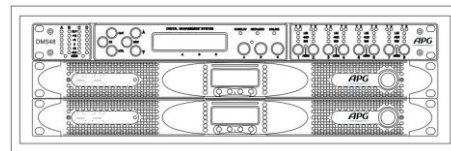


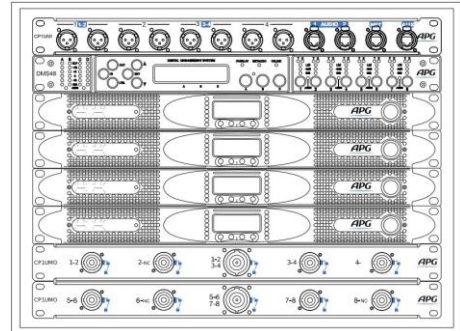
Instructions for set up UNILINE system

UNIRACK & TOURACK

Version 1.21 – Sept 2014



UNIRACK



TOURACK

Instructions about APG amp racks with integrated DSP UNIRACK & TOURACK with Uniline

Presentation

APG offers you two standard amplifiers&processor racks, dedicated to UNILINE speakers wiring :

UNIRACK (**4 inputs/4 outputs**) consist of :

- One CP3UAP input/output wiring plate with power supply
- One DMS48 Digital processor
- Two SA30:2 amplifiers (2 channels per amplifier)

Le TOURACK (**4 inputs/8 outputs**) consist of :

- One CP1UMI input wiring plate
- Two CP1UMO output wiring plates
- One DMS48 Digital processor
- Four SA30:2 amplifiers (2 channels per amplifier)

Recommendations

Read the instruction leaflet in full and ensure that the safety requirements have been fulfilled as described in the "**Uniline users – general information**" leaflet.

UL210 and UL210D enclosures should never be wired in parallel because the internal loudspeakers are not the same impedance.

UL210 and UL115B enclosures should never be wired in parallel because the operating frequency bandwidths are not the same, in a similar way UL115B and UL118B enclosure should never be wired in parallel.

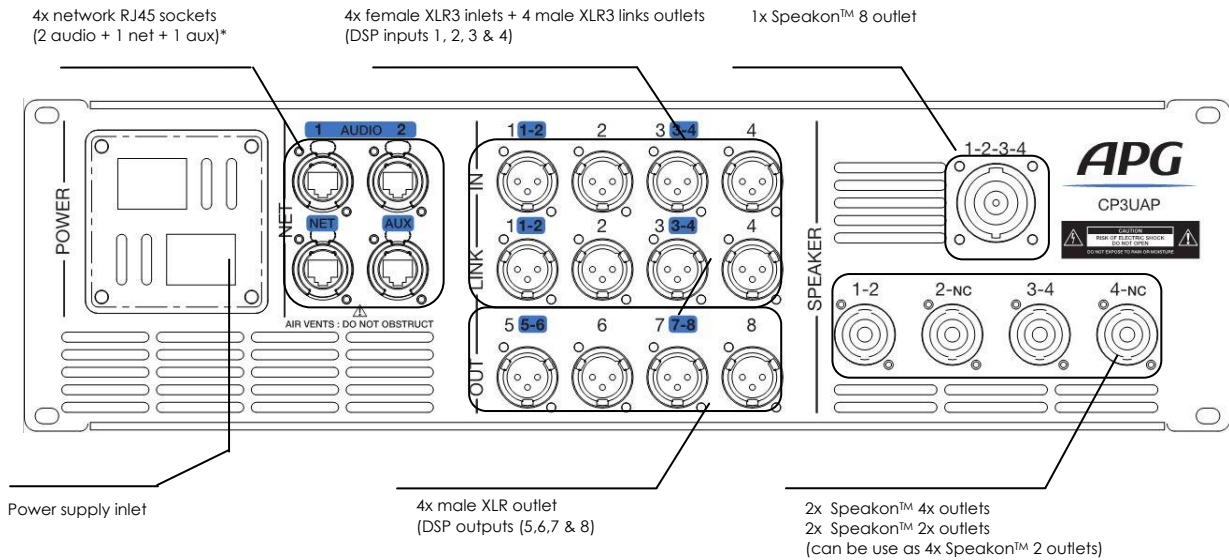
Never connect more than :

- **8 UL210** on a single amplifier channel.
- **4 UL210D** on a single amplifier channel.
- **4 UL115B** on a single amplifier channel.
- **4 UL118B** on a single amplifier channel.

Because the total impedance will be less than 2 ohms (the maximum limit for an amp channels).

1. UNIRACK Wiring

CP3UAP Wiring plate



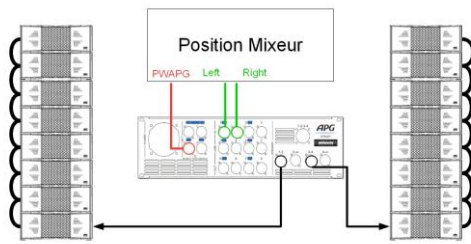
RJ45 sockets

- **AUDIO 1** and **2** RJ45 inlets are useful if the rack is equipped with **NetAudio option** (For example, DANTE Primary/Secondary)
- **NET** inlets is connected to the DMS48 **Ethernet** port, it is a 10/100M remote control network.
- **AUX** isn't connected as default; it can be used for global purpose, for example connected to the DMS48 GPI or SA amplifiers remote ports, integrated Ethernet switch output etc.

Power Supply

- As default, the plate is fitted with two Neutrik Powercon™ NAC3MPA 20A, the first one power the first SA30:2 and the DMS48, the second one power the second SA30:2 only.
- On special request, this plate can be fitted with dual CEI 16A inlet, or even P17 32A MONO inlet.

Stereo UL210 setup example



Full range mode

“Standalone” system with UL210 only
Max 2x 8x UL210

It's the basic stereo configuration you can make with a single UNIRACK, which permits to connect a remote computer directly the UNIRACK via the NET inlet, without a dedicated server.

You connect Left & Right outputs of the mixing desk to 1 & 2 UNIRACK inputs (analog, or digital (AES3)).

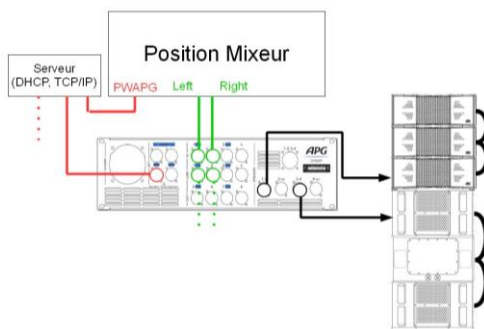
Optimized for 4 boxes (4 ohm load), this configurations shows the maximum number of UL210 speakers per channel. 2 ohm load means only 350W for each enclosure, do this only if you don't need the full system power and use short cable length.

Routing :

Out 1-2		Out 3-4	
LO UL210 L	HI UL210 L	LO UL210 R	HI UL210 R
IN A	IN A	IN B	IN B

The DMS48 presets must be loaded, either via factory preset (.dfa), or form internal Drive Modules, for more information refer to the DMS48 manual.

Preset : UL210 STEREO.dfa



Extended mode with UL115B cardioid
(only one side shown for clarity)

UL210+UL115B setup example

Extended mode 1 with UL115B cardioid
2x 3x UL210
2x 3x UL115B in cardioid array setup

Routing :

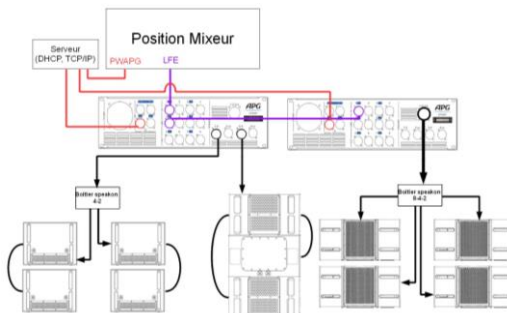
Out 1-2		Out 3-4	
LO UL210 L	HI UL210 L	UL115B front	UL115B back
DSP A - IN 1	DSP A - IN 1	DSP A - IN 1	DSP A - IN 1

Preset : UL210/UL115Card.dfa

In order to link several devices remote, it is mandatory to use an Ethernet switch. We highly recommend using a DHCP server functionality to attribute IP address automatically.

Subwoofer setup example

It also possible to use a Unirack with single amp channel loudspeaker, for example subwoofers (or DX front fills etc.).



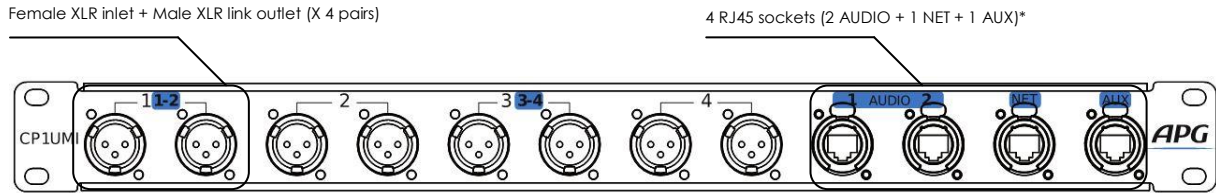
Routing :

Out 1	Out 2	Out 3-4		Out 1'	Out 2'	Out 3'	Out 4
UI118B	UI118B	UI115B front	UI115B back	TB218S	TB218S	TB218S	TB218S
DSP A IN 1	DSP B IN 1	DSP C IN 1	DSP C IN 1	DSP A IN 1	DSP B IN 1	DSP C IN 1	DSP D IN 1

Using a Speakon™ 8-4-2 Split Box can prove useful to simplify wiring.

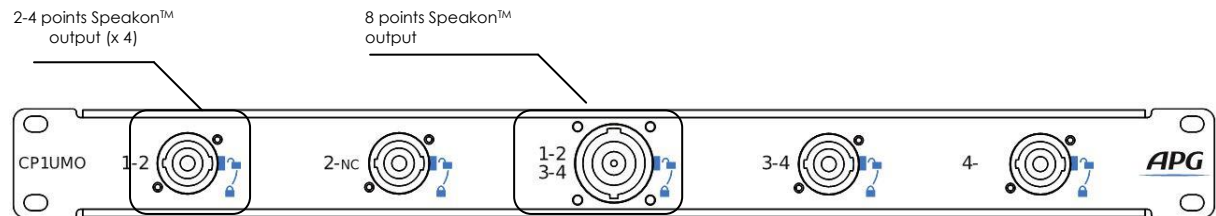
2. TOURACK Wiring

CP1UMI Wiring plate

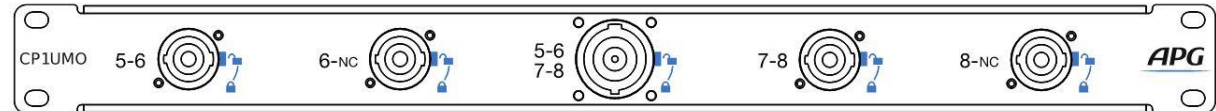


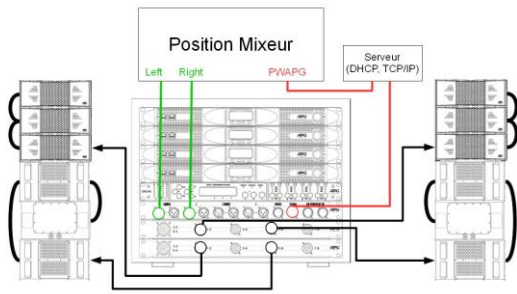
* : AUDIO 1 and 2 RJ45 socket are used for NetAudio option (example DANTE Primary & Secondary), NET inlet is used for DMS48 10/100M Ethernet remote control, AUX isn't connected, it can be useful for DMS48 GPI port or Remote SA option etc.

CP1UMO Wiring plates

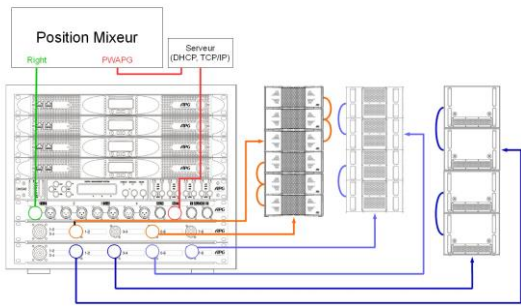


There's a second identical wiring plate used for 5,6,7 & 8 outputs :

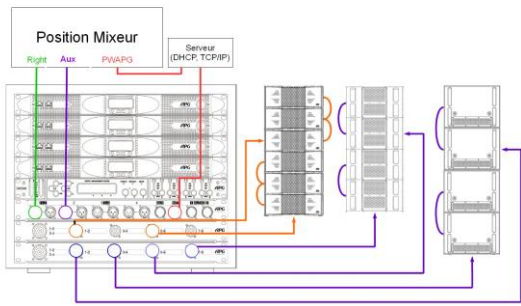




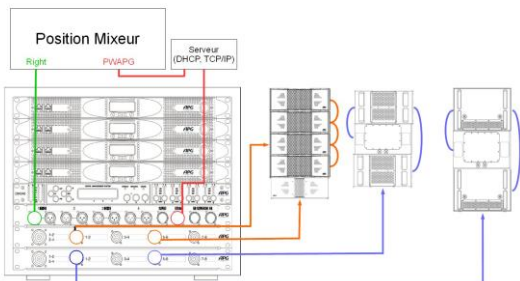
Extended mode with UL115B Cardioid



Complete system, medium throw



Complete system, medium throw (w/ Aux feed bass management)



Complete system, medium throw with downfill

Stereo UL210+UL115B setup example

Extended mode with UL115B cardioid

Suitable for medium audience without very low frequency extension

Routing :

Out 1-2		Out 3-4		Out 5-6		Out 7-8	
LO UL210 L	HI UL210 L	UL115B	UL115B Rev	LO UL210 R	HI UL210 R	UL115B	UL115B Rev
DSP A IN1	DSP A IN1	DSP A IN1	DSP A IN1	DSP B IN2	DSP B IN2	DSP B IN2	DSP B IN2

Preset : UL210/UL115Card.dfa

It's the same configuration as previously seen with two UNIRACK, but made this time with a single TOURACK, thus both solutions are possible.

Mono complete mode example

Complete system (5 way acoustic, 4 way active), medium throw
One TOURACK on each side to drive (4 ohm) :

- 2x 4 x UL210
- 4 x UL115B
- 4 x UL118B

Routing (for right side) :

Out 1	Out 2	Out 3	Out 4	Out 5	Out 6	Out 7	Out 8
LO UL210 R	HI UL210 R	LO UL210 R	HI UL210 R	UL115B	UL115B	UL118B	UL118B
DSP A IN1	DSP A IN1	DSP B IN1	DSP B IN1	DSP C IN1	DSP C IN1	DSP D IN1	DSP D IN1

Preset custom

The bass management can also be made via an auxiliary send just by changing the routing:

Routing (for right side) :

Out 1	Out 2	Out 3	Out 4	Out 5	Out 6	Out 7	Out 8
LO UL210 R	HI UL210 R	LO UL210 R	HI UL210 R	UL115B	UL115B	UL118B	UL118B
DSP A IN1	DSP A IN1	DSP B IN1	DSP B IN1	DSP C IN3	DSP C IN3	DSP D IN3	DSP D IN3

1 and 2 inputs are still used for your stereo mix, 3 is dedicated to bass management.

Downfill and cardioid setup example

Complete system, medium throw with downfill and low frequency cardioid directivity control

- 1 x UL210D
- 4 x UL210
- 3 x UL115B (cardio)
- 3 x UL118B (cardio)

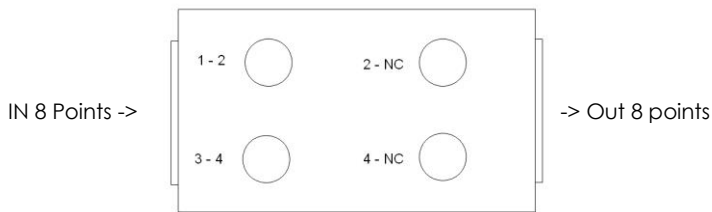
Routing (for right side) :

Out 1-2		Out 3-4		Out 5-6		Out 7-8	
LO UL210 R	HI UL210 R	LO UL210D R	HI UL210D R	UL115B	UL115B Rev	UL118B	UL118B Rev
DSP A IN1	DSP A IN1	DSP B IN1	DSP B IN1	DSP C IN1	DSP C IN1	DSP D IN1	DSP D IN1

Preset custom

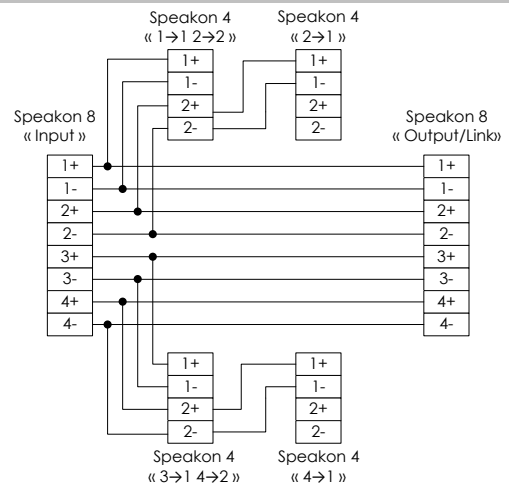
This configuration uses every speakers of UNILINE, and every outputs of DMS48. This configuration stands for a basis for big events. You can add up this configuration several times.

3. Speakon split box 8 - 4 - 2

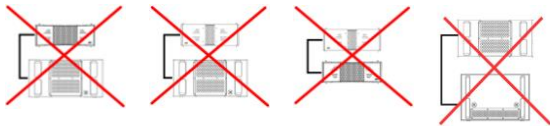


Speakon™ split box can also be used to distribute signals coming from the 8-points Speakon™ output to speakers.

The wiring scheme will keep the same design as connecting plate CP3UAP and CP1UMO



4. Operating precaution



An UL210 speaker shall never be connected with an UL210D speaker : they haven't got the same impedance.

An UL210 speaker shall never be connected with an UL115B/UL118B : they function on a different bandwidth, and they haven't got the same impedance. (same thing for UL210D)

An UL210 speaker shall never be connected with an UL115B/UL118B : they function on a different bandwidth, and they haven't got the same impedance.

5. Recommended amplification

UNIRACK and TOURACK are equipped with SA30:2 amplifiers

MODEL	Nominal impedance	Recommended number of speaker per channel	Number max of speakers per channel (2 ohm load)
UL210	16 ohm	4	8
UL210D	8 ohm	2	4
UL115B	8 ohm	2	4
UL118B	8 ohm	2	4
TB115S	8 ohm	2	4
TB215S	4 ohm	1	2
TB118S	8 ohm	2	4
TB218S	4 ohm	1	2

General recommendations

The Uniline sound system is capable of producing very high levels of sound pressure that may be dangerous for health, in particular may induce hearing impairment. It is recommended not to stay close to the operating speakers.

All elements of the Uniline system must be flown using exclusively the rigging accessories designed and approved by APG. It is important to conform to the constraints related to the configuration and the maximal load permitted by the suspension system (hoists, rigging elements, chains, slings,...)

Setting up

Before any deployment, it is necessary to do a simulation with the software tools provided by APG (Uniline Aiming Tool, EASE et EASE Focus).

The UNILINE systems are very powerful and precise professional tools.

To deploy a UNILINE system, the technicians must be qualified and trained by APG about setup, tuning and correct use.

APG Provide technical support engineers and an international network of qualified UNILINE system engineers, who are available for any information, training, advice and technical support about simulation, setup, tuning, operational and corrective maintenance.

APG declines all responsibility in case of use of non-approved accessories or non-conformity to the deployment instructions or safety rules.

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The logo for APG, consisting of the letters 'APG' in a bold, italicized, sans-serif font. The letters are black and are positioned above a thin blue horizontal line.