



Powersoft S.p.A.
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Product:	UNICA SERIES
Protocol:	Basic 3rd party protocol
Description:	UDP ASCII Protocol Specifications
Issue:	1.0.0
Date:	2023-02-22
FW Compatibility	1.11.1.58

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Revision History

Version	Date	Updated by	Changes
1.0.0	2023-02-22	A. Carello	First Edition

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1. Purpose of this document

The purpose of this document is to depict the BASIC communication protocol used to communicate with UNICA devices.

Usage of this protocol in conjunction with Armonia is discouraged, otherwise you might experience de-synchronizations between on-board settings and software settings.

1.1 Definitions

Equipment or amplifier is the Unica device

Remote controller is the software, running on a PC or on another device, that is enabled to communicate with Equipment

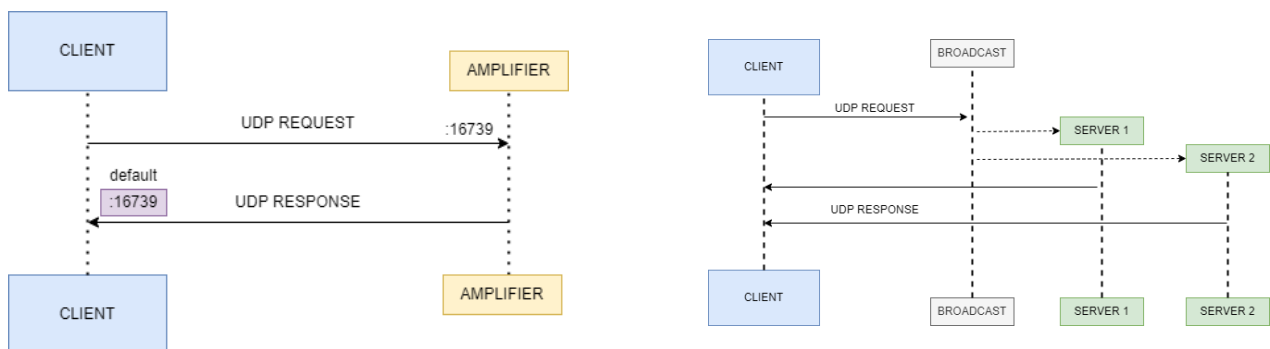
2. Protocol

It's possible to interact with any amplifier using an UDP protocol. Each time that the amplifier receives a well-formatted message it replies with a well-formatted answer to the IP (single-cast) that originated the request.

The amplifier manages both broadcast and single-cast requests coming to its own IP address, incoming port is **16739**. It will answer to the port set from the command "**REPLYPORT**" which is **16739** by default.

The amplifier manages more than one request at the same time, but the request is not "marked". Since the device hasn't a session for each client, it is up to the client to manage answers according to their scope.

This protocol has to be in UTF-8.



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2.1. Data Types

The following data types are currently supported:

- **Number:** can have min and/or max values
- **String:** is UTF-8 string. Strings have always a max length constraint
- **Float:** uses point (.) as decimal separator. Has at most 7 decimal digits and integers value must be represented as floats as well; "1" becomes "1.0".
- **Boolean:** 1 means true, 0 false
- **Enum:** enum values are sent as string
- **Bitwise:** bitwise values are sent as a string of 1's and 0's by multiples of eight (eg: 16 is sent as '00010000'). When a bitwise converts multiple bytes are shown without spaces (eg: 1992 is sent as '0000011111001000')

2.2. Tools

A common tools that can be used to send commands are netcat or /dev/udp/

Some examples (assuming that the device as IP 10.10.10.1 and we use the default port):

POWER STANDBY

```
echo -n "POWER STANDBY" >/dev/udp/10.10.10.1/16739
```

POWER ON

```
echo -n "POWER ON" >/dev/udp/10.10.10.1/16739
```

MUTE FIRST CHANNEL INPUT

 first input is recognize with index 1

```
echo -n "INPUT 1 MUTE 1" >/dev/udp/10.10.10.1/16739
```

UNMUTE 8TH CHANNEL INPUT

```
echo -n "INPUT 8 MUTE 0" >/dev/udp/10.10.10.1/16739
```

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3. Summary

Commands

1. [POWER..... Reads or sets the standby](#)
2. [INPUT..... Reads or sets the device's input matrix](#)
3. [MATRIX..... Reads or sets the matrix value](#)
4. [OUTPUT..... Reads or sets the Advanced EQ Parameters](#)
5. [INFO..... Reads the device's information](#)
6. [ALARMS..... Reads the alarms](#)

Actions

1. [BLINK.....](#)
2. [SNAPSHOTRECALL.....](#)

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4. Commands

POWER

DESCRIPTION	Reads or sets the standby	
READ PARAMETERS	<i>no params</i>	
WRITE PARAMETERS	<ul style="list-style-type: none">• STATE: enum	
EXAMPLE	READ REQ	READ RES
	POWER	POWER STANDBY
	WRITE REQ	WRITE RES
	POWER ON	POWER ON

STATE enum values:

- ON
- STANDBY

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INPUT

DESCRIPTION	Reads or sets the device's input matrix	
READ PARAMETERS	<ul style="list-style-type: none">• CHANNEL: number CONSTRAINTS <u>min</u>: 1 <u>max</u>: 8• KEY: enum	
WRITE PARAMETERS	<ul style="list-style-type: none">• CHANNEL: number CONSTRAINTS <u>min</u>: 1 <u>max</u>: 8• KEY: enum• GAIN: float CONSTRAINTS <u>min</u>: 0.0 <u>max</u>: 1.0 <i>required only if GAIN</i>• MUTE: boolean <i>required only if MUTE</i>	
EXAMPLE	READ REQ	READ RES
	INPUT 1 GAIN	INPUT 1 GAIN 1.0
	WRITE REQ	WRITE RES
	INPUT 1 GAIN 0.5	INPUT 1 GAIN 0.5

KEY enum values:
• GAIN
• MUTE

KEY enum values:
• GAIN
• MUTE

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MATRIX

<p>DESCRIPTION</p> <p>READ PARAMETERS</p>	<p>Reads or sets the matrix value</p> <ul style="list-style-type: none"> OUTPUT: enum INPUT: number CONSTRAINTS <u>min</u>: 1 <u>max</u>: 8 KEY: enum 	<p>OUTPUT enum values:</p> <ul style="list-style-type: none"> A B C D E F G H <p>KEY enum values:</p> <ul style="list-style-type: none"> GAIN MUTE 				
<p>WRITE PARAMETERS</p>	<ul style="list-style-type: none"> OUTPUT: enum INPUT: number CONSTRAINTS <u>min</u>: 1 <u>max</u>: 8 KEY: enum GAIN: float CONSTRAINTS <u>min</u>: 0.0 <u>max</u>: 1.0 <i>required only if <u>GAIN</u></i> MUTE: boolean <i>required only if <u>MUTE</u></i> 	<p>OUTPUT enum values:</p> <ul style="list-style-type: none"> A B C D E F G H <p>KEY enum values:</p> <ul style="list-style-type: none"> GAIN MUTE 				
<p>EXAMPLE</p>	<table border="1"> <thead> <tr> <th data-bbox="386 1821 798 1870">READ REQ</th> <th data-bbox="801 1821 1222 1870">READ RES</th> </tr> </thead> <tbody> <tr> <td data-bbox="386 1874 798 1991">MATRIX A 1 GAIN</td> <td data-bbox="801 1874 1222 1991">MATRIX A 1 GAIN 1.0</td> </tr> </tbody> </table>	READ REQ	READ RES	MATRIX A 1 GAIN	MATRIX A 1 GAIN 1.0	
READ REQ	READ RES					
MATRIX A 1 GAIN	MATRIX A 1 GAIN 1.0					

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WRITE REQ	WRITE RES
MATRIX A 1 GAIN 0.95	MATRIX A 1 GAIN 0.95

OUTPUT

DESCRIPTION	Reads or sets the Advanced EQ Parameters									
READ PARAMETERS	<ul style="list-style-type: none">OUTPUT: number CONSTRAINTS <u>min</u>: 1 <u>max</u>: 8KEY: enum	KEY enum values: <ul style="list-style-type: none">GAINMUTE								
WRITE PARAMETERS	<ul style="list-style-type: none">OUTPUT: number CONSTRAINTS <u>min</u>: 1 <u>max</u>: 8KEY: enumGAIN: float CONSTRAINTS <u>min</u>: 0.0 <u>max</u>: 1.0 <i>required only if <u>GAIN</u></i>MUTE: boolean <i>required only if <u>MUTE</u></i>	KEY enum values: <ul style="list-style-type: none">GAINMUTE								
EXAMPLE	<table><thead><tr><th>READ REQ</th><th>READ RES</th></tr></thead><tbody><tr><td>OUTPUT 1 GAIN</td><td>OUTPUT 1 GAIN 1.0</td></tr></tbody></table> <table><thead><tr><th>WRITE REQ</th><th>WRITE RES</th></tr></thead><tbody><tr><td>OUTPUT 1 GAIN 0.55</td><td>OUTPUT 1 GAIN 0.55</td></tr></tbody></table>	READ REQ	READ RES	OUTPUT 1 GAIN	OUTPUT 1 GAIN 1.0	WRITE REQ	WRITE RES	OUTPUT 1 GAIN 0.55	OUTPUT 1 GAIN 0.55	
READ REQ	READ RES									
OUTPUT 1 GAIN	OUTPUT 1 GAIN 1.0									
WRITE REQ	WRITE RES									
OUTPUT 1 GAIN 0.55	OUTPUT 1 GAIN 0.55									

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INFO

DESCRIPTION	Reads the device's information	
RESPONSE	<ul style="list-style-type: none">• MODEL: enum• SERIAL: number• FIRMWARE: string	MODEL enum values: <ul style="list-style-type: none">• UNICA-4CH• UNICA-8CH• UNICA-2CH
EXAMPLE	READ REQ	READ RES
	INFO	INFO UNICA-4CH 00345678 1.10.0.7

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ALARMS

DESCRIPTION	Reads the alarms
RESPONSE	<ul style="list-style-type: none">• HARDWARE_FAULTS: boolean• MAINS_OUT_OF_RANGE: boolean• OVER_TEMPERATURE: boolean• NO_MAINS: boolean• HARDWARE_FAULTS_OUTPUT: bitwise<ul style="list-style-type: none">◦ BIT 0 CH 1◦ BIT 1 CH 2◦ BIT 2 CH 3◦ BIT 3 CH 4◦ BIT 4 CH 5◦ BIT 5 CH 6◦ BIT 6 CH 7◦ BIT 7 CH 8• LOAD_ALARM: bitwise<ul style="list-style-type: none">◦ BIT 0 CH 1◦ BIT 1 CH 2◦ BIT 2 CH 3◦ BIT 3 CH 4◦ BIT 4 CH 5◦ BIT 5 CH 6◦ BIT 6 CH 7◦ BIT 7 CH 8• SHORT_CIRCUIT: bitwise<ul style="list-style-type: none">◦ BIT 0 CH 1◦ BIT 1 CH 2◦ BIT 2 CH 3◦ BIT 3 CH 4◦ BIT 4 CH 5◦ BIT 5 CH 6◦ BIT 6 CH 7◦ BIT 7 CH 8• PILOT_TONE_MONITOR: bitwise<ul style="list-style-type: none">◦ BIT 0 CH 1◦ BIT 1 CH 2◦ BIT 2 CH 3◦ BIT 3 CH 4◦ BIT 4 CH 5◦ BIT 5 CH 6◦ BIT 6 CH 7◦ BIT 7 CH 8

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EXAMPLE	<ul style="list-style-type: none"> • NOMINAL_IMPEDANCE_DETECTOR: bitwise <ul style="list-style-type: none"> ◦ BIT 0 CH 1 ◦ BIT 1 CH 2 ◦ BIT 2 CH 3 ◦ BIT 3 CH 4 ◦ BIT 4 CH 5 ◦ BIT 5 CH 6 ◦ BIT 6 CH 7 ◦ BIT 7 CH 8 	
	READ REQ	READ RES
	ALARMS	ALARMS 0 0 0 0 0 0 0 0 0

5. Actions

BLINK

DESCRIPTION	Makes the front of the device blink	
REQUEST PARAMETERS		
EXAMPLE	WRITE REQ	WRITE RES
	BLINK	BLINK

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SNAPSHOTRECALL

DESCRIPTION	Loads the snapshot	
REQUEST PARAMETERS	• SNAPSHOT: <i>number</i> CONSTRAINTS <u>max</u> : 50 <u>min</u> : 1	
EXAMPLE	WRITE REQ	WRITE RES
	SNAPSHOTRECALL 1	SNAPSHOTRECALL 1

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