



DSP Series API Document

DSP-AEC-0606

DSP-AEC-1010-DA

DSP-AEC-1410

DSP-AEC-3026-DA

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TiGHT AV DSP Series API

Introduction

The TiGHT AV DSP series, offers external control through various communication methods, making it versatile for integration with control systems. This API documentation introduction will guide you on how to structure the information based on available details and tools.

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Communication Protocols

For historical reasons the DSP can be using different protocols: V1, V2 or TiGHT AV API, depending on which firmware version is utilized each with distinct characteristics for external control.

TiGHT AV API

- The latest protocol, using ASCII commands for enhanced functionality, recommended for new systems. An example command is `ivol.10:-0.7` to set the input volume of channel 10 to -0.7 dB.
- Users can discover specific commands using the "Command Copy" tool in the TiGHT AV DSP software.
- The models firmware's mentioned below and later utilizes the TiGHT AV API.
 - DSP-AEC-0606 & DSP-AEC-1010-DA: From V10h.0.1.1
 - DSP-AEC-1410: From V2r.1.1.1
 - DSP-AEC-3026-DA: From V2r.2.5.2

Legacy V1 and V2 Protocols

- **V1 Protocol:** A legacy HEX-based protocol for basic functions like parameter control and preset calling. Commands are in hexadecimal format, such as `B3 21 AB 00 03 00 0A 00 03 00 E8 FC` for setting input gain.
- Users can discover specific V1 commands using the "Command Copy" tool in the TiGHT AV DSP software.
- **V2 Protocol:** Similar to V1, also HEX-based, with slight improvements, used for the Communication Methods

The DSP supports control via:

- UDP: Send commands to port 50000 on the DSP's IP address.
- TCP: Establish a connection to port 50000 and send commands over this connection.
- Serial: Use RS232 or RS485, with default settings like baud rate (9600 or 115200), 8 data bits, 1 stop bit, and no parity. Requires a minimum delay of 100 ms between commands to ensure reliable processing.

TiGHT AV API

1. Command and Response Formats

- All commands must end with a carriage return (CR, ASCII 13).
- Responses from the DSP end with CR followed by a line feed (LF, ASCII 10).

2. Commands

Object	Command	Function	Command & Feedback Example
Device	getmodel	Query the model's name	getmodel
			model, DSP-AEC-1010-DA!
	getfirmware	Query the firmware version	getfirmware
			firmware,1.0.0!
	getstatus	Query system status.	getstatus
			model,DSP-AEC-1010-DA!
			setdevicename,Rack2!
			firmware,1.0.0!
			setnetwork:192.168.0.178,255.255.255.0,192.168.0.1!
			ipmode,dhcp!
			mac,00-B0-D0-63-C2-24!
			fplock,on!
			setdanteprimary:192.168.0.177,255.255.0,192.168.0.1!
			setdantesecondary:192.168.10.177,255.255.255.0,192.168.10.1!
			setbaudrate,3!
			output,1:3!
			output,2:6!
			output,3:6!
			output,4:13!
			output,5:14!
			output,6:2!
			.
			.
			.
			output,26:16!
	reset	Reset to factory default (keep IP settings)	reset ok
	resetfull	Reset to factory default	resetfull ok
	fplock,z	Enable or disable the front panel lock z = on/off	fplock,on
			fplock,on ok
	getfplock	Query status for front Panel Lock.	fplock,on!
	serialmode,z	Set serial port mode, RS232 or RS485 z = Mode, 1 = RS232 (default), 2 = RS485	serialmode,2
			serialmode,2 ok
	getserialmode	Query the serial port mode setting	getserialmode
			serialmode,2!
	setbaudrate,z	Set the serial port RS232/RS485 Baud Rate z = Baud Rate 1 ~10 2400 = 1 4800 = 2	setbaudrate,7
			setbaudrate,7 ok

	9600 = 3 (default) 11400 = 4 19200 = 5 38400 = 6 56000 = 7 57600 = 8 115200 = 9 128000 = 10 256000 = 11	
getbaudrate	Query the serial port Baud Rate setting	getbaudrate
		setbaudrate,3!
setdevicename,zzzz	Set the DSP friendly name.	setdevicename,Rack2
		setdevicename,Rack2 ok
getdevicename	Query the DSP friendly name.	getdevicename
		setdevicename,Rack2!
setip,xxx.xxx.xxx.xxx	Set IP address of the device. Note, Changes ip mode to static.	setip,192.168.0.178
		setip,192.168.0.178 ok
getip	Query IP Address of the device.	getip
		setip,192.168.0.178!
setipstatic	Set IP mode to Static.	setipstatic
		setipstatic ok
setipdhcp	Set IP mode to DHCP.	setipdhcp
		setipdhcp ok
getipmode	Query IP mode of the device.	getipmode
		ipmode,dhcp!
setnetwork,x,y,z	Set network parameters of the unit, x =IP-address, y = Subnet Mask, z = Default Gateway	setnetwork:192.168.0.178,255.255.0,192.168.0.1
		setnetwork:192.168.0.178,255.255.0,192.168.0.1 ok
getnetwork	Query network subnet mask of the device.	getnetwork
		setnetwork:192.168.0.178,255.255.0,192.168.0.1!
getmac	Query device mac address	getmac
		mac,00-B0-D0-63-C2-24!
setdantemode,z	Set Dante primary and secondary LAN ports mode z = 0~1 Switched = 0 (default) Redundant = 1	setdantemode,1
		setdantemode,1 ok
getdantemode	Query device Dante primary and secondary LAN ports mode	getdantemode
		setdantemode,0!
setdanteprimary,x,y,z	Set Dante primary IP -Address x = Ip Address y = Subnet Mask	setdanteprimary:192.168.0.177,255.255.0,192.168.0.1
		setdanteprimary:192.168.0.177,255.255.0,192.168.0.1 ok

	z = Default Gateway	
getdanteprimary	Query Dante primary IP -Address	getdanteprimary setdanteprimary:192.168.0.177,255.255.255.0,192.168.0.1!
setdantesecondary	Set Dante secondary IP -Address x = Ip Address y = Subnet Mask z = Default Gateway	setdantesecondary:192.168.10.177,255.255.255.0,192.168.10.1 setdantesecondary:192.168.10.177,255.255.255.0,192.168.10.1 ok
getdantesecondary	Query Dante secondary IP -Address	getdantesecondary setdantesecondary:192.168.10.177,255.255.255.0,192.168.10.1!
redundancy,z	Enable or disable Redundancy mode z = on/off	redundancy,off redundancy,off ok
getredundancy	Query the Redundancy Mode status	getredundancy redundancy,off!
setredundancyip,xxx.xxx.x xx.xxx	Set IP address of the back up device.	setredundancyip,192.168.0.22 setredundancyip,192.168.0.22 ok
getredundancyip	Query the configured IP address of the back up device	getredundancyip setredundancyip,192.168.0.22!
savepreset,z	Saves current settings to preset number (z) z = Preset number 1 ~ 16	savepreset,5 savepreset,5 ok
loadpreset,z	Loads Preset number (z) z = Preset number 1 ~ 16	loadpreset,5 loadpreset,5 ok
getpreset	Query the current loaded preset z = Preset number 1 ~ 16	getpreset loadpreset,1!
defaultpreset,z	Sets the default preset to be used after power on. z = Preset number 1 ~ 17 (Previous Loaded Preset =17)	defaultpreset,5 defaultpreset,5 ok
getdefaultpreset	Query the Default Preset	getdefaultpreset defaultpreset,17 ok
feedback,z	Enable DSP command Feedback z = on/off	feedback,on feedback,on ok
getfeedback	Query the Command Feedback status	getfeedback feedback,off!
sendascii,x:zzz	Send the ascii command (zzz) on the local RS232 port using the specified baud rate (x) x = Baud Rate 1 ~10 2400 = 1 4800 = 2 9600 = 3 11400 = 4 19200 = 5 38400 = 6 56000 = 7	sendascii,3:powon CR sendascii,3:powon CR ok

		115200 = 8 128000 = 9 256000 = 10	
	sendhex,x:zzzz	Send the HEX command (zzz) on the local RS232 port using the specified baud rate (x) x = Baud Rate 1 ~10 2400 = 1 4800 = 2 9600 = 3 11400 = 4 19200 = 5 38400 = 6 56000 = 7 115200 = 8 128000 = 9 256000 = 10	sendhex3:706f7765726f6e0d sendhex3:706f7765726f6e0d ok
INPUT			
	livol,x:z	Set the gain for input x. x = Input or multiple inputs, 3;4;8 means input 3,4 and 8. x = 0 (all inputs) z = (-)72.00dB ~ +12.00dB in 0,01 dB Steps	livol,5-8:10.50 livol,5-8:10.50 ok
	livolinc,x:z	Increases the gain for input x by z dB steps x = Input or multiple inputs, 3;4;8 means input 3,4 and 8. x = 0 (all inputs) z= Gain increase 1dB ~ 10dB steps	livolinc,3-4:5 livolinc,3-4:5 ok
	livoldec,x:z	Decreases the gain for input x by z dB steps x = Input or multiple inputs, 3;4;8 means input 3,4 and 8. x = 0 (all inputs) z= Gain decrease 1dB ~ 10dB steps	livoldec,1-2:3 livoldec,1-2:3 ok
	getlivol,x	Query the gain of input. x=Input or multiple inputs, 1-4 means input 1 to input 4. x = 0 (all inputs)	getlivol,4-6 livol,4,-10.23! livol,5,-8.00! livol,6,2.01!
	inputmute,x:z	Mute or unmute input channel (x) x = Input or multiple inputs, 3;4;8 means input 3,4 and 8. x = 0 (all inputs) z = on/off	inputmute,1:on inputmute,1:on ok
	getinputmute,x	Query status of mute on output port y. x = Input or multiple inputs, 3;4;8 means input 3,4 and 8. x = 0 (all inputs)	getinputmute,1;2 inputmute,1:on! Inputunmute,2:off!
	setinputsens:x,z	Set the input sensitivity of input x. x = Input or multiple inputs, 3;4;8 means input 3,4 and 8. x = 0 (all inputs) z = 0,6,12,18,24,30,36,42,48 dB	setinputsens,2:12 setinputsens,2:12 ok
	getinputsens,x	Query input sensitivity settings of input x. x = Input or multiple inputs, 3;4;8 means input 3,4 and 8. x = 0 (all inputs)	getinputsens,1-2 setinputsens,1:0! setinputsens,2:30!
	phantom,x:z	Enable or disable phantom power for input channel (x)	phantom,1:on

	x = Input or multiple inputs, 3;4;8 means input 3,4 and 8. x = 0 (all inputs) z = on/off	phantomon,1 ok
getphantom,x	Query status of phantom power on specified input x x = Input or multiple inputs, 3;4;8 means input 3,4 and 8. x = 0 (all inputs)	getphantom,1;2;3 phantom,1:on! phantom,2:off! phantom,3:off!
inputgen,x;z	Enable the signal generator for input x at frequency z. x = Input or multiple inputs, 3;4;8 means input 3,4 and 8. x = 0 (all inputs) z = on/off	inputgen,1:on inputgen,1:on ok
getinputgen,x	Query status of signal generator on specified input x x = Input or multiple inputs, 3;4;8 means input 3,4 and 8. x = 0 (all inputs)	getinputgen,7;8;9 inputgen,7:on! inputgen,8:off! inputgen,9:on!
inputgenmode,x;z	Set input mode for signal generator x = Input or multiple inputs, 3;4;8 means input 3,4 and 8. x = 0 (all inputs) z = Mode, 1= Sine Wave, 2 = White Noise, 3 = Pink Noise	inputgenmode,1:2 inputgenmode,1:2 ok
getinputgenmode,x	Query signal generator mode for input channel (x)	getinputgenmode,1 inputgenmode,1:2!
inputgenfreq,x;z	Set input frequency for signal generator x = Input or multiple inputs, 3;4;8 means input 3,4 and 8. x = 0 (all inputs) z = frequency 20Hz ~ 20 000Hz in 1Hz steps (if not defined latest value will be used)	inputgenfreq,1:1000 inputgenfreq,1:100 ok
getinputgenfreq,x	Query signal generator frequency for input channel (x)	getinputgenfreq,1 inputgenfreq,1:1000!
inputgenlevel,x;z	Set input signal level for signal generator x = Input or multiple inputs, 3;4;8 means input 3,4 and 8. x = 0 (all inputs) z = Level(dBFS) -72dB ~ 0dB in 0,01 dB steps (if not defined latest value will be used)	inputgenlevel,1:-36.00 inputgenlevel,1:-36.00 ok
getinputgenlevel,x	Query signal generator signal level for input channel (x)	getinputgenlevel,1 inputgenlevel,1:-48.00!
setinputchname,x;z	Set input channel (x) friendly name. x = Input channel number z = Friendly name	setinputchname,12:Stage1 setinputchname,12:Stage1 ok
getinputchname,x	Query the input channel (x) friendly name x = Input channel number	getinputchname,12 setinputchname,12:Stage1!
inputphase,x;z	Enable or disable Phase: Inverts the phase 180 degrees for input channel (x) x = Input or multiple inputs, 3;4;8 means input 3,4 and 8. x = 0 (all inputs) z = on/off	inputphase,2:on inputphase,2:on ok
getinputphase,x	Query input phase status for input channel (x) x = Input or multiple inputs, 3;4;8 means input 3,4 and 8. x = 0 (all inputs)	getinputphase,8 inputphase,8:off!
inputlink,x;z	Turns on the link between two adjacent input channels	inputlink,3:on

		x = lowest uneven number in the link pair Link CH1 and CH2 = 1 Link CH3 and CH4 = 3 Link CH5 and CH6 = 5 Link CH7 and CH8 = 7 Link CH9 and CH10 = 9 Link CH11 and CH12 = 11 Link CH13 and CH14 = 13 z = on/off	inputlink,3:on ok
	getinputlink	Query input link status for all link pairs	getinputlink inputlink,1:on! inputlink,3:on! inputlink,5:on! inputlink,7:on! inputlink,9:on! inputlink,11:on! inputlink,13:on!
	getinputmeter,x	Query the DBFS meter level for input x, -72dB ~ 0dB y = output or multiple outputs, 3;4;8 means output 3,4 and 8. y = 0 (all outputs)	getinputmeter,6 inputmeter,6:-8.56!
	OUTPUT		
	lovol,y:z	Set the gain for output x. y = output or multiple outputs, 3;4;8 means output 3,4 and 8. y = 0 (all outputs) z = (-)72.00dB ~ +12.00dB in 0,01 dB Steps	lovol,5-8:10.50 lovol,5-8:10.50 ok
	lovolinc,y:z	Increases the gain for output x by z dB steps y = output or multiple outputs, 3;4;8 means output 3,4 and 8. y = 0 (all outputs) z = Gain increase 1dB ~ 10dB steps	lovolinc,3-4:5 lovolinc,3-4:5 ok
	lovoldec,y:z	Decreases the gain for output x by z dB steps y = output or multiple outputs, 3;4;8 means output 3,4 and 8. y = 0 (all outputs) z = Gain decrease 1dB ~ 10dB steps	lovoldec,1-2:3 lovoldec,1-2:3 ok
	getlovol,y	Query the gain of output. y = output or multiple outputs, 3;4;8 means output 3,4 and 8. y = 0 (all outputs)	getlovol,4-6 lovol,4:-10.23! lovol,5:-8.00! lovol,6:2.01!
	getlovol,y	Mute the output port y. y=output or multiple outputs, 3;4;8 means output 3,4 and 8. y = 0 (all outputs)	outputmute,1 outputmute,1 ok
	setoutputchname,y:z	Set output channel (y) friendly name. y = Output channel number z = Friendly name	setoutputchname,2:Front L setoutputchname,2:Front L ok
	getoutputchname,y	Query the output channel (y) friendly name y = Output channel number	getoutputchname,2 setoutputchname,2:Front L!
	outputphase,y:z	Inverts the phase 180 degrees for output x y = output or multiple outputs, 3;4;8 means output 3,4 and 8. y = 0 (all outputs)	outputphase,2;5:on outputphase,2;5:on ok

		z = on/off		
	getoutputphase,y	Query phase status for specified output y y = output or multiple outputs, 3;4;8 means output 3,4 and 8. y = 0 (all outputs)	getoutputphase,8;9	
			outputphase,8:on!	
			outputphase,9:off!	
	outputlink,y;z	Turns on the link between two adjacent output channels y = lowest uneven number in the link pair Link CH1 and CH2 = 1 Link CH3 and CH4 = 3 Link CH5 and CH6 = 5 Link CH7 and CH8 = 7 Link CH9 and CH10 = 9 Link CH11 and CH12 = 11 Link CH13 and CH14 = 13 z = on/off	outputlink,3:on	
			outputlink,3:on ok	
	getoutputlink	Query output link status for all link pairs	getoutputlink	
outputlink,1:on!				
outputlink,3:on!				
outputlink,5:on!				
outputlink,7:on!				
getoutputmeter,y	Query the DBFS meter level for output x, -72dB ~ 0dB y = output or multiple outputs, 3;4;8 means output 3,4 and 8. y = 0 (all outputs)	outputlink,9:on!		
		getoutputmeter,6		
		outputmeter,6:-8.56!		
Input Delay object	inputdelay,x;z	Enables the delay for input (x) with delay time z ms. x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) z = delay in ms, 0ms ~ 1200ms in steps of 1ms (if not defined latest value will be used)	inputdelay,3:150	
inputdelay,3:150 ok				
getinputdelay,x			Query the delay status for channel (x) x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels)	getinputdelay,1;2;3
				inputdelay,1:50!
				inputdelayoff:2!
	inputdelayoff:3!			
Output Delay object	outputdelay,y;z	Enables the delay for output (y) with delay time z ms. y = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) z = delay in ms, 0ms ~ 1200ms in steps of 1ms (if not defined latest value will be used)	outputdelay,3:150	
outputdelay,3:150 ok				
getoutputdelay,y			Query the delay status for channel (y) y = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. y = 0 (all channels)	getoutputdelay,1;2;3
				outputdelay,1:50!
				outputdelayoff:2!
	outputdelayoff:3!			
INPUT PEQ 5,8,12 object	inputpeq,x;z	Enable or disable PEQ object for channel (x) x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) z = on/off	inputpeq,4:on	
inputpeq,4 ok				

getinputpeq,x	Query the PEQ status for channel (x) x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels)	getinputpeq,3
		inputpeq,3:on!
inputpeqband,x,y:z	Enable or disable specific PEQ bands for channel (x) x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) y = Band number 1 ~ 12, band 1;4;12 means band 1, 4 and 12., y = 0 (all bands) z = on/off	inputpeqband,3,5:on
		inputpeqband,3,5:o ok
getinputpeqband,x	Query PEQ band status for channel (x)	getinputpeqband,3
		inputpeqband,3,1:on!
		inputpeqband,3,2:on!
		inputpeqband,3,3:off!
		inputpeqband,3,4:off!
		inputpeqband,3,5:off!
		inputpeqband,3,6:off!
		inputpeqband,3,7:on!
		inputpeqband,3,8:on!
inputpeqbtype,x,y:z	Set PEQ band type for channel (x) x = Channel number or multiple channels, 3;4;8 means output 3,4 and 8. x = 0 (all channels) y = Band number 1 ~ 12, band 1;4;12 means band 1, 4 and 12., y = 0 (all bands) z = Type number 1 = Low pass 2 = High pass 3 = Parametric 4 = Lowshelf 5 = Highshelf	inputpeqbtype,1,2:3
		inputpeqbtype,1,2:3 ok
getinputpeqbtype,x,y	Query PEQ band type for channel (x) x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) y = Band number 1 ~ 12, band 1;4;12 means band 1, 4 and 12., y = 0 (all bands)	getinputpeqbtype,5:8
		inputpeqbtype,5,8:3!
inputpeqbfreq,x,y:z	Set PEQ band frequency for channel (x) x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) y = Band number 1 ~ 12, band 1;4;12 means band 1, 4 and 12., y = 0 (all bands) z = frequency 20Hz ~ 20 000Hz in 1Hz steps	inputpeqbfreq,2,5:4500
		inputpeqbfreq,2,5:4500 ok
getinputpeqbfreq,x,y	Query PEQ band frequency for channel (x) x = Channel number or multiple channels, 3;4;8 means output 3,4 and 8. x = 0 (all channels) y = Band number 1 ~ 12, band 1;4;12 means band 1, 4 and 12., y = 0 (all bands)	getinputpeqbfreq,2,1;2
		inputpeqbfreq,2,1:80!
		inputpeqbfreq,2,2:600!
inputpeqbgain,x,y:z	Set PEQ band gain for channel (x) y = Band number 1 ~ 12, band 1;4;12 means band 1, 4 and 12., y = 0 (all bands) z = Gain -24dB to 18dB in 0.01dB steps	inputpeqbgain,1,5:3.80
		inputpeqbgain,1,5:3.80 ok
getinputpeqbgain,x,y	Query PEQ band gain for channel (x) x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) y = Band number 1 ~ 12, band 1;4;12 means band 1, 4 and 12., y = 0 (all bands)	getinputpeqbgain,1,5
		inputpeqbgain,1,5:3.80!

OUTPUT PEQ 5,8,12 object	inputpeqbqv,x,y:z	Set PEQ band Q value for channel (x) y = Band number 1 ~ 12, band 1;4;12 means band 1, 4 and 12., y = 0 (all bands) z = Q value 0.2 ~ 50 in 0.01 steps	inputpeqbqv,2,5:3.69 inputpeqbqv,2,5:3.69 ok
	getinputpeqbqv,x,y	Query PEQ band Q value for channel (x) x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) y = Band number 1 ~ 12, band 1;4;12 means band 1, 4 and 12., y = 0 (all bands)	getinputpeqbqv,2,5;6 inputpeqbqv,2,5:3.69! inputpeqbqv,2,6:22.52!
	outputpeq,y:z	Enable or disable PEQ object for channel (y) y = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. y = 0 (all channels) z = on/off	outputpeq,4:on outputpeq,4 ok
	getoutputpeq,y	Query the PEQ status for channel (y) y = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. y = 0 (all channels)	getoutputpeq,3 outputpeq,3:on!
	outputpeqband,x,y:z	Enable or disable specific PEQ bands for channel (x) x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) y = Band number 1 ~ 12, band 1;4;12 means band 1, 4 and 12., y = 0 (all bands) z = on/off	outputpeqband,3,5:on outputpeqband,3,5:o ok
	getoutputpeqband,x,y	Query PEQ band (y) status for channel (x) x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) y = Band number 1 ~ 12, band 1;4;12 means band 1, 4 and 12., y = 0 (all bands)	getoutputpeqband,3,0 outputpeqband,3,1:on! outputpeqband,3,2:on! outputpeqband,3,3:off! outputpeqband,3,4:off! outputpeqband,3,5:off! outputpeqband,3,6:off! outputpeqband,3,7:on! outputpeqband,3,8:on!
	outputpeqbtype,x,y:z	Set PEQ band type for channel (x) x = Channel number or multiple channels, 3;4;8 means output 3,4 and 8. x = 0 (all channels) y = Band number 1 ~ 12, band 1;4;12 means band 1, 4 and 12., y = 0 (all bands) z = Type number 1 = Low pass 2 = High pass 3 = Parametric 4 = Lowshelf 5 = Highshelf	outputpeqbandtype,1,2:3 outputpeqbandtype,1,2:3 ok
	getoutputpeqbtype,x,y	Query PEQ band type for channel (x) x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) y = Band number 1 ~ 12, band 1;4;12 means band 1, 4 and 12., y = 0 (all bands)	getoutputpeqbtype,5:8 outputpeqbtype,5,8:3!
	outputpeqbfreq,x,y:z	Set PEQ band frequency for channel (x) x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) y = Band number 1 ~ 12, band 1;4;12 means band 1, 4 and 12., y = 0 (all bands)	outputpeqbfreq,2,5:4500 outputpeqbfreq,2,5:4500 ok

		z = frequency 20Hz ~ 20 000Hz in 1Hz steps	
	getoutputpeqbfreq,x,y	Query PEQ band frequency for channel (x) x = Channel number or multiple channels, 3;4;8 means output 3,4 and 8. x = 0 (all channels) y = Band number 1 ~ 12, band 1;4;12 means band 1, 4 and 12., y = 0 (all bands)	getoutputpeqbfreq,2,1;2 outputpeqbfreq,2,1:80! outputpeqbfreq,2,2:600!
	outputpeqbgain,x,y;z	Set PEQ band gain for channel (x) y = Band number 1 ~ 12, band 1;4;12 means band 1, 4 and 12., y = 0 (all bands) z = Gain -24dB to 18dB in 0.01dB steps	outputpeqbgain,1,5:3.80 outputpeqbgain,1,5:3.80 ok
	getoutputpeqbgain,x,y	Query PEQ band gain for channel (x) x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) y = Band number 1 ~ 12, band 1;4;12 means band 1, 4 and 12., y = 0 (all bands)	getoutputpeqbgain,1,5 outputpeqbgain,1,5:3.80!
	outputpeqbqv,x,y;z	Set PEQ band Q value for channel (x) y = Band number 1 ~ 12, band 1;4;12 means band 1, 4 and 12., y = 0 (all bands) z = Q value 0.2 ~ 50 in 0.01 steps	outputpeqbqv,2,5:3.69 outputpeqbqv,2,5:3.69 ok
	getoutputpeqbqv,x,y	Query PEQ band Q value for channel (x) x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) y = Band number 1 ~ 12, band 1;4;12 means band 1, 4 and 12., y = 0 (all bands)	getoutputpeqbqv,2,5;6 outputpeqbqv,2,5:3.69! outputpeqbqv,2,6:22.52!
INPUT GEQ 10,15,31 object			
	inputgeq,x;z	Enable GEQ object for channel (x) x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) z = on/off	inputgeq,4:off inputgeq,4:off ok
	getinputgeq,x	Query the GEQ status for channel (x) x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels)	getinputgeq,3 inputgeq,3:on!
	inputgeqbqv,x;z	Set GEQ band Q value for channel (x) x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) z = Q value, 1 = Narrow, 2 = Normal, 3 = Wide	inputgeqbqv,2:2 inputgeqbqv,2:2 ok
	getinputgeqbqv,x	Query GEQ band Q value for channel (x) x = Channel number or multiple channels, 3;4;8 means output 3,4 and 8. x = 0 (all channels)	getinputgeqbqv,2 inputgeqbqv,2:2!
	inputgeqbgain,x,y;z	Set GEQ band gain for channel (x) x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) z = Band number 1 ~ 31, band 1-4 means band 1 to 4, z = 0 (all bands) y = Gain -24dB to 18dB in 0.01dB steps	inputgeqbgain,1,5:6.50 inputgeqbgain,1,5:6.50 ok
	getinputgeqbgain,x,y	Query GEQ band gain for channel (x) x = 1-30 y = 1 ~ 31 Band number, z = 1;2;5 means band 1,2 and 5. z = 0 (all bands)	getinputgeqbgain,1,5 inputgeqbgain,1,5:3.80!
	resetinputgeq,x	Resets GEQ object to default for channel (x)	resetinputgeq,5 resetinputgeq,5 ok
OUTPUT GEQ 10,15,31 object			
	outputgeq,y;z	Enable GEQ object for channel (y) y = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. y = 0 (all channels) z = on/off	outputgeq,4:off outputgeq,4:off ok

	getoutputgeq,y	Query the GEQ status for channel (y) y = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. y = 0 (all channels)	getoutputgeq,3 outputgeq,3:on!
	outputgeqbqv,x:z	Set GEQ band Q value for channel (x) x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) z = Q value, 1 = Narrow, 2 = Normal, 3 = Wide	outputgeqbqv,2:2 outputgeqbqv,2:2 ok
	getoutputgeqbqv,x	Query GEQ band Q value for channel (x) x = Channel number or multiple channels, 3;4;8 means output 3,4 and 8. x = 0 (all channels)	getoutputgeqbqv,2 outputgeqbqv,2:2!
	outputgeqbgain,x,y:z	Set GEQ band gain for channel (x) x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) z = Band number 1 ~ 31, band 1-4 means band 1 to 4, z = 0 (all bands) y = Gain -24dB to 18dB in 0.01dB steps	outputgeqbgain,1,5:6.50 outputgeqbgain,1,5:6.50 ok
	getoutputgeqbgain,x,y	Query GEQ band gain for channel (x) x = 1-30 z = 1 ~ 31 Band number, z = 1;2;5 means band 1,2 and 5. z = 0 (all bands)	getoutputgeqbgain,1,5 outputgeqbgain,1,5:3.8!
	resetoutputgeq,y	Resets GEQ object to default for channel (y)	resetoutputgeq,5 resetoutputgeq,5 ok
	inputafs,x:z	Enable or disable Automatic Feedback Suppression z = on/off	inputafs1:,on inputafs,1:on ok
	getinputafs,x	Query Automatic Feedback Suppression status x = Input channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels)	getinputafs,1 inputafs,1:on!
	inputafsfreq,x,y:z	AFS Feedback Point Frequency (Hz) x = Input channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) y = 1~16 Frequency point option z = 20Hz to 20 000Hz in steps of 1Hz => Values 20 ~ 20 000	inputafsfreq,2,11:200 inputafsfreq,2,11:200 ok
	getinputafsfreq,x,y	Query AFS Feedback Point Frequency (Hz) x = Input channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) y = 1~16 Frequency point option	getinputafsfreq,2,11 inputafsfreq,2,11:200!
Automatic Feedback Suppression (AFS)	inputafsfpgain,x,y:z	AFS Feedback Point Gain (dB) x = Input channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) y = 1~16 Frequency point option z = (-)24dB to 0dB in steps of 0.01dB => Values: -24.0 ~ 0.0	inputafsfpgain,2,11:-12.50 inputafsfpgain,2,12:-12.50 ok
	getinputafsfpgain,x,y	Query AFS Feedback Point Gain (dB) x = Input channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) y = 1~16 Frequency point option	getinputafsfpgain,2,11 inputafsfpgain, 2,11:-12.5!
	inputafsoctave,x:z	AFS Octave Value x = Input channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) z = 1/5 Octave or 1/10 Octave Values: 20 or 10	inputafsoctave,4:20 inputafsoctave,4:20 ok
	getinputafsoctave,x	Query AFS Octave Value x = Input channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels)	getinputafsoctave,4 inputafsoctave,4:20!

inputafstype,x,y:z	AFS Type x = Input channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) y = 1~16 Frequency point option z = Mode, 0 = Dynamic, 1 = Fixed, 2 = Manual	inputafstype,2,4:0
		inputafstype, 2,4:0 ok
getinputafstype,x,y	Query AFS Type x = Input channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) y = 1~16 Frequency band	getinputafstype,2,4
		inputafstype, 2,4:0!
inputafspanic,x:z	AFS Panic Threshold (dB) x = Input channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) z = (-)36dB to 0dB in steps of 0.01dB => Values: -36.00~0.00	inputafspanic,1:-10.00
		inputafspanic,1:-10.00 ok
getinputafspanic,x	Query AFS Panic Threshold (dB) x = Input channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) (-)36dB to 0dB in steps of 0.01dB => Values: -36.00 ~ 0.00	getinputafspanic,1
		inputafspanic,1:-10.00!
inputafsfeedback,x:z	AFS Feedback Threshold (dB) x = Input channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) z = (-)96dB to -24dB in steps of 0.01dB => Values: -96.00 ~ -24.00	inputafsfeedback,2:-20.00
		inputafsfeedback,2:-20.00 ok
getinputafsfeedback,x	Query AFS Feedback Threshold (dB) x = Input channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) (-)96dB to -24dB in steps of 0.01dB => Values: -96.00 ~ -24.00	getinputafsfeedback,1
		inputafsfeedback,-1:24.00!
inputafsfilter,x:z	AFS Filter depth x = Input channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) z = 1 to 24 in steps of 0.01dB => Values: 1.00 ~ 24.00	inputafsfilter,1:15.00
		inputafsfilter,1:15.00 ok
getinputafsfilter,x	Query AFS filter depth x = Input channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) 1 to 24 in steps of 0.01dB => Values: 1.0 ~ -24.00	getinputafsfilter,2
		inputafsfilter,2:7.80!
inputafsstep,x:z	AFS Feedback Threshold (dB) x = Input channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) z = 0.5 to 3 in steps of 0.01dB => Values: 0.50 ~ -3.00	inputafsstep,1:1.50
		inputafsstep,1:1.50 ok
getinputafsstep,x	Query AFS Feedback Threshold (dB) x = Input channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) 0.5 to 3 in steps of 0.01dB => Values: 0.50 ~ -3.00	getinputafsstep,2
		inputafsstep,2:1.50!
ANC object		
anc,x:z	Enable ANC object for input channel (x) x = Channel number or multiple channels, 3;4;8 means output 3,4 and 8. x = 0 (all channels) z = on/off	anc,4:on
		anc,4:on ok
getanc,x	Query status ANC object for input channel (x) x = Channel number or multiple channels, 3;4;8 means output 3,4 and 8. x = 0 (all channels)	getanc,5;8
		anc,5:on!
		anc,8:off!
ancmaxgain,x:z	Set ANC maximum gain limit for channel (x)	ancmaxgain,2:-4.8

	z = Gain max limit -20dB ~ 0dB in 0.01dB steps	ancmaxgain,2:-4.80 ok
getancmaxgain,x	Query ANC maximum gain limit for input channel (x) x = Channel number or multiple channels, 3;4;8 means output 3,4 and 8. x = 0 (all channels)	getancmaxgain,5-6
		ancmaxgain,5:-11.30!
		ancmaxgain,6:-1-6.20!
ancmingain,x:z	Set ANC maximum gain limit for channel (x) z = Gain max limit -20dB ~ 0dB in 0.01dB steps	ancmingain,2:-4.80
		ancmingain,2:-4.80 ok
getancmingain,x	Query ANC minimum gain limit for input channel (x) x = Channel number or multiple channels, 3;4;8 means output 3,4 and 8. x = 0 (all channels)	getancmingain,5-6
		ancmingain,5:-11.3!
		ancmingain,6:-1-6.2!
ancgs,x:z	Set ANC Gain-Sense Ratio for channel (x) z = Gain-Sense Ratio 0.50dB ~ 1.50dB in 0.01dB steps	ancgs,1:1.00
		ancgs,1:1.00 ok
getancgs,x	Query ANC minimum gain limit for input channel (x) x = Channel number or multiple channels, 3;4;8 means output 3,4 and 8. x = 0 (all channels)	getancgs,3
		ancgs,3:0.94!
ancspeed,x:z	Set ANC speed for channel (x) x = Channel number or multiple channels, 3;4;8 means output 3,4 and 8. x = 0 (all channels) z = Speed (ms), 500ms ~ 60 000ms in 1ms steps.	ancspeed,3:25000
		ancspeed,3:25000 ok
getancspeed,x	Query ANC speed for input channel (x) x = Channel number or multiple channels, 3;4;8 means output 3,4 and 8. x = 0 (all channels)	getancspeed,3
		ancspeed,x:25000!
anctrim,x:z	Set ANC trim for channel (x) x = Channel number or multiple channels, 3-4 means channel 3 to channel 4. x = 0 (all channels). z = Trim, -10dB ~ 10dB in 0.01dB steps.	anctrim,8:-2.30
		anctrim,8:-2.30 ok
getanctrim,x	Query ANC trim for input channel (x) x = Channel number or multiple channels, 3;4;8 means output 3,4 and 8. x = 0 (all channels)	getanctrim,4
		anctrim,4:-4.50!
ancthres,x:z	Set ANC Noise Threshold for channel (x) x=Channel number or multiple channels, 3-4 means channel 3 to channel 4. x = 0 (all channels). z = Noise Threshold, -60dB ~ -24dB in 0.01dB steps.	ancthres,2:-36.50
		ancthres,2:-36.50 ok
getancthres,x	Query ANC Noise Threshold for input channel (x) x = Channel number or multiple channels, 3;4;8 means output 3,4 and 8. x = 0 (all channels)	getancthres,1
		ancthres,1:-24.00!
ancdist,x:z	Set ANC Distance for channel (x) x = Channel number or multiple channels, 3;4;8 means output 3,4 and 8. x = 0 (all channels) z = Distance, 0.00m ~ 15.00m in 0.01m steps.	ancdist,4-6:3.85
		ancdist,4-6:3.85 ok
getancdist,x	Query ANC Distance for input channel (x) x = Channel number or multiple channels, 3;4;8 means output 3,4 and 8. x = 0 (all channels)	getancdist,1
		ancdist,1:-2.30!
ancref,x:y	Set ANC Reference Source input number for channel (x) x = Channel number or multiple channels, 3;4;8 means output 3,4 and 8. x = 0 (all channels) y = Channel number or multiple channels, 3;4;8 means output 3,4 and 8. x = 0 (all channels)	ancref,x:5
		ancref,x:5 ok
getancref,x	Query ANC Reference Source number for input channel (x) x = Channel number or multiple channels, 3;4;8 means output 3,4 and 8. x = 0 (all channels)	getancref,5;6
		ancref,5;8;20;24!
		ancref,6:12!

Expander object			
	exp,x:z	Enable Expander object for input channel (x) x = Channel number or multiple channels, 3;4;8 means channels 3,4 and 8. x = 0 (all channels) z = on/off	exp,4:off exp,4:off ok
	getexp,x	Query status Expander object for input channel (x) x = Channel number or multiple channels, 3;4;8 means channels 3,4 and 8. x = 0 (all channels)	getexp,5;9
			exp,5:on!
			exp,9:off!
	expthres,x:z	Set the Expander object Threshold for input channel (x) x = Channel number or multiple channels, 3;4;8 means channels 3,4 and 8. x = 0 (all channels) z = Threshold, -72dB ~ 0dB in 0.01dB steps.	expthres,2,-30.50
			expthres,2,-30.50 ok
	getexpthres,x	Query Expander Threshold setting for input channel (x) x = Channel number or multiple channels, 3;4;8 means channels 3,4 and 8. x = 0 (all channels)	getexpthres,5
			expthres,5:-28.00!
	expratio,x:z	Set Expander Ratio for input channel (x) x = Channel number or multiple channels, 3;4;8 means channels 3,4 and 8. x = 0 (all channels) z = Expander Ratio 1.00 ~ 20.0 in 0.01 steps	expratio,1:6.45
			expratio,1:6.45 ok
	getexpratio,x	Query the Expander object Ratio setting for channel (x) x = Channel number or multiple channels, 3;4;8 means channels 3,4 and 8. x = 0 (all channels)	gerexpratio,3
			expratio,3:7.55!
expatt,x:z	Set Expander object AttackTime for input channel (x) x = Channel number or multiple channels, 3-4 means channel 3 to channel 4. x = 0 (all channels). z = Expander Attack Time 1ms ~ 500ms in 1ms steps	expatt,1:200	
		expatt,1:200 ok	
getexpatt,x	Query the Expander object AttackTime setting for input channel (x) x = Channel number or multiple channels, 3;4;8 means channels 3,4 and 8. x = 0 (all channels)	getexpatt,3-4	
		expatt,3:200!	
		expatt,4:255!	
exprel,x:z	Set Expander object ReleaseTime for input channel (x) x = Channel number or multiple channels, 3;4;8 means channels 3,4 and 8. x = 0 (all channels) z = Expander Release Time 1ms ~ 10000ms in 1ms steps	exprel,1:2000	
		exprel,1:2000 ok	
getexprel,x	Query the Expander object ReleaseTime setting for input channel (x) x = Channel number or multiple channels, 3-4 means channel 3 to channel 4. x = 0 (all channels).	getexprel,3-4	
		exprel,3:2000!	
		exprel,4:8000!	
Compressor object			
	comp,x:z	Enable Compressor object for input channel (x) x = Channel number or multiple channels, 3;4;8 means channels 3,4 and 8. x = 0 (all channels) z = on/off	comp,5:on comp,5:on ok
	getcomp,x	Query status Compressor object for input channel (x) x = Channel number or multiple channels, 3;4;8 means channels 3,4 and 8. x = 0 (all channels)	getcomp,5;6
			comp,5:on!
			comp,6:off!
compthres,x:z	Set the Compressor object Threshold for input channel (x) x = Channel number or multiple channels, 3;4;8 means channels 3,4 and 8. x = 0 (all channels) z = Threshold, -48dB ~ 0dB in 0.01dB steps.	compthres,2:-30.50	
		compthres,2:-30.50 ok	
getcompthres,x	Query Compressor Threshold setting for input channel (x)	getcompthres,5	

		x = Channel number or multiple channels, 3;4;8 means channels 3,4 and 8. x = 0 (all channels)	comphres,5:-28.0!
	compratio,x:z	Set Compressor Ratio for input channel (x) x = Channel number or multiple channels, 3;4;8 means channels 3,4 and 8. x = 0 (all channels) z = Expander Ratio 1.00 ~ 20.0 in 0.01 steps	compratio,1:6.45 compratio,1:6.45 ok
	getcompratio,x	Query the Compressor object Ratio setting for input channel (x) x = Channel number or multiple channels, 3;4;8 means channels 3,4 and 8. x = 0 (all channels)	gercompratio,3 compratio,3:7.55!
	compatt,x:z	Set Compressor object AttackTime for channel (x) x = Channel number or multiple channels, 3;4;8 means channels 3,4 and 8. x = 0 (all channels) z = Expander Attack Time 1ms ~ 500ms in 1ms steps	compatt,1:200 compatt,1:200 ok
	getcompatt,x	Query the Compressor object AttackTime setting for input channel (x) x = Channel number or multiple channels, 3;4;8 means channels 3,4 and 8. x = 0 (all channels)	getcompatt,3-4 compatt,3:200! compatt,4:255!
	comprel,x:z	Set Compressor object ReleaseTime for channel (x) x = Channel number or multiple channels, 3;4;8 means channels 3,4 and 8. x = 0 (all channels) z = Compressor Release Time 1ms ~ 10000ms in 1ms steps	comprel,1:2000 comprel,1:2000 ok
	getcomprel,x	Query the Compressor object ReleaseTime setting for input channel (x) x = Channel number or multiple channels, 3;4;8 means channels 3,4 and 8. x = 0 (all channels)	getcomprel,3-4 comprel,3:2000! comprel,4:8000!
	compgain,x:z	Set Compressor object Gain compensation for input channel (x) x = Channel number or multiple channels, 3;4;8 means channels 3,4 and 8. x = 0 (all channels) z = Compressor Gain compensation -72dB to 6dB in steps of 0.01dB	comprel,1:-30,50 comprel,1:-30,50 ok
	getcompgain,x	Query the Compressor object ReleaseTime setting for input channel (x) x = Channel number or multiple channels, 3;4;8 means channels 3,4 and 8. x = 0 (all channels)	getcompgain,3-4 compgain,3:-30,5! compgain,4:-30,5!
Matrix	seta,x1;x2;x3;...;xn:y1;y2;y3;...;yn	Route input channel (x) to channels channel (y) for single or multiple crosspoints (x:y) x1,x2,...,xn = Input channel number. y1,y2,...,yn = Output channel number.	seta,2;3;4;6;7;8 seta,2;3;4;6;7;8
	setaoff,x1;x2;x3;...;xn:y1;y2;y3;...;yn	Unroute input channel (x) to channels channel (y) for single or multiple crosspoints (x:y) x = Input channel number or multiple channels, 3;4;8 means inputs 3,4 and 8. x = 0 (all inputs) y = Output channel number or multiple channels, 3;4;8 means outputs 3, 4 and 8. x = 0 (all outputs).	setaoff,2;3;4;6;7;8 setaoff,2;3;4;6;7;8 ok
	getseta,y	Query current routing for output channel (y) y = Channel number or multiple channels, 3;4;8 means channels 3, 4 and 8. x = 0 (all channels).	getseta,0 output,1:3! output,2:6;1;3;12! output,3:6! output,4:13! output,5:14! output,6:2! output,7:6!

			output,8:3.00! output,9:16.00! output,10:11.00!
	setagain,x,y:z	Set the matrix route point Gain (z) for input channel (x) and channels channel (y) z = Matrix Gain -72dB to 12dB in steps of 0.01dB	setagain,2,2:-30.50 setagain,2,2:-30.50 ok
	getsetagain,x,y	Query the matrix route point Gain (z) for input channel (x) and channels channel (y)	getsetagain,2,2 getsetagain,2,2:-30.5!
High pass Filter	hpf,x:z	Enable High Pass Filter for input channel (x) x = Channel number or multiple channels, 3;4;8 means channels 3,4 and 8. x = 0 (all channels) z = on/off	hpf,5:on hpf,5:on ok
	gethpf,x	Query High Pass Filter status for input channel (x) x = Channel number or multiple channels, 3;4;8 means channels 3,4 and 8. x = 0 (all channels)	gethpf,2 hpf,2:off!
	hpftype,x:z	High Pass filter type for input channel (x) z = Type 0=Bessel 1=Butterworth 2=Likwitz-Riley	hpftype,1:0 hpftype,1:0 ok
	gethpftype,x	Query High Pass filter type for input channel (x) x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels)	gethpftype,1 hpftype,1:0!
	hpfslope,x:z	Set High Pass Filter Slope for input channel (x) x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) z = Values: 6, 12, 18, 24, 30, 36, 42 and 48	hpfslope,1:48 hpfslope,1:48 ok
	gethpfslope,x	Query High Pass Filter slop for input channel (x) x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels)	gethpfslope,1 hpfslope,1:48!
	hpffreq,x:z	Set High Pass Filter frequency for input channel (x) x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) z = Frequency value in Hz (20Hz to 20000Hz)	hpffreq,1:1000 hpffreq,1:1000 ok
	gethpffreq,x	Query High Pass Filter frequency for input channel (x) x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels)	gethpffreq,1 hpffreq,1:1000!
	hpfgain,x:z	Set High Pass Filter gain for input channel (x) x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) z = gain value in dB (-15dB to 15dB in steps of 0.01dB => Values: -15.0 ~ 15.0)	gethpfgain,1:15.00 hpfgain,1:15.00!
	gethpfgain,x	Query High Pass Filter gain for input channel (x) x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels)	gethpfgain,1 hpfgain,1:15.00!
Low pass Filter	lpf,x:z	Enable Low Pass Filter for input channel (x) x = Channel number or multiple channels, 3;4;8 means channels 3,4 and 8. x = 0 (all channels) z = on/off	lpf,5:on lpf,5:on ok
	getlpf,x	Query Low Pass Filter status for input channel (x) x = Channel number or multiple channels, 3;4;8 means channels 3,4 and 8. x = 0 (all channels)	getlpf,2 lpf,2:off!
	lpftype,x:z	Low Pass filter type for input channel (x) z = Type 0=Bessel 1=Butterworth 2=Likwitz-Riley	lpftype,1:0 lpftype,1:0 ok

	getlpftype,x	Query Low Pass filter type for input channel (x) x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels)	getlpftype,1 getlpftype,1:0!
	lpffreq,x:z	Set Low Pass Filter frequency for input channel (x) x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) z = Frequency value in Hz (20Hz to 20000Hz)	lpffreq,1:1000 lpffreq,1:1000 ok
	getlpffreq,x	Query Low Pass Filter frequency for input channel (x) x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels)	getlpffreq,1 lpffreq,1:1000!
	lpfslope,x:z	Set Low Pass Filter Slope for input channel (x) x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) z = Values: 6, 12, 18, 24, 30, 36, 42 and 48	lpfslope,1:48 lpfslope,1:48 ok
	getlpfslope,x	Query Low Pass Filter Slope for input channel (x) x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels)	getlpfslope,1 lpfslope,1:48!
	lpfgain,x:z	Set Low Pass Filter gain for input channel (x) x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) z = gain value in dB ((-)15dB to 15dB in steps of 0.01dB => Values: -15.00 ~ 15.00)	lpfgain,1:10.00 lpfgain,1:10.00 ok
	getlpfgain,x	Query Low Pass Filter gain for input channel (x) x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels)	getlpfgain,1 lpfgain,1:10.00!
	Gating Auto Mixer		
	gam,z	Enable or disable Gating Auto Mixer z = on/off	gam,on gam,on ok
	getgam	Query Gate Auto Mixer status	getgam gam,off!
	gammute,x:z	Gating Auto Mixer channel (x) Mute x = Channel number or multiple channels, 3;4;8 means output 3,4 and 8. x = 0 (all channels) z = on/off	gammute,1:on gammute,1:on ok
	getgammute,x	Query Gating Auto Mixer channel (x) Mute x = Channel number or multiple channels, 3;4;8 means output 3,4 and 8. x = 0 (all channels)	getgammute,2 gammute,2:on!
	globalgammute,z	Gating Auto Mixer global Mute z = on/off	globalgammute,off globalgammute,off ok
	getglobalgammute	Query Gating Auto Mixer global Mute	getglobalgammute globalgammute,off!
	gamgain,z	Gating Auto Mixer Gain z = (-)72dB to 12dB in steps of 0.01dB => Values: -72.00 ~ 12.00	gamgain,3.5.00 gamgain,3.5.00 ok
	getgamgain	Query Gating Auto Mixer Gain	getgamgain gamgain,3.500!
	gamhold,z	Gating Auto Mixer Hold z = 100ms to 5 000ms in steps of 1ms => Values: 100 ~ 5000	gamhold,100 gamhold,100 ok
	getgamhold	Query Gating Auto Mixer Hold	getgamhold gamhold,100!
	gamoffgain,z	Gating Auto Mixer Off Gain	gamoffgain -10.0

	z = (-)90dB to -10dB in steps of 0.01dB => Values: -90.00 ~ -10.00	gamoffgain,-10.00 ok
getgamoffgain	Query Gating Auto Mixer Off Gain	getgamoffgain
		gamoffgain,-10.00!
gamsens,z	Gating Auto Mixer Sensitivity z = 3dB to 30dB in steps of 0.01dB => Values: 3.00 ~ 30.00	gamsens,30.00
		gamsens,30.00 ok
getgamsens	Query Gating Auto Mixer Sensitivity	getgamsens
		gamsens:30.00!
gamatt,z	Gating Auto Mixer NOM Attenuation z = 0dB to 6dB in steps of 0.01dB => Values: 0.00 ~ 6.00	gamatt,6.00
		gamatt,6.00 ok
getgamatt	Query Gating Auto NOM Attenuation	getgamatt
		gamatt,6.0!
gamnolimit,z	Gating Auto Mixer NOM Limit z = 1 ~ 12	gamatt,12
		gamatt,12 ok
getgamnolimit	Query Gating Auto NOM Limit	getgamatt
		gamatt,4!
gamchmix,x:z	Enable or disable channel (x) in Auto Mixer x = Channel number or multiple channels, 3;4;8 means output 3,4 and 8. x = 0 (all channels) z = on/off	gamchmix,13:on
		gamchmix,13:on ok
getgamchmix:x	Query Channel Auto Mixer x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels)	getgamchmix 13
		gamchmix,13:on!
gamchgain,x:z	Channel Gain x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) z = (-)72dB to 12dB in steps of 0.01dB => Values: -72.00 ~ 12.00	gamchgain,1:3.20
		gamchgain,1:3.20 ok
getgamchgain,x	Query Channel Gain x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels)	getgamchgain,1
		gamchgain,1:3.20!
gamprio,x:z	Priority x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) z = 1~10	gamchmix,13:10
		gamchmix, 13:10 ok
getgamprio:x	Query Priority x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels)	getgamprio 13
		gamchmix,13:10!
gamdefault,x:z	Channel Auto Mixer x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) z = on/off	gamdefault,13:off
		gamdefault, 13:off ok
getgamdefault,x	Query Channel Auto Mixer x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels)	getgamdefault,13
		gamdefault,13:off!
gamnoise,z	Noise Threshold z = (-)90dB to (-)24dB in steps of 0.01dB => Values: -90.00 ~ -24.00	gamnoise,24.00
		gamnoise:24.00 ok
getgamnoise	Query Noise Threshold	getgamnoise
		gamnoise,24.00!

Gain Sharing Auto Mixer			
	gsam,z	Enable or disable Gain Sharing Auto Mixer z = on/off	gsam,on
			gsam,on ok
	getgsam	Query Gain Sharing Auto Mixer	getgsam
			gsam,off!
	gsamch,x::z	Enable or disable channel (x) in Auto Mixer x = Channel number or multiple channels, 3;4;8 means output 3,4 and 8. x = 0 (all channels) z = on/off	gsamch,1:on
			gsamch,1:on ok
	getgsamch,x	Query Gate Auto Mixer channel status x = Channel number or multiple channels, 3;4;8 means output 3,4 and 8. x = 0 (all channels)	getgsamch,1
			gsamch,1:off!
	gsamtotgain,z	Total Gain (dB) z = (-)72dB to 12dB in steps of 0.01dB => Values: -72.00~12.00	gsamtotgain,12.00
			gsamtotgain,12.00 ok
	getgsamtotgain	Query Total Gain (dB)	getgsamtotgain
			gsamtotgain,12.00!
	gsamslope,z	Set the Gain Sharing Auto Mier Slope z = (-)72dB to 12dB in steps of 0.01dB => Values: -72.00 ~ 12.00	gsamslope 12.00
			gsamslope,12.00 ok
	getgsamslope	Query Gain Sharing Auto Mixer Slope	getgsamslope
			gsamslope,1200!
	gsamresponse,z	Response Time z = 5ms to 5 000ms in steps of 1ms => Values: 5 ~ 5 000	gsamresponse,100
			gsamresponse,100 ok
	getgsamresponse	Query Gain Sharing Auto Mixer Response z = 5ms to 5 000ms in steps of 1ms => Values: 5 ~ 5 000	getgsamresponse
			gsamresponse,100!
	gsamchmute,x::z	Channel Auto Mixer Mute x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) z = on/off	gsamchmute,13:on
			gsamchmute,13:on ok
	getgsamchmute:x	Query Channel Auto Mixer Mute x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels)	getgsamchmute:13
			gsamchmute:13,on!
	gsamgain,x::z	Channel Auto Mixer Gain x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) z = (-)72dB to 12dB in steps of 0.01dB => Values: -72.00 ~ 12.00	gsamgain:-10.00
			gsamgain:-10.00 ok
	getgsamgain,x	Query Channel Auto Mixer Gain	getgsamgain
			gsamgain:6.00!
	gsamprio,x::z	Channel Auto Mixer Priority x = Channel number z = on/off	gsamprio,12:5
			gsamprio,12:5 ok
	getgsamprio,x	Query Channel Auto Mixer Priority x = Channel number	getgsamprio,12
			gsamprio,12:5!
Auto Gain Compensation (AGC)	agc,x::z	Enable or disable Auto Gain Compensation on channel (x)	agcs,1:on

	x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) z = on/off	agcs,1:on ok
getagc,x	Query Auto Gain Compensation Status on channel (x) x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels)	getagc,2 agc,2:off!
agcthreshold,x:z	Set AGC Threshold (dB) x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) z = (-)72dB to 12dB in steps of 0.01dB => Values: -72.00 ~ -20.00	agcthreshold,12:-11.00 ok agcthreshold,12:-11.00 ok
getagcthreshold,x	Query AGC Threshold (dB) on channel (x) x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels)	getagcthreshold,1 getagcthreshold,1:-11.0!
agctarget,x:z	AGC Target Level (dB) x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) z = (-)40dB to 0dB in steps of 0.01dB => Values -20.00 ~ 0.00	agctarget,1:-20.00 agctarget,1:-20.00 ok
getagctarget,x	Query AGC Target Level (dB) on channel (x) x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels)	getagctarget agctarget,1:-10.00!
agcratio,x:z	Set AGC Ratio x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) z = 1dB to 20dB in steps of 0.01 => Values 1.00 ~ 20.00	agcratio,2:1.00 agcratio,2:1.00 ok
getagcratio,x	Query AGC Ratio on channel (x) x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels)	getagcratio,2 agcratio,2:1.00!
agcattack,x:	AGC Attack Time x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) z = 1ms to 500ms in steps of 1ms => Values 1 ~ 500	agcattack,3:100 agcattack,3:100 ok
getagcattack,x	Query Attach Time on channel (x) x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels)	getagcattack3 agcattack,3:100!
agcrelease,x:z	AGC Release Time (ms) x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) z = 1ms to 10 000ms in steps of 1ms => Values 1 ~ 10 000	agcrelease,4:100 agcrelease,4:100 ok
getagcrelease,x	Query Release Time (ms) on channel (x) x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels)	getagcrelease,4 agcrelease,4:100!
AEC (Only DSP-AEC-0606 and DSP-AEC-1010-DA has AEC2)	aec1,z	Enable or disable, Acoustic Echo Cancellation 1, AEC1 z = on/off aec2,on aec2,on ok
	getaec1	Query AEC1 Status getaec2 aec2,off!
	aec2,z	Enable or disable, Acoustic Echo Cancellation 2, AEC2 z = on/off aec1,on aec2,on ok
	getaec2	Query AEC2 Status getaec2 aec2,off!
	aec1matrixon,x:y	Set AEC1 Matrix points aec1matrixon,1;2;3;6;21;22

	x = Local Input Source, channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) y = Remote Source, channel number or multiple channels, 3;4;8 means channel 3,4 and 8.	aec1matrixon,1;2;3;6:21;22 ok
aec1matrixoff,x:y	Unset AEC1 Matrix points x = Local Input Source, channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) y = Remote Source, channel number or multiple channels, 3;4;8 means channel 3,4 and 8.	aec1matrixoff,1;2;3;6:21;22 aec1matrixoff,1;2;3;6:21;22 ok
getaec1matrix	Query AEC1 Matrix points	getaec1matrix aec1matrix,1;2:21;22!
aec2matrixon,x:y	Set AEC2 Matrix points x = Local Input Source, channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) y = Remote Source, channel number or multiple channels, 3;4;8 means channel 3,4 and 8.	aec2matrixon,1;2;3;6:21;22 aec2matrixon,1;2;3;6:21;22 ok
aec2matrixoff,x:y	Unset AEC2 Matrix points x = Local Input Source, channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) y = Remote Source, channel number or multiple channels, 3;4;8 means channel 3,4 and 8.	aec2matrixoff,1;2;3;6:21;22 aec2matrixoff,1;2;3;6:21;22 ok
getaec2matrix	Query AEC2 Matrix points	getaec2matrix aec2matrix,1;2:21;22!
aec1nlp,z	Set AEC1 tail time mode. 1 = Conservative (128ms), 2 = Moderate (256ms) and 3 = Aggressive (512ms)	aec1nlp,1 aec1nlp,1 ok
getaec1nlp	Query AEC1 tail time mode	getaec1nlp aec1nlp,1!
aec2nlp,z	Set AEC2 tail time mode. 1 = Conservative (128ms), 2 = Moderate (256ms) and 3 = Aggressive (512ms)	aec2nlp,3 aec2nlp,3 ok
getaec2nlp	Query AEC2 tail time mode	getaec2nlp aec2nlp,3!
Automatic Noise Suppression (ANS)	ansswitch,x	Automatic Noise Suppression Switch z = on/off ansswitch,off ansswitch,off ok
	getansswitch	Query Automatic Noise Suppression Switch getansswitch ansswitch,on!
	anslevel,x	Automatic Noise Suppression Level (dB) x = Values 0 = 6dB, 1 = 10dB, 2 = 15dB, 4 = 18dB anslevel,1 anslevel,1 ok
	getanslevel	Query Automatic Noise Suppression Level (dB) getanslevel anslevel,1!
	ansselect,x:z	Automatic Noise Suppression Selector x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) z = on/off ansselect,1:off ansselect,1:off ok
	getansselect,x	Query Automatic Noise Suppression Selector getansselect:1

		x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels)	ansselect:1,1!
System Mute			
	systemmute,z	System Mute z = on/off	systemmute,off systemmute,off ok
	getsystemmute	Query System Mute	getsystemmute systemmute,off!
Limiter			
	limiter,y:z	Enable or disable output channel (y) Limiter y = Output number or multiple channels, 3;4;8 means output 3, 4 and 8. x = 0 (all channels). z = on/off	limiter,13:off limiter,13:off ok
	getlimiter,y	Query output channel (y) Limiter status x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels)	getlimiter,13 limiter,13:on!
	limiterthres,y:z	Set Limiter Threshold for output channel (y) x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) z = (-)48dB to 0dB in steps of 0,01dB	limiterthres,13:-36.5 limiterthres,13:-36.5 ok
	getlimiterthres,y	Query Limiter Threshold for output channel (y) x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels)	getlimiterthres,13 limiterthres,13:-36.5!
	limiterrel,y:z	Set Limiter Release Time for output channel (y) x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) z = 1ms to 10 000ms in steps of 1ms	limiterrel,13:100 limiterrel,13:100 ok
	getlimiterrel,y	Query Limiter Release Time for output channel (y) y = Output number or multiple channels, 3;4;8 means output 3, 4 and 8. x = 0 (all channels).	getlimiterrel,13 limiterrel,13:100!
Ducker			
	ducker,x:z	Enable or disable ducker for input channel (x) x = Channel number or multiple channels, 3;4;8 means output 3,4 and 8. x = 0 (all channels) z = on/off	ducker,13;14:off ducker,13:off ok ducker,14:off ok
	getducker,x	Query Channel In Ducker x = Channel number or multiple channels, 3;4;8 means output 3,4 and 8. x = 0 (all channels)	getducker,13 ducker,13:off!
	duckerthres,x:z	Set Ducker Threshold for input channel (x) x = Channel number or multiple channels, 3;4;8 means output 3,4 and 8. x = 0 (all channels) z = (-)60dB to 0dB in steps of 0,01dB	duckerthres,13:-36.5 duckerthres,13:-36.5 ok
	getduckerthres,x	Query Limiter Threshold for input channel (x) x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels)	getduckerthres,13 duckerthres,13:-36.5!
	duckerdepth,x:z	Set Ducker Depth for input channel (x) x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) z = (-)72dB to 0dB in steps of 0,01dB	duckertdepth,13:-36.5 duckerdepth,13:-36.5 ok
	getduckerdepth,x	Query Ducker Depth for input channel (x) x = Channel number or multiple channels, 3;4;8 means output 3,4 and 8. x = 0 (all channels)	getduckerdepth,13 duckerdepth,13:-36.5!
	duckerattack,x:z	Set Ducker Attack for input channel (x) x = Channel number or multiple channels, 3;4;8 means output 3,4 and 8. x = 0 (all channels) z = 10ms to 500ms in steps of 1ms	duckerattack,13:10 duckerattack,13:10 ok
	getduckerattack,x	Query Ducker Attack for input channel (x)	getduckerattack,13

		x = Channel number or multiple channels, 3;4;8 means output 3,4 and 8. x = 0 (all channels)	duckerattack,13:10!
	duckerhold,x:z	Set Ducker Hold for input channel (x) x = Channel number or multiple channels, 3;4;8 means output 3,4 and 8. x = 0 (all channels) z = 10ms to 10000ms in steps of 1ms	duckerhold,13:10 duckerhold,13:10 ok
	getduckerhold,x	Query Ducker Hold for input channel (x) x = Channel number or multiple channels, 3;4;8 means output 3,4 and 8. x = 0 (all channels)	getduckerhold,13 duckerhold,13:10!
	duckerrel,x:z	Set Ducker Release for input channel (x) x = Channel number or multiple channels, 3;4;8 means output 3,4 and 8. x = 0 (all channels) z = 10ms to 17431ms in steps of 1ms	duckerrel,13:10 duckerrel,13:10 ok
	getduckerrel,x	Query Ducker Release for input channel (x) x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels)	getduckerrel,13 duckerrel,13:10!
	duckermute,x:z	Set Ducker Mute x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) z = on/off	duckermute,13:off duckermute,13:off ok
	getduckermute,x	Query Ducker Mute x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels)	getduckermute,13 duckermute,13:off!
	duckerref,x,y:z	Set Ducker Reference Source channel (x) x = Channel number or multiple channels, 3;4;8 means output 3,4 and 8. x = 0 (all channels) y = Channel number or multiple channels, 3;4;8 means output 3,4 and 8. x = 0 (all channels)	duckerref,13,1;2;24 duckerref,13,1;2;24 ok
	getduckerref,x	Query Ducker Reference Source channel for channel (x) x = Channel number	getduckerref,13 duckerref,13,1;2;24!
Gate	gate,x:z	Enable or disable Gate for input channel (x) x = Channel number or multiple channels, 3;4;8 means output 3,4 and 8. x = 0 (all channels) z = on/off	gate,13:off gate,13:off ok
	getgate,x	Query Channel (x) Gate status x = Channel number or multiple channels, 3;4;8 means output 3,4 and 8. x = 0 (all channels)	getgate,13 gate,13:off!
	gatethres,x:z	Set Gate Threshold for input channel (x) x = Channel number or multiple channels, 3;4;8 means output 3,4 and 8. x = 0 (all channels) z = (-)48dB to 0dB in steps of 0,01dB	gatethres,13:-36.5 gatethres,13:-36.5 ok
	getgatethres,x	Query Limiter Threshold for input channel (x) x = Channel number or multiple channels, 3;4;8 means output 3,4 and 8. x = 0 (all channels)	getgatethres,13 gatethres,13:-36.5!
	gatedepth,x:z	Set Gate Depth for input channel (x) x = Channel number or multiple channels, 3;4;8 means output 3,4 and 8. x = 0 (all channels) z = (-)72dB to 0dB in steps of 0,01dB	gatedepth,13:-36.5 gatedepth,13:-36.5 ok
	getgatedepth,x	Query Gate Depth for input channel (x) x=Channel number or multiple channels, 3-4 means channel 3 to channel 4. x = 0 (all channels).	getgatedepth,13 gatedepth,13:-36.5!
	gateattack,x:z	Set Gate Attack for input channel (x) x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) z = 1ms to 1000ms in steps of 1ms	gateattack,13:10 gateattack,13:10 ok

	getgateattack,x	Query Gate Attack for input channel (x) x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels)	getgateattack,13
			gateattack,13:10!
	gatehold,x:z	Set Gate Hold for input channel (x) x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) z = 5ms to 10000ms in steps of 1ms	gatehold,13:10
			gatehold,13:10 ok
	getgatehold,x	Query Gate Hold for input channel (x) x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels)	getgatehold,13
			gatehold,13:10!
	gaterel,x:z	Set Gate Release for input channel (x) x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels) z = 5ms to 10 000ms in steps of 1ms	gaterel,13:10
			gaterel,13:10 ok
	getgaterel,x	Query Gate Release for input channel (x) x = Channel number or multiple channels, 3;4;8 means channel 3,4 and 8. x = 0 (all channels)	getgaterel,13
			gaterel,13:10!

TiGHT AV DSP Series Legacy API V1 and V2

1. V1 Protocol

Structure

Byte 1 Fixed	Byte 2	Byte 3 Fixed	Byte 4	Byte 5~12
B3	Message Type: SET = 21 GET = 22 PRESET = 13	AB	Version No: V1 = 00 V2 = 01	Data

Data Bytes 5-12: All using 2 bytes in little endian format.

Byte 5~6	Byte 7~8	Byte 9~10	Byte 11~12
Module ID	Parameter Type	Parameter 1	Parameter 2

Byte 1 - Fixed start: B3.

Byte 2 - Message type: SET= 21, GET =22 and PRESET =13.

Byte 3 - Fixed to AB (can be any value but for easy programming we choose to use AB)

Byte 4 - Version number: V1 = 00 and V2 =01.

Byte 5-6 - Module ID: See Appendix A: Module ID.

Byte 7-8 - Parameter type: Appendix B: Module Parameters.

Byte 9-10 - Parameter 1.

Byte 11-12 - Parameter 2.

Note: "Central Control Command" can acquire V1 version code through software menu bar of computer.

For customized development, please use this protocol.

2. V2 Protocol

Structure

Byte 1 Fixed	Byte 2	Byte 3 Fixed	Byte 4	Byte 5~72
B3	Message Type:	AB	Version No: V1 = 00 V2 = 01	Data

Byte 1 - Start of command: B3

Byte 2 - Message types: There are various message types including:

21: SET.

22: GET, no parameter values should be filled in.

13: PRESET.

74: Other controls.

Byte 3 – Fixed: AB

Byte 4 - Version number: V1 = 00 and V2 = 01.

Data bytes 5-72

Byte 5	Byte 6	Byte 7	Byte 8	Byte 9~72
Input/Output	Start Channel	End Channel	Parameter Type	Parameter Value
Output = 01				
Input = 02				

Byte 5 – Set control of input or output channel: 01 for output and 02 for input channels.

Byte 6-7 - Indicate start and end channel numbers: Channel count starts at 0 (Channel 1 = 0).

Byte 8 - Parameter type: Please refer to Appendix B.

Byte 9-72 - Fill in parameter values of start to end channels. Each parameter value shall take two bytes.

3. Preset Structure (V1 and V2 protocol)

Byte 1	Byte 2	Byte 3	Byte 4	Byte 5~12
Fixed		Fixed		
B3	Message Type:	AB	Version No:	Preset No 0-15
	PRESET = 13		V1 = 00	
			V2 = 01	

4. UDP to RS232/RS485 (V2 protocol only)

Byte 1	Byte 2	Byte 3	Byte 4	Byte 5~72
Fixed		Fixed		
B3	Message Type:	AB	Version No:	Data
	Other = 74		V2 = 01	

Byte 5	Byte 6	Byte 7	Byte 8	Byte 9-132
Control Type:	Data Length	Reserved	Reserved	Data Bytes
RS232 = 02		00	00	
RS485 = 03				

Byte 5 - Control Type: 02 = RS232, and 03= RS485.

Byte 6 - The data length of byte 6 refers to the data length in bytes that shall be sent via RS232/485.

Byte 7-8 – Reserved for future use. Fill out with 00.

Byte 9-132 - Command data to be sent via RS232/485.

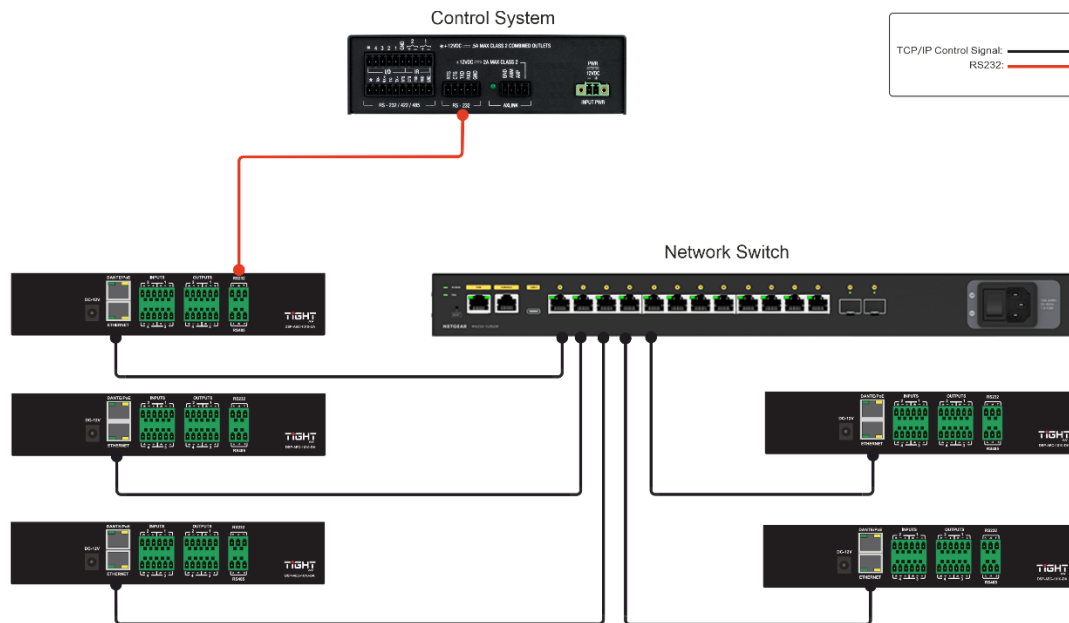
5. RS232/RS485 to UDP (V2 protocol only)

DSP devices support RS232 translating into UDP. The protocol formats are as follows.

Byte 1	Byte 2	Byte 3	Byte 4	Byte 5~128
Fixed		Fixed		
B3	Message Type:	AB	Version No:	Data
	Other = 74		V2 = 01	

Byte 5~8	Byte 9~12	Byte 13~14	Byte 15	Byte 16	Byte 17~128
Prefix					
08000000	IP address of receiving device	Port Number	Data length	Reserved	Data

Application scenario: The function can be applied in scenarios when a central controller have no network control ability. One of the DSPs can then be utilized as a RS232/RS485 to UDP translator and control multiple DSP or third-party devices over IP.



Note: Baudrate for RS232 and RS485 is set globally by software in “Device Settings”.

6. Central Control Response control ON/OFF (V2 protocol only):

Byte 1	Byte 2	Byte 3	Byte 4	Byte 5~9
Fixed		Fixed		
B3	Message Type:	AB	Version No:	Data
	Other = 74		V2 = 01	

Byte 5	Byte 6	Byte 7	Byte 8	Byte 9
Control Type:	Data Length	Reserved	Reserved	Data Bytes
04	01	00	00	ON = 01
				OFF = 00

7. Feedback and response to SET or GET commands (V1 and V2)

Response to a SET command will mirror the sent command with the exception of Byte 4 (Version No) where the response will have “E0” for V1 and “E1” for V2.

Response to a GET command will have Byte 4 (Version No) “E0” for V1 and “E1” for V2 and the Parameters filled in with the requested status information.

8. Appendix A: Module ID

Module:	ID
Input Source	299
Input Channel 1-32 - 1st module (Default Expander)	1~32
Input Channel 1-32 - 2nd module (Default Compressor)	33~64
Input Channel 1-32 - 3rd module (Default AGC)	65~95
Input Channel 1-32 - 4th module (Default PEQ (8))	97~128
Input Channel 1-32 - 5th module (Default AFS)	129~160
AutoMixer Gain Sharing / Gating	161
Acoustic Echo Cancellation AEC	163
AEC Matrix (Local/Remote Input)	162
Automatic Noise Suppression (ANS)	165
ANS Channel Selector	164
Matrix	166
Output	295
System Control	296
Output Channel 1-32 - 1st module (Default Filter)	167~198
Output Channel 1-32 - 2nd module Default PEQ (8))	199~230
Output Channel 1-32 - 3rd module (Default Delay)	231~262
Output Channel 1-32 - 4th module (Default Limiter)	263~294

9. Appendix B: Module Parameters

Module:	Parameter Type	Description	Parameter 1 (Value)	Parameter 2 (Value)
Input	1	Gain	Input channel 1 ~ 14 => Values: 0 ~ 13	(-)72dB to 12dB in steps of 0,01dB => Values: -7200 ~ 1200
	2	Mute	Input channel 1 ~ 14 => Values: 0 ~ 13	ON = 1 OFF=0
	3	Sensitivity	Input channel 1 ~ 14 => Values: 0 ~ 13	0dB to 48dB in 6dB steps => Values: 0~8
	4	Phantom Power Switch	Input channel 1 ~ 14 => Values: 0 ~ 13	ON = 1 OFF=0
	5	Signal Generator	Input channel 1 ~ 14 => Values: 0 ~ 13	OFF (Analog signal)=0 Sine =1 White=2 Pink=3
	6	Signal Generator Frequency	Input channel 1 ~ 14 => Values: 0 ~ 13	20Hz to 20 000Hz in steps of 1Hz => Values 20 ~ 20 000
	7	Level (dBFS)	Input channel 1 ~ 14 => Values: 0 ~ 13	(-)72dBFS to 0dBFS in steps of 0,01dBFS => Values -7200 ~ 0
	8	Channel Name	Input channel 1 ~ 14 => Values: 0 ~ 13	SET: Only supporting 2 bytes GET: Fill out command past 12th byte with 00 to get full name
	9	Invert Phase	Input channel 1 ~ 14 => Values: 0 ~ 13	ON = 1 OFF= 0
	10	Increase/decrease Gain by step	Input channel 1 ~ 14 => Values: 0 ~ 13	+3dB = 300 +2dB = 200 +1dB = 100 -1dB = -100 -2dB = -200 -3dB = -300
	11	Link	Link CH1 and CH2 = 1 Link CH3 and CH4 = 3 Link CH5 and CH6 = 5 Link CH7 and CH8 = 7	ON = 1 OFF= 0

			Link CH9 and CH10 = 9 Link CH11 and CH12 = 11 Link CH13 and CH14 = 13	
	12	Channel Level (Meter)	Input channel 1 ~ 14 => Values: 0 ~ 13	
Delay	1	Bypass Switch	ON = 0 OFF=1	
	2	In Milliseconds	0ms to 1200ms in steps of 1ms => Values 0 ~ 1200	
PEQ	1	Global Switch	ON = 0 OFF=1	
	2	Band Segment Switch	12 Bands => Values: 0 ~ 11	ON = 0 OFF=1
	3	Frequency	12 Bands => Values: 0 ~ 11	20Hz to 20 000Hz in steps of 1Hz => Values 20 ~ 20 000
	4	Gain	12 Bands => Values: 0 ~ 11	(-)24dB to 18dB in steps of 0,01dB => Values: -2400 ~ 1800
	5	Q Value	12 Bands => Values: 0 ~ 11	0,02 to 50 in steps of 0,01 => Values 2 ~ 5000
	6	Type	12 Bands => Values: 0 ~ 11	Low pass = 0 High pass = 1 Parametric = 6 Lowshelf = 7 Highshelf = 8
GEQ	1	Global Switch	ON = 0 OFF=1	
	2	Q-Width	31 Bands => Values: 0 ~ 30	Narrow = 1 Normal = 2 Wide = 3
	3	Gain	31 Bands => Values: 0 ~ 30	(-)24dB to 18dB in steps of 0,01dB => Values: -2400 ~ 1800
	4	Reset	12 Bands => Values: 0 ~ 11	ON = 1 OFF=0
ANC	1	Global Switch	ON = 0 OFF=1	
	2	Max Gain	0dB to 20dB in steps of 0,01dB => Values: 0 ~ 2000	

	3	Min Gain	(-)20dB to 0dB in steps of 0,01dB => Values: -2000 ~ 0	
	4	G-S Ratio	0.5dB to 1.5dB in steps of 0,01dB => Values: 50 ~ 150	
	5	Speed	500ms to 60000ms in steps of 1ms => Values: 500 ~ 60000	
	6	Trim	(-)10dB to 10dB in steps of 0,01dB => Values: -1000 ~ 1000	
	7	Noise Threshold	(-)60dB to -24dB in steps of 0,01dB => Values: -6000 ~ -2400	
	8	Distance	0m to 15m in steps of 0.01m => Values: 0 ~ 1500	
	9	REF Source	Input channel 1 ~ 14 => Values: 0 ~ 13	ON = 1 OFF=0
Output	1	Gain	Output channel 1 ~ 10 => Values: 0 ~ 9	(-)72dB to 12dB in steps of 0,01dB => Values: -7200 ~ 1200
	2	Mute	Output channel 1 ~ 10 => Values: 0 ~ 9	ON = 1 OFF= 0
	3	Channel Name	Output channel 1 ~ 10 => Values: 0 ~ 9	SET: Only supporting 2 bytes GET: Fill out command past 12th byte with 00 to get full name
	4	Invert Phase	Output channel 1 ~ 10 => Values: 0 ~ 9	ON = 1 OFF= 0
	6	Increase/decrease by step	Output channel 1 ~ 10 => Values: 0 ~ 9	+3dB = 300 +2dB = 200 +1dB = 100 -1dB = -100 -2dB = -200 -3dB = -300
	7	Link	Link CH1 and CH2 = 1 Link CH3 and CH4 = 3 Link CH5 and CH6 = 5 Link CH7 and CH8 = 7	ON = 1 OFF= 0

			Link CH9 and CH10 = 9	
	8	Channel Level (Meter)	Output channel 1 ~ 10 => Values: 0 ~ 9	Only available as GET command (-)72dB to 0dB in steps of 0,01dB => Values: -7200 ~ 0
Expander	1	Global Switch	ON = 0 OFF=1	
	2	Threshold (dB)	(-)72dB to 0dB in steps of 0,01dB => Values -7200 ~ 0	
	3	Ratio	1dB to 20dB in steps of 0,01dB => Values 100 ~ 2000	
	4	Attack Time (ms)	1ms to 500ms in steps of 1ms => Values 1 ~ 500	
	5	Release Time (ms)	1ms to 10 000ms in steps of 1ms => Values 1 ~ 10 000	
Compressor	1	Global Switch	ON = 0 OFF=1	
	2	Compressor Threshold (dB)	(-)48dB to 0dB in steps of 0,01dB => Values -4800 ~ 0	
	3	Compressor Ratio	1dB to 20dB in steps of 0,01dB => Values 100 ~ 2000	
	4	Attack Time (ms)	1ms to 500ms in steps of 1ms => Values 1 ~ 500	
	5	Release Time (ms)	1ms to 10 000ms in steps of 1ms => Values 1 ~ 10 000	
	6	Gain Compensation (dB)	(-)72dB to 6dB in steps of 0,01dB => Values -7200 ~ 600	
Matrix	1	Matrix Switch	First byte input ch 0 ~ 17 Second byte output ch 0 ~ 10 Ex IN1 OUT4=> 00 03	ON = 1 OFF= 0
	2	Matrix Gain	First byte input ch 0 ~ 17 Second byte output ch 0 ~ 10 Ex IN1 OUT4=> 00 03	(-)72dB to 12dB in steps of 0,01dB => Values: -7200 ~ 1200
Filter	1	High Pass Switch	ON = 1 OFF= 0	

	2	High Pass Type	Bessel = 0 Butterworth = 1 Likwitz-Riley = 2	
	3	High Pass Slope	Values: 6, 12, 18, 24, 30, 36, 42 and 48	
	4	High Pass Frequency	20Hz to 20 000Hz in steps of 1Hz => Values: 20 ~ 20 000	
	5	High Pass Gain	(-)15dB to 15dB in steps of 0,01dB => Values: -1500 ~ 1500	
	11	Low Pass Switch	ON = 1 OFF= 0	
	12	Low Pass Type	Bessel = 0 Butterworth = 1 Likwitz-Riley = 2	
	13	Low Pass Slope	Values: 6, 12, 18, 24, 30, 36, 42 and 48	
	14	Low Pass Frequency	20Hz to 20 000Hz in steps of 1Hz => Values: 20 ~ 20 000	
	15	Low Pass Gain	(-)15dB to 15dB in steps of 0,01dB => Values: -1500 ~ 1500	
Gating Auto Mixer	1	Global Switch	ON = 1 OFF= 0	
	2	Channel Mute	Channel 1 ~ 14 => Values: 0 ~ 13	ON = 1 OFF= 0
	3	Automixer Gain	(-)72dB to 12dB in steps of 0,01dB => Values: -7200 ~ 1200	
	4	Last On	ON = 1 OFF= 0	
	5	Hold	100ms to 5 000ms in steps of 1ms => Values: 100 ~ 5000	
	6	Off Gain	(-)90dB to -10dB in steps of 0,01dB => Values: -9000 ~ - 1000	
	7	Sensitivity	3dB to 30dB in steps of 0,01dB => Values: 300 ~ 3000	

	8	NOM Attenuation	0dB to 6dB in steps of 0,01dB => Values: 0 ~ 600	
	9	NOM Limit	Values: 1 ~ 12	
	10	Channel Auto Mixer	Channel 1 ~ 14 => Values: 0 ~ 13	ON = 1 OFF= 0
	11	Channel Mute	Channel 1 ~ 14 => Values: 0 ~ 13	ON = 1 OFF= 0
	12	Channel Gain	Channel 1 ~ 14 => Values: 0 ~ 13	(-)72dB to 12dB in steps of 0,01dB => Values: -7200 ~ 1200
	13	Priority	Channel 1 ~ 14 => Values: 0 ~ 13	Values: 1 ~ 10
	14	Default	Channel 1 ~ 14 => Values: 0 ~ 13	ON = 1 OFF= 0
	15	Noise Threshold	(-)90dB to (-)24dB in steps of 0,01dB => Values: -9000 ~ -2400	
Gain Sharing Auto Mixer	1	Global Switch	ON = 1 OFF= 0	
	2	Total Gain (dB)	(-)72dB to 12dB in steps of 0,01dB => Values: -7200 ~ 1200	
	3	Slope	1 to 3 in 0,01 steps => Value: 100 ~ 300	
	4	Response Time	5ms to 5 000ms in steps of 1ms => Values: 5 ~ 5 000	
	5	Channel Auto Mixer	Channel 1 ~ 14 => Values: 0 ~ 13	ON = 1 OFF= 0
	6	Channel Mute	Channel 1 ~ 14 => Values: 0 ~ 13	ON = 1 OFF= 0
	7	Channel Gain	Channel 1 ~ 14 => Values: 0 ~ 13	(-)72dB to 12dB in steps of 0,01dB => Values: -7200 ~ 1200
	8	Priority	Channel 1 ~ 14 => Values: 0 ~ 13	Values: 1 ~ 10
	9	Auto Mix Switch	ON = 0 OFF=1	
Automatic Feedback Suppression (AFS)	1	Switch	ON = 0 OFF=1	
	2	Feedback Point Frequency (Hz)	Freq 1 ~ 12 => Values: 0 ~ 11	20Hz to 20 000Hz in steps of 1Hz => Values 20 ~ 20 000

	3	Feedback Point Gain (dB)	Freq 1 ~ 12 => Values: 0 ~ 11	(-)24dB to 0dB in steps of 0,01dB => Values: -2400 ~ 0
	4	Octave Value	1/5 Octave = 20 1/10 Octave = 10	
	5	Type	Freq 1 ~ 12 => Values: 0 ~ 11	Dynamic = 0 Fixed = 1 Manual = 2
	8	Panic Threshold (dB)	(-)36dB to 0dB in steps of 0,01dB => Values: -3600 ~ 0	
	9	Feedback Threshold (dB)	(-)96dB to -24dB in steps of 0,01dB => Values: -9600 ~ - 2400	
Auto Gain Compensation (AGC)	1	Switch	ON = 0 OFF=1	
	2	Threshold (dB)	(-)72dB to -20dB in steps of 0,01dB => Values -7200 ~ -2000	
	3	Target Level (dB)	(-)40dB to 0dB in steps of 0,01dB => Values -4000 ~ 0	
	4	Ratio	1dB to 20dB in steps of 0,01dB => Values 100 ~ 2000	
	5	Attack Time (ms)	1ms to 500ms in steps of 1ms => Values 1 ~ 500	
	6	Release Time (ms)	1ms to 10 000ms in steps of 1ms => Values 1 ~ 10 000	
AEC	1	Echo Cancellation Switch	ON = 0 OFF=1	
	2	Echo Cancellation Mode	Conservative (128ms) = 0 Moderate (256ms) = 1 Aggressive (512ms) = 2	
AEC Matrix	1		Local Source CH 1 = 0 CH 2 = 1 CH 3 = 2 CH 4 = 3 CH 5 = 4 CH 6 = 5	ON = 1 OFF=0

			CH 7 = 6 CH 8 = 7 CH 9 = 8 CH 10 = 9 CH 11 = 10 CH 12 = 11 AutoMixer = 14 Remote Source CH 1 = 515 CH 2 = 516 CH 3 = 517 CH 4 = 518 CH 5 = 519 CH 6 = 520 CH 7 = 521 CH 8 = 522 CH 9 = 523 CH 10 = 524 CH 11 = 525 CH 12 = 526 USBL = 527 USBR = 528	
Automatic Noise Suppression (ANS)	1	Global Switch	ON = 0 OFF=1	
	2	ANS Level (dB)	6dB = 0 10dB =1 15dB = 2 18dB = 3	
ANS Channel Selector	1	Channel	Channel Values: 0 ~ 15	ON = 1 OFF=0
System Control	2	System Mute	ON = 1 OFF=0	
Limiter	1	Limiter Switch	ON = 0 OFF=1	
	2	Limiter Threshold (dB)	(-)48dB to 0dB in steps of 0,01dB => Values -4800 ~ 0	
	5	Release Time (ms)	1ms to 10 000ms in steps of 1ms => Values 1 ~ 10 000	
Ducker	1	Global Switch	ON = 0 OFF=1	
	2	Threshold	(-)60dB to 0dB in steps of 0,01dB => Values -6000 ~ 0	

	3	Depth	(-)72dB to 0dB in steps of 0,01dB => Values -7200 ~ 0	
	4	Attack	10ms to 500ms in steps of 1ms => Values 10 ~ 500	
	5	Hold	10ms to 10 000ms in steps of 1ms => Values 10 ~ 10 000	
	6	Release	10ms to 17 431ms in steps of 1ms => Values 10 ~ 17 431	
	7	Gain	(-)72dB to 6dB in steps of 0,01dB => Values -7200 ~ 600	
	8	Mute	ON = 1 OFF= 0	
	9	REF Source	Channel 1 ~ 34 => Values: 0 ~ 33	ON = 1 OFF= 0
Gate	1	Global Switch	ON = 0 OFF=1	
	2	Threshold	(-)48dB to 0dB in steps of 0,01dB => Values -4800 ~ 0	
	3	Depth	(-)72dB to 0dB in steps of 0,01dB => Values -7200 ~ 0	
	4	Hold	5ms to 10 000ms in steps of 1ms => Values 5 ~ 10 000	
	5	Attack	1ms to 1 000ms in steps of 1ms => Values 1 ~ 1 000	
	6	Release	5ms to 10 000ms in steps of 1ms => Values 5 ~ 10 000	

10. Appendix C: Command Structure Examples

10.1. V1 examples

SET examples

1. Set input Gain to -3dB for input 4.		
Structure	Command	Comments
Byte 1 : Fixed start B3	B3	Fixed
Byte 2: Message type: SET= 21, GET =22 and PRESET =13	21	SET
Byte 3: Fixed to AB	AB	Fixed
Byte 4: Version number: V1 = 00 and V2 =01.	00	Version 1
Byte 5-6: Module ID: See Appendix A: Module ID in manual.	2B 01	Appendix A, Input source ID = 299 gets 2B 01 in little endian format
Byte 7-8: Parameter type: Appendix B: Module Parameter Types (1).	01 00	Appendix B Input source Gain = 1 gets 01 00 in little endian format
Byte 9-10: Parameter 1	03 00	Inputs starts counting at 0 = input 1 so input 4 gets value 3 and in little endian 03 00
Byte 11-12: Parameter 2	D4 FE	(-)3db in hundreds gets value -300 which corresponds to D4 FE in little endian format.
SET command: B3 21 AB 00 2B 01 01 00 03 00 D4 FE	Response: B3 21 AB E0 2B 01 01 03 00 00 D4 FE	

1. Increase Gain +3dB for input 2.		
Structure	Command	Comments
Byte 1 : Fixed start B3	B3	Fixed
Byte 2: Message type: SET= 21, GET =22 and PRESET =13	21	SET
Byte 3: Fixed to AB	AB	Fixed
Byte 4: Version number: V1 = 00 and V2 =01.	00	Version 1
Byte 5-6: Module ID: See Appendix A: Module ID in manual.	2B 01	Appendix A, Input source ID = 299 gets 2B 01 in little endian format
Byte 7-8: Parameter type: Appendix B: Module Parameter Types (1).	0A 00	Appendix B Input source Gain = 10 gets 0A 00 in little endian format
Byte 9-10: Parameter 1	01 00	Inputs starts counting at 0 = input 1 so input 2 gets value 1 and in little endian 01 00
Byte 11-12: Parameter 2	2C 01	(+)3db in hundreds gets value 300 which corresponds to 2C 01 in little endian format.
SET command: B3 21 AB 00 2B 01 0A 00 01 00 2C 01	Response: B3 21 AB E0 2B 01 0A 00 01 00 2C 01	

2. Set Input 8 to Mute.		
Structure	Command	Comments
Byte 1 : Fixed start B3	B3	Fixed
Byte 2: Message type: SET= 21, GET =22 and PRESET =13	21	SET
Byte 3: Fixed to AB	AB	Fixed
Byte 4: Version number: V1 = 00 and V2 =01.	00	Version 1
Byte 5-6: Module ID: See Appendix A: Module ID in manual.	2B 01	Appendix A, Input source ID = 299 gets 2B 01 in little endian format
Byte 7-8: Parameter type: Appendix B: Module Parameter Types (1).	02 00	Appendix B Input source Mute = 2 gets 02 00 in little endian format
Byte 9-10: Parameter 1	07 00	Inputs starts counting at 0 = input 1 so input 8 gets value 7 and in little endian 07 00
Byte 11-12: Parameter 2	01 00	Mute On = 1 which corresponds to 01 00 in little endian format.
SET command: B3 21 AB 00 2B 01 02 00 07 00 01 00	Response: B3 21 AB E0 2B 01 02 00 07 00 01 00	

3. Set AEC Switch 1 to ON		
Structure	Command	Comments
Byte 1 : Fixed start B3	B3	Fixed
Byte 2: Message type: SET= 21, GET =22 and PRESET =13	21	SET
Byte 3: Fixed to AB	AB	Fixed
Byte 4: Version number: V1 = 00 and V2 =01.	00	Version 1
Byte 5-6: Module ID: See Appendix A: Module ID in manual.	A3 00	Appendix A, Echo Cancellation = 163 gets A3 00 in little endian format
Byte 7-8: Parameter type: Appendix B: Module Parameter Types (1).	01 00	Appendix B Echo Cancellation Switch = 1 gets 01 00 in little endian format
Byte 9-10: Parameter 1	00 00	Value 0 = AEC on which corresponds to 00 00 in little endian format.
Byte 11-12: Parameter 2	00 00	Fill up with 00 00
SET command: B3 21 AB 00 A3 00 01 00 00 00 00 00	Response: B3 21 AB E0 A3 00 01 00 00 00 00 00	

GET examples

1. Get Input Gain for input 2		
Structure	Command	Comments
Byte 1 : Fixed start B3	B3	Fixed
Byte 2: Message type: SET= 21, GET =22 and PRESET =13	22	GET
Byte 3: Fixed to AB	AB	Fixed
Byte 4: Version number: V1 = 00 and V2 =01.	00	Version 1
Byte 5-6: Module ID: See Appendix A: Module ID in manual.	2B 01	Appendix A, Input source ID = 299 gets 2B 01 in little endian format
Byte 7-8: Parameter type: Appendix B: Module Parameter Types (1).	01 00	Appendix B Input source Gain = 1 gets 01 00 in little endian format
Byte 9-10: Parameter 1	01 00	Inputs starts counting at 0 = input 1 so input 2 gets value 1 and in little endian 01 00
Byte 11-12: Parameter 2	00 00	Fill up with 00 00
GET command: B3 22 AB 00 2B 01 01 00 01 00 00 00		
Response: B3 23 AB E0 2B 01 01 00 01 00 24 FF (24 FF = -220 => -2,2dB)		

2. Get Mute status for output 5		
Structure	Command	Comments
Byte 1 : Fixed start B3	B3	Fixed
Byte 2: Message type: SET= 21, GET =22 and PRESET =13	22	GET
Byte 3: Fixed to AB	AB	Fixed
Byte 4: Version number: V1 = 00 and V2 =01.	00	Version 1
Byte 5-6: Module ID: See Appendix A: Module ID in manual.	27 01	Appendix A, Output ID = 295 gets 27 01 in little endian format
Byte 7-8: Parameter type: Appendix B: Module Parameter Types (1).	02 00	Appendix B Output Mute = 2 gets 02 00 in little endian format
Byte 9-10: Parameter 1	04 00	Inputs starts counting at 0 = output 1 so output 5 gets value 4 and in little endian 04 00
Byte 11-12: Parameter 2	00 00	Fill up with 00 00
GET command: B3 22 AB 00 27 01 02 00 04 00 00 00		
Response: B3 21 AB E0 27 01 02 00 04 00 01 00 (01 00 = Mute On)		

PRESET example

1. Get Input Gain for input 2		
Structure	Command	Comments
Byte 1 : Fixed start B3	B3	Fixed
Byte 2: Message type: SET= 21, GET =22 and PRESET =13	13	PRESET

Byte 3: Fixed to AB	AB	Fixed
Byte 4: Version number: V1 = 00 and V2 =01.	00	Version 1
Byte 5-6: Preset number 1-16	02 00	Preset 3 is then value 3 which corresponds to 02 00 in little endian format.
Byte 7-8: Not used	00 00	Fill up with 00 00
Byte 9-10: Not used	00 00	Fill up with 00 00
Byte 11-12: Not used	00 00	Fill up with 00 00
PRESET command: B3 13 AB 00 02 00 00 00 00 00 00 00 00	Response: B3 13 AB E0 02 00 00 00 00 00 00 00 00	

10.2. V2 examples

SET example:

1. SET Input Mute CH1-CH4		
Structure	Command	Comments
Byte 1 : Fixed start B3	B3	Fixed
Byte 2: Message type: SET= 21, GET =22 and PRESET =13	21	SET
Byte 3: Fixed to AB (any will do but we set it to AB)	AB	Fixed
Byte 4: Version number: V1 = 00 and V2 =01.	01	Version 2
Byte 5: Input or Output	02	Input = 02
Byte 6: Start Channel	00	CH1 = 00
Byte 7: End Channel	03	CH4 = 03
Byte 8: Parameter type	02	Input Mute = 02
Byte 9: Parameter value	01	Mute = 01
SER command: B3 21 AB 01 02 00 03 02 01	Response: B3 21 AB E1 02 00 03 02 01	

GET example:

1. GET output Gain CH2-CH5		
Structure	Command	Comments
Byte 1: Fixed start B3	B3	Fixed
Byte 2: Message type: SET= 21, GET =22 and PRESET =13	22	PRESET
Byte 3: Fixed to AB (any will actually do but we set it to AB)	AB	Fixed
Byte 4: Version number: V1 = 00 and V2 =01.	01	Version 2
Byte 5: Input or Output	01	Output = 01
Byte 6: Start Channel	01	CH2 = 01
Byte 7: End Channel	05	CH5 = 04
Byte 8: Parameter type	01	Input Gain = 01
Byte 9: Parameter value	01	Fill up with: 00 00 00 00 00 00 00 00

GET command: B3 22 AB 01 01 01 04 01 00 00 00 00 00 00 00 00	Response: B3 22 AB E1 01 01 04 01 C8 00 18 FC 18 FC 50 FB CH2 = C8 00 (little endian) = 200 > Gain = 2dB CH2 = 18 FC (little endian) = -1000 > Gain = -10dB CH2 = 18 FC (little endian) = -1000 > Gain = -10dB CH2 = 50 FB (little endian) = -1200 > Gain = -12dB
---	---

RS232 to UDP example:

1. Send command "HELLO DSP" to 192.168.40.159 on UDP port 50 000.		
Structure	Command	Comments
Byte 1 : Fixed start B3	B3	Fixed
Byte 2: Message type: SET= 21, GET =22 and PRESET =13	74	Other controls
Byte 3: Fixed to AB (any will actually do but we set it to AB)	AB	Fixed
Byte 4: Version number: V1 = 00 and V2 =01.	01	Version 2
Byte 5~8: Prefix	08 00 00 00	Prefix =08 00 00 00
Byte 9~12: IP address of receiving device	C0 A8 28 9F	192.168.40.159 = C0 A8 28 9F
Byte 13~14: Port number	50 C3	50 000 = 50 C3
Byte 15: Data length	09	9 Bytes = 09
Byte 16: Reserved	00	00
Byte 17~128: Data	48 45 4C 4C 4F 20 44 53 50	"HELLO DSP" = 48 45 4C 4C 4F 20 44 53 50
Command: B3 74 AB 01 08 00 00 00 C0 A8 28 9F 50 C3 09 00 48 45 4C 4C 4F 20 44 53 50	Response: B3 74 AB E1 08 00 00 00 C0 A8 28 9F 50 C3 09 00 48 45 4C 4C 4F 20 44 53 50	