



# MIMO88

MATRICES NUMÉRIQUES

Matrice numérique d'installation



## MODE D'EMPLOI

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## 1 REMARQUE IMPORTANTE



WARNING: SHOCK HAZARD - DO NOT OPEN

AVIS: RISQUE DE CHOC ÉLECTRIQUE - NE PAS OUVRIR



Le symbole d'éclair avec une flèche, à l'intérieur d'un triangle équilatéral, avertit l'utilisateur de la présence d'une « tension dangereuse », non isolée, à l'intérieur de l'enceinte du produit, assez importante pour constituer un risque d'électrocution des personnes.



Le point d'exclamation dans un triangle équilatéral avertit l'utilisateur de l'existence d'importantes instructions d'opération et de maintenance (entretien courant) dans les documents qui accompagnent l'appareil.

**AVERTISSEMENT (le cas échéant):** Les bornes marquées du symbole " " peuvent avoir une ampleur suffisante pour constituer un risque de choc électrique. Le câblage externe connecté aux bornes nécessite l'installation par une personne instruite ou l'utilisation de câbles ou de câbles prêts à l'emploi.

**AVERTISSEMENT:** afin d'éviter tout incendie ou électrocution, n'exposez pas cet appareil à la pluie ou l'humidité

**AVERTISSEMENT:** Les appareils de construction de type I doivent être raccordés à l'aide d'une prise avec protection de terre.

## 2 CONSIGNES DE SÉCURITÉ IMPORTANTES

1. Lisez ces instructions.
2. Conservez ces instructions.
3. Prenez en compte tous les avertissements.
4. Suivez toutes les instructions.
5. N'utilisez pas cet appareil près de l'eau.
6. Nettoyez-le uniquement à l'aide d'un chiffon sec.
7. Ne bloquez pas les ouvertures d'aération. Installez-le en respectant les instructions du fabricant.
8. Ne l'installez pas près de sources de chaleur telles que des radiateurs, des bouches d'air chaud, des cuisinières ou d'autres appareils (amplificateurs inclus) qui produisent de la chaleur.
9. Ne neutralisez pas la fonction de sécurité de la fiche polarisée ou de terre du cordon d'alimentation. Une fiche polarisée a deux lames, l'une plus large que l'autre. Une fiche de terre a deux broches identiques et une troisième pour la mise à la terre. Cette troisième broche est destinée à votre sécurité. Si le câble fourni ne rentre pas dans la prise, demandez à un électricien de remplacer cette prise obsolète.
10. Protégez le cordon d'alimentation afin qu'il ne soit ni écrasé ni pincé, en particulier au niveau des fiches, des prises de courant et à l'endroit où ils sortent de l'appareil.
11. N'utilisez que des accessoires recommandés par le fabricant.
12. Débranchez l'appareil en cas d'orage ou s'il n'est pas utilisé pendant une longue période.
13. Pour toute réparation, veuillez contacter un service technique qualifié. Une réparation est nécessaire si l'appareil ne fonctionne pas normalement ou a été endommagé d'une quelconque façon, par exemple si le cordon ou la fiche d'alimentation est endommagé, si du liquide a été renversé sur l'appareil ou si des objets sont tombés dedans, si l'appareil a été exposé à la pluie ou est tombé.
14. Déconnexion du secteur : appuyer sur l'interrupteur POWER désactive les fonctions et les voyants de l'amplificateur, mais la déconnexion totale de l'appareil s'effectue en débranchant le cordon d'alimentation du secteur. C'est la raison pour laquelle vous devez toujours y avoir facilement accès.
15. Cet appareil doit être impérativement relié à la terre via son câble d'alimentation.
16. Une partie de l'étiquetage du produit se trouve à la base du produit..
17. Cet appareil ne doit pas être exposé à des gouttes ou des éclaboussures, et aucun élément rempli d'eau, comme des vases, ne doit être placé sur le dessus de l'appareil.



**AVERTISSEMENT:** Ce produit ne doit en aucun cas être mis au rebut en tant que déchet urbain non sélectionné. Allez au centre de traitement des déchets électriques et électroniques le plus proche.

NEEC AUDIO BARCELONA, S.L décline toute responsabilité pour les dommages qui pourraient être causés à des personnes, des animaux ou des objets par le non-respect des avertissements ci-dessus.

### 3 NOTE IMPORTANTE

Merci d'avoir choisi notre **Matrice numérique d'installation, MIMO88**.

Il est **TRÈS IMPORTANT** de lire attentivement ce mode d'emploi et d'en comprendre parfaitement le contenu avant d'effectuer toute connexion afin de maximiser votre utilisation et de tirer les meilleures performances de cet équipement.

Pour garantir le bon fonctionnement de cet appareil, nous recommandons que sa maintenance soit assurée par nos services techniques agréés.

L'Ecler MIMO88 bénéficie d'une **garantie de 3 ans**.

### 4 INTRODUCTION

MIMO88 est une matrice audio numérique, totalement programmable, et ayant les caractéristiques principales suivantes :

- 8 entrées MICRO/LIGNE symétriques (alimentation fantôme indépendante par canal d'entrée).
- 8 sorties LIGNE symétriques.
- 2 sorties MONITOR qui peuvent être utilisées comme auxiliaires.
- Extensible à 16 entrées/16 sorties en lui connectant une deuxième unité MIMO88 (pour obtenir une matrice réelle de 16 entrées et 16 sorties). Reliez les unités au moyen d'un câble CAT5 croisé (sur une distance maximale de 100 mètres).
- 8 ports d'entrée de commande GPI (*General Purpose Input*).
- 8 ports de sortie de commande GPO (*General Purpose Output*).
- Programmation et gestion à distance via Ethernet au moyen de l'application EclerNet Manager (ou point à point, avec un câble CAT5 direct, ou depuis un poste de réseau Ethernet).
- Commande à distance via des clients Ethernet de l'application EclerNet Manager : clients simultanés avec panneau de commande personnalisé.
- Commande à distance à partir de périphériques externes de tierces parties (Crestron, AMX, Vity, Medialon, etc. Marques déposées par leurs fabricants). Protocole TP-NET par ports Ethernet ou RS-232.
- Bus de commande à distance pour panneaux numériques WPTOUCH et consoles de messages (radiomessagerie) MPAGE16.

- Gestion des mémoires de configuration (*presets*).
- Événements programmés sur la base du calendrier.
- Abondant traitement DSP :
  - Matrice de routage/mélangeur, de n'importe quelle entrée à n'importe quelle sortie avec niveau réglable des points de croisement (mixages indépendants de différentes entrées pour chaque sortie).
  - Traitement des canaux en mono ou en stéréo.
  - Niveau, coupure du son (Mute), VU-mètres et réglage de phase pour les entrées et pour les sorties.
  - Générateur de signal interne (onde sinusoïdale, bruit rose, bruit blanc, test de polarité).
  - Égaliseur paramétrique sur les entrées et les sorties.
  - Retards sur les entrées et les sorties.
  - Noise gate/comresseur sur les canaux d'entrée.
  - Compresseur/limiteur sur les sorties.
  - Priorités (*ducking*) entre les canaux d'entrée.
  - Consoles de messages (*paging*) virtuelles et physiques.
  - Mélangeur automatique.

La programmation du MIMO88 se fait au moyen de l'application [EclerNet Manager](#). Consultez le mode d'emploi de l'application EclerNet Manager sur [www.ecler.com](http://www.ecler.com) pour obtenir plus d'informations.

## 5 INSTALLATION

### 5.1 Localisation, montage, ventilation

La MIMO88 a été spécialement conçue pour un montage en rack 19", occupant une unité de hauteur.

Il est très important que, produisant de la chaleur, MIMO88 ne soit pas complètement enfermé ni exposé à des températures extrêmes. Il est également nécessaire de favoriser le passage d'air frais à travers les orifices de ventilation du châssis, en laissant au moins une unité de rack libre entre chaque appareil et ceux installés au dessus et en dessous de lui dans le rack.

Si l'installation comprend plusieurs amplificateurs dans le même rack ou se fait dans une armoire fermée par des portes, il est fortement conseillé de doter ceux-ci d'une ventilation forcée ascendante, en installant des ventilateurs à leurs extrémités supérieure et inférieure. Ce flux ascendant de ventilation favorisera la dissipation de la chaleur produite à l'intérieur.

## 5.2 Raccordement au réseau électrique et mise sous tension

Le MIMO88 fonctionne sur courant alternatif de 90 à 264 V (47 à 63 Hz). Tous les modèles sont équipés d'une source d'alimentation capable de s'adapter sans aucun réglage spécifique à la tension secteur en vigueur dans le pays concerné.

En face arrière, et à côté du connecteur d'alimentation IEC, se trouve un interrupteur marche/arrêt de l'unité. Sur la face avant, un voyant à LED s'allume lorsque l'appareil est en service.

Éviter de mêler les cordons secteur et les cordons audio, ceci peut provoquer des ronflements.

## 5.3 Branchement de l'entrée du signal

Le MIMO88 dispose en face arrière de 8 entrées "IN" symétriques pour signal analogique (9), acceptant un niveau ligne ou microphone. La sélection du type de signal d'entrée et sa gestion se font depuis l'application EclerNet Manager Consultez le mode d'emploi de l'application EclerNet Manager sur [www.ecler.com](http://www.ecler.com) pour obtenir plus d'informations..

Les connecteurs d'entrée du signal sont de type borniers vissables à trois contacts. L'assignation du câblage est la suivante :

Point chaud (signal direct) > Terminal +

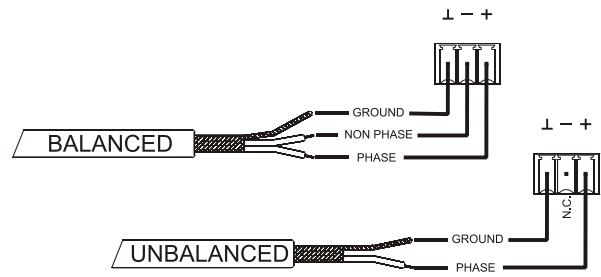
Point froid (signal inversé) > Terminal -

Masse > Terminal ⊥

Pour les branchements asymétriques relier le point - à la masse.

## 5.4 Connexions de sortie audio

Le MIMO88 dispose en face arrière de 8 sorties "OUT" pour signal analogique (8) et de deux sorties supplémentaires d'écoute de contrôle "MONITOR" (10), symétriques et de niveau de ligne.



Les connecteurs de sortie du signal sont de type borniers vissables à trois contacts. L'assignation du câblage est la suivante :

Point chaud (signal direct) > Terminal +

Point froid (signal inversé) > Terminal -

Masse > Terminal ⊥

Pour les connexions ASYMÉTRIQUES, ne pas connecter la borne -.

## 5.5 Port Ethernet pour la programmation et la commande

Un connecteur de type RJ45 (11) permet la connexion de l'équipement à un réseau Ethernet :

- Gestion depuis l'application EclerNet Manager. Consultez le mode d'emploi de l'application EclerNet Manager sur [www.ecler.com](http://www.ecler.com) pour obtenir plus d'informations.
- Possibilité de connexion directe (point à point) d'un ordinateur à une unité MIMO88.
- Connexion à d'autres appareils de tierces parties (Crestron, AMX, Vity, Medialon, etc. Marques déposées par leurs fabricants). Protocole utilisé : Ecler TP-NET. [Se reporter au manuel du protocole TP-NET](#) pour de plus amples informations.

### 5.5.1 Paramètres réseau prédéfinis d'usine

Les paramètres réseau prédéfinis d'usine pour les appareils compatibles avec le gestionnaire EclerNet sont les suivants :

- IP: 192.168.0.100
- Mask: 255.255.255.0
- Gate: 192.168.0.1
- UDP Port: 2210

## 5.6 Port LINK BUS de liaison audio numérique

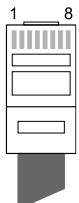
Un connecteur de type RJ45 (12) permet la connexion de l'équipement à une seconde unité MIMO88 pour obtenir un échange bidirectionnel de données audio numériques et de commandes entre les deux unités, l'ensemble se comportant à tous points de vue comme une matrice réelle de 16 entrées et 16 sorties. La distance maximale possible entre les deux unités, si on utilise un câble CAT5 standard, est de 100 mètres.

Pour travailler en mode 16x16, au sein de la paire d'unités MIMO88 (reliées par LINK BUS), l'une des d'eux assume le rôle de maître (MASTER) et l'autre d'esclave (SLAVE). Le mode MASTER ou SLAVE de chaque unité se choisit avec le sélecteur (13) situé en face arrière. Dans les installations avec un seul MIMO88, la position du sélecteur n'a pas d'importance.

En mode 16x16, les deux unités se comportent comme un seul appareil ayant 16 entrées et 16 sorties. Toute la programmation et la télécommande via Ethernet de la paire maître-esclave (MASTER-SLAVE) se font au moyen de l'application EclerNet Manager et la communication uniquement au travers du port Ethernet de l'unité MASTER, il n'est pas nécessaire d'utiliser le port Ethernet de l'unité SLAVE. (Sauf pour la mise à jour du firmware).

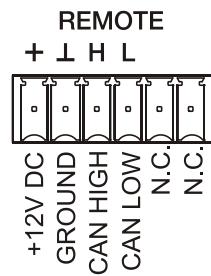
**Précaution :** la liaison LINK BUS entre les deux unités MIMO88 **doit se faire au moyen d'un câble croisé ("crossover")**, c'est à dire un câble CAT5 dédié aux ports LINK BUS des deux unités, pouvant atteindre 100 mètres, et **sans équipement Ethernet ou d'autre type** sur le trajet. [Consultez le mode d'emploi de l'application EclerNet Manager](#) pour obtenir davantage d'informations.

CABLAGE DU CONNECTEUR RJ-45 "CROSSOVER"			
RJ-45 (1)	COULEUR	RJ-45 (2)	
BROCHE 1	BLANC/ORANGE	BROCHE 3	
BROCHE 2	ORANGE	BROCHE 6	
BROCHE 3	BLANC/VERT	BROCHE 1	
BROCHE 4	BLEU	BROCHE 7	
BROCHE 5	BLANC/BLEU	BROCHE 8	
BROCHE 6	VERT	BROCHE 2	
BROCHE 7	BLANC/MARRON	BROCHE 4	
BROCHE 8	MARRON	BROCHE 5	



## 5.7 Ports REMOTE 1 et 2 pour télécommandes numériques

Les ports REMOTE 1 et REMOTE 2 (14) sont deux points de connexion du bus numérique d'appareils de télécommande, tels que le panneau mural WPTOUCH ou la console de messages (*paging*) MPAGE16. Chacun d'eux peut se connecter à une branche du bus numérique, branche à laquelle les différents dispositifs distants sont enchaînés en cascade (daisy-chain) et le dernier d'entre eux est chargé par une résistance terminale de  $120\ \Omega$  entre CAN HIGH et CAN LOW.



Consultez la documentation de l'appareil distant (WPTOUCH, MPAGE16, etc) sur [www.ecler.com](http://www.ecler.com) pour plus d'informations sur votre connexion et vos commandes.

Consultez le mode d'emploi de l'application EclerNet Manager sur [www.ecler.com](http://www.ecler.com) pour obtenir plus d'informations sur la programmation du MIMO88 afin de gérer les périphériques distants connectés à REMOTE1 ou REMOTE2.

## 5.8 Ports GPI de télécommande

En face arrière, le MIMO88 dispose de 8 entrées GPI (16) de commande continue par tension, CC 0-10 V. Chacune de ces entrées peut être connectée à un périphérique physique externe (un potentiomètre, une fermeture de contact, une tension variable en continu de CC 0-10 V, etc) et associée à une fonction du MIMO88, par exemple :

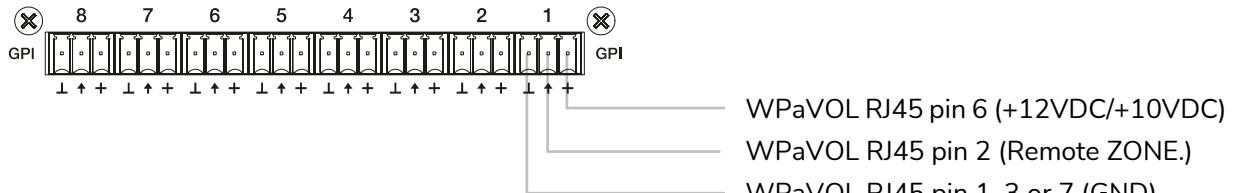
- Télécommande du volume d'un canal d'entrée, de sortie ou d'un point de croisement de matrice par le biais d'un potentiomètre physique WPVOL ou d'un télécommande WPVOL-IR de la série WP Ecler
- Activation/désactivation d'un MUTE ou d'un SOLO par un commutateur ou une fermeture de contact
- Rappel d'un préréglage (*preset*) au moyen d'un bouton-poussoir ou d'une fermeture de contact

Les connecteurs GPI sont de type borniers vissables. L'assignation des connecteurs est la suivante :

Positif, CC +12 V > Borne +

Tension variable, CC 0-12 V > Borne ↑

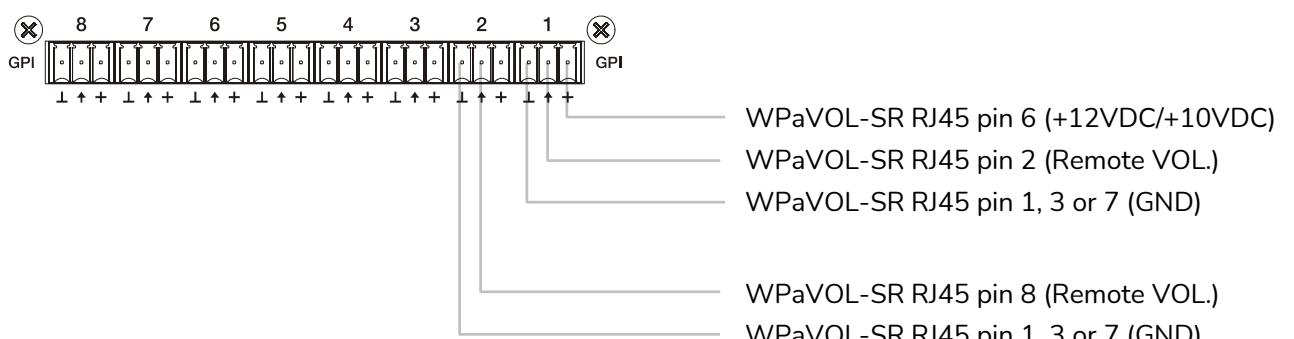
Masse > Borne ⊥



Jumpers position: ALOG / LIN → **LIN position**

+12 / +10 → **+12 position**

#### Connexion WPaVOL aux ports GPI série MIMO



Jumpers position: ALOG / LIN → **LIN position**

+12 / +10 → **+12 position**

#### Connexion WPaVOL-SR aux ports GPI série MIMO

Les câbles de connexion peuvent mesurer jusqu'à environ 500 mètres, s'ils ont une section minimale de 0,5 mm<sup>2</sup>.

Consultez votre distributeur ECLER ou le site [www.ecler.com](http://www.ecler.com) pour en savoir plus sur les panneaux muraux de télécommande de la gamme WP et autres accessoires disponibles pour la connexion au port REMOTE/VCA.

## 5.9 Ports GPO de télécommande

La face arrière du MIMO88 offre 8 sorties relais (17) NO/NC (normalement ouvert/fermé). Chacune de ces sorties peut être associée à une fonction du MIMO88, comme par exemple un bouton de l'application EclerNet Manager (bouton MUTE, bouton SOLO, etc.) Cela permet d'interagir avec des périphériques externes tels que des moteurs d'écrans de projection ou de cloisons mobiles, des lumières, des sirènes, des entrées GPI d'autres équipements, etc.

## 5.10 Port RS-232 pour contrôle à distance

Le port RS-232 intégré au panneau arrière permet la communication entre un dispositif externe et une unité MIMO88 à travers une connexion série. Cette connexion fait appel à la syntaxe du protocole TP-NET afin que le dispositif externe puisse obtenir la valeur de l'un des paramètres de l'unité MIMO88 (via les commandes « GET ») et/ou modifier ces valeurs (commandes « SET »). [Se reporter au manuel du protocole TP-NET](#) pour de plus amples informations.

La connexion série doit satisfaire les caractéristiques suivantes :

Baud rate: 57600 (fixed, no auto negotiation)

Data bits: 8

Parity: None

Stop bits: 1

Flow control : None

CABLAGE RS232 – DB9	
RS232	DB9
Tx	Broche 2 (RxD)
Rx	Broche 3 (TxD)
Gnd	Broche 5 (Signal Gnd)

## 5.11 Commandes et voyants à LED de la face avant

Les éléments suivants sont disponibles en face avant du MIMO88 :

- **Sortie MONITOR** (portant un symbole de casque) : produit le même signal d'écoute de contrôle que celui disponible par le bornier vissable de la face arrière, mais au format jack 6,35 mm 3 points (TRS) et avec un bouton de volume (2) pour l'écoute au casque. Elle est particulièrement utile pour écouter les signaux entrants ou sortants sans perturber le fonctionnement normal de l'unité. En mode 16x16, les deux unités MIMO reçoivent le même signal. La sélection du signal à écouter se fait au moyen du logiciel de commande EclerNet Manager. Consultez le mode d'emploi de l'application EclerNet Manager sur [www.ecler.com](http://www.ecler.com) pour obtenir plus d'informations.

- **Voyants d'entrée à LED** : indiquent la présence d'un signal audio en entrée de l'unité, et son niveau d'intensité (les couleurs verte, ambre et rouge correspondent dans cet ordre à l'augmentation du niveau d'intensité)
- **Voyants de sortie à LED** : indiquent la présence d'un signal audio en sortie de l'unité, et son niveau d'intensité (les couleurs verte, ambre et rouge correspondent dans cet ordre à l'augmentation du niveau d'intensité)
- **Voyants de statut à LED (STATUS)** :
  - **DATA** : Éteint : il n'y a aucun lien avec l'application EclerNet Manager même avec une connexion à Ethernet. Allumé : connecté à l'application EclerNet Manager ou à d'autres applications tierces par protocole TP-NET. Clignotant : échange de données avec l'application EclerNet Manager ou d'autres.
  - **LINK** (liaison) :
    - **1.** Si l'appareil est configuré comme maître (MASTER) 8x8, la LED reste éteinte.
    - **2.** Si l'appareil est configuré comme maître (MASTER) 16x16 :
      - Si tout est correct (l'esclave (SLAVE) est connecté et il n'y a pas d'erreurs de communication), la LED alterne continuellement et rapidement entre allumage en vert (50 ms) et extinction (50 ms)
      - En cas d'erreur de communication avec l'esclave (SLAVE), la LED alterne rapidement entre vert (50 ms) et rouge (200 ms)
      - Si aucun esclave (SLAVE) n'est connecté (ou si l'appareil connecté est un autre maître), la LED alterne lentement entre vert (800 ms) et rouge (200 ms)
    - **3.** Si l'appareil est configuré comme esclave (SLAVE) :
      - Si tout est correct (le maître (MASTER) est connecté et il n'y a pas d'erreurs de communication), la LED alterne continuellement et rapidement entre allumage en orange (50 ms) et extinction (50 ms)
      - En cas d'erreur de communication avec le maître (MASTER), la LED alterne rapidement entre orange (50 ms) et rouge (200 ms)
      - Si aucun maître (MASTER) n'est connecté (ou si l'appareil connecté est un autre esclave), la LED alterne lentement entre orange (800 ms) et rouge (200 ms)
  - **POWER** : s'allume lorsque l'appareil est en fonctionnement. S'il clignote, erreur dans l'unité ou le firmware n'est pas correct. Il clignote également lorsque vous mettez à jour le firmware.

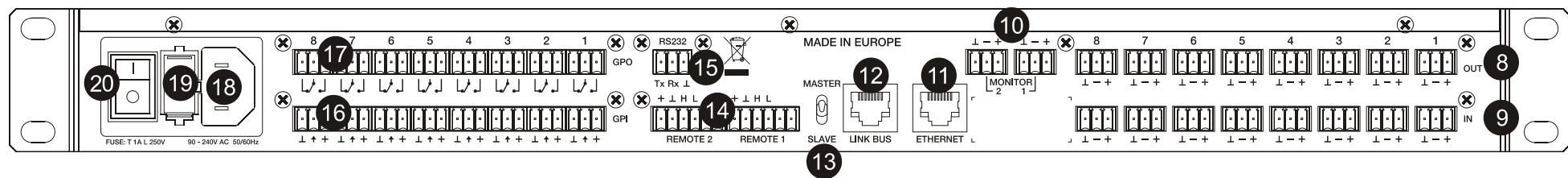
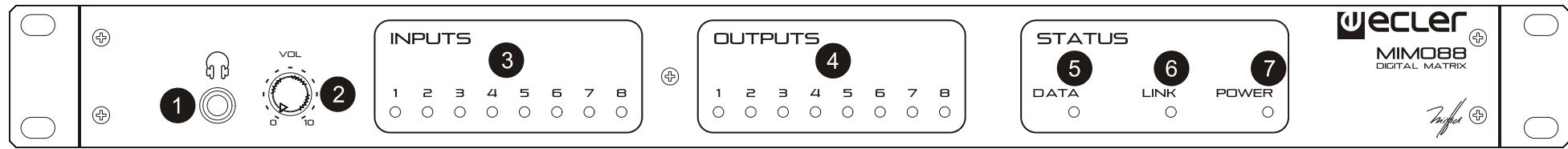
## 6 ENTRETIEN

Il est interdit d'utiliser des substances dissolvantes ou abrasives pour nettoyer la face avant, celles-ci détériorant la sérigraphie. Nettoyer uniquement avec un chiffon humide. Attention ! Jamais de l'eau ou tout autre liquide ne doit pénétrer par les orifices du panneau de commande.

## 7 LISTE DE FONCTIONS

- 1.** Jack de connexion du casque
- 2.** Contrôle de volume pour la sortie casque, VOL
- 3.** Voyants de signal d'entrée, INPUTS
- 4.** Voyants de signal de sortie, OUTPUTS
- 5.** Voyant de trafic de données, DATA
- 6.** Voyant de liaison à une autre unité, LINK
- 7.** Voyant de mise sous tension, POWER
- 8.** Borniers vissables de sortie de signal, OUT
- 9.** Borniers vissables d'entrée de signal, IN
- 10.** Borniers vissables de sortie de signal, MONITOR
- 11.** Connecteur RJ-45, ETHERNET
- 12.** Connecteur RJ-45, LINK BUS
- 13.** Sélecteur maître – esclave, MASTER SLAVE
- 14.** Borniers vissables pour télécommande numérique, REMOTE
- 15.** Borniers vissables pour contrôle à distance via protocole TP-NET, RS-232
- 16.** Borniers vissables pour contrôle continu par tension, GPI
- 17.** Borniers vissables pour sortie de relais, GPO
- 18.** Embase secteur
- 19.** Porte-fusible
- 20.** Interrupteur de mise sous tension

## 8 SCHEMA DE FONCTIONNEMENT



## 9 CARACTÉRISTIQUES TECHNIQUES

### MIMO88

DSP	DSP Sampling Rate Latency IN to OUT	2 x 32/64bit 48kHz <2.9ms (+1ms for 16x16)
Converters	Resolution Dynamic Range	24bit AKM AD:110dB, DA: 115dB
Analogue		
8+8 Input/Output 2 monitor output Headphones related Analogue Input headroom Max. output level Input sensitivity @ 0dBV out Input Impedance Phantom power Headphones Frequency response (-3dB) Flatness THD+Noise @ 1kHz, 0dBV input (line) THD+Noise @ 1kHz, -40dBV input (mic.) Output Noise floor FFT (20Hz - 20kHz) Interchannel crosstalk (20Hz - 20kHz) Channel Leakage (20Hz - 20kHz) CMRR 20Hz- 20kHz	Terminal block (Symmetrical) Terminal block (Symmetrical) Jack 1/4 +27dBV = +30dBu +18dBV = +21dBu From -50dBV to +10dBV in 0.5dB step Balanced, >4kΩ +42VDC, 5mA max. software switched >200mW/200Ω 5Hz to 24kHz better than ±0.1dB <0.004% <0.008% better than 115dB better than 90dB (100dB typ.) better than 100dB (115dB typ.) 65dB typ.	
Processing		
Input Level (x8)		Range: from Off to 0 dB Mute: Yes Signal Polarity reverse: Yes Metering: VU+clip pre & post fader
Output Level (x8)		Range: from Off to 0 dB Mute: Yes Solo: Yes Signal Polarity reverse: Yes Metering: VU+clip pre & post fader
Output Gain		Range: from 0 to +6 dB
Input Delay (x8)		from 0 to 1000 ms Units: sec/ms/m/cm.
Output Delay (x8)		from 0 to 1000 ms Units: sec/ms/m/cm.
Parametric Eq. Types (4 max per input) (8 max per output in 8x8 mode) (4 max per output in 16x16 mode)		Bypass / On-Off all channels Param Eq.      Freq: 20Hz-20kHz Gain: -60/+12 dB Q: 0.3 to 200 Low & High Shelf 6/12 dB/oct

	Low & High Pass 6/12 dB/oct All Pass 1/2 order
High & Low pass output Crossover filters (x8)	
Input Noise Gate (x8)	Bypass On-Off Butterworth in 6/12/18/24 dB/oct Bessel in 12/18/24 dB/oct Linkwitz-Riley in 12/24 dB/oct Bypass On-Off Threshold: from -80 dBV to +18 dBV Depth: 0 dB to 80 dB Attack time: from 0,1 ms. to 500 ms. Hold time: from 10 ms. to 3000 ms. Release time: from 10 ms. to 1000 ms.
Input Compressor / Limiter (x8)	Bypass On-Off Threshold: from -36 dBV to +18 dBV Ratio: 1:1 to inf:1 (limiter) Knee: hard / soft Attack time: from 0,1 ms. to 500 ms. Release time: from 10 ms. to 1000 ms. Make up gain: from 0 to +10 dB Available on all inputs. ON / OFF function
Input Frequency Shifter Output Limiter (x8)	Bypass On-Off Threshold: from -36 dBV to +18 dBV Attack time: from 0,1 ms. to 500 ms. Release time: from 10 ms. to 1000 ms.
Built in Signal Generator	Sine: from 20 Hz to 20 kHz Polarity: from 20 Hz to 20 kHz White noise Pink noise
Stereo Linking	Adjacent input / output channels Linked processing
Mix Matrix	Matrix routing linked Size: 8x8 (1-MIMO88) Size: 16x16 (2-MIMO88 with expan. link bus) Vol: Input, Output, Crosspoint Mute: Set/Clear individual, row, column, all Input /output Mono/stereo selector Meter: Input /output VU and clip
Pager	Input: IN1 to IN8 (or to IN16 in 16x16) Priorities: 4(max) 4 (min) Depth: 0 dB to 80 dB Attack time: from 5 ms. to 2000 ms. Release time: from 50 ms. to 3000 ms. Chime Source: None, Melody 1, Melody 2 Chime Volume: from -12 dB to 0 dB

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**Mechanical**

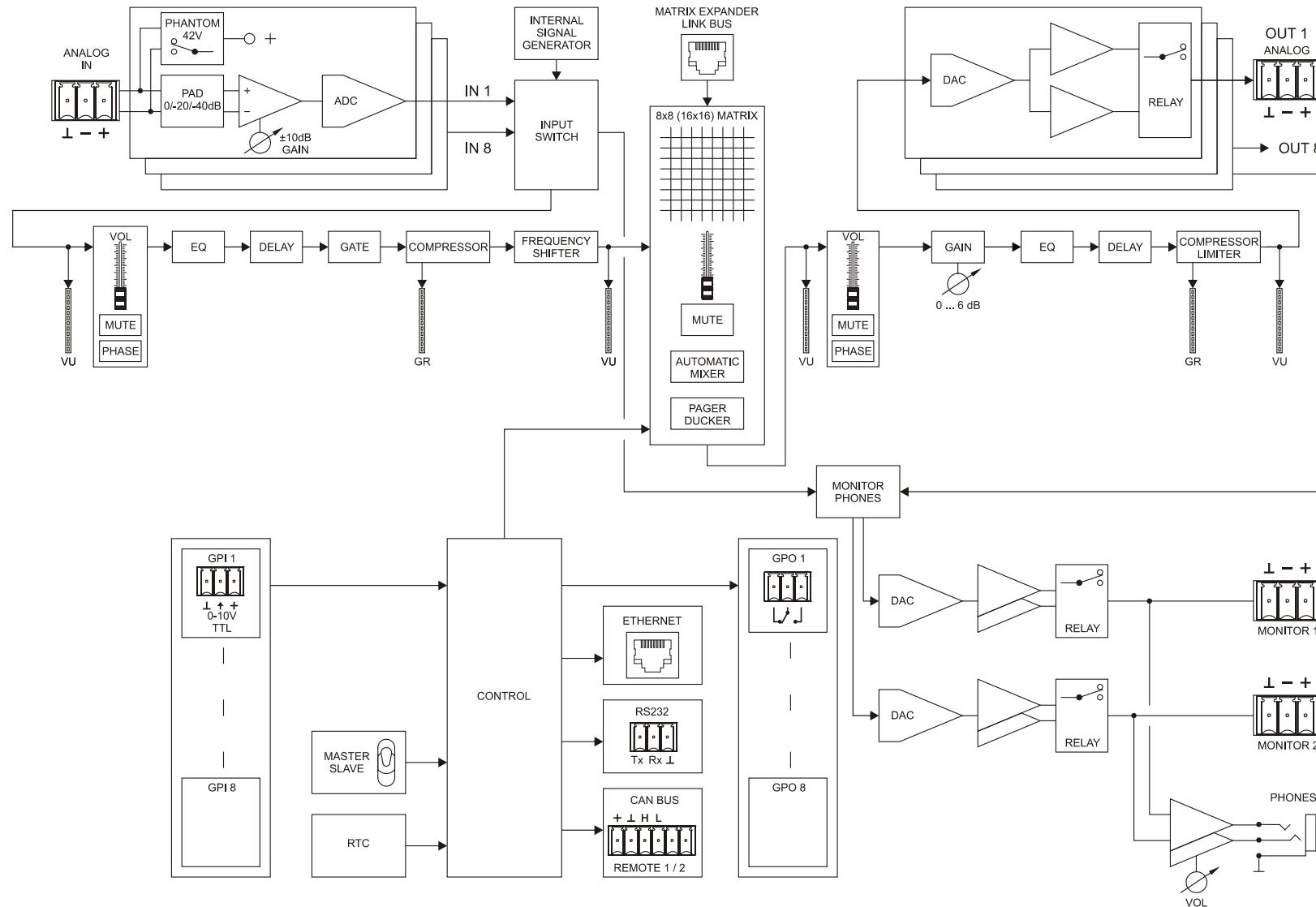

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Dimensions	482.6x44x266.5mm
Weight	3.5kg

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<b>Supply</b>	
Mains Power consumption	90-264VCA 47-63Hz 45VA
<b>Miscellaneous</b>	
Management Connectivity	Ethernet Base-Tx 10/100Mb Auto X-Over CAT5 up to 100m.
Expansion LINK BUS (16x16 ch.)	Proprietary over CAT5, Xover cable up to 100m.
Remote Bus	2, over twisted pairs; up to 1km (see specific specs.)
GPI	8, from 0 to 10VDC or TTL level
GPO	8, 3 poles isolated relay; 1A, 48VDC max. +12VDC, 1.2A. max. (short circuit protected)
Aux. Power Supply for Remotes & GPI	1 month aprox. (ambient temperature dependant)
Time and date retention (battery)	±1 minute /year
RTC accuracy	
<b>SOFTWARE</b>	
EclerNet Software	Realtime full GUI of all functions and controls thru Ethernet with interactive graphical display Grouping mode channels or devices Grouping of other groups Automated report generation Up to 256 devices on same net Autodiscovery devices feature Routing capability through NAT gateways Real time metering at input/output (DSP) Device "Finder" feature Save & Recall setup and preset functions Firmware update capability thru Ethernet Password protection (device & project with two user levels) Default Network configuration: IP: 192.168.0.100 Mask: 255.255.255.0 Gate: 192.168.0.1 UDP Port: 2210
Operating System	Windows® 10; W8.1; W8; W7; Vista (SP1); XP Prof. (SP3); W2000 Prof. (SP4)
Minimum EclerNet System Requirements	Pentium IV ® 1GHz 512MB RAM 40MB HDD free space 800x600 pixels & 16bits color display 10/100/1G Ethernet Network card

## 10 DIAGRAMME DE BLOCS





# TP-NET PROTOCOL

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SOFTWARE

*Third-Party NET*

# USER MANUAL

## 11 TP-NET PROTOCOL INTRODUCTION

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, MIMO7272DN and MIMO4040CDN 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, except for DUO-NET PLAYER, eMIMO1616, HUB series and MIMO4040CDN, 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 (Rx <sub>D</sub> )
Rx	Pin 3 (Tx <sub>D</sub> )
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):

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

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.

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
- **<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 MIMO7272DN and MIMO4040CDN
- **<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 MIMO7272DN and MIMO4040CDN 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 MIMO4040CDN model
  - It can be within a [1..160] range for MIMO7272DN model

## 12 NXA DIGITAL AUDIO MANAGER SERIES

**IMPORTANT NOTE:** The communication must be started with the client sending **the first message SYSTEM CONNECT** to the EclerNet device. Otherwise, the commands from the client to the EclerNet device will be ignored. See [TP-NET PROTOCOL INTRODUCTION](#) chapter for additional information.

TYPE	PARAM1	PARAM2	PARAM3	PARAM4	DESCRIPTION
SYSTEM	CONNECT	[PINGPONG]			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

	ALARMFAULT	<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
	VIRTUALCONTROL	<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
<b>ERROR</b>	<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.

## 13 NZA MULTICHANNEL AMPLIFIER SERIES

**IMPORTANT NOTE:** The communication must be started with the client sending **the first message SYSTEM CONNECT** to the EclerNet device. Otherwise, the commands from the client to the EclerNet device will be ignored. See [TP-NET PROTOCOL INTRODUCTION](#) chapter for additional information.

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
	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
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## 14 NPA STEREO AMPLIFIER SERIES

**IMPORTANT NOTE:** The communication must be started with the client sending **the first message SYSTEM CONNECT** to the EclerNet device. Otherwise, the commands from the client to the EclerNet device will be ignored. See [TP-NET PROTOCOL INTRODUCTION](#) chapter for additional information.

TYPE	PARAM1	PARAM2	PARAM3	PARAM4	DESCRIPTION
SYSTEM	CONNECT	[PINGPONG]			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
<b>ERROR</b>	<Error ID>	"<Error Description>"			Informs about an error

## 15 MIMO88 / MIMO88 CONFERENCE / MIMO88SG / MIMO1212SG (SINGLE) DIGITAL MATRIX

**IMPORTANT NOTE:** The communication must be started with the client sending **the first message SYSTEM CONNECT** to the EclerNet device. Otherwise, the commands from the client to the EclerNet device will be ignored. See [TP-NET PROTOCOL INTRODUCTION](#) chapter for additional information.

TYPE	PARAM1	PARAM2	PARAM3	PARAM4	DESCRIPTION
SYSTEM	CONNECT	[PINGPONG]			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
	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 <b>(not valid for MIMO88SG / MIMO1212SG)</b>
	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 <b>(not valid for MIMO88SG)</b>
	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. <b>(not valid for MIMO88SG)</b>
	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

## 16 MIMO88SG CONFERENCE DIGITAL MATRIX

**IMPORTANT NOTE:** The communication must be started with the client sending **the first message SYSTEM CONNECT** to the EclerNet device. Otherwise, the commands from the client to the EclerNet device will be ignored. See [TP-NET PROTOCOL INTRODUCTION](#) chapter 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)

## 17 MIMO 7272DN / MIMO4040CDN DIGITAL MATRIX

**IMPORTANT NOTE:** The communication must be started with the client sending **the first message SYSTEM CONNECT** to the EclerNet device. Otherwise, the commands from the client to the EclerNet device will be ignored. See [TP-NET PROTOCOL INTRODUCTION](#) chapter 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 <b>ClientNumber ClientIP Client Port</b> (separated by blank characters)

## 17.1 MIMO4040CDN: AEC MANAGEMENT

TYPE	PARAM1	PARAM2	PARAM3	PARAM4	DESCRIPTION
GET	AEC_MIC_LEVEL	<Room>	<Mic>		Gets the current LEVEL of a local mic from a given AEC room
	AEC_MIC_MUTE	<Room>	<Mic>	YES/NO	Gets the current MUTE status of a local mic from a given AEC room
	AEC_MIC_VU	<Room>	<Mic>		Gets the VU-meter value of a local mic from a given AEC room. It returns the Pre Fader and Post Fader values
	AEC_SPK_LEVEL	<Room>	<Speaker>		Gets the current LEVEL of a local loudspeaker from a given AEC room
	AEC_SPK_MUTE	<Room>	<Speaker>	YES/NO	Gets the current MUTE status of a local loudspeaker from a given AEC room
	AEC_SPK_VU	<Room>	<Speaker>		Gets the VU-meter value of a local loudspeaker from a given AEC room. It returns the Pre Fader and Post Fader values
SET	AEC_MIC_LEVEL	<Room>	<Mic>	<Value>	Sets the current LEVEL of a local mic from a given AEC room
	AEC_MIC_MUTE	<Room>	<Mic>	YES/NO	Sets the current MUTE status of a local mic from a given AEC room
	AEC_SPK_LEVEL	<Room>	<Speaker>	<Value>	Sets the current LEVEL of a local loudspeaker from a given AEC room
	AEC_SPK_MUTE	<Room>	<Speaker>	YES/NO	Sets the current MUTE status of a local loudspeaker from a given AEC room
	AEC_RESET	<Room>			Reset the AEC algorithm (default parameters) from a given AEC room

INC	AEC_MIC_LEVEL	<Room>	<Mic>	<Value>	Increases the current LEVEL of a local mic from a given AEC room (Value can range from ±1 to ±100)
	AEC_SPK_LEVEL	<Room>	<Speaker>	<Value>	Increases the current LEVEL of a local loudspeaker from a given AEC room (Value can range from ±1 to ±100)
DEC	AEC_MIC_LEVEL	<Room>	<Mic>	<Value>	Decreases the current LEVEL of a local mic from a given AEC room (Value can range from ±1 to ±100)
	AEC_SPK_LEVEL	<Room>	<Speaker>	<Value>	Decreases the current LEVEL of a local loudspeaker from a given AEC room (Value can range from ±1 to ±100)
SUBSCRIBE	AEC_MIC_VU	<Room>	<Mic>		Subscribe to all VU-meters of a local mic from a given AEC room
	AEC_SPK_VU	<Room>	<Speaker>		Subscribe to all VU-meters of a local loudspeaker from a given AEC room
UNSUBSCRIBE	AEC_MIC_VU	<Room>	<Mic>		Unsubscribe to all VU-meters of a local mic from a given AEC room
	AEC_SPK_VU	<Room>	<Speaker>		Unsubscribe to all VU-meters of a local loudspeaker from a given AEC room

## 18 DUO-NET PLAYER AUDIO PLAYER & STREAMING RECEIVER

**IMPORTANT NOTE:** The communication must be started with the client sending **the first message SYSTEM CONNECT** to the EclerNet device.

Otherwise, the commands from the client to the EclerNet device will be ignored. See [TP-NET PROTOCOL INTRODUCTION](#) chapter for additional information.

TYPE	PARAM1	PARAM2	PARAM3	PARAM4	DESCRIPTION
SYSTEM	CONNECT	[PINGPONG]			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

<b>SET</b>	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%
<b>INC</b>	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%
<b>DEC</b>	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%
<b>SUBSCRIBE</b>	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 : <a href="#">DATA INFO_IPLIST 1</a> <a href="#">192.168.1.2 55229</a> <a href="#">DATA INFO_IPLIST 2</a> <a href="#">192.168.1.2 55231</a>

	IP_CONFIG	IP>	<PORT>	<NETMASK>	<GATEWAY>	Shows the DUO-NET unit's current IP configuration. Example: <a href="#">DATA IP_CONFIG</a> <a href="#">192.168.0.6 5000</a> <a href="#">255.255.0.0 192.168.0.1</a>
	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

## 19 ERROR CODES FOR ECLERNET DEVICES

### 19.1 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,

## 19.2 NXA SERIES SPECIFIC ERROR CODES

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,

## 19.3 NZA SERIES SPECIFIC ERROR CODES

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,

## 19.4 NPA, MIMO7272DN, MIMO4040CDN, MIMO88 &amp; MIMO88 CONFERENCE SERIES SPECIFIC ERROR CODES

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,

## 19.5 MIMO88SG, MIMO1212SG, MIMO88SG CONFERENCE &amp; MIMO1212SG CONFERENCE SERIES SPECIFIC ERROR CODES

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,

## 19.6 DUO-NET PLAYER SPECIFIC ERROR CODES

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,

## 20 eMIMO1616 DIGITAL MATRIX

**IMPORTANT NOTE:** The communication must be started with the client sending **the first message SYSTEM CONNECT** to the device. Otherwise, the commands from the client to the EclerNet device will be ignored. See [TP-NET PROTOCOL INTRODUCTION](#) chapter for additional information.

TYPE	PARAM1	PARAM2	PARAM3	PARAM4	DESCRIPTION
SYSTEM	CONNECT	[PINGPONG]			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)
<b>SUBSCRIBE</b>	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
<b>UNSUBSCRIBE</b>	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
<b>DATA</b>	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 <b>DeviceIP DeviceMask DeviceGateway</b> (separated by blank characters)
	INFO_IPLIST				Shows the list of clients connected to the Device. The message will contain a list including <b>ClientNumber ClientIP Client Port</b> (separated by blank characters)
	I NAME	<Input Channel>	<Name>		Shows the NAME (label) of an Input Channel
	I LEVEL	<Input Channel>	<Level>		Shows the current LEVEL of an Input Channel
	I MUTE	<Input Channel>	YES/NO		Shows the current MUTE status of an Input Channel
	I BASSGAIN	<Input Channel>	<Gain>		Shows the current BASS EQ filter GAIN of an Input Channel
	I MIDGAIN	<Input Channel>	<Gain>		Shows the current MID EQ filter GAIN of an Input Channel
	I TREBLEGAIN	<Input Channel>	<Gain>		Shows the current TREBLE EQ filter GAIN of an Input Channel
	I VU	<Input Channel>	<Post Vumeter Level>		Shows the VU-meter value of an Input Channel
	O NAME	<Output Channel>	<Name>		Shows the NAME (label) of an Output Channel
	O LEVEL	<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))
<b>ERROR</b>	<Error ID>	"<Error Description>"			Informs about an error

## 21 eMIMO1616 ERROR CODES

ERROR ID	DESCRIPTION
<b>0</b>	No error. Depending on scenario, can report any of the following: <ul style="list-style-type: none"> <li>• Device is in TEST MODE</li> <li>• Device is in FACTORY MODE</li> <li>• Last loaded project was incomplete</li> <li>• Now Disconnected</li> </ul>
<b>1</b>	Invalid Field MSG
<b>2</b>	Depending on scenario, can report any of the following: <ul style="list-style-type: none"> <li>• Invalid Field DATA</li> <li>• Invalid Field VALUE</li> <li>• Invalid Field PARAM1</li> </ul>
<b>3</b>	Invalid Field CHANNEL
<b>4</b>	Invalid Field VALUE
<b>7</b>	Timeout Waiting PONG
<b>8</b>	CONNECT received while connected
<b>9</b>	DISCONNECT received while unconnected
<b>10</b>	Invalid client (client not connected)
<b>11</b>	Message too long (more than 80 characters)
<b>12</b>	Message with invalid format
<b>13</b>	Depending on scenario, can report any of the following: <ul style="list-style-type: none"> <li>• Invalid Ping Interval value</li> <li>• Invalid Subscription Interval value</li> </ul>
<b>14</b>	Maximum number of clients reached
<b>15</b>	Master Mode active

## 22 HUB SERIES DIGITAL ZONER

**IMPORTANT NOTE:** The communication must be started with the client sending **the first message SYSTEM CONNECT** to the device. Otherwise, the commands from the client to the EclerNet device will be ignored. See [TP-NET PROTOCOL INTRODUCTION chapter](#) for additional information.

TYPE	PARAM1	PARAM2	PARAM3	PARAM4	DESCRIPTION
SYSTEM	CONNECT	[PINGPONG]			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
<b>DATA</b>	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 <b>DeviceIP DeviceMask DeviceGateway</b> (separated by blank characters)
	INFO_IPLIST				Shows the list of clients connected to the Device. The message will contain a list including <b>ClientNumber ClientIP Client Port</b> (separated by blank characters)
	I NAME	<Input Channel>	<Name>		Shows the NAME (label) of an Input Channel
	I LEVEL	<Input Channel>	<Level>		Shows the current LEVEL of an Input Channel
	I MUTE	<Input Channel>	YES/NO		Shows the current MUTE status of an Input Channel
	I BASSGAIN	<Input Channel>	<Gain>		Shows the current BASS EQ filter GAIN of an Input Channel
	I MIDGAIN	<Input Channel>	<Gain>		Shows the current MID EQ filter GAIN of an Input Channel
	I TREBLEGAIN	<Input Channel>	<Gain>		Shows the current TREBLE EQ filter GAIN of an Input Channel
	I VU	<Input Channel>	<Post Vumeter Level>		Shows the VU-meter value of an Input Channel
	O NAME	<Output Channel>	<Name>		Shows the NAME (label) of an Output Channel
	O LEVEL	<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))
<b>ERROR</b>	<Error ID>	"<Error Description>"			Informs about an error

## 23 HUB SERIES ERROR CODES

ERROR ID	DESCRIPTION
<b>0</b>	No error. Depending on scenario, can report any of the following: <ul style="list-style-type: none"> <li>• Device is in TEST MODE</li> <li>• Device is in FACTORY MODE</li> <li>• Last loaded project was incomplete</li> <li>• Now Disconnected</li> </ul>
<b>1</b>	Invalid Field MSG
<b>2</b>	Depending on scenario, can report any of the following: <ul style="list-style-type: none"> <li>• Invalid Field DATA</li> <li>• Invalid Field VALUE</li> <li>• Invalid Field PARAM1</li> </ul>
<b>3</b>	Invalid Field CHANNEL
<b>4</b>	Invalid Field VALUE
<b>7</b>	Timeout Waiting PONG
<b>8</b>	CONNECT received while connected
<b>9</b>	DISCONNECT received while unconnected
<b>10</b>	Invalid client (client not connected)
<b>11</b>	Message too long (more than 80 characters)
<b>12</b>	Message with invalid format
<b>13</b>	Depending on scenario, can report any of the following: <ul style="list-style-type: none"> <li>• Invalid Ping Interval value</li> <li>• Invalid Subscription Interval value</li> </ul>
<b>14</b>	Maximum number of clients reached
<b>15</b>	Master Mode active



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