channels using XLR connectors.
- Adjustable PEQ Gain, Bandwidth and Frequency for all channels. Choose between Peak, L-shelf, H-shelf, Low- cut, High- cut, ALLPASS1 and ALLPASS2.
- All input and output channels have independent phase curve and PEQ adjustment functions. Choose between ALLPASS1 / 180° curve adjust, and ALLPASS2 / 360° curve adjust.
- IIR crossover filter types can be selected : Butterworth, Linkwitz- Riley, Bessel, Slope is -6 dB/oct ~-48 dB/oct.
- All input channels have independent 512 Taps asymmetric FIR filters for system phase correction, equalization and frequency division processing. Perfectly compatible with third-party application data import.
- All output channels have adjustable 256-1024 Taps asymmetric FIR filters for system phase correction, equalization and frequency division processing. Perfectly compatible with third-party application data import. As well as FIR divider mode selection, frequency, type and optional TAPS.
- Adjustable independent output compressor with threshold, soft knee, ratio, attack time and release time parameters.

Adjustable independent output Peak limiter functions and adjustable threshold, attack time and release time parameters.

- Maximal delay time 680 ms for all input/output channels.
- Parameter settings can be copied for every single channel and the channels can be linked.
- Internal signal generator (pink, white noise and 20Hz-20KHz sine wave with adjustable amplitude).
- Front panel features high-precision level indicators, channel editing keys, mute keys, menu keys, parameter encoding wheel and USB control port.
- Rear panel includes 1 x AES input connector and 1 x AES output connector plus RS232 & 485 control port.
- 20 user presets. Each preset can be saved and recalled. Device parameters can be uploaded and downloaded.
- 255 units can be linked together via ID settings.
- Password protection function for high security applications.



1. LCD

Shows the related operation parameters and the status of current operation.

2. PARAMETER EDIT KEYS

Choose all the system menus/input parameters and output parameters. Exit by pressing the "Exit" key.

3. PARAMETER EDIT KNOB

Edit the parameters. Confirm the data input by pressing the knob.

4. INPUT LEVEL INDICATORS

5-segment high precision LEDs show the status of the input channel's level.

5. INPUT EDIT KEYS

Press to enter into the relevant channel. Parameters will show on the LCD.

6. INPUT MUTE KEYS

Mute any channel by pressing and unmute by pressing again.

1

FRONT PANEL

7. OUTPUT EDIT KEYS

Press to enter the relevant channel. The edit status parameter will show on the LCD.

- 8. OUTPUT MUTE KEYS Mute the channel by press
- Mute the channel by pressing and unmute by pressing again. 9. OUTPUT LEVEL INDICATORS

4-segment high precision LEDs and 1 compressor signal LED shows the status of the output level and the compressor on current channel.

10. USB

Used to connect to the PC and center-control equipment.

REAR PANEL



- 1. POWER SOCKET
- 2. POWER ON/OFF SWITCH
- 3. RS232/485 INTERFACE Center-control by rs232, cascade control by rs485.
- 4. ETHERNET CONNECT CONTROL PORT
- For network control.
- 5. SIGNAL OUTPUT PORT 1-8.
- 6. SIGNAL INPUT PORT A-D.

OPERATION GUIDE

	Below status after power on:
SC-48 FIR Processor V1.0	Power on. Displays the model and firmware version.
SC-48 FIR F00 Default Preset	After self-checking, displays the model and the current user preset.
	UTIL menu
ID Number Select ID: 1	Press UTIL key to enter the ID status. When using cascade connection, the setting is 1-254. (If the cascade connection has more than 16 units or covers a long distance, a loaded 120 ohm resistance should be connected in parallel by RS485 network end-point.)
Manual IP Set 192. 168. 1. 101	Press UTIL a second time to enter the Manual IP Set mode. The factory default address is 192.168.1.101. The IP of each machine can be set to different addresses according to different network environment.

OPERATION GUIDANCE

Input Select ANALOG	Press down a third time to enter input channel digital and analog signal select , ANALOG is analog input. AES/EBU is digital input.
Output Select ANALOG	Press down a fourth time to enter output channel digital and analog signal selection. ANALOG is analog output, AES/EBU is digital output.
Unit Lock Password [1234]	Press down a fifth time to enter password setting. You can choose all the words or numbers to set the password you want. The initial password is "1234".
In Source Select ANALOG INPUT	Press down a sixth time to enter signal source selection: pink noise, white noise and sine wave 20 Hz-20 KHz.
Copy CH Select InA -> InB	Press down a seventh time to enter the channel copy interface: Parameter settings can be copied for every input and output channel.
LCD DISPLAY TIME 10 Second	Press down an eighth time to enter the LCD backlight time setting: maximum 200 ms.
	Preset menu interface
Load Preset F00 Default Preset	Press "PRESET" key to enter the preset select setting. You can recall any user preset U01-U20 and factory settings F00 using the rotary encoder.
Store Preset U01 Default1 Preset	Press "PRESET" key again to enter the save preset interface. You can save the adjusted parameters in any U01-U20 user location.
	Input channel EDIT menu interface
GAIN INA +0.0 dB	Press input channel "EDIT" key to enter input channel function setting interface. Default option is "GAIN", the scale is -60 dB -+12 dB.
PHASE INA Normal 0	Press the "GAIN" key again to enter PHASE adjust setting. Phase scale is (0°/180°).
FIR INA TAPS:512 BYPASS:ON	Press down "X-over" to enter the FIR BYPASS settings. If FIR is not required, select ON.
DELAY INA 0.000ms 0.000m 0.000ft	Press "DELAY" key to enter the delay settings. Maximum delay is 680 ms. Can be displayed as "ms", "m" or "ft"
IN-LINK INA A∶□ B∶□ C∶□ D∶□	Press down "DELAY" key again to enter linking adjustment selection: If the current channel is INA, you can choose INB, INC, IND channel to adjust parameters simultaneously and together.
FEQ:1 INA G: 0.0 FREQ: 25.3 BY Q:3.00 TYPE: PEAK□	Press down "PEQ" key to enter the parameter settings. PEQ current filter number is 8, "G" is -12 dB - +12 dB and the scale of "FREQ" is 20 Hz-20 KHz. "Q" is 0.4-128. The filter types are Peak, Low-shelf, High-shelf, Low-cut, High-cut, Allpass1, Allpass2 and Bypass (which is $$).

OPERATION GUIDANCE

	Output channel EDIT menu interface
GAIN OUT1 +0.0 dB	Press output channel "EDIT" key to enter output channel settings. The default is "GAIN". The scale is -60 dB - +12 dB.
PHASE OUT1 Normal 0	Press down "GAIN" again to enter the phase parameter setting. The scale is 0°/180°.
XOVER OUT1 MODE HP: 19.6 BYPASS IIR LP: 20K15 BYPASS	Press down "X-OVER" key to enter IIR crossover settings. "HP" frequency adjust range is 20 Hz-20 KHz. "LP" frequency adjust range is 20 Hz- 20 KHz. The HP/LP filter has three types and different slopes can be selected: Butterworth, Linkwitz- Riley, Bessel. The slope is -6 dB/oct ~-48 dB/oct.
FIR OUT1 MODE T:512 W:SINC BY FIR H: 250.0 L: 20K15	Select FIR mode from "X-OVER" to enter FIR settings: "T" is FIR TAPS. The range is 256-1024. "W" is FIR curve type. "BY" is crossover type selection. HP, LP and band-pass can be selected. "H" is HP frequency. 150 Hz-20 KHz can be selected. "L" is LP frequency 150 Hz-20 KHz can be selected.
DELAY OUT1 0.000ms 0.000m 0.000ft	Press "DELAY" key to enter the delay function setting: maximum delay is 680 ms, Units can be displayed as : "ms", "m" or "ft".
OUT-LINK OUT1 1: □ 2: □ 3: □ 4: □ 5: □ 6: □ 7: □ 8: □	Press down "DELAY" again to enter the linking adjustment settings. If the current channel is OUT1, you can choose OUT2, OUT3, OUT4, OUT5, OUT6, OUT7, OUT8. Channel parameters can be adjusted simultaneously.
FEQ:1 OUT1 G: 0.0 FREQ: 40.2 BY Q: 3.00 TYPE: PEAK□	Press down the "PEQ" key to enter the PEQ settings. PEQ current filter number is 9. "G" is -12 dB - +12 dB. The scale of "FREQ" is 20 Hz-20 KHz. "Q" is 0.4-128. The types of filter are Peak, Low-shelf, High-shelf, Low-cut, High-cut, Allpass1, Allpass2 and Bypass (which is √).
MATRIX OUT1 A: B: C: D: D:	Press down the "MATRIX" key to enter the matrix settings. All the output channels can freely choose one or several input signals.
MIX OUT1 A:+ 0.0 dB B:+ 0.0 dB C:+ 0.0 dB D:+ 0.0 dB	Press down "MATRIX" again to enter the matrix routing output gain settings. The factory default is 0 dB. Adjustment range is -60 dB - 0 dB.
COMPRESSOR INA T+20.0 R:1.0 K 0 PASS A: 50 R: 500 F: 1K00	Press down "DYNAMIC" again to enter the COMPRESSOR settings. "T" is compression value -60 dB -+20 dB, "R" is the compression ratio 1:1, 1:10, LIMIT. "K" is soft knee 0-12 dB. "A" is attack time 10-900 ms, "R" is release time 10-3000 ms. "F" and "PASS" are dynamic compressor settings, which are frequency and type settings (low pass, high pass and band-pass without "Q".).
LIMIT OUT1 T:+ 20.0 R:LIMT K: 0 dB AT: 50 ms REL: 500 ms	Press down "DYNAMIC" again to enter the limiter settings. "T" is threshold value. -60 dB - +20 dB. "R" is limit ratio. 1:1, 1:10, LIMT, "K" is soft knee 0-12 dB. "AT" is the attack time 10-999 ms. " REL" is the release time adjustable between 10-3000 ms. If the output is used as a limiter, the ratio defaults to LIMIT.

Notice: User manual and PC software are on the enclosed CD. Due to software upgrades that may be released always get the latest version from www.wharfedalepro.com



1. Install the PC software from the CD. (or download)



2. Connect the processor to the computer by USB. After turning on the device the computer will find new hardware automatically. Then the hardware will install and you can use it.

3. Open the PC software. The PC software will find USB and connect to the device. After that the onLine key turns green at the top right corner and shows "Online". You can then operate the processor by the software. Click the "Online" button then close the software interface before exiting.



PAGE 1: VOLUME CONTROL INTERFACE



1, Menu

File	Open and save preset parameters. Upload and download to and from the computer.
Link	Input and output channels can be set freely to adjust all of the parameters.
Сору	Freely copy parameters between the input and output channels.
Lock	Set the panel lock password to ensure the safety of the device.
Setting ID	To cascade control more than 255 devices by setting different IDs
In Select	Input signal selection. AES/EBU digital or ANALOG.
Out Select	Output signal selection. AES/EBU digital or ANALOG.
Test Tone	Built-in signal generator. Pink noise, white noise and sine wave. 20 Hz - 20 KHz.
Channel Name	The channel name can be easily edited.
Language	Select between Chinese and English language operation menus.
Help	RS232 control protocol codes for reference.

2. Spectrum Area:

You can freely choose PEQ and phase.

3. The Volume Control Area:

Gain, Phase, Mute control for all input and output channels.

4. Preset Operation Area:

Save or convert preset parameters and show current preset parameter status.

PAGE 2 : COMPRESSOR INTERFACE



- 1. Shows the compression status, level indicators and status of all channels.
- 2. Sets the compression parameters for the output channel. The compression range is -90dB+20dB, ratio is 1:1, 1:10, LIMIT, attack time is: 1-999 ms, release time is 10-3000 ms and soft knee is 0 dB-12 dB.

PAGE 3 : LIMITER INTERFACE



- 1. Shows the limiter status, level indicators and status of all channels.
- 2. All output channel limiter parameters can be set: threshold is -90 dB to + 20 dB, ratio is 1:1, 1:10, LIMIT, attack time is 1-999 ms, release time is 10-3000 ms and soft knee is 0 dB-12 dB .It is the peak limiter when the ratio is LIMIT.

PAGE 4 : DELAY INTERFACE



- 1. Shows the delay parameter status of all channels.
- 2. Can adjust the delay parameters of all channels. The scale is 0-680 ms,
- The Units of the delay can be displayed in ms, meters or feet.

PAGE 5 : MATRIX INTERFACE

	(1) Wharfeda	le SC-48 FIR D	SP Processo	Editor V1.	,												- 0
	File Link Copy	Lock Settin	ID/IP In Sel	ect OutSe	ect Test	Tone Chann	el Name	语言(X) Help	About								_
	Gain Co	np Limit	Delay	Matrix	InA 1	InB InC	InD	Out1 Out	2 Out3	Out4	Out5 O	ut6 Ou	t7 Out	8	5		OffLine
									VOITE		250	0.101	0010	10.07	D.C		
	In	A GAP	MUTE	PHASE	PEQ	DELAY	FIR		XOVER	FIR	PEQ	GAIN	COMP	LIMIT	DELAY	Ou	t1
	_		_	_	_	_	_	X	XOVER	FIR	PEQ	GAIN	COMP	LIMIT	DELAY	Ou	13
	In	GAD	MUTE	PHASE	PEQ	DELAY	FIR	$< \times$	XOVER	FIR	PEQ	GAIN	COMP	LIMIT	DELAY	Ou	t4
(1)		CAD	MUTTE	PHASE	PEO	DELAV	TIP	\nearrow	XOVER	FIR	PEQ	GAIN	COMP	LIMIT	DELAY	Ou	t5
	16	C OAL	alon	THASE	ILQ	DECAT	THE		XOVER	FIR	PEQ	GAIN	COMP	LIMIT	DELAY	Ou	tó
	In	D GAD	MUTE	PHASE	PEQ	DELAY	FIR		XOVER	FIR	PEQ	GAIN	COMP	LIMIT	DELAY	Ou	t7
									XOVER	FIR	PEQ	GAIN	COMP	LIMIT	DELAY	Ou	t8
	0	at 1	Out2		c	Dut3		Out4	0	Dut5		Out6		Out7		Ot	it8
	hA	+0.0d8 📩	InA +0.	048 🛨	InA	+0.0d8 📩	InA	+0.0d8 📩	InA	+0.0dB	Ha ha	+0.0dB	1 w	A +0.0d	• 🕂	hA	+0.0d8 📩
1	ыв	+0.0d8 📩	InB +0.	0d8 🛨	InB	+0.0d8 📩	InB	+0.0d8 📩	_hB_	+0.0d8	H InB	+0.0d8		8 +0.00	• 🕂	hB -	+0.0d8 📩
2	hC	+0.0d8 🛨	InC +0.	0d8 🛨	hC	+0.0d8 📩	InC	+0.0d8 📩	hC	+0.0d8	l InC	+0.0d8		+0.0d	• 🕄	LC .	+0.0d8 🛨
	LD.	+0.0d8 📩	<u>hD</u> +0.	0d8 🛨	hD	+0.0d8 📩	hD	+0.0d8 📩	LaD	+0.0d8	: LD	+0.0d8	- <u>-</u>	0 (+0.0d	• 🗄	MD	+0.0d8 📩
	Add	Iress II	0:1 19	2.168.1.1	.01	PI	eset	F00 I	Default F	reset	C	Stor	ė			Recall	

- 1. Shows the connections of the device. You can enter and edit channels by clicking the related square. Every channel name can also be edited.
- 2. Any output channel can choose any routing connection from input channel signal source and the level can be set independently.

(0) wh	arfe	dale SC-	48 FIR D	SP Proc	essor	Editor V1.	2														
File Link	0	opy Lod	Setting	ID/IP	In Sele	ect Out Se	ect T	est Tone	Channel	Name	语言(X)	Help Ab	out								
Gain	0	Comp	Limit	De	ay	Matrix	int	InB	InC	InD	Out1	Out2	Out3	Out4	Out5	Out6	Out7	Out	3		
		InA	Free	uency	(⊷/	→) Q(+	/~)	Gain (↑/↓)		🔳 Inß	a in		<u>160</u>			EQ Byp	355	EQ Reset	SHOW	ALL EQ
- 100		• Mag	Phase	è																	
+120	-		Q: 25	3.00 4Hz																	
+60	4 8			MB		,			3			4					6		7		8
- 00	18					- Õ			•			•		-					•		
-64	18																				
-12	3 8																				
-18	18																				
			20Hz			SOHz		100Hz		200H:	*	50	0Hz	10	-tz	20Hz		-	X9Hz	10i0Hz	20
PE	Q	Freq	luency		(2	C	Jain	-	Type	-	Вура	SS		PEC	Parame	ter		FIR		Gain
	• [25.4	Hz		3.00		0.0	MB	Peak		•	Вура	\$\$	Fr	eq	Q	Gain		Name	InA	CI
2		59.7	Hz		3.00		0.0)dB	Peak		•	Вура	33	-	-				FirFile		+12
		157.5	Hz		3.00		0.	0dB	Peak		-	Bypa	55		2	1	E.		Ø		+04
-		406.1	HS	-	3.00		0.0	AB	Peak		1	Bypa	55	Ξ	Ξ	:_:	1		Taps		-5dE
		2.461	(Hz		3.00	— h	0	WB	Peak	5	-	Bypa	32	E.	1		ET-		512	1 1	-100
7		6.061	Ha	-	3.00	— 'r	0.	NB	Peak	-		Вура	33		1	11	Ξ.		Bypass	+0.045	-304
	ſ	16.00	KHz	-	3.00	— i	0.1	DelB	Peak	-	•	Вура	33	25.4	4Hz	3.00	+0.0dB		ON	Noma	
		_	_		_		_	_			_					_	A	21			
	A	ddress	5 ID	11	19	2.168.1.1	.01) 1	Pre	set	FO	De	fault I	reset	2		Store) (Reca	

PAGE 6 : INPUT INTERFACE

- 1. PEQ and Low-cut & High-cut curves for all output channels could be adjusted if you select the Mag interface. The Phase curve of current channel could be adjusted if you select the Phase interface. Besides, you can choose to show PEQ and Phase curves that are not in the current channel synchronously.
- 2. Gain, Q value, frequency, type of PEQ are adjustable, as well as the bypass key. PEQ type includes EQ, L-shelf, H-shelf, L-cut, H-cut, Phase 180° and Phase 360°.
- 3. Gain, Q value, frequency of PEQ could be adjusted by putter, or controlled by pressing the UP, DOWN, LEFT, RIGHT keys on the keyboard.
- 4. 512Taps FIR is supported in default for input channel. Click "Firefile" folder to load the data. The software supports .CSV and .TXT format imports. After importing the file, the number will show on the Taps, FIR file name will show on the Name, PEQ curve diagram will immediately show FIR curve. If Bypass FIR parameter is needed, please just click "ON". Normally 512Taps FIR is recommended. If the larger the Taps, the longer the latency will be. For example, with 1024Taps, the latency will be as much as 10ms.
- 5. Gain, Mute, Phase could be controlled independently in input channel, as well as the level indicator.

PAGE 7 : OUTPUT INTERFACE

- 🗆 × me 语言(X) Help Abou Limit Delay Matrix InA InB InC InD t1 Out2 Out3 Out4 Out5 Out6 OffLin Out6 Out7 Out8 EQ By III Out3 9 LPF PEO Frequ 0 Gain Туре Bypass PEO Parameter Mode Peak Bypass 1 Freq Q Gain Out1 84.4Hz 3.00 0.0dF Peak 2 -Bypass +12dE 176.8H 3 3.00 0.0dF -Bypass dini +5**d**B 370.3Hz 3.00 0.0dB Peak 4 * Bypass 3 +0dB 757.9H 3.00 0.0dB Peal Bypass -5dB E**.** E 1.59KHz 3.00 0.0dF 19.7 • Bypess -10dB l e e e Trees 3.32KHz 3.00 0.0dB Peak • 7 Bypass 1 1 6.81 KHz Bypass
Bypass Peak 8 10.48 -1 P .48 50dF 40.3Hz 3.00 +0.0dB 14.25KH: 3.00 0.0dB Peak Preset F00 Default Preset

redale SC-	18 FIR DS	P Processor Ed	itor V1.0								- 0
Copy Lod	Setting I	D/IP In Select	Out Select T	est Tone Chan	nel Name 询	音(X) Help	About				
Comp	Limit	Delay M	atrix InA	InB InC	InD	uti Out	2 Out3 Ou	ut4 Out5	Out6 O	ut7 Out8	OffLine
Out1	Frequ	1ency (← / →) Q(+/-)	Gain (↑/↓)	Out2	🗏 Out3 🗐	ut+ III Outs III	Out6 III Out	7 🗐 Outs 🗉	Q Bypass EQ Reset	SHOW ALL EQ
😧 Mag	O Phase										
		0.100									
		40.3Hz									
		1		2	3	4	5		6	7 8	9
					•	•	•			•	
	20Hz		i0Hz	100Hz	200Hz		500Hz	1KHz	2KHz	5KHz	10KHz 20KHz
	_				_						
Freq	iency	Q	Gain	Ty	pe	Bypass		PEQ Param	ieter	Mode FIR •	Gain
40.3H	2	3.00	0.0dB	Peak	*	Bypass	Freq	Q	Gain	HighPass LowPass	Out1 Limit
84.4H	2	3.00	0.0dB	Peak	-	Bypass					Clip
176.81	iz	3.00	0.0dB	Peak	-	Bypass	- E E	1 2 2	3 3	ELS STE	- +5dB
370.3	iz	3.00	0.04B	Peak	-	Bypass	1 E E	1 E E	1 E E		- +0dB
757.94	iz	3.00	0.04B	Peak	-	Bypass	<u>- </u>	8.8	888	250.0Hz 20.16KHz	5dB
1.59K		3.00	0.04B	Peak	<u> </u>	Bypess	. ELE	1272	E 3	The Protocol	-10dB
3.32K	12	3.00		Peak	-	Bypass	: E E	122	1 2	Type BTPASS •	-30dB
0.81K	12	3.00	ULUB OUND	Peak	1	Bypass	40.3Hz	3.00	+0.0d8	Win SNC +	+0.000 -50dB
14.255	116	5.00	1 UNBB	Ireak	1	Bypess		1		Taps 512 - OK	Normal Mute
Addrose		1 102	60 1 101		t	TOO I	Defends Dee		(m	832	David)
Auures	, ID	1 192.	108.1.101	PI	reset	100 1	Default Pres	set	Sto	896	Recall
										928	
										992	
	Copy Lodd Comp Out! Out! Orlag Frequ 40.3H 84.4H 176.8H 370.3H 370.3H 377.59K 1.59KR 6.51KL 14.25K Address	Copy Lock Setting I Comp Limit Out Frequency O Hag O Phase Determined of the setting I Comp Limit Out Frequency Core 2042 Core 204 Core Core 204 Core 20 Core 20 Core 20 Core 20 Core	Corp Losi X Setting DJ/P In Select Comp Limit Delay M Outl Frequency (m-/ → 0 0.3 Mg Outl Phase 0.3 Mg 0.3 Mg Outl Frequency Q 0.3 Mg 2012 2012 5 Frequency Q 0.3 Mg 1000 84.4Hg 3.00 176.8Hg 3.00 1.3 MgHg 370.3Hg 3.00 1.3 MgHg 3.32KHg 3.00 1.3 MgHg 4.42KHg 3.00 1.4 25KHg 3.03 Hg 3.00 1.4 25KHg Address 10;1 192:	Comp Limit Delay Matrix InA Out Frequency Q Gain 0.047 Out Frequency Q Gain 2012 5012 5012 Prequency Q Gain 40.3Hz 3.00 0.048 1 3.00 0.048 130.3Hz 3.00 0.048 144.4Hz 3.00 0.048 130.3Hz 3.00 0.048 130.3Hz 3.00 0.048 1370.3Hz 3.00 0.048 1392.Hz 3.00 0.048 1392.Hz 3.00 0.048 1392.Hz 3.00 0.048 1392.Hz 3.00 0.048 1322.Hz 3.00 0.048 1425.Hz 3.00 0.048 1425.Hz 3.00 0.048 1425.Hz 3.00 0.048 1425.Hz 3.00 0.048	Copy Lock Setting ID/IP In Select Out Setting ID/IP In Select In ID ID In ID ID <th< th=""><th>Notice of the set of</th><th>Comp Limit Delay Matrix In A In B InC InD Low Out Out Trequency Q Gain I/J Out Out</th><th>Copy Lock Setting ID/P in Select OutSelect TestTone Channel Name Will be About Comp Limit Delay Matrix InA InB InC InD Out2 Out2 Out3 Or Out1 Frequency () Q(+-) Gain (1/1) Out2 Out3 Out3 Out3 0 Hase 0 Hase 0 0 Hase 0 Hase 0</th><th>Conv Los Setting ID/P In Sect. Cut Setter Text Tore Channel Hame Use About Comp Linit Delay Matrix In A In B In C In D Out 2 Out 3 Out 4 Out 5 Out Frequency Q Gain Type Bypas PEQ Param 1% Kits 300 OutB Peak Bypas Prequency Q Gain Type Bypas PEQ Param 103H2 300 OutB Peak Bypas Frequency Q Gain Type Bypas Frequency Q Gain Type Bypas Frequency Q Gain Type Bypas Freq Q I<th>Copy Losit Setting D/P In Select: Charmed Name USE (0) Help Abut Comp Limit Delay Matrix InA InB InC InD Out: <th< th=""><th>Core Loss Setting ID/P in Select OutSelect TextTone Channel Name NEOD Heb About Comp Limit Delay Matrix InA InB InC InD Out2 Out2 Out3 Out4 Out5 Out6 Out7 Out8 Out Frequency (</th></th<></th></th></th<>	Notice of the set of	Comp Limit Delay Matrix In A In B InC InD Low Out Out Trequency Q Gain I/J Out Out	Copy Lock Setting ID/P in Select OutSelect TestTone Channel Name Will be About Comp Limit Delay Matrix InA InB InC InD Out2 Out2 Out3 Or Out1 Frequency () Q(+-) Gain (1/1) Out2 Out3 Out3 Out3 0 Hase 0 Hase 0 0 Hase 0	Conv Los Setting ID/P In Sect. Cut Setter Text Tore Channel Hame Use About Comp Linit Delay Matrix In A In B In C In D Out 2 Out 3 Out 4 Out 5 Out Frequency Q Gain Type Bypas PEQ Param 1% Kits 300 OutB Peak Bypas Prequency Q Gain Type Bypas PEQ Param 103H2 300 OutB Peak Bypas Frequency Q Gain Type Bypas Frequency Q Gain Type Bypas Frequency Q Gain Type Bypas Freq Q I <th>Copy Losit Setting D/P In Select: Charmed Name USE (0) Help Abut Comp Limit Delay Matrix InA InB InC InD Out: <th< th=""><th>Core Loss Setting ID/P in Select OutSelect TextTone Channel Name NEOD Heb About Comp Limit Delay Matrix InA InB InC InD Out2 Out2 Out3 Out4 Out5 Out6 Out7 Out8 Out Frequency (</th></th<></th>	Copy Losit Setting D/P In Select: Charmed Name USE (0) Help Abut Comp Limit Delay Matrix InA InB InC InD Out: Out: <th< th=""><th>Core Loss Setting ID/P in Select OutSelect TextTone Channel Name NEOD Heb About Comp Limit Delay Matrix InA InB InC InD Out2 Out2 Out3 Out4 Out5 Out6 Out7 Out8 Out Frequency (</th></th<>	Core Loss Setting ID/P in Select OutSelect TextTone Channel Name NEOD Heb About Comp Limit Delay Matrix InA InB InC InD Out2 Out2 Out3 Out4 Out5 Out6 Out7 Out8 Out Frequency (

- 1. PEQ and Low-cut & High-cut curves for all output channels could be adjusted if you select the Mag interface. The Phase curve of current channel could be adjusted if you select the Phase interface. Besides, you can choose to show PEQ and Phase curves that are not in the current channel synchronously.
- 2. Gain, Q value, frequency, type of PEQ are adjustable, as well as the bypass key. PEQ type includes EQ, L-shelf, H-shelf, L-cut, H-cut, Phase 180° and Phase 360°.
- 3. Gain, Q value, frequency of PEQ could be adjusted by putter, or controlled by pressing the UP, DOWN, LEFT, RIGHT keys on the keyboard.
- 4. The slope 20Hz-20KHz of L-cut could be adjusted, and "Butterworth", "Bessel" or "Linkwitz-Riley" could be chosen to use.
- 5. The slope 20Hz-20KHz of H-cut could be adjusted, and "Butterworth", "Bessel" or "Linkwitz-Riley" could be chosen to use.
- 6. Gain, Mute, Phase could be controlled independently in output channel, as well as the level indicator.



SPECIFICATION

	Frequency Response	20 Hz~20 KHz, -0.3 dBu
System Englishing	S/N Ratio	>110 dBu
System Specification	Distortion(THD)	<0. 005 at 1 KHz(0 dBu)
	Cross-talk	<100 dB below full scale
	Туре	Balanced XLR
Input Section	Max. Input Level	+15 dBu
	Impedance	20 K/Stereo; 10 K/MONO
	Туре	Balanced XLR
Output Section	Max. Output Level (bypass)	+20 dBu
	Impedance	<500 Ω
	24-bit sigma - delta converters	
Digital Processing	96 KHz Sampling Rate	
Display	Dot matrix screen display For Para	meters Setting And Function Select
Power Supply	AC~95 V-240 V FUSE 250 VAC/2 A	FAST
Dimension (LxWxH)	48.2x24.7x4.4 cm	
Weight	2.7 kg	

SUPPLIED ACCESSORIES

- 1. One USB cord.
- 2. One electrical cord.
- 3. CD containing PC software and PDF user manual

REAR PANEL CONTROL PORT CONNECTIONS

1. Ethernet connection port for direct connection to the computer through network cabling. Multiple devices can be connected to a switch for control, but remember to set each devices IP and ID differently. It also can also connect to wireless routers but again remember to set each device IP and ID differently or it will fail to connect or will cause network address conflicts.



1. RS232 connection port for central system control.



REAR PANEL CONTROL PORT CONNECTIONS

3. RS485 cascade control port: Parallel connect several devices by RS485. You can choose different IDs to cascade control separately.



5232/485 PORT

The 7PIN is: RS485 D+ , 8PIN is: RS485 D- of the RS232 port.

EXTENDED REMOTE CONTROL PROTOCOL

1, Control package

\square	0	1	2	3	4	5	6	7	8
	DLE	STX	Device Assress	CMD	Data1	Data2	Date3	STX	DLE
Packet	0x7B	0x7D	1~254	0x41~0x4A	0x??	0x??	0x??	0x7D	0x7B

2, Command Detail

(1) Gain Control(0x41)

\square	0	1	2	3	4	5	6	7	8
	DLE	STX	Device	CMD	In/Out	Channel	+/-	STX	DLE
			Assress						
Packet	0x7B	0x7D	1~254	0x41	In:0 Out:1	0~3	+:0,-:1	0x7D	0x7B

Example (increase input channel 1 gain): 7B7D0141000007D7B

(2) Mute Control(0x42)

\square	0	1	2	3	4	5	6	7	8
	DLE	STX	Device	CMD	In/Out	Channel	No/Yes	STX	DLE
			Assress						
Packet	0x7B	0x7D	1~254	0x42	In:0 Out:1	0~3	No:0 Yes:1	0x7D	0x7B

Example (input channel 1 mute): 7B7D01420000017D7B

(3) Load Preset Control(0x43)

\sum	0	1	2	3	4	5	6	7	8
	DLE	STX	Device Assress	CMD	Factory/User	Preset	0x30	STX	DLE
Packet	0x7B	0x7D	1~254	0x43	F:0 U:1	0~31	0	0x7D	0x7B

Example (recall user preset U00):7B7D01430100007D7B

EXTENDED REMOTE CONTROL PROTOCOL

(4) Input Volume Control(0x44)

\sum	0	1	2	3	4	5	6	7	8
	DLE	STX	Device Assress	CMD	Channel	HI-VOL	LO-VOL	STX	DLE
Packet	0x7B	0x7D	1~254	0x44	00~07	0x??	0x??	0x7D	0x7B

Example (InA volume +0.0dB): 7B7D01440001187D7B

(5) Output Volume Control(0x45)

\sum	0	1	2	3	4	5	6	7	8
	DLE	STX	Device Assress	CMD	Channel	HI-VOL	LO-VOL	STX	DLE
Packet	0x7B	0x7D	1~254	0x45	00~07	0x??	0x??	0x7D	0x7B

Example (Out 2 volume - 3.0dB): 7B7D01450100FA7D7B

(6) Get Now Gain(0x48)

\square	0	1	2	3	4	5	6	7	8
	DLE	STX	Device Assress	CMD	In/Out	Channel	0x30	STX	DLE
Packet	0x7B	0x7D	1~254	0x48	In:0 Out:1	0~3	0	0x7D	0x7B

Example (read input channel 1 gain parameter): 7B7D0148000007D7B MCU Return: 0x00 ~ 0x90=-60dB ~ +12dB, 0.5dB/Step

(7) Get Now Mute(0x49)

\square	0	1	2	3	4	5	6	7	8
	DLE	STX	Device Assress	CMD	In/Out	Channel	0x30	STX	DLE
Desket	07D	07D	4 054	0	In a Queta 4	0.0	0	07D	0.470
Раскет	UX/B		1~254	0X49		0~3	0	UX7D	UX/B

Example (read input channel 1 mute parameter): 7B7D0149000007D7B MCU Return: 0x00 or 0x01=Un-Mute or Mute

EXTENDED REMOTE CONTROL PROTOCOL

(8) Get Now Preset(0x4A)

\sum	0	1	2	3	4	5	6	7	8
	DLE	STX	Device	CMD	0x30	0x30	0x30	STX	DLE
			Assress						
Packet	0x7B	0x7D	1~254	0x4A	0	0	0	0x7D	0x7B

Example (read preset parameter): 7B7D014A0000007D7B MCU Return: 0x00~ 0x32=0: F00, 1 ~ 32:U00~ U31

Communication parameter	Bits per second	115200	Stop bits	1	
	Data bits	8	Step	>=20ms	
	Parity	None	ID	1	



.....

.....

IMPORTANT WARNINGS & SAFETY INSTRUCTIONS

- 1. Read these instructions
- 2. Follow all instructions
- 3. Keep these instructions
- 4. Heed all warnings
- 5. Do not use this apparatus near water
- 6. Clean only with dry cloth.
- 7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- 8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- 9. Do not defeat the safety purpose of a polarised or grounding plug. A polarised plug has two blades with one wider than the other. A grounding plug has two blades and a third grounding blade. The wide blade or the third blade is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- 10.Protect the power cord from being walked on or pinched, particularly at the plug, receptacle and or the point where it exits from the apparatus.
- 11. Only use attachments/accessories specified by the manufacturer.
- 12.Only use a stand, tripod, bracket or rack specified by the manufacturer, or sold with the apparatus. When a rack is used, use caution when moving the rack and apparatus combination to avoid tip-over or injury.



- 13. Unplug the apparatus during lightning storms or when unused for long periods of time.
- 14. Refer all servicing to qualified personnel. Servicing is required when the apparatus has been damaged in any way including but not limited to power supply cord or plug damage, liquid ingress, foreign objects in the chassis, exposure to rain/moisture or impact damage. In addition the unit must be serviced when you experience any abnormal operation.
- 15. CAUTION: These servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock, do not attempt to perform any servicing other than that contained in the operating instructions unless you are qualified to do so. In addition opening the casing will result in your warranty becoming null and void.
- 16.Do not install this apparatus in a confined space such as a book case or similar unit. Good ventilation should be maintained around the apparatus. Any vents, air-inlets or fans should not be obstructed by objects such as paper, table-cloths, curtains etc.
- 17. WARNING: To reduce the risk of fire or electric shock, do not expose the apparatus to rain or moisture. The apparatus should not be exposed to dripping or splashing and objects filled with liquids, such as vases, should not be placed on the apparatus.
- 18.WARNING: The mains plug/appliance coupler is used as a disconnect device, the disconnect device shall remain readily operable.



19. The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of non-insulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock.

- Warning: To reduce the risk of electric shock, do not remove the cover (or back) as there are no user-serviceable parts inside. Refer servicing to qualified personnel.

- The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance instructions in the literature accompanying the appliance.

20. (=)(Protective earthing terminal) The apparatus should be connected to a mains socket outlet with a protective earthing connection.



21. Correct Disposal of this product. This marking indicates that this product should not be disposed with other household wastes throughout the EU. To prevent possible harm to the environment or human health from uncontrolled waste disposal, recycle it responsibly to promote the sustainable reuse of material resources. To return your used device, please use local return and collection systems or contact the retailer where the product was purchased. They can take this product for safe environmentally friendly recycling.

WHARFEDALE PRO LIMITED WARRANTY

Wharfedale Pro products are warranted of manufacturing or material defects for a period of one year from the original date of purchase. In the event of malfunction, contact your authorised Wharfedale Pro dealer or distributor for information.

*Be aware that warranty details may differ from country to country. Contact your dealer or distributor for information. These terms do not infringe your statutory rights.



WHARFEDALE PROFESSIONAL

IAG House, 13/14 Glebe Road, Huntingdon, Cambridgeshire, PE27 7DL, UK www.wharfedalepro.com

Wharfedale Professional reserves the right to alter or improve specifications without notice. All rights reserved © 2021 Wharfedale Pro. Wharfedale Pro is a member of the IAG Group.