TP-NET PROTOCOL

SOFTWARE
Third-Party NET

USER MANUAL

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1. TP-NET protocol (Third-Party NET)

The TP-NET protocol lets a client device (control device) get and/or set the values of several parameters of the **EclerNet compatible devices** (MIMO and MIMO SG series digital matrices, DUO-NET PLAYER, NXA digital audio manager series, NZA amplifier series, NPA amplifier series, etc.), like volumes, mutes, alarms, etc. It's as well available for **eMIMO1616 digital matrix, HUB series digital zoner and MIMO4040DN digital matrix**.

The communication with these digital audio devices can be established using Ethernet and the UDP/IP transport protocol, always by means of the **5800** UDP port.

A second option for this communication is using the RS-232 interface that some of these compatible devices do also have (MIMO series, DUO-NET PLAYER, NXA series, etc.). In this case, the serial connection must fulfil the following specifications:

- Baud rate: **57600** (fixed, no autonegotiation) for all the devices, <u>except for DUO-NET PLAYER, eMIMO1616, HUB series and MIMO4040DN</u>, which use **115200** baud rate)
- Data bits: 8
- Parity: None
- Stop bits: 1
- Flow control: None

In case the Ecler device has an Euroblock connector for the RS-232 interface, the serial cable wiring, from the device's connector to a standard DB9 serial interface connector, must be the following:

WIRING RS232 – DB9	
RS232	**DB9**
Tx	Pin 2 (RxD)
Rx	Pin 3 (TxD)
Gnd	Pin 5 (Signal Gnd)

The protocol is simple and direct, making it easy to read, write and modify the generated code. It is based on messages with no begin and end delimiter: each message is self-delimited by the UDP packet size, which is defined with a maximum of **80 characters**. All the messages must be written in capital letters.

To let some control systems (like CRESTRON®, EXTRON®, AMX®, RTI®, VITY®, MEDIALON®, etc.) process the messages more easily, the EclerNet device adds the character **LF (0x0A)** to the end of each message. This way the client can buffer the

messages to process them, if it's required. The EclerNet device can also handle several messages received in a single message packet by using the **LF** delimiter.

The available messages are built with one or more fields separated with blank spaces (= blank space):

<div align="center">

<TYPE> ▮ **[PARAM1]** ▮ **[PARAM2]** ▮ **[PARAM3]** ▮ **[PARAM4][LF]**

</div>

The first field (**TYPE**) defines the **message type** and then, the required parameters for it (each kind of message requires a given number of parameters). The field **TYPE** can have these values:

- **SYSTEM**
- **GET**
- **SET**
- **INC**
- **DEC**
- **SUBSCRIBE**
- **UNSUBSCRIBE**
- **DATA**
- **ERROR**

At the end of this document you'll find all the available messages and their parameters for each model of the EclerNet compatible devices.

The **SYSTEM, GET, SET, INC, DEC, SUBSCRIBE** & **UNSUBSCRIBE** messages can be sent from the client to the EclerNet device. The **DATA** & **ERROR** messages can be sent from the device to the client. The only exception is the **SYSTEM PING** message, that is a **SYSTEM** type message that is sent from the EclerNet device when the initial message from the client to the device was **SYSTEM CONNECT PINGPONG.**

The communication (using UDP or RS-232) starts when a client sends the message **SYSTEM CONNECT** to the EclerNet device. As far as the UDP communication requires no connection (unlike the TCP), the EclerNet device stores this client's IP address, and then uses it as the destination IP address for the messages that it generates (**DATA** & **ERROR**). After receiving the **SYSTEM CONNECT** message, the device dumps its entire configuration using several consecutive **DATA** messages.

Note: if the configuration data dump process (usually a huge list of parameters & values) wants to be avoided after a **SYSTEM CONNECT** message, a **SYSTEM CONNECT ONCE** message can be used instead.

The communication can be terminated by two methods:

- **Manually:** when the client sends the **SYSTEM DISCONNECT** message**,** cancelling all the subscriptions and stopping the **DATA** & **ERROR** messages
- **Automatically:** in case the initial message was **SYSTEM CONNECT PINGPONG** and the client didn't get any **SYSTEM PONG** message in a period longer than 10 seconds (presuming a communication breakdown)

The **SET** messages don't have an automatic acknowledgement with a **DATA** message sent from the EclerNet device after it has processed the **SET** command. The client must update the values itself and must send the needed **GET** message if it requires confirmation from the device.

NOTES:

- The numerical values are always integer numbers without **+**, **–**, comma or dot symbols.
- **[PINGPONG]** is an optional parameter used to configure the device-client communication with a periodical check, to see whether the client or the device have terminated it. When configured this way, the device sends a **SYSTEM PING** once per second, and the client must answer with a **SYSTEM PONG** message. If anyone doesn't get these messages along a 10 seconds period, the communication will be considered terminated
- **[ONCE]** is an optional parameter used to start the device-client communication without a full data dump process (usually a huge list of parameters & values)
- **<Input Channel>** & **<Output Channel>** are numerical values that identify an input or output channel of the EclerNet device:
- It can be within a [1..8] range for MIMO88 single units (8x8 matrix masters), and [1..16] for MIMO88 couples configured as 16x16 matrix masters
- It can be within a [1..8] range for MIMO88SG units
- It can be within a [1..12] range for MIMO1212SG units
- For the NPA series, <Output Channel> can be within a [1..2] range
- For the NXA and NZA series it can be within the [1..4] or [1..6] range, for 4 or 6 channel amplifiers
- It can be within a [1..16] range for eMIMO1616 units
- It can be within a [1...40] range for MIMO4040DN
- **<Preset Number>** is a numerical value that identifies one available Preset stored in the EclerNet device's memory:
- For the MIMO series it can be within the [1..99] range
- For the DUO-NET PLAYER it can be within the [1..20] range
- For the NPA series it can be within the [1..10] range
- For the NXA and NZA series it can be within the [1..5] range

- **<Level>**, **<Pre Vumeter Level>** y **<Post Vumeter Level>** are numerical values in the [0..100] range that define values in a scale equivalent to [-inf..0] dB
- **<GPI>** & **<GPO>** are numerical values within the [1..8] range for the MIMO88 configured as 8x8 matrix masters (single units), and [1..16] for MIMO88 couples configured as 16x16 matrix masters. For the NXA series GPI values can be within the [1..4] or [1..6] range, depending on model. For the MIMO4040DN GPI and GPO values can be within [1..8]
- **<GPI Value>** is a numerical value within the [0..100] range that indicates the value of an analogue GPI input. For a digital input only 0 or 100 are the possible values
- **<GPO Value>** is a numerical value within the [0..1] range: it can only be 0 or 1 (opened or closed GPO)
- **<Rate>** is a numerical value within the [1..10] range that sets the VU-meter refresh rate, or the number of times the vumeters' values are sent per second (by default = 3)
- **"<Device Name>"** is the device name inside double quotation marks, to allow for names with blank spaces
- **<Error ID>** is a numerical value for an error code
- **"<Error Description>"** is a text chain inside double quotation marks, containing an error description
- **<Virtual Control>** is a numerical value that identifies a Virtual Control in a MIMO or NXA device:
- It can be within a [1A..4A] or [1B..4B] range for NXA 4 ch. Models
- It can be within a [1A..6A] or [1B..6B] range for NXA 6 ch. models
- It can be within a [1..64] range for MIMO88, MIMO88CONF, MIMO88SG, MIMO88SGCONF, MIMO1616, MIMO1616CONF, MIMO1212SG and MIMO1212SGCONF models
- It can be within a [1..80] range for MIMO4040DN model

2. NXA DIGITAL AUDIO MANAGER SERIES

IMPORTANT NOTE: The communication must be started with the client sending **the first message** **SYSTEM CONNECT** or **SYSTEM CONNECT ONCE** to the EclerNet device. Otherwise, the commands from the client to the EclerNet device will be ignored. See chapter 1 for additional information.

TYPE	PARAM1	PARAM2	PARAM3	PARAM4	DESCRIPTION
SYSTEM	CONNECT	[PINGPONG]	[ONCE]		Saves the client IP address for responses and then dumps current device status (with DATA messages)
	DISCONNECT				Cancel subscriptions and terminates communication
	SUBSCRIPTION_RATE	<Rate>			Alive message from device
	PING				Alive message from device
	PONG				Alive ACK message from client
GET	ALL				Dumps current device status (with DATA messages)
	POWER				Gets the Device Power status
	PRESET				Gets the current PRESET
	OLEVEL	<Output Channel>			Gets the current LEVEL of an Output Channel
	XLEVEL	<Input Channel>	<Output Channel>		Gets the current LEVEL of a Matrix point
	OMUTE	<Output Channel>			Gets the current MUTE status of an Output Channel

	XMUTE	\<Input Channel>	\<Output Channel>		Gets the current MUTE status of a Matrix Point
	OVU	\<Output Channel>			Gets the VU-meter value of an Output Channel
	ALARM_PROTECT	\<Output Channel>			Gets the Protect alarm status of an Output Channel
	ALARM_FAULT	\<Output Channel>			Gets the self-diagnosis system alarm status of an Output Channel
	INFO_NAME				Gets the Device Name
	INFO_MODEL				Gets the Device Model
	INFO_VERSION				Gets the Firmware Version
	INFO_MAC				Gets the Device MAC address
	VIRTUAL_CONTROL	\<Virtual Control>			Gets the Virtual Control value

TYPE	PARAM1	PARAM2	PARAM3	PARAM4	DESCRIPTION
SET	POWER	ON/OFF			Sets the Device Power status
	PRESET	<Preset Number>			Sets the current PRESET
	OLEVEL	<Output Channel>	<Level>		Sets the current LEVEL of an Output Channel
	XLEVEL	<Input Channel>	<Output Channel>	<Level>	Sets the current LEVEL of a Matrix point
	OMUTE	<Output Channel>	YES/NO		Sets the current MUTE status of an Output Channel
	XMUTE	<Input Channel>	<Output Channel>		Sets the current MUTE status of a Matrix Point
	VIRTUAL_CONTROL	<Virtual Control>	<Value>		Sets the Virtual Control value (Value can range from 1 to 100)
INC	OLEVEL	<Output Channel>	<Value>		Increases the current LEVEL of an Output Channel by Value (Value can range from ±1 to ±100)
	XLEVEL	<Input Channel>	<Output Channel>	<Value>	Increases the current LEVEL of a Matrix point by Value (Value can range from ±1 to ±100)
DEC	OLEVEL	<Output Channel>	<Value>		Decreases the current LEVEL of an Output Channel by Value (Value can range from ±1 to ±100)
	XLEVEL	<Input Channel>	<Output Channel>	<Value>	Decreases the current LEVEL of a Matrix point by Value (Value can range from ±1 to ±100)
SUBSCRIBE	ALL				Subscribes to all VU-meters
	OVU	<Output Channel>			Subscribes to an Output Channel VU-meter
UNSUBSCRIBE	ALL				Unsubscribe to all VU-meters
	OVU	<Output Channel>			Unsubscribe to an Output Channel VU-meter
DATA	POWER	ON/OFF			Shows the Device Power status

	PRESET	<Preset Number>			Shows the current PRESET
	OLEVEL	<Output Channel>	<Level>		Shows the current LEVEL of an Output Channel
	XLEVEL	<Input Channel>	<Output Channel>	<Level>	Shows the current LEVEL of a Matrix point
	OMUTE	<Output Channel>	YES/NO		Shows the current MUTE status of an Output Channel
	XMUTE	<Input Channel>	<Output Channel>	YES/NO	Shows the current MUTE status of a Matrix point
	VIRTUAL_CONTROL	<Virtual Control>	<Value>		Shows the Virtual Control value
	OVU	<Output Channel>	<Pre Vumeter Level>	<Post Vumeter Level>	Shows the VU-meter value of an Output Channel
	ALARM_PROTECT	<Output Channel>	ON/OFF		Shows the Protect alarm status of an Output Channel
	ALARM_FAULT	<Output Channel>	ON/OFF		Shows the self-diagnosis system alarm status of an Output Channel
	INFO_NAME	"<Device Name>"			Shows the Device Name
	INFO_MODEL	<Device Model>			Shows the Device Model
	INFO_VERSION	<Firmware Version>			Shows the Firmware Version
	INFO_MAC	<Device MAC address>			Shows the Device MAC address
ERROR	<Error ID>	"<Error Description>"			Informs about an error

Note: INC and DEC commands are replied with a DATA command from the device with the resulting LEVEL value, after it has been increased or decreased. When the INC or DEC command tries to adjust a LEVEL value beyond its minimum or maximum limits, no reply (DATA command) will be produced.

3. NZA MULTICHANNEL AMPLIFIER SERIES

IMPORTANT NOTE: The communication must be started with the client sending **the first message** SYSTEM CONNECT or SYSTEM CONNECT ONCE to the EclerNet device. Otherwise, the commands from the client to the EclerNet device will be ignored. See chapter 1 for additional information.

TYPE	PARAM1	PARAM2	PARAM3	PARAM4	DESCRIPTION
SYSTEM	CONNECT	[PINGPONG]	[ONCE]		Saves the client IP address for responses and then dumps current device status (with DATA messages)
	DISCONNECT				Cancel subscriptions and terminates communication
	SUBSCRIPTION_RATE	<Rate>			Alive message from device
	PING				Alive message from device
	PONG				Alive ACK message from client
GET	ALL				Dumps current device status (with DATA messages)
	POWER				Gets the Device Power status
	PRESET				Gets the current PRESET
	OLEVEL	<Output Channel>			Gets the current LEVEL of an Output Channel
	OMUTE	<Output Channel>			Gets the current MUTE status of an Output Channel
	OVU	<Output Channel>			Gets the VU-meter value of an Output Channel
	ALARM_PROTECT	<Output Channel>			Gets the Protect alarm status of an Output Channel
	INFO_NAME				Gets the Device Name
	INFO_MODEL				Gets the Device Model

	INFO_VERSION				Gets the Firmware Version
	INFO_MAC				Gets the Device MAC address
SET	POWER	ON/OFF			Sets the Device Power status
	PRESET	\<Preset Number>			Sets the current PRESET
	OLEVEL	\<Output Channel>	\<Level>		Sets the current LEVEL of an Output Channel
	OMUTE	\<Output Channel>	YES/NO		Sets the current MUTE status of an Output Channel
SUBSCRIBE	ALL				Subscribes to all VU-meters
	OVU	\<Output Channel>			Subscribes to an Output Channel VU-meter
UNSUBSCRIBE	ALL				Unsubscribe to all VU-meters
	OVU	\<Output Channel>			Unsubscribe to an Output Channel VU-meter
DATA	POWER	ON/OFF			Shows the Device Power status
	PRESET	\<Preset Number>			Shows the current PRESET
	OLEVEL	\<Output Channel>	\<Level>		Shows the current LEVEL of an Output Channel
	OMUTE	\<Output Channel>	YES/NO		Shows the current MUTE status of an Output Channel
	OVU	\<Output Channel>	\<Pre Vumeter Level>	\<Post Vumeter Level>	Shows the VU-meter value of an Output Channel
	ALARM_PROTECT	\<Output Channel>	ON/OFF		Shows the Protect alarm status of an Output Channel

	INFO_NAME	"\<Device Name>"			Shows the Device Name
	INFO_MODEL	\<Device Model>			Shows the Device Model
	INFO_VERSION	\<Firmware Version>			Shows the Firmware Version
	INFO_MAC	\<Device MAC address>			Shows the Device MAC address
ERROR	\<Error ID>	"\<Error Description>"			Informs about an error

4. NPA STEREO AMPLIFIER SERIES

IMPORTANT NOTE: The communication must be started with the client sending **the first message** SYSTEM CONNECT or SYSTEM CONNECT ONCE to the EclerNet device. Otherwise, the commands from the client to the EclerNet device will be ignored. See chapter 1 for additional information.

TYPE	PARAM1	PARAM2	PARAM3	PARAM4	DESCRIPTION
SYSTEM	CONNECT	[PINGPONG]	[ONCE]		Saves the client IP address for responses and then dumps current device status (with DATA messages)
	DISCONNECT				Cancel subscriptions and terminates communication
	SUBSCRIPTION_RATE	<Rate>			Alive message from device
	PING				Alive message from device
	PONG				Alice ACK message from client
GET	ALL				Dumps current device status (with DATA messages)
	POWER				Gets the Device Power status
	PRESET				Gets the current PRESET
	OLEVEL	<Output Channel>			Gets the current LEVEL of an Output Channel
	OMUTE	<Output Channel>			Gets the current MUTE status of an Output Channel
	OVU	<Output Channel>			Gets the VU-meter value of an Output Channel

	ALARM_PROTECT	<Output Channel>			Gets the Protect alarm status of an Output Channel
	ALARM_THERMAL	<Output Channel>			Gets the Thermal alarm status of an Output Channel
	ALARM_LOAD	<Output Channel>			Gets the Load alarm status of an Output Channel
	ALARM_VOLTAGE				Gets the Voltage alarm status of the Device
	INFO_NAME				Gets the Device Name
	INFO_MODEL				Gets the Device Model
	INFO_VERSION				Gets the Firmware Version
	INFO_MAC				Gets the Device MAC address

TYPE	PARAM1	PARAM2	PARAM3	PARAM4	DESCRIPTION
SET	POWER	ON/OFF			Sets the Device Power status
	PRESET	<Preset Number>			Sets the current PRESET
	OLEVEL	<Output Channel>	<Level>		Sets the current LEVEL of an Output Channel
	OMUTE	<Output Channel>	YES/NO		Sets the current MUTE status of an Output Channel
SUBSCRIBE	ALL				Subscribes to all VU-meters
	OVU	<Output Channel>			Subscribes to an Output Channel VU-meter
UNSUBSCRIBE	ALL				Unsubscribe to all VU-meters
	OVU	<Output Channel>			Unsubscribe to an Output Channel VU-meter
DATA	POWER	ON/OFF			Shows the Device Power status
	PRESET	<Preset Number>			Shows the current PRESET
	OLEVEL	<Output Channel>	<Level>		Shows the current LEVEL of an Output Channel
	OMUTE	<Output Channel>	YES/NO		Shows the current MUTE status of an Output Channel
	OVU	<Output Channel>	<Pre Vumeter Level>	<Post Vumeter Level>	Shows the VU-meter value of an Output Channel

	ALARM_PROTECT	<Output Channel>	ON/OFF		Shows the Protect alarm status of an Output Channel
	ALARM_THERMAL	<Output Channel>	ON/OFF		Shows the Thermal alarm status of an Output Channel
	ALARM_LOAD	<Output Channel>	ON/OFF		Shows the Load alarm status of an Output Channel
	ALARM_VOLTAGE	ON/OFF			Shows the Voltage alarm status of the Device
	INFO_NAME	"<Device Name>"			Shows the Device Name
	INFO_MODEL	<Device Model>			Shows the Device Model
	INFO_VERSION	<Firmware Version>			Shows the Firmware Version
	INFO_MAC	<Device MAC address>			Shows the Device MAC address
ERROR	<Error ID>	"<Error Description>"			Informs about an error

5. MIMO88 / MIMO88 CONFERENCE / MIMO88SG / MIMO1212SG (SINGLE) DIGITAL MATRIX

IMPORTANT NOTE: The communication must be started with the client sending **the first message** SYSTEM CONNECT or SYSTEM CONNECT ONCE to the EclerNet device. Otherwise, the commands from the client to the EclerNet device will be ignored. See chapter 1 for additional information.

TYPE	PARAM1	PARAM2	PARAM3	PARAM4	DESCRIPTION
SYSTEM	CONNECT	[PINGPONG]	[ONCE]		Saves the client IP address for responses and then dumps current device status (with DATA messages)
	DISCONNECT				Cancel subscriptions and terminates communication
	SUBSCRIPTION_RATE	<Rate>			Alive message from device
	PING				Alive message from device
	PONG				Alive ACK message from client
GET	ALL				Dumps current device status (with DATA messages)
	PRESET				Gets the current PRESET
	ILEVEL	<Input Channel>			Gets the current LEVEL of an Input Channel
	OLEVEL	<Output Channel>			Gets the current LEVEL of an Output Channel
	XLEVEL	<Input Channel>	<Output Channel>		Gets the current LEVEL of a Matrix point

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	IMUTE	<Input Channel>			Gets the current MUTE status of an Input Channel
	OMUTE	<Output Channel>			Gets the current MUTE status of an Output Channel
	XMUTE	<Input Channel>	<Output Channel>		Gets the current MUTE status of a Matrix Point
	IVU	<Input Channel>			Gets the VU-meter value of an Input Channel
	OVU	<Output Channel>			Gets the VU-meter value of an Output Channel
	GPI	<Input>			Gets the current value of a General Purpose Input
	GPO	<Output>			Gets the current value of a General Purpose Output **(not valid for MIMO88SG / MIMO1212SG)**
	INFO_NAME				Gets the Device Name
	INFO_MODEL				Gets the Device Model
	INFO_VERSION				Gets the Firmware Version
	INFO_MAC				Gets the Device MAC address
	VIRTUAL_CONTROL	<Virtual Control>			Gets the Virtual Control value

TYPE	PARAM1	PARAM2	PARAM3	PARAM4	DESCRIPTION
SET	PRESET	<Preset Number>			Sets the current PRESET
	ILEVEL	<Input Channel>	<Level>		Sets the current LEVEL of an Input Channel
	OLEVEL	<Output Channel>	<Level>		Sets the current LEVEL of an Output Channel
	XLEVEL	<Input Channel>	<Output Channel>	<Level>	Sets the current LEVEL for a Matrix point
	IMUTE	<Input Channel>	YES/NO		Sets the current MUTE status of an Input Channel
	OMUTE	<Output Channel>	YES/NO		Sets the current MUTE status of an Output Channel
	XMUTE	<Input Channel>	<Output Channel>	YES/NO	Sets the current MUTE status for a Matrix Point
	GPO	<Output>	<GPO Value>		Sets the current value for a General Purpose Output **(not valid for MIMO88SG)**
	VIRTUAL_CONTROL	<Virtual Control>	<Value>		Sets the Virtual Control value (Value can range from 1 to 100)
INC	ILEVEL	<Input Channel >	<Value>		Increases the current LEVEL of an Input Channel by Value (Value can range from ±1 to ±100)
	OLEVEL	<Output Channel>	<Value>		Increases the current LEVEL of an Output Channel by Value (Value can range from ±1 to ±100)

	XLEVEL	<Input Channel>	<Output Channel>	<Value>	Increases the current LEVEL of a Matrix point by Value (Value can range from ±1 to ±100)
DEC	ILEVEL	<Input Channel >	<Value>		Decreases the current LEVEL of an Input Channel by Value (Value can range from ±1 to ±100)
	OLEVEL	<Output Channel>	<Value>		Decreases the current LEVEL of an Output Channel by Value (Value can range from ±1 to ±100)
	XLEVEL	<Input Channel>	<Output Channel>	<Value>	Decreases the current LEVEL of a Matrix point by Value (Value can range from ±1 to ±100)
SUBSCRIBE	ALL				Subscribes to all VU-meters
	IVU	<Input Channel>			Subscribes to an Input Channel VU-meter
	OVU	<Output Channel>			Subscribes to an Output Channel VU-meter
UNSUBSCRIBE	ALL				Unsubscribe to all VU-meters
	IVU	<Input Channel>			Unsubscribe to an Input Channel VU-meter
	OVU	<Output Channel>			Unsubscribe to an Output Channel VU-meter

Note: INC and DEC commands are replied with a DATA command from the device with the resulting LEVEL value, after it has been increased or decreased. When the INC or DEC command tries to adjust a LEVEL value beyond its minimum or maximum limits, no reply (DATA command) will be produced.

TYPE	PARAM1	PARAM2	PARAM3	PARAM4	DESCRIPTION
DATA	PRESET	<Preset Number>			Shows the current PRESET
	ILEVEL	<Input Channel>	<Level>		Shows the current LEVEL of an Input Channel
	OLEVEL	<Output Channel>	<Level>		Shows the current LEVEL of an Output Channel
	XLEVEL	<Input Channel>	<Output Channel>	<Level>	Shows the current LEVEL for a Matrix point
	IMUTE	<Input Channel>	YES/NO		Shows the current MUTE status of an Input Channel
	OMUTE	<Output Channel>	YES/NO		Shows the current MUTE status of an Output Channel
	XMUTE	<Input Channel>	<Output Channel>	YES/NO	Shows the current MUTE status for a Matrix Point
	VIRTUAL_CONTROL	<Virtual Control>	<Value>		Shows the Virtual Control value (Value can range from 1 to 100)
	IVU	<Input Channel>	<Pre Vumeter Level>	<Post Vumeter Level>	Shows the VU-meter value of an Input Channel
	OVU	<Output Channel>	<Pre Vumeter Level>	<Post Vumeter Level>	Shows the VU-meter value of an Output Channel
	GPI	<Input>	<GPI Value>		Shows the current value of a General Purpose Input
	GPO	<Output>	<GPO Value)		Shows the current value of a General Purpose Output. **(not valid for MIMO88SG)**
	INFO_NAME	"<Device Name>"			Shows the Device Name
	INFO_MODEL	<Device Model>			Shows the Device Model
	INFO_VERSION	<Firmware Version>			Shows the Firmware Version
	INFO_MAC	<Device MAC address>			Shows the Device MAC address
ERROR	<Error ID>	"<Error Description>"			Informs about an error

6. MIMO88SG CONFERENCE DIGITAL MATRIX

IMPORTANT NOTE: The communication must be started with the client sending **the first message** SYSTEM CONNECT or SYSTEM CONNECT ONCE to the EclerNet device. Otherwise, the commands from the client to the EclerNet device will be ignored. See chapter 1 for additional information.

This MIMO88SG CONFERENCE firmware version shares the same hardware with the standard MIMO88SG unit, just uploading the CONFERENCE firmware version to it, and shares as well the same TP-NET commands in the above table, adding to them these new ones:

TYPE	PARAM1	PARAM2	PARAM3	PARAM4	DESCRIPTION
GET	GATE				Gets the current status of the NOISE GATE for inputs 1 to 8
	AUTOMIXER				Gets the current status of the AUTOMIXER function for inputs 1 to 8
SUBSCRIBE	GATE				Subscribes to the status of the NOISE GATE for inputs 1 to 8
	AUTOMIXER				Subscribes to the status of the AUTOMIXER function for inputs 1 to 8
UNSUSCRIBE	GATE				Unsubscribes to the status of the NOISE GATE for inputs 1 to 8
	AUTOMIXER				Unsubscribes to the status of the AUTOMIXER function for inputs 1 to 8
DATA	GATE	s1 s2 s3 s4 s5 s6 s7 s8			Shows the current NOISE GATE status (0 = open / 1 = closed) for the 8 inputs channels (s1 to s8, status of the gate for inputs 1 to 8)
	AUTOMIXER	s1 s2 s3 s4 s5 s6 s7 s8			Shows the current status for input channels in the Automixer section (0 = disabled or bellow threshold in the automixer / 1 = enabled and beyond threshold, but queued, not in the automatic mix / 2 = enabled, beyond threshold and into the automatic mix) for the 8 inputs channels (s1 to s8, status of the automixer function for inputs 1 to 8)

7. MIMO4040DN / MIMO4040DN CONFERENCE DIGITAL MATRIX

IMPORTANT NOTE: The communication must be started with the client sending **the first message** SYSTEM CONNECT or SYSTEM CONNECT ONCE to the EclerNet device. Otherwise, the commands from the client to the EclerNet device will be ignored. See chapter 1 for additional information.

TYPE	PARAM1	PARAM2	PARAM3	PARAM4	DESCRIPTION
SYSTEM	CONNECT	[MASTER]	[PINGPONG]	[ONCE]	Saves the client IP address for responses and then dumps current device status (with DATA messages)
	DISCONNECT				Cancel subscriptions and terminates communication
	SUBSCRIPTION_RATE	<Rate>			Alive message from device
	PING				Alive message from device
	PONG				Alive ACK message from client
	PING INTERVAL	<1-1000>			Ping Interval, in seconds
GET	ALL				Dumps current device status (with DATA messages)
	PRESET				Gets the current PRESET
	ILEVEL	<Input Channel>			Gets the current LEVEL of an Input Channel
	OLEVEL	<Output Channel>			Gets the current LEVEL of an Output Channel

	XLEVEL	\<Input Channel\>	\<Output Channel\>		Gets the current LEVEL of a Matrix point
	IMUTE	\<Input Channel\>			Gets the current MUTE status of an Input Channel
	XMUTE	\<Input Channel\>	\<Output Channel\>		Gets the current MUTE status of a Matrix Point
	IVU	\<Input Channel\>			Gets the VU-meter value of an Input Channel
	OVU	\<Output Channel\>			Gets the VU-meter value of an Output Channel
	GPI	\<Input\>			Gets the current value of a General Purpose Input
	GPO	\<Output\>			Gets the current value of a General Purpose Output
	INFO_NAME				Gets the Device Name
	INFO_MODEL				Gets the Device Model
	INFO_VERSION				Gets the Firmware Version
	INFO_MAC				Gets the Device MAC address
	VIRTUAL_CONTROL	\<Virtual Control\>			Gets the Virtual Control value

TYPE	PARAM1	PARAM2	PARAM3	PARAM4	DESCRIPTION
SET	PRESET	<Preset Number>			Sets the current PRESET
	ILEVEL	<Input Channel>	<Level>		Sets the current LEVEL of an Input Channel
	OLEVEL	<Output Channel>	<Level>		Sets the current LEVEL of an Output Channel
	XLEVEL	<Input Channel>	<Output Channel>	<Level>	Sets the current LEVEL for a Matrix point
	IMUTE	<Input Channel>	YES/NO		Sets the current MUTE status of an Input Channel
	XMUTE	<Input Channel>	<Output Channel>	YES/NO	Sets the current MUTE status for a Matrix Point
	GPO	<Output>	<GPO Value>		Sets the current value for a General Purpose Output
	VIRTUAL_CONTROL	<Virtual Control>	<Value>		Sets the Virtual Control value (Value can range from 1 to 100)
INC	ILEVEL	<Input Channel >	<Value>		Increases the current LEVEL of an Input Channel by Value (Value can range from ±1 to ±100)
	OLEVEL	<Output Channel>	<Value>		Increases the current LEVEL of an Output Channel by Value (Value can range from ±1 to ±100)
	XLEVEL	<Input Channel>	<Output Channel>	<Value>	Increases the current LEVEL of a Matrix point by Value (Value can range from ±1 to ±100)

DEC	ILEVEL	\<Input Channel \>	\<Value\>		Decreases the current LEVEL of an Input Channel by Value (Value can range from ±1 to ±100)
	OLEVEL	\<Output Channel\>	\<Value\>		Decreases the current LEVEL of an Output Channel by Value (Value can range from ±1 to ±100)
	XLEVEL	\<Input Channel\>	\<Output Channel\>	\<Value\>	Decreases the current LEVEL of a Matrix point by Value (Value can range from ±1 to ±100)
SUBSCRIBE	ALL				Subscribes to all VU-meters
	IVU	\<Input Channel\>			Subscribes to an Input Channel VU-meter
	OVU	\<Output Channel\>			Subscribes to an Output Channel VU-meter
UNSUBSCRIBE	ALL				Unsubscribe to all VU-meters
	IVU	\<Input Channel\>			Unsubscribe to an Input Channel VU-meter
	OVU	\<Output Channel\>			Unsubscribe to an Output Channel VU-meter

Note: INC and DEC commands are replied with a DATA command from the device with the resulting LEVEL value, after it has been increased or decreased. When the INC or DEC command tries to adjust a LEVEL value beyond its minimum or maximum limits, no reply (DATA command) will be produced.

TYPE	PARAM1	PARAM2	PARAM3	PARAM4	DESCRIPTION
DATA	PRESET	<Preset Number>			Shows the current PRESET
	ILEVEL	<Input Channel>	<Level>		Shows the current LEVEL of an Input Channel
	OLEVEL	<Output Channel>	<Level>		Shows the current LEVEL of an Output Channel
	XLEVEL	<Input Channel>	<Output Channel>	<Level>	Shows the current LEVEL for a Matrix point
	IMUTE	<Input Channel>	YES/NO		Shows the current MUTE status of an Input Channel
	XMUTE	<Input Channel>	<Output Channel>	YES/NO	Shows the current MUTE status for a Matrix Point
	VIRTUAL_CONTROL	<Virtual Control>	<Value>		Shows the Virtual Control value (Value can range from 1 to 100)
	IVU	<Input Channel>	<Pre Vumeter Level>	<Post Vumeter Level>	Shows the VU-meter value of an Input Channel
	OVU	<Output Channel>	<Pre Vumeter Level>	<Post Vumeter Level>	Shows the VU-meter value of an Output Channel
	GPI	<Input>	<GPI Value>		Shows the current value of a General Purpose Input
	GPO	<Output>	<GPO Value)		Shows the current value of a General Purpose Output.
	INFO_NAME	"<Device Name>"			Shows the Device Name

	INFO_MODEL	<Device Model>			Shows the Device Model
	INFO_VERSION	<Firmware Version>			Shows the Firmware Version
	INFO_MAC	<Device MAC address>			Shows the Device MAC address
	INFO IPLIST				Shows the list of clients connected to the Device. The message will contain a list including **ClientNumber ClientIP Client Port** (separated by blank characters)

8. DUO-NET PLAYER AUDIO PLAYER & STREAMING RECEIVER

IMPORTANT NOTE: The communication must be started with the client sending **the first message** SYSTEM CONNECT or SYSTEM CONNECT ONCE to the EclerNet device. Otherwise, the commands from the client to the EclerNet device will be ignored. See chapter 1 for additional information.

TYPE	PARAM1	PARAM2	PARAM3	PARAM4	DESCRIPTION
SYSTEM	CONNECT	[PINGPONG]	[ONCE]		Saves the client IP address for responses and then dumps current device status (with DATA messages)
	DISCONNECT				Cancel subscriptions and terminates communication
	SUBSCRIPTION_RATE	<Rate>			Alive message from device
	PING				Alive message from device
	PONG				Alive ACK message from client
	PING_INTERVAL				
GET	ALL				Dumps current device status (with DATA messages)
	PRESET_INDEX				Gets the current PRESET number
	PRESET_NAME				Gets the current PRESET name
	DEVICE_NAME				Gets the Device Name
	INFO_MODEL				Gets the Device Model

	INFO_VERSION				Gets the Firmware Version
	INFO_MAC				Gets the Device MAC address
	INFO_IPLIST				Gets the IP parameters of the connected client devices
	IP_CONFIG				Shows the DUO-NET unit's current IP configuration
	PLAYER_NAME	<PLAYER:A/B>			Gets the PLAYER A or B NAME
	PLAYER_MUTE	<PLAYER:A/B>			Gets the MUTE status of PLAYER A or B
	PLAYER_VOLUME	<PLAYER:A/B>			Gets the VOLUME level of PLAYER A or B
	PLAYER_VUMETER	<PLAYER:A/B>			Gets the VUMETER level of PLAYER A or B
	PLAYER_TIME	<PLAYER:A/B>			Gets PLAYER A or B elapsed, remaining and total time of the current media playback
	PLAYER_TRANSPORT_STATUS	<PLAYER:A/B>			Gets PLAYER A or B current playback status
	PLAYER_PLAYLIST_INDEX				Gets PLAYER A or B loaded playlist number, from the 99 available in the playlist bank
	PLAYER_PLAYLIST_NAME	<PLAYER:A/B>			Gets PLAYER A or B loaded playlist name, from the 99 available in the playlist bank
	PLAYER_QUEUE_INFO	<PLAYER:A/B>			Gets PLAYER A or B current playback queue position (index) and total number of items in it (count)

	PLAYER_PLAY_MODE	<PLAYER:A/B>			Gets PLAYER A or B current playback order mode
	PLAYER_REPEAT_MODE	<PLAYER:A/B>			Gets PLAYER A or B current playback repeat mode
	PLAYER_FADE_MODE	<PLAYER:A/B>			Gets PLAYER A or B current tracks playback transition mode
	PLAYER_VARISPEED	<PLAYER:A/B>			Gets PLAYER A or B current playback tempo variation value
	PRIORITY_STATUS	<PRIORITY:1/2>			Gets PRIORITY MODULE 1 or 2 status
	PLAYER_ITEM_TAGS	<PLAYER:A/B>			Gets PLAYER A or B current playback ALIAS, TITLE, ARTIST, ALBUM and NAME tags

SET	PRESET_INDEX	<1..20>			Sets the current PRESET number
	PLAYER_MUTE	<PLAYER:A/B>	<YES/NO>		Sets the MUTE status of PLAYER A or B
	PLAYER_VOLUME	<PLAYER:A/B>	<0..100>		Sets the VOLUME level of PLAYER A or B
	PLAYER_TRANSPORT_CONTROL	<PLAYER:A/B>	<STOP/PLAY/PAUSE/NEXT/PREV>		Sets PLAYER A or B transport controls
	PLAYER_PLAYLIST_INDEX	<PLAYER:A/B>	<1..99>		Sets (loads) PLAYER A or B playlist number, from the 99 available in the playlist bank
	PLAYER_PLAY_MODE	<PLAYER:A/B>	<SEQUENTIAL/RANDOM>		Sets PLAYER A or B playback order mode
	PLAYER_REPEAT_MODE	<PLAYER:A/B>	<PLAY_ALL/PLAY_ONE/REPEAT_ALL/REPEAT_ONE>		Sets PLAYER A or B current playback repeat mode
	PLAYER_FADE_MODE	<PLAYER:A/B>	<NONE/XFADE/FADE/HFADE>		Sets PLAYER A or B current tracks playback transition mode
	PLAYER_VARISPEED	<PLAYER:A/B>	<VARISPEED:-50..50>		Sets the current Varispeed (track's tempo) variation value, from -50% to +50%

INC	PLAYER_VOLUME	PLAYER:A/B>	<0..100>		INCreases the current VOLUME of a PLAYER, a value from ±1 to ±100
	PLAYER_VARISPEED	PLAYER:A/B>	<VARISPEED:-50..50>		INCrements the current Varispeed (track's tempo) variation value, from -50% to +50%
DEC	PLAYER_VOLUME	PLAYER:A/B>	<0..100>		DECreases the current VOLUME of a PLAYER, a value from ±1 to ±100
	PLAYER_VARISPEED	PLAYER:A/B>	<VARISPEED:-50..50>		DECrements the current Varispeed (track's tempo) variation value, from -50% to +50%
SUBSCRIBE	ALL				Subscribes to all VU-meters and player times
	PLAYER_VUMETER	PLAYER:A/B>			Subscribes to the VUMETER level of PLAYER A or B
	PLAYER_TIME	PLAYER:A/B>			Subscribes to the TIME values (elapsed, remaining, total) of PLAYER A or B
UNSUSCRIBE	ALL				Unsubscribes to all VU-meters and player times
	PLAYER_VUMETER	PLAYER:A/B>			Unsubscribes to the VUMETER level of PLAYER A or B
	PLAYER_TIME	PLAYER:A/B>			Unsubscribes to the TIME values (elapsed, remaining, total) of PLAYER A or B

DATA	PRESET_INDEX	<1..20>			Shows the current PRESET number
	PRESET_NAME	"<NAME>"			Shows the current PRESET name
	DEVICE_NAME	"<NAME>"			Shows the Device Name
	INFO_MODEL	<Device Model>			Shows the Device Model
	INFO_VERSION	<Firmware Version>			Shows the Firmware Version
	INFO_MAC	<Device MAC address>			Shows the Device MAC address
	INFO_IPLIST	<N>	<IP>	<PORT>	Shows the IP parameters of the connected client devices, where N is an incremental number assigned to each one, followed by the IP:port it has Example with 2 clients : *DATA INFO_IPLIST 1 192.168.1.2 55229 DATA INFO_IPLIST 2 192.168.1.2 55231*

IP_CONFIG	IP>	<PORT>		<NETMASK>	<GATEWAY>	Shows the DUO-NET unit's current IP configuration. Example: DATA IP_CONFIG 192.168.0.6 5000 255.255.0.0 192.168.0.1
PLAYER_NAME	<PLAYER:A/B>	"<NAME>"				Shows the PLAYER A or B NAME
PLAYER_MUTE	<PLAYER:A/B>	<MUTE:YES/NO>				Shows the MUTE status of PLAYER A or B
PLAYER_VOLUME	<PLAYER:A/B>	<VOL:0..100>				Shows the VOLUME level of PLAYER A or B
PLAYER_VUMETER	<PLAYER:A/B>	<VOL:0..100>				Shows the VUMETER level of PLAYER A or B
PLAYER_TIME	<PLAYER:A/B>	<ELAPSED>		<REMAIN>	<TOTAL>	Shows PLAYER A or B elapsed, remaining and total time of the current media playback
PLAYER_TRANSPORT_STATUS	<PLAYER:A/B>	<STATUS:STOPPED/PLAYING/PAUSE>				Shows PLAYER A or B current playback status
PLAYER_PLAYLIST_INDEX	<PLAYER:A/B>	<INDEX:1..99>				Shows PLAYER A or B loaded playlist number, from the 99 available in the playlist bank

PLAYER_PLAYLIST_NAME	<PLAYER:A/B>	"<NAME>"		Shows PLAYER A or B loaded playlist name, from the 99 available in the playlist bank
PLAYER_QUEUE_INFO	<PLAYER:A/B>	<QUEUE_INDEX>	<QUEUE_COUNT>	Shows PLAYER A or B current playback queue position (index) and total number of items in it (count)
PLAYER_PLAY_MODE	<PLAYER:A/B>	<MODE:SEQUENTIAL/RANDOM>		Shows PLAYER A or B current playback order mode
PLAYER_REPEAT_MODE	<PLAYER:A/B>	<MODE:PLAY_ALL/PLAY_ONE/REPEAT_ALL/REPEAT_ONE>		Shows PLAYER A or B current playback repeat mode
PLAYER_FADE_MODE	<PLAYER:A/B>	<MODE:NONE/XFADE/FADE/HFADE>		Shows PLAYER A or B current tracks playback transition mode
PLAYER_VARISPEED	<PLAYER:A/B>	<VALUE:-50..50>		Shows PLAYER A or B current playback tempo variation value
PRIORITY_STATUS	<PRIORITY:1/2>	<STATUS:RUNNING/STOPPED>		Shows PRIORITY MODULE 1 or 2 status
PLAYER_ITEM_TAG_ALIAS	<PLAYER:A/B>	"<ALIAS>"		Shows PLAYER A or B current playlist ALIAS field

	PLAYER_ITEM_TAG_TITLE	<PLAYER:A/B>	"<TITLE>"		Shows PLAYER A or B current playback title tag
	PLAYER_ITEM_TAG_ARTIST	<PLAYER:A/B>	"<ARTIST>"		Shows PLAYER A or B current playback artist tag
	PLAYER_ITEM_TAG_ALBUM	<PLAYER:A/B>	"<ALBUM>"		Shows PLAYER A or B current playback album tag
	PLAYER_ITEM_TAG_NAME	<PLAYER:A/B>	"<NAME>"		Shows PLAYER A or B current playback name tag

9. ERROR CODES FOR ECLERNET DEVICES

9.1. COMMON ERROR CODES (to all EclerNet - TP-NET compatible devices)

ERROR ID	DESCRIPTION
0	TPNET_ERROR_NONE = 0,
1	TPNET_ERROR_INVALID_FIELD_TYPE,
2	TPNET_ERROR_INVALID_FIELD_PARAM1,
3	TPNET_ERROR_INVALID_FIELD_PARAM2,
4	TPNET_ERROR_INVALID_FIELD_PARAM3,
5	TPNET_ERROR_INVALID_FIELD_PARAM4,

ERROR ID	DESCRIPTION
6	UDP_ERROR_TIMEOUT_PONG,
7	UDP_ERROR_CONNECT_WHILE_CONNECTED,
8	UDP_ERROR_DISCONNECT_WHILE_UNCONNECTED,
9	UDP_ERROR_INVALID_CLIENT_IP,
10	UDP_ERROR_MESSAGE_TOO_LONG,
11	UDP_ERROR_UNSUPPORTED_MESSAGE,
12	UDP_ERROR_UNSUPPORTED_PRESET_NUMBER,
13	UDP_ERROR_UNSUPPORTED_INPUT_CHANNEL_NUMBER,
14	UDP_ERROR_UNSUPPORTED_OUTPUT_CHANNEL_NUMBER,
15	UDP_ERROR_UNSUPPORTED_GPI_NUMBER,
16	UDP_ERROR_UNSUPPORTED_GPO_NUMBER,
17	UDP_ERROR_INVALID_LEVEL_VALUE,
18	UDP_ERROR_INVALID_RATE_VALUE,
19	UDP_ERROR_GPO_VALUE,
20	UDP_ERROR_MAX_CLIENTS_REACHED,
21	UDP_ERROR_MASTER_MODE,

ERROR ID	DESCRIPTION
6	UDP_ERROR_TIMEOUT_PONG,
7	UDP_ERROR_CONNECT_WHILE_CONNECTED,
8	UDP_ERROR_DISCONNECT_WHILE_UNCONNECTED,
9	UDP_ERROR_INVALID_CLIENT_IP,
10	UDP_ERROR_MESSAGE_TOO_LONG,
11	UDP_ERROR_UNSUPPORTED_MESSAGE,
12	UDP_ERROR_UNSUPPORTED_PRESET_NUMBER,
13	UDP_ERROR_UNSUPPORTED_INPUT_CHANNEL_NUMBER,
14	UDP_ERROR_UNSUPPORTED_OUTPUT_CHANNEL_NUMBER,
15	UDP_ERROR_UNSUPPORTED_GPI_NUMBER,
16	UDP_ERROR_UNSUPPORTED_GPO_NUMBER,
17	UDP_ERROR_INVALID_LEVEL_VALUE,
18	UDP_ERROR_INVALID_RATE_VALUE,
19	UDP_ERROR_GPO_VALUE,
20	UDP_ERROR_UNSUPPORTED_INPUT_SELECT_VALUE,

ERROR ID	DESCRIPTION
6	UDP_ERROR_TIMEOUT_PONG,
7	UDP_ERROR_CONNECT_WHILE_CONNECTED,
8	UDP_ERROR_DISCONNECT_WHILE_UNCONNECTED,
9	UDP_ERROR_INVALID_CLIENT_IP,
10	UDP_ERROR_MESSAGE_TOO_LONG,
11	UDP_ERROR_UNSUPPORTED_MESSAGE,
12	UDP_ERROR_UNSUPPORTED_PRESET_NUMBER,
13	UDP_ERROR_UNSUPPORTED_INPUT_CHANNEL_NUMBER,
14	UDP_ERROR_UNSUPPORTED_OUTPUT_CHANNEL_NUMBER,
15	UDP_ERROR_UNSUPPORTED_GPI_NUMBER,
16	UDP_ERROR_UNSUPPORTED_GPO_NUMBER,
17	UDP_ERROR_INVALID_LEVEL_VALUE,
18	UDP_ERROR_INVALID_RATE_VALUE,
19	UDP_ERROR_GPO_VALUE,

ERROR ID	DESCRIPTION
6	UDP_ERROR_TIMEOUT_PONG,
7	UDP_ERROR_CONNECT_WHILE_CONNECTED,
8	UDP_ERROR_DISCONNECT_WHILE_UNCONNECTED,
9	UDP_ERROR_INVALID_CLIENT_IP,
10	UDP_ERROR_MESSAGE_TOO_LONG,
11	UDP_ERROR_UNSUPPORTED_MESSAGE,
12	UDP_ERROR_UNSUPPORTED_PRESET_NUMBER,
13	UDP_ERROR_UNSUPPORTED_INPUT_CHANNEL_NUMBER,
14	UDP_ERROR_UNSUPPORTED_OUTPUT_CHANNEL_NUMBER,
15	UDP_ERROR_UNSUPPORTED_GPI_NUMBER,
16	UDP_ERROR_INVALID_LEVEL_VALUE,
17	UDP_ERROR_INVALID_RATE_VALUE,

ERROR ID	DESCRIPTION
6	TPNET_ERROR_INVALID_FIELD_PARAM5,
7	TPNET_ERROR_TIMEOUT_PONG,
8	TPNET_ERROR_CONNECT_WHILE_CONNECTED,
9	TPNET_ERROR_DISCONNECT_WHILE_UNCONNECTED,
10	TPNET_ERROR_INVALID_CLIENT_IP,
11	TPNET_ERROR_MESSAGE_TOO_LONG,
12	TPNET_ERROR_UNSUPPORTED_MESSAGE,
13	TPNET_ERROR_INVALID_RATE_VALUE,
14	TPNET_ERROR_MAX_CLIENTS_REACHED,
15	TPNET_ERROR_MASTER_MODE,

10. eMIMO1616 DIGITAL MATRIX

IMPORTANT NOTE: The communication must be started with the client sending **the first message** SYSTEM CONNECT or SYSTEM CONNECT ONCE to the device. Otherwise, the commands from the client to the EclerNet device will be ignored. See chapter 1 for additional information.

TYPE	PARAM1	PARAM2	PARAM3	PARAM4	DESCRIPTION
SYSTEM	CONNECT	[PINGPONG]	[ONCE]		Saves the client IP address for responses and then dumps current device status (with DATA messages)
	DISCONNECT				Cancel subscriptions and terminates communication
	SUBSCRIPTION_RATE	<Rate>			Alive message from device
	PING_INTERVAL	<1-1000>			Ping Interval, in seconds
	PING				Alive message from device
	PONG				Alive ACK message from client
GET	ALL				Dumps current device status (with DATA messages)
	INFO_NAME				Gets the Device Name
	INFO_MODEL				Gets the Device Model
	INFO_VERSION				Gets the Firmware Version
	INFO_MAC				Gets the Device MAC address
	IP_CONFIG				Gets the Device network configuration
	INFO_IPLIST				Gets the list of clients connected to the Device

	INAME	<Input Channel>			Gets the NAME (label) of an Input Channel
	ILEVEL	<Input Channel>			Gets the current LEVEL of an Input Channel
	IMUTE	<Input Channel>			Gets the current MUTE status of an Input Channel
	IBASSGAIN	<Input Channel>			Gets the current BASS EQ filter GAIN of an Input Channel
	IMIDGAIN	<Input Channel>			Gets the current MID EQ filter GAIN of an Input Channel
	ITREBLEGAIN	<Input Channel>			Gets the current TREBLE EQ filter GAIN of an Input Channel
	IVU	<Input Channel>			Gets the VU-meter value of an Input Channel
	ONAME	<Output Channel>			Gets the NAME (label) of an Output Channel
	OLEVEL	<Output Channel>			Gets the current LEVEL of an Output Channel
	OMUTE	<Output Channel>			Gets the current MUTE status of an Output Channel
	OBASSGAIN	<Output Channel>			Gets the current BASS EQ filter GAIN of an Output Channel
	OMIDGAIN	<Output Channel>			Gets the current MID EQ filter GAIN of an Output Channel
	OTREBLEGAIN	<Output Channel>			Gets the current TREBLE EQ filter GAIN of an Output Channel
	OVU	<Output Channel>			Gets the VU-meter value of an Output Channel

	OSOURCESEL	<Output Channel>			Gets the current selected source (input) of an Output Channel

TYPE	PARAM1	PARAM2	PARAM3	PARAM4	DESCRIPTION
SET	IMUTE	<Input Channel>	YES/NO		Sets the current MUTE status of an Input Channel
	ILEVEL	<Input Channel>	<Level>		Sets the current LEVEL of an Input Channel (Level can range from 1 to 100)
	IBASSGAIN	<Input Channel>	<Gain>		Sets the current BASS EQ filter GAIN of an Input Channel (Gain can range from ±1 to ±100)
	IMIDGAIN	<Input Channel>	<Gain>		Sets the current MID EQ filter GAIN of an Input Channel (Gain can range from ±1 to ±100)
	ITREBLEGAIN	<Input Channel>	<Gain>		Sets the current TREBLE EQ filter GAIN of an Input Channel (Gain can range from ±1 to ±100)
	OMUTE	<Output Channel>	YES/NO		Sets the current MUTE status of an Output Channel
	OLEVEL	<Output Channel>	<Level>		Sets the current LEVEL of an Output Channel (Level can range from 1 to 100)
	OBASSGAIN	<Output Channel>	<Gain>		Sets the current BASS EQ filter GAIN of an Output Channel (Gain can range from ±1 to ±100)
	OMIDGAIN	<Output Channel>	<Gain>		Sets the current MID EQ filter GAIN of an Output Channel (Gain can range from ±1 to ±100)

	OTREBLEGAIN	<Output Channel>	<Gain>		Sets the current TREBLE EQ filter GAIN of an Output Channel (Gain can range from ±1 to ±100)
	OSOURCESEL	<Output Channel>	<Input>		Sets the selected source (input) for an Output Channel (Input (source) can range from 0 to 16, meaning 0 = no source (silence))
INC	ILEVEL	<Input Channel >	<Value>		Increases the current LEVEL of an Input Channel by Value (Value can range from ±1 to ±100)
	IBASSGAIN	<Input Channel>	<Value>		Increases the current BASS EQ filter GAIN of an Input Channel by Value (Value can range from ±1 to ±200, where 200 means 20.0 -> values are steps like nn.n, with decimal fraction)
	IMIDGAIN	<Input Channel>	<Value>		Increases the current MID EQ filter GAIN of an Input Channel by Value (Value can range from ±1 to ±200, where 200 means 20.0 -> values are steps like nn.n, with decimal fraction)
	ITREBLEGAIN	<Input Channel>	<Value>		Increases the current TREBLE EQ filter GAIN of an Input Channel by Value (Value can range from ±1 to ±200, where 200 means 20.0 -> values are steps like nn.n, with decimal fraction)
	OLEVEL	<Output Channel>	<Value>		Increases the current LEVEL of an Output Channel by Value (Value can range from ±1 to ±100)
	OBASSGAIN	<Input Channel>	<Value>		Increases the current BASS EQ filter GAIN of an Output Channel by Value (Value can range from ±1 to ±200, where 200 means 20.0 -> values are steps like nn.n, with decimal fraction)

	OMIDGAIN	<Input Channel>	<Value>		Increases the current MID EQ filter GAIN of an Output Channel by Value (Value can range from ±1 to ±200, where 200 means 20.0 -> values are steps like nn.n, with decimal fraction)
	OTREBLEGAIN	<Input Channel>	<Value>		Increases the current TREBLE EQ filter GAIN of an Output Channel by Value (Value can range from ±1 to ±200, where 200 means 20.0 -> values are steps like nn.n, with decimal fraction)
DEC	ILEVEL	<Input Channel >	<Value>		Decreases the current LEVEL of an Input Channel by Value (Value can range from ±1 to ±100)
	IBASSGAIN	<Input Channel>	<Value>		Decreases the current BASS EQ filter GAIN of an Input Channel by Value (Value can range from ±1 to ±200, where 200 means 20.0 -> values are steps like nn.n, with decimal fraction)
	IMIDGAIN	<Input Channel>	<Value>		Decreases the current MID EQ filter GAIN of an Input Channel by Value (Value can range from ±1 to ±200, where 200 means 20.0 -> values are steps like nn.n, with decimal fraction)
	ITREBLEGAIN	<Input Channel>	<Value>		Decreases the current TREBLE EQ filter GAIN of an Input Channel by Value (Value can range from ±1 to ±200, where 200 means 20.0 -> values are steps like nn.n, with decimal fraction)
	OLEVEL	<Output Channel>	<Value>		Decreases the current LEVEL of an Output Channel by Value (Value can range from ±1 to ±100)

	OBASSGAIN	<Input Channel>	<Value>		Decreases the current BASS EQ filter GAIN of an Output Channel by Value (Value can range from ±1 to ±200, where 200 means 20.0 -> values are steps like nn.n, with decimal fraction)
	OMIDGAIN	<Input Channel>	<Value>		Decreases the current MID EQ filter GAIN of an Output Channel by Value (Value can range from ±1 to ±200, where 200 means 20.0 -> values are steps like nn.n, with decimal fraction)
	OTREBLEGAIN	<Input Channel>	<Value>		Decreases the current TREBLE EQ filter GAIN of an Output Channel by Value (Value can range from ±1 to ±200, where 200 means 20.0 -> values are steps like nn.n, with decimal fraction)
SUBSCRIBE	ALL				Subscribes to all VU-meters
	IVU	<Input Channel>			Subscribes to an Input Channel VU-meter
	OVU	<Output Channel>			Subscribes to an Output Channel VU-meter
UNSUBSCRIBE	ALL				Unsubscribe to all VU-meters
	IVU	<Input Channel>			Unsubscribe to an Input Channel VU-meter
	OVU	<Output Channel>			Unsubscribe to an Output Channel VU-meter

Note: INC and DEC commands are replied with a DATA command from the device with the resulting LEVEL value, after it has been increased or decreased. When the INC or DEC command tries to adjust a LEVEL value beyond its minimum or maximum limits, no reply (DATA command) will be produced.

TYPE	PARAM1	PARAM2	PARAM3	PARAM4	DESCRIPTION
DATA	INFO_NAME	"<Device Name>"			Shows the Device Name
	INFO_MODEL	<Device Model>			Shows the Device Model
	INFO_VERSION	<Firmware Version>			Shows the Firmware Version
	INFO_MAC	<Device MAC address>			Shows the Device MAC address
	IP_CONFIG				Shows the Device network configuration. The message will contain **DeviceIP DeviceMask DeviceGateway** (separated by blank characters)
	INFO_IPLIST				Shows the list of clients connected to the Device. The message will contain a list including **ClientNumber ClientIP Client Port** (separated by blank characters)
	INAME	<Input Channel>	<Name>		Shows the NAME (label) of an Input Channel
	ILEVEL	<Input Channel>	<Level>		Shows the current LEVEL of an Input Channel
	IMUTE	<Input Channel>	YES/NO		Shows the current MUTE status of an Input Channel
	IBASSGAIN	<Input Channel>	<Gain>		Shows the current BASS EQ filter GAIN of an Input Channel
	IMIDGAIN	<Input Channel>	<Gain>		Shows the current MID EQ filter GAIN of an Input Channel
	ITREBLEGAIN	<Input Channel>	<Gain>		Shows the current TREBLE EQ filter GAIN of an Input Channel

	IVU	<Input Channel>	<Post Vumeter Level>		Shows the VU-meter value of an Input Channel
	ONAME	<Output Channel>	<Name>		Shows the NAME (label) of an Output Channel
	OLEVEL	<Output Channel>	<Level>		Shows the current LEVEL of an Output Channel
	OMUTE	<Output Channel>	YES/NO		Shows the current MUTE status of an Output Channel
	OBASSGAIN	<Input Channel>	<Gain>		Shows the current BASS EQ filter GAIN of an Output Channel
	OMIDGAIN	<Input Channel>	<Gain>		Shows the current MID EQ filter GAIN of an Output Channel
	OTREBLEGAIN	<Input Channel>	<Gain>		Shows the current TREBLE EQ filter GAIN of an Output Channel
	OVU	<Output Channel>	<Post Vumeter Level>		Shows the VU-meter value of an Output Channel
	OSOURCESEL	<Output Channel>	<Input>		Shows the current selected source (input) of an Output Channel. (Input (source) can range from 0 to 16, meaning 0 = no source (silence))
ERROR	<Error ID>	"<Error Description>"			Informs about an error

11. eMIMO1616 ERROR CODES

ERROR ID	DESCRIPTION
0	No error. Depending on scenario, can report any of the following: • Device is in TEST MODE • Device is in FACTORY MODE • Last loaded project was incomplete • Now Disconnected
1	Invalid Field MSG
2	Depending on scenario, can report any of the following: • Invalid Field DATA • Invalid Field VALUE • Invalid Field PARAM1
3	Invalid Field CHANNEL
4	Invalid Field VALUE
7	Timeout Waiting PONG
8	CONNECT received while connected
9	DISCONNECT received while unconnected
10	Invalid client (client not connected)
11	Message too long (more than 80 characters)
12	Message with invalid format
13	Depending on scenario, can report any of the following: • Invalid Ping Interval value • Invalid Subscription Interval value
14	Maximum number of clients reached
15	Master Mode active

12. HUB SERIES DIGITAL ZONER

IMPORTANT NOTE: The communication must be started with the client sending **the first message** SYSTEM CONNECT or SYSTEM CONNECT ONCE to the device. Otherwise, the commands from the client to the EclerNet device will be ignored. See chapter 1 for additional information.

TYPE	PARAM1	PARAM2	PARAM3	PARAM4	DESCRIPTION
SYSTEM	CONNECT	[PINGPONG]	[ONCE]		Saves the client IP address for responses and then dumps current device status (with DATA messages)
	DISCONNECT				Cancel subscriptions and terminates communication
	SUBSCRIPTION_RATE	<Rate>			Alive message from device
	PING_INTERVAL	<1-1000>			Ping Interval, in seconds
	PING				Alive message from device
	PONG				Alive ACK message from client
GET	ALL				Dumps current device status (with DATA messages)
	INFO_NAME				Gets the Device Name
	INFO_MODEL				Gets the Device Model
	INFO_VERSION				Gets the Firmware Version
	INFO_MAC				Gets the Device MAC address
	IP_CONFIG				Gets the Device network configuration
	INFO_IPLIST				Gets the list of clients connected to the Device

	INAME	<Input Channel>			Gets the NAME (label) of an Input Channel
	ILEVEL	<Input Channel>			Gets the current LEVEL of an Input Channel
	IMUTE	<Input Channel>			Gets the current MUTE status of an Input Channel
	IBASSGAIN	<Input Channel>			Gets the current BASS EQ filter GAIN of an Input Channel
	IMIDGAIN	<Input Channel>			Gets the current MID EQ filter GAIN of an Input Channel
	ITREBLEGAIN	<Input Channel>			Gets the current TREBLE EQ filter GAIN of an Input Channel
	IVU	<Input Channel>			Gets the VU-meter value of an Input Channel
	ONAME	<Output Channel>			Gets the NAME (label) of an Output Channel
	OLEVEL	<Output Channel>			Gets the current LEVEL of an Output Channel
	OMUTE	<Output Channel>			Gets the current MUTE status of an Output Channel
	OGENVOL				Gets the current LEVEL of the General Volume
	OMUTEGENVOL				Gets the current MUTE status of the General Volume
	OBASSGAIN	<Output Channel>			Gets the current BASS EQ filter GAIN of an Output Channel
	OMIDGAIN	<Output Channel>			Gets the current MID EQ filter GAIN of an Output Channel
	OTREBLEGAIN	<Output Channel>			Gets the current TREBLE EQ filter GAIN of an Output Channel

	OVU	<Output Channel>			Gets the VU-meter value of an Output Channel
	OSOURCESEL	<Output Channel>			Gets the current selected source (input) of an Output Channel

TYPE	PARAM1	PARAM2	PARAM3	PARAM4	DESCRIPTION
SET	IMUTE	<Input Channel>	YES/NO		Sets the current MUTE status of an Input Channel
	ILEVEL	<Input Channel>	<Level>		Sets the current LEVEL of an Input Channel (Level can range from 1 to 100)
	IBASSGAIN	<Input Channel>	<Gain>		Sets the current BASS EQ filter GAIN of an Input Channel (Gain can range from ±1 to ±100)
	IMIDGAIN	<Input Channel>	<Gain>		Sets the current MID EQ filter GAIN of an Input Channel (Gain can range from ±1 to ±100)
	ITREBLEGAIN	<Input Channel>	<Gain>		Sets the current TREBLE EQ filter GAIN of an Input Channel (Gain can range from ±1 to ±100)
	OMUTE	<Output Channel>	YES/NO		Sets the current MUTE status of an Output Channel
	OLEVEL	<Output Channel>	<Level>		Sets the current LEVEL of an Output Channel (Level can range from 1 to 100)
	OGENVOL	<Level>			Sets the current LEVEL of the General Volume (Level can range from 1 to 100)
	OMUTEGENVOL	YES/NO			Sets the current MUTE status of the General Volume

	OBASSGAIN	<Output Channel>	<Gain>		Sets the current BASS EQ filter GAIN of an Output Channel (Gain can range from ±1 to ±100)
	OMIDGAIN	<Output Channel>	<Gain>		Sets the current MID EQ filter GAIN of an Output Channel (Gain can range from ±1 to ±100)
	OTREBLEGAIN	<Output Channel>	<Gain>		Sets the current TREBLE EQ filter GAIN of an Output Channel (Gain can range from ±1 to ±100)
	OSOURCESEL	<Output Channel>	<Input>		Sets the selected source (input) for an Output Channel (Input (source) can range from 0 to 16, meaning 0 = no source (silence))
INC	ILEVEL	<Input Channel >	<Value>		Increases the current LEVEL of an Input Channel by Value (Value can range from ±1 to ±100)
	IBASSGAIN	<Input Channel>	<Value>		Increases the current BASS EQ filter GAIN of an Input Channel by Value (Value can range from ±1 to ±200, where 200 means 20.0 -> values are steps like nn.n, with decimal fraction)
	IMIDGAIN	<Input Channel>	<Value>		Increases the current MID EQ filter GAIN of an Input Channel by Value (Value can range from ±1 to ±200, where 200 means 20.0 -> values are steps like nn.n, with decimal fraction)
	ITREBLEGAIN	<Input Channel>	<Value>		Increases the current TREBLE EQ filter GAIN of an Input Channel by Value (Value can range from ±1 to ±200, where 200 means 20.0 -> values are steps like nn.n, with decimal fraction)

	OLEVEL	<Output Channel>	<Value>		Increases the current LEVEL of an Output Channel by Value (Value can range from ±1 to ±100)
	OGENVOL	<Value>			Increases the current LEVEL of the General Volume by Value (Value can range from ±1 to ±100)
	OBASSGAIN	<Input Channel>	<Value>		Increases the current BASS EQ filter GAIN of an Output Channel by Value (Value can range from ±1 to ±200, where 200 means 20.0 -> values are steps like nn.n, with decimal fraction)
	OMIDGAIN	<Input Channel>	<Value>		Increases the current MID EQ filter GAIN of an Output Channel by Value (Value can range from ±1 to ±200, where 200 means 20.0 -> values are steps like nn.n, with decimal fraction)
	OTREBLEGAIN	<Input Channel>	<Value>		Increases the current TREBLE EQ filter GAIN of an Output Channel by Value (Value can range from ±1 to ±200, where 200 means 20.0 -> values are steps like nn.n, with decimal fraction)
DEC	ILEVEL	<Input Channel >	<Value>		Decreases the current LEVEL of an Input Channel by Value (Value can range from ±1 to ±100)
	IBASSGAIN	<Input Channel>	<Value>		Decreases the current BASS EQ filter GAIN of an Input Channel by Value (Value can range from ±1 to ±200, where 200 means 20.0 -> values are steps like nn.n, with decimal fraction)

	IMIDGAIN	<Input Channel>	<Value>		Decreases the current MID EQ filter GAIN of an Input Channel by Value (Value can range from ±1 to ±200, where 200 means 20.0 -> values are steps like nn.n, with decimal fraction)
	ITREBLEGAIN	<Input Channel>	<Value>		Decreases the current TREBLE EQ filter GAIN of an Input Channel by Value (Value can range from ±1 to ±200, where 200 means 20.0 -> values are steps like nn.n, with decimal fraction)
	OLEVEL	<Output Channel>	<Value>		Decreases the current LEVEL of an Output Channel by Value (Value can range from ±1 to ±100)
	OGENVOL	<Value>			Decreases the current LEVEL of the General Volume by Value (Value can range from ±1 to ±100)
	OBASSGAIN	<Input Channel>	<Value>		Decreases the current BASS EQ filter GAIN of an Output Channel by Value (Value can range from ±1 to ±200, where 200 means 20.0 -> values are steps like nn.n, with decimal fraction)
	OMIDGAIN	<Input Channel>	<Value>		Decreases the current MID EQ filter GAIN of an Output Channel by Value (Value can range from ±1 to ±200, where 200 means 20.0 -> values are steps like nn.n, with decimal fraction)
	OTREBLEGAIN	<Input Channel>	<Value>		Decreases the current TREBLE EQ filter GAIN of an Output Channel by Value (Value can range from ±1 to ±200, where 200 means 20.0 -> values are steps like nn.n, with decimal fraction)
SUBSCRIBE	ALL				Subscribes to all VU-meters

	IVU	<Input Channel>			Subscribes to an Input Channel VU-meter
	OVU	<Output Channel>			Subscribes to an Output Channel VU-meter
UNSUBSCRIBE	ALL				Unsubscribe to all VU-meters
	IVU	<Input Channel>			Unsubscribe to an Input Channel VU-meter
	OVU	<Output Channel>			Unsubscribe to an Output Channel VU-meter

Note: INC and DEC commands are replied with a DATA command from the device with the resulting LEVEL value, after it has been increased or decreased. When the INC or DEC command tries to adjust a LEVEL value beyond its minimum or maximum limits, no reply (DATA command) will be produced.

TYPE	PARAM1	PARAM2	PARAM3	PARAM4	DESCRIPTION
DATA	INFO_NAME	"<Device Name>"			Shows the Device Name
	INFO_MODEL	<Device Model>			Shows the Device Model
	INFO_VERSION	<Firmware Version>			Shows the Firmware Version
	INFO_MAC	<Device MAC address>			Shows the Device MAC address
	IP_CONFIG				Shows the Device network configuration. The message will contain **DeviceIP DeviceMask DeviceGateway** (separated by blank characters)
	INFO_IPLIST				Shows the list of clients connected to the Device. The message will contain a list including **ClientNumber ClientIP Client Port** (separated by blank characters)
	INAME	<Input Channel>	<Name>		Shows the NAME (label) of an Input Channel
	ILEVEL	<Input Channel>	<Level>		Shows the current LEVEL of an Input Channel
	IMUTE	<Input Channel>	YES/NO		Shows the current MUTE status of an Input Channel
	IBASSGAIN	<Input Channel>	<Gain>		Shows the current BASS EQ filter GAIN of an Input Channel
	IMIDGAIN	<Input Channel>	<Gain>		Shows the current MID EQ filter GAIN of an Input Channel
	ITREBLEGAIN	<Input Channel>	<Gain>		Shows the current TREBLE EQ filter GAIN of an Input Channel

	IVU	\<Input Channel>	\<Post Vumeter Level>		Shows the VU-meter value of an Input Channel
	ONAME	\<Output Channel>	\<Name>		Shows the NAME (label) of an Output Channel
	OLEVEL	\<Output Channel>	\<Level>		Shows the current LEVEL of an Output Channel
	OMUTE	\<Output Channel>	YES/NO		Shows the current MUTE status of an Output Channel
	OGENVOL	\<Level>			Shows the current LEVEL of the General Volume
	OMUTEGENVOL	YES/NO			Shows the current MUTE status of the General Volume
	OBASSGAIN	\<Input Channel>	\<Gain>		Shows the current BASS EQ filter GAIN of an Output Channel
	OMIDGAIN	\<Input Channel>	\<Gain>		Shows the current MID EQ filter GAIN of an Output Channel
	OTREBLEGAIN	\<Input Channel>	\<Gain>		Shows the current TREBLE EQ filter GAIN of an Output Channel
	OVU	\<Output Channel>	\<Post Vumeter Level>		Shows the VU-meter value of an Output Channel
	OSOURCESEL	\<Output Channel>	\<Input>		Shows the current selected source (input) of an Output Channel. (Input (source) can range from 0 to 16, meaning 0 = no source (silence))
ERROR	\<Error ID>	"\<Error Description>"			Informs about an error

13. HUB SERIES ERROR CODES

ERROR ID	DESCRIPTION
0	No error. Depending on scenario, can report any of the following: • Device is in TEST MODE • Device is in FACTORY MODE • Last loaded project was incomplete • Now Disconnected
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12	Message with invalid format
13	Depending on scenario, can report any of the following: • Invalid Ping Interval value • Invalid Subscription Interval value
14	Maximum number of clients reached
15	Master Mode active

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