

TTL31-A II

LINE ARRAY MODULE



The TTL31-A II is a full range, ultracompact, wide dispersion, line array module that sets a new standard in the touring and theatre sound reinforcement.

TTL31-A II is a 2-way active system featuring with 1 x 8" neo woofer 64 mm voice coil in horn loaded configuration, 3 x 1" neo compression driver 37 mm voice coil, titanium dome, in horn-array configuration. Each transducer has been specifically designed for the application. The woofer provides large excursion and very light weight and an incredibly high BL for best vocal presence, the unique compression driver design offer the minimum spacing between throats to avoid HF cancellation.

Thanks to the extensive use of neodymium and new basket designs, the total weight of the 4 transducers is less than 6 Kg!

The amplifier section features 750 watt switching power supply module, 500 watt low frequency digital amplifier module, 250 watt high frequency digital amplifier module, extra capacitor bus able to sustain the voltage for 100 ms burst signals. The total available power supply power is 750 watts and can be distributed to the 2 final amplifier sections. Each amplifier section has a very high maximum output power capability in order to provide, when necessary, maximum output bursts in a specific frequency range.

TTL31-A II amplifier represents a state of the art execution of a Dsp controlled multiway digital amplification. The analog input board offers xlr input and output link, cluster size control switches, high frequencies correction switches, pre-loaded equalizations by-pass (memory recall) switch and 4 status LEDs. Ethercon input and output connect the system in daisy chain on a RDNet monitoring and controlling system from the FOH. The signal processor is a 32 bit floating point Dsp running at 96 kHz. The Dsp takes care of crossovers, equalisations, soft-limiters, rms limiters, large signals compression and customised presets for the 2 way amplification. The TTL31-A II is equipped with a dedicated networking board. Using our proprietary RDNet protocol is possible to monitor all the system parameters, from the input to the status of each single amplifier. Having a Dsp on board of each cabinet, it is possible to address to single cabinets or groups of cabinets specific presets or modifications of parameters like gain, equalisation or delay.

The RDNet protocol is based on RS-485 communication protocol, it is very stable and it is possible to send and receive data on a simple XLR cable.

The AC panel features In/Out Powercon connectors, On/Off switch. The cabinet is in marine baltic birch plywood, coated with high resistance epoxy paint.

The mechanical suspension and orientation system is in high quality steel, very precise and easy to use. The suspension system is directly connected to the aluminum sides of the cabinet. The suspension system is designed to have a safety factor 7 up to 16 speakers per side.

Applications

- Theatrical sound reinforcement
- Portable and installed audio-visual systems
- Front and under-balcony fill
- Houses of worship, ballrooms, concert halls and other fixed venue installations
- High quality reinforcement of music and speech

Features

- Very compact size (300 x 538 x 450 mm (11.8" x 21.18" x 18.2"))
- Maximum output per size available on market
- Minimum weight (kg 22.5/ lbs 49.5)
- Wide, constant directivity, horizontal coverage angle
- 4 high power neodymium transducers
- 750 watt, 2 high power switching amplifiers
- 96 khz, 24 bit, floating DSP
- XLR in/out, powercon in/out
- Baltic birch cabinet

ACOUSTICAL SPECIFICATIONS

Frequency response:	60 Hz- 20 KHz
Max SPL:	132 dB
Horizontal coverage angle:	100°
Vertical coverage angle:	15°
Compression driver:	3 x 1" neo, 37 mm voice coil
Midrange:	-
Woofer:	1 x 8" neo, 64 mm voice coil

INPUT SECTION

Input signal (Impedance):	bal/unbal
Input/Output connector:	xlr
Input sensitivity:	- 2 dBu / + 4 dBu

PROCESSOR SECTION

Crossover frequencies:	1600 Hz
Protections:	thermal, hf
Sensitivity control:	yes
Limiter:	rms, fast limiter
High pass:	yes, 100 Hz
Controls:	hf correction, cluster size, HPF

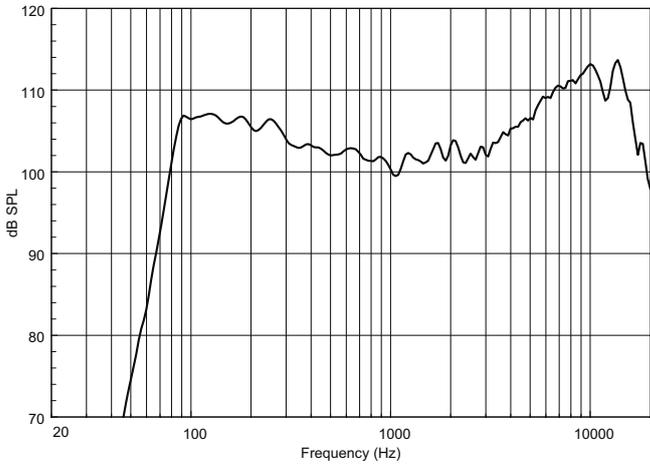
AMPLIFIER

Power supply:	switching 750 Watt
High frequencies:	D / 250 Watt
Mid frequencies:	-
Low frequencies:	D / 500 Watt
Cooling:	convection
Connection:	powercon in/out

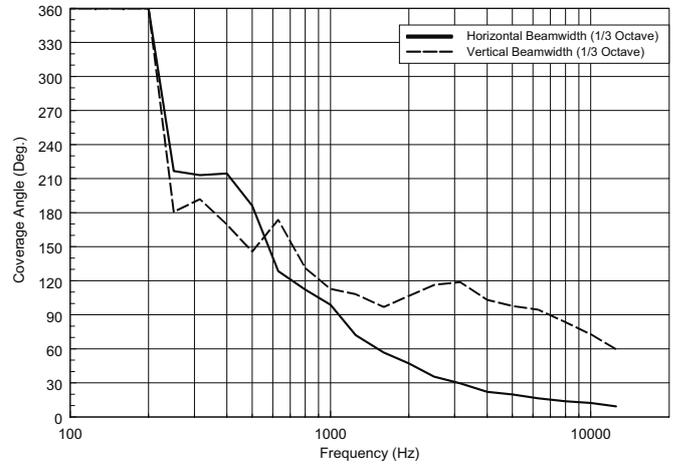
PHYSICAL

Height:	300 mm (11,8")
Width:	538 mm (21,18")
Depth:	450 mm (18,2")
Weight:	22,5 kg (49,5 lbs)
Cabinet:	baltic birch
Hardware:	side fly fittings
Handles:	2 on side
Colour:	Black

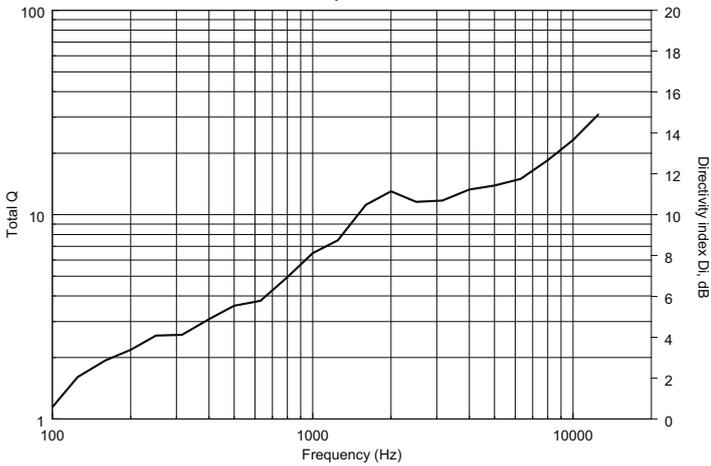
Response



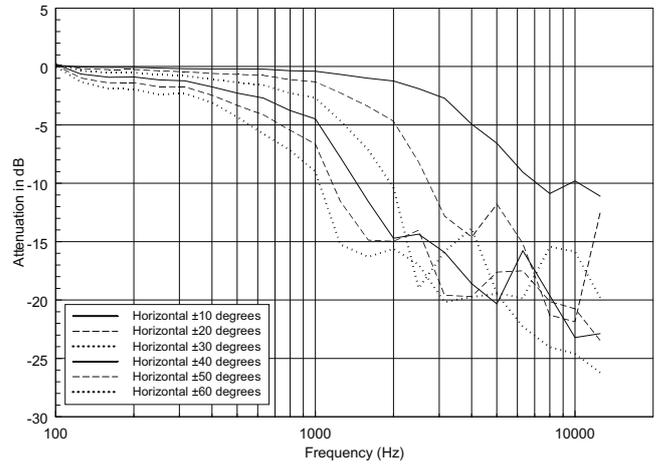
Beamwidth vs. Frequency



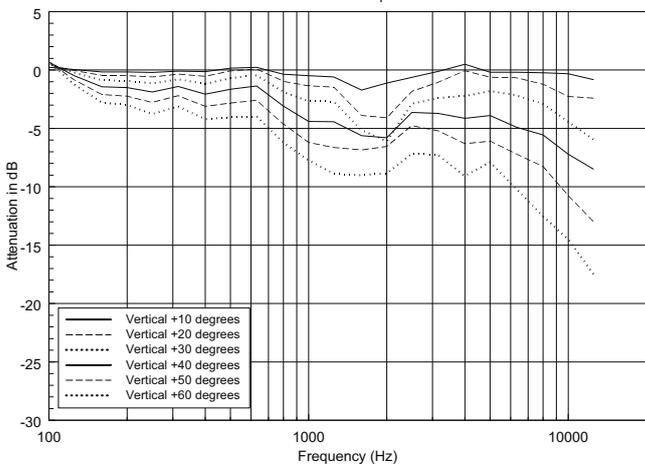
Directivity Index and Q



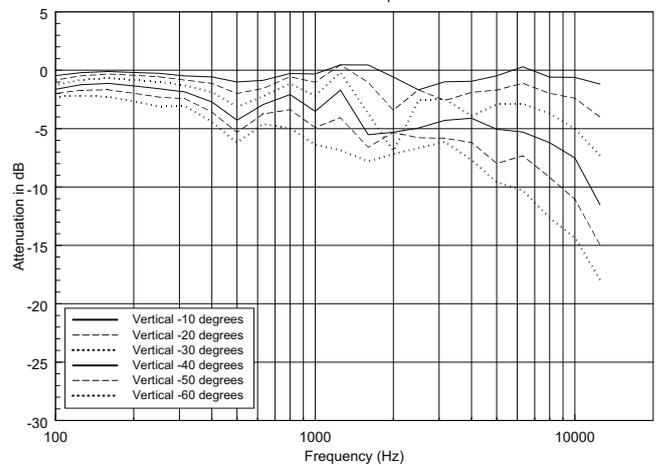
Normalized Horizontal off-axis Response



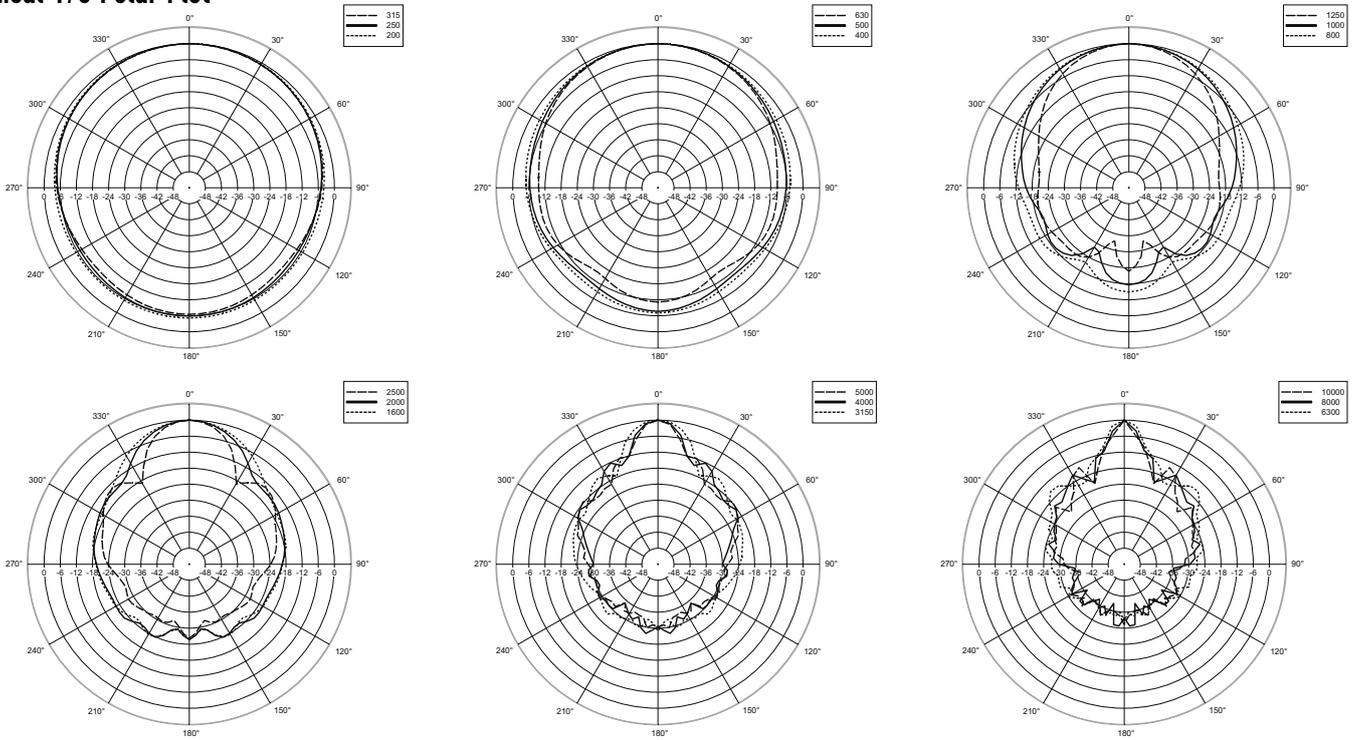
Normalized Vertical off-axis Response. Above the box



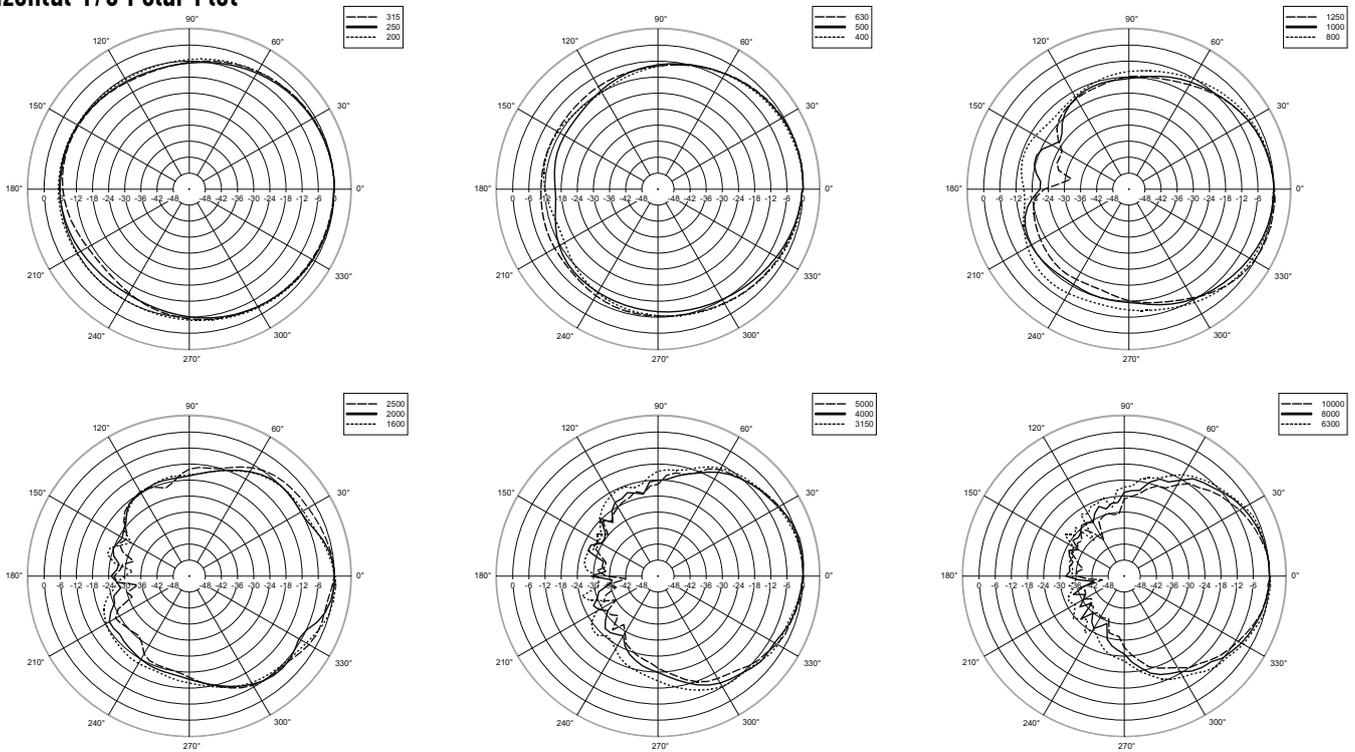
Normalized Vertical off-axis Response. Below the box



Vertical 1/3 Polar Plot



Horizontal 1/3 Polar Plot



CSI PRODUCT SPECIFICATIONS FOR DESIGNERS, SPECIFIERS, AND CONSULTANTS (ALSO KNOWN AS “A&E SPECIFICATIONS”)

The following are “Part 2 Products” CSI-type specifications. It is assumed that “Part 1 General – Administrative and Procedures” and “Part 3 Execution – Installation and Maintenance” are part of an overall audio system or project specification.

PART 2 PRODUCTS

2.01 Approved Manufacturer/Product

A. RCF, Via Raffaello 13, 42100 Mancasale, Reggio Emilia, Italy.

B. Model number: TTL31-A

2.02 Design

Configuration	2 way line array module
LF Sub-section	1 x 8” neodymium woofer, 64 mm voice coil
MR Sub-section	-
HF Sub-section	3 x 1” neodymium, 37 mm voice coil

2.03 Acoustical Properties

Nominal dispersion angle:	Horizontal: 100° - Vertical: 15°
Axial frequency range:	60Hz-20kHz

2.04 Physical Properties

Cabinet:	Baltic birch
Rigging inserts:	Side fly fittings
Color:	Black
Grille:	Custom perforated steel grille with open-cell poly fiber backing
Input Connectors:	xlr
Dimensions (H x W x D):	300 x 538 x 450 mm (11.8” x 21.18” x 18.2”)
Weight:	22,5 kg (49.5 lbs.)

2.05 Accessories

FLY BAR TTL31	Suspending bar for array system TTL31-A.
STCK BAR TTL31	Accessory to add to fly bar for stacking option on sub TTL31-A. Quick lock pins to be added.
AC PROTECTION	Rain cover protection for TTL33 amplifier.
AC QL-PIN TTL31-A	Kit 4 quick lock pins for TTL31-A array system.

