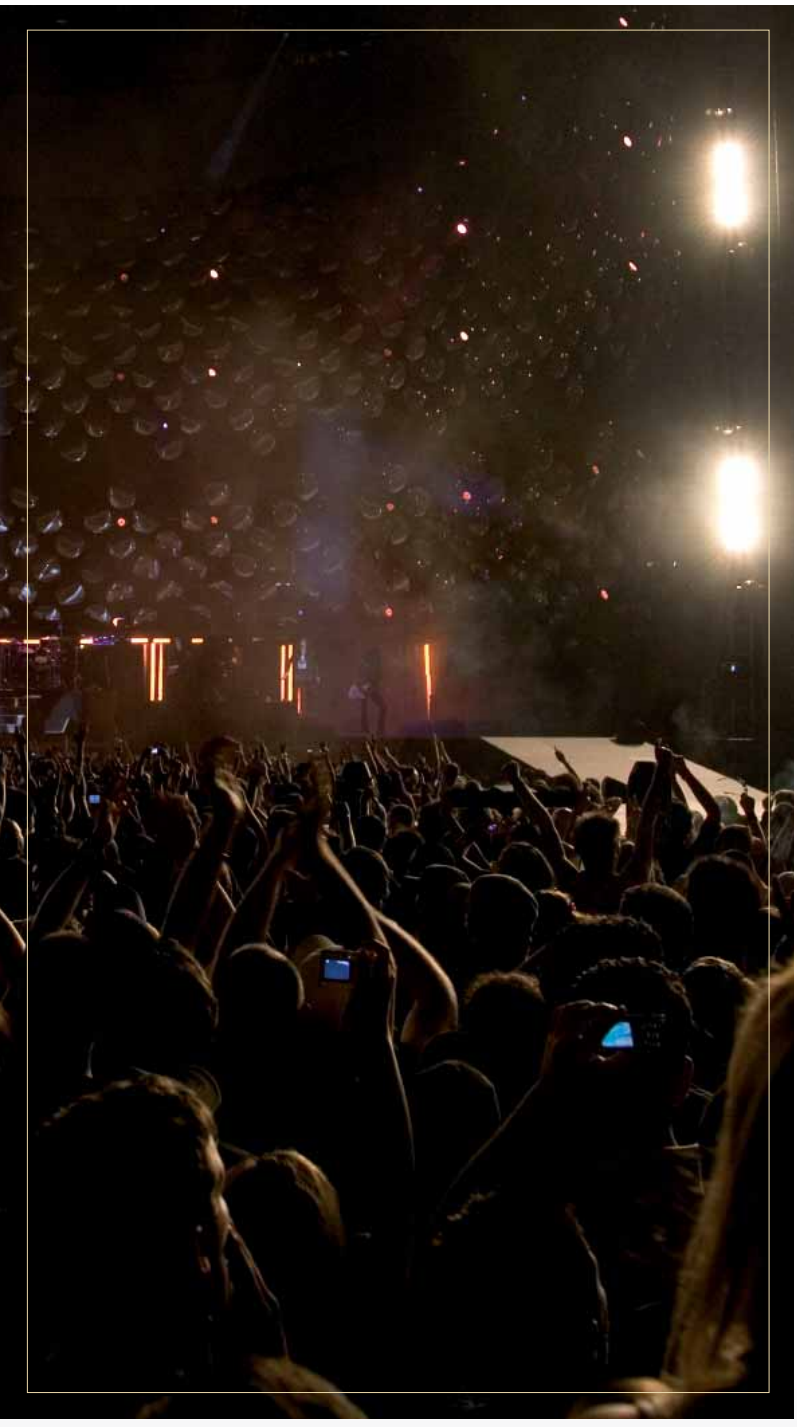
LARGE
VENUES

TT+ HIGH DEFINITION
TOURING AND THEATRE

the rules of sound

RCF

ENG 2009



TT+ LARGE VENUES SYSTEMS

RCF TT+ large venues products is a specifically designed group of products dedicated to highly demanding large scale applications.

Whether a speaker system is designed for large venue concert situations, arenas or concert halls, the paying customer now expects a level of audio fidelity and intelligibility of such a standard unsurpassed by previous generations.

This requirement has fostered the need for audio professionals to be able to offer high power speaker systems combined with dedicated processing and amplification technologies that are superior in acoustic performance and control technology.

RCF TT+ large venues products offer ready to use solutions and tools in true active high power, high definition touring systems.

Touring

The capability of delivering superior SPL output of our systems will reduce the truck space requirement, the higher efficiency of integrated digital amplifiers will reduce the energy requirement, the integrated processing and the cabling reduction will make the set-up faster and easier.

Stadia and Arenas

Whether the event is a live performance or a sport match, whether the speaker system is a rented solution or a dedicated permanent installation, TT+ will excel for superior vocal intelligibility, dynamic of sound and musical clarity.

RCF PRECISION TRANSDUCERS

For over five decades RCF professional woofers have represented the ultimate performance, the highest power handling and the most advanced technology. Thanks to high energy magnetic designs, complex cooling systems and specifically developed new technologies, our neodymium transducers put themselves at the same, unsurpassed level.

Technology and craftsmanship: at RCF each professional compression driver is precision built using the most advanced moulding and assembly technologies and our experienced dedication and attention.

ACTIVE AND CONTROLLED

The large venues TT+ systems are active and features highly advanced digital or analogue electronic processing. TT+ high power digital amplifiers offer very low distortion and natural sound with a very low heat dissipation and energy consumption.

The integration of precise analogue and digital processing , simple presets directly available, the possibility of monitoring and controlling the systems with RDnet proprietary protocol brings TT+ large venues products to unmatched results in the audio industry.

RCF SYSTEM SOLUTIONS

With more than 50 years of experience RCF is one of the leading manufacturers of professional audio; one of the very few companies to use its own transducer technology, RCF has pioneered many of the innovations now recognised and used in pro audio products. RCF products are designed in very close cooperation with our customers, offering complete solutions to meet the highest demanding market needs. The entire production process in the RCF European factory guarantees that RCF professional products comply with the highest quality standards. The world-wide RCF distribution network offers our customers the most complete and qualified support.

■ Concert halls

The incredibly low distortion of RCF digital amplifiers, the accuracy and transparency of the reinforcement, the possibility of controlling and monitoring each single speaker make the TT+ the perfect indoor system that will satisfy the most demanding artists, from opera and musicals to symphony and rock.

■ Houses of worship

From small and medium houses of god to very large community churches a TT+ systems will always deliver unique intelligibility, well defined pattern control, exceptional feedback stability during speech and will immediately be ready to play high definition music and soundtracks at the desired spl level.

TTL55-A

THREE-WAY ARRAY MODULE

The TTL55-A is a high power, three way, active line array module engineered to deliver an incredible output for use in indoor and outdoor large spaces. The system is designed to be easily scalable from few modules for medium and small theatres to full size arrays for very large outdoor stadia and public spaces.
The three new designs for the six neodymium transducers that power the system represent the result of many years dedicated in pioneering new solutions using the best materials available on the market.
The integration of the 3500 Watt four channel digital amplification and the advanced digital processing set a new standard for distortion, noise and thermal efficiency.

FEATURES

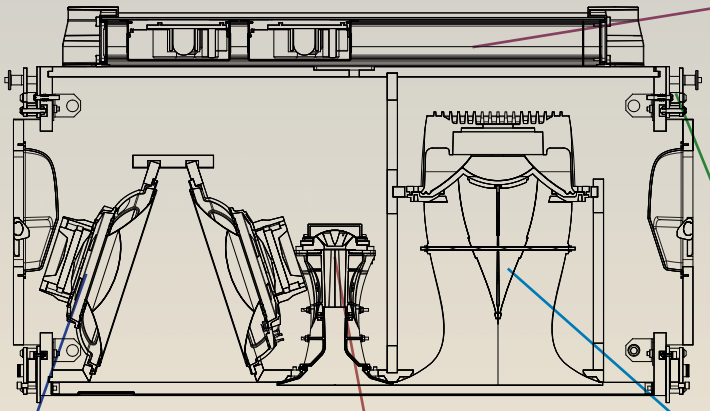
- Tour grade cabinet and mechanics
- 3500 Watt, 4 way amplification
- 6 x high power neodymium transducers
- High quality analog input board
- 96 Khz, 32 bit DSP processing
- Remote monitoring and control
- Maximum output per size on market

■ Touring

■ Stadia and Arenas

COMPONENTS

INSIDE VIEW



POWER PLATFORM
The power section comprises 4 high power digital amplifiers, a state of the art 32 bit floating point Dsp processing, network board, high quality analog inputs.

TOURING GRADE CABINET
The cabinet is in Baltic birch and the mechanics are laser cut in high grade steel. The weight of the system is less than many similar size passive competitors.

LF CLAM SHELL CONFIGURATION
The 2 woofers, in a band-pass loading configuration, provide a very tight and powerful bass response. The acoustical configuration is very efficient in the 100 Hz region and free from dual source cancellations.

HF ARRAY
The high frequency section employs three high power 2,5" voice coil compression drivers housed on a very compact slotted horn. Precision assembled titanium domes to produce very high power and clarity

HORN LOADED MF
The 10" midrange is a state of the art neodymium design. It features a sealed aluminium basket, incredibly high BL product, a secondary "distortion reduction" coil. The transducer is loaded on a 4-slot constant directivity horn that guarantees a uniform vertical coupling module to module.

ICC "IMPEDANCE CONTROL COIL" TECHNOLOGY

The TTL55-A midrange transducer features a unique "Impedance Control Coil" technology. A secondary coil wound on the speaker yoke and driven in opposite phase to the primary coil has the function of cancelling the primary coil inductance, increasing the speaker sensitivity and reducing the speaker distortion. A primary effect of this technology is the improvement of the temporal behaviour of the speaker, improving the crossover transition from the midrange to the compression drivers.

WOOFERS

- 2 x 12"high power vented neo woofers, 4"voice coil
- Minimum weight basket design

MIDRANGE

- 10" Very high BL neo midrange, 3.5" voice coil
- Aluminium sealed basket design

COMPRESSION DRIVERS

- 3 x 1.5" throat neo compression drivers, 2.5" voice coil
- Very compact diameter design

■ Concert halls

■ Houses of worship

THE TTL55-A AMPLIFIER

The TTL55-A amplifier represents a state of the art execution of a Dsp controlled multi-way 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 switch. 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 4 way amplification. Four digital amplifiers: 2 x 1000 watt low frequency, 1000 watt the midrange, 500 watt for the three high frequency drivers.

TTL55-A

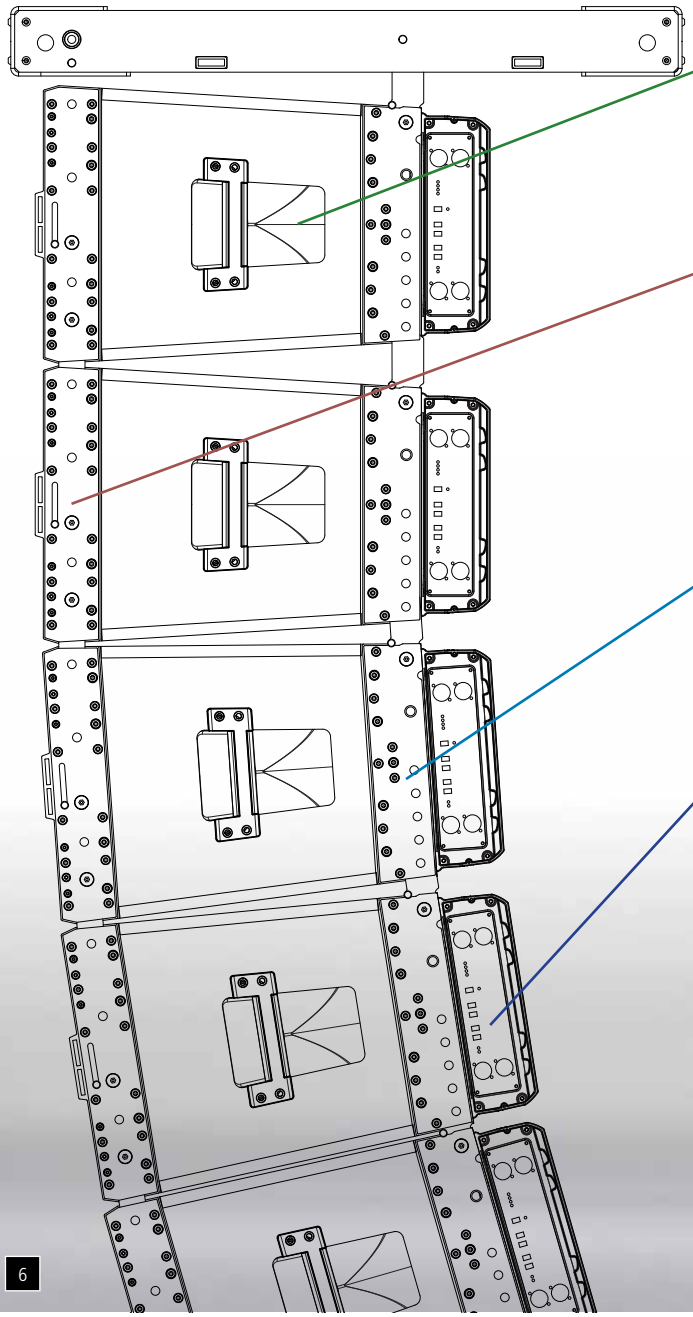
TOURING LINE ARRAY

THE TTL55-A CABINET

The TTL55-A cabinet is built in Baltic birch plywood and protected with heavy-duty coating. The internal structure is braced and reinforced and all the parts are assembled on metal inserts with metric screws. With a very small size compared to the spl output it is easily transportable as a single module on a dolly or in groups of four in dedicated karts. The front grille is powder coated a features and special foam backing very transparent to the sound.

MECHANICS

SIDE VIEW



SIDE HANDLE

The TTL55-A cabinet features a newly designed die-cast side handle with rubber hand-grip. Tanks to the internal scoop design it is possible to use the handle in three different directions.

FRONT MECHANICS

All the mechanical structure is built in high strength structural steel. This special steel by a quenching and tempering process guarantees a yielding strength almost 4 times higher compared to commercial grade steel and maintains the mechanical properties down to –40° C. Thanks to this material the mechanics have high safety factor with a weight under control.

REAR MECANICHS AND ANGLES

The TTL55-A cabinet features 8 possible splay angles, from 0° to 7° with 1° step increment to create curved spiral arrays with very high precision.

AMPLIFIER MECHANICAL STRUCTURE

The electronic processing and the amplifier are housed in a solid aluminium extrusion. The housing is tightly fitted to the rear of the cabinet and sealed. The power input and all the signal connectors are housed in two recessed and protected panels.

RCF SHAPE DESIGNER

In order to assist with the set up procedures for the TTL55-A Line Array System, RCF has developed a complete prediction software package. The software enables a complete two dimensional simulation of the behaviour of the TTL55-A cabinets arrays and also suggest the correct subwoofers combination. The system curvature angles and the sound projection data are computed with maximum sound pressure levels for the given design. The software will allow simulations up to a maximum of twenty TTL55-A systems.
The rigging menu provides data for weight, centre of gravity and length of the array configuration. Rigging points and rigging hardware configurations are also computed.

RDNET

The TTL55-A is equipped with a dedicated networking board. Using our proprietary RDNet protocol is possible to monitor all the system parameters, form 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.

TT45-SMA

HIGH OUTPUT STAGE MONITOR

The TT45-SMA is a very high output, high performance, active stage monitor. Perfectly flat amplitude response, extended bass reproduction and incredible output make this monitor unique in the market. The TT45-SMA distinguishes itself for vocal clarity, accurate and detailed high frequency reproduction, prefect feedback stability. The cabinet angle and the 90° x 40° uniform directivity provide optimal coverage in medium and large sized stages. TT45-SMA are designed to work in couples to provide exceptional tour grade monitoring to the most demanding artists. The TT45-SMA features 1500 Watt digital amplification power with integrated onboard signal processing and transducers protections.

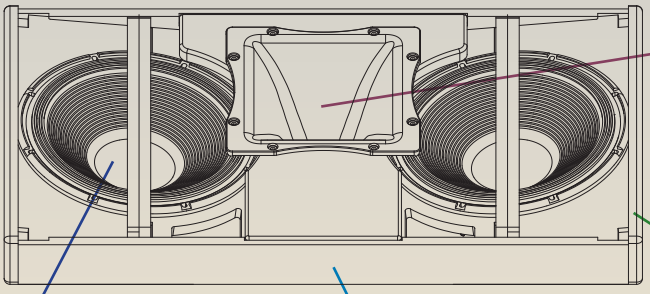
FEATURES

- **1500 Watt, 2 way digital amplification**
- **2 x 12" high power neodymium woofers, 3.5" voice coil**
- **Horn loaded 1.5" throat titanium compression driver, 3" voice coil**
- **Soft limiter and rms protection**
- **Very low profile**
- **Maximum gain before feedback**
- **Maximum output per size on market**

- Touring stage monitor
- Theatre and Performing art stage monitor

COMPONENTS

INSIDE VIEW



PRECISION HF
The high freqencies section features a 90° x 40° horn loaded compression driver, 3" voice coil.

TOURING GRADE CABINET
The cabinet is constructed in Baltic birch plywood and protected with high quality textured coating.
It features two recessed side handle on the sides and a heavy duty metal grille with acoustical high quality foam backing. Low profile rubber feet prevent cabinet damages.

DIGITAL AMPLIFICATION
The TT45-SMA is powered by a 1500 Watt digital 2 way amplifier: 1000 Watt for the low frequencies and 500 Watt for the high frequencies.

HIGH POWER LF
The loudspeaker's low frequency section comprises two 12" high power neodymium woofers in clam shell configuration.

COMPRESSION DRIVER

A new high performance 3.0 inch diaphragm compression driver with a 1.4 inch exit throat deliver perfectly natural midrange and high frequency. The diaphragm is precision formed from pure titanium, the suspension is based on a vented and damped design in order to provide very low distortion.

WOOFERS

The loudspeaker's low frequency section comprises two 12" high power neodymium vented woofers. The two transducers are driven in parallel for a tight and powerful bass response. In the low midrange frequency region only one of the two transducers is driven in order to avoid side cancellations.

The TT45-SMA woofer is designed to provide an excellent frequency response linearity with very low distortion. A very strong neodymium magnetic structure guarantee dynamic and precision, a new and unique 3,5" voice coil design provides a very high power handling, especially recommended in comparison to a standard 3" voice coil. The unique Dual-forced air venting system guarantee a very efficient voice coil ventilation to minimize the power compression.

House of worship stage monitor

DIGITAL AMPLIFICATION

The TT45-SMA is powered by a 1500 Watt digital 2 way amplifier: 1000 Watt for the two 12" woofers and 500 Watt drive the 3" voice coil horn loaded driver.
The input board features a special switch to align the curve response equalisation for use of the speaker system in couples.
The amplifier is housed on a heavy duty aluminum panel suspended from the main cabinet with flexible mounts to obtain the best insulation from vibrations.
Signal output link and power output link are available on the right side of the cabinet.

TTS56-A

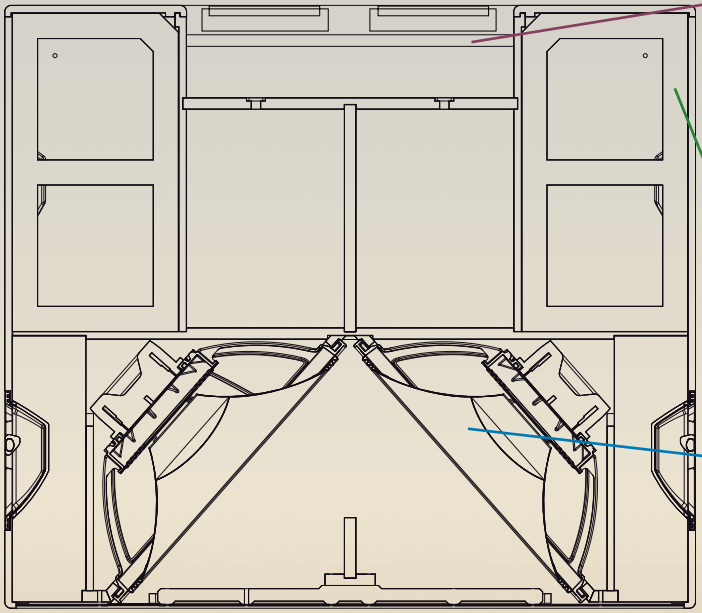
HIGH POWER ACTIVE SUBWOOFER

The TTS56-a is a high power, high output active subwoofer system that sets a new standard in the touring sound reinforcement. The new 21" neodymium design represent the result of many years dedicated in pioneering new solutions for the transducers technology. The integration of the 6800 Watt , 2 channel digital amplification and the advanced digital processing set a new standard for distortion, noise and thermal efficiency.

FEATURES

- 2 x 3400 Watt digital amplifiers
- 2 x high power neodymium 21" woofers
- 96 Khz, 32 bit DSP processing
- Remote monitoring and control
- Time delay alignment
- Cardioid preset for groups
- Tour grade cabinet
- Maximum output per size on market

INSIDE VIEW



POWER PLATFORM

The power section comprises 2 x 3400 watt digital amplifiers, a state of the art 32 bit floating point Dsp processing, time delay setting, network board, high quality analog inputs.

TOURING GRADE CABINET

The cabinet is in Baltic birch and the internal structure is heavily braced to survive to long term use and transportation. The weight of the system is less than many similar size passive competitors.

BASS-REFLEX LOADING

The 2 x 21" woofers, in a clam shell loading configuration, provide a very tight and powerful extended bass response.

INPUT BOARD

The input section provides:
- In/Out XLR connectors
- Crossover Out XLR connector
- System sensitivity control
- crossover set-up (60 Hz - 90 Hz)
- High pass set-up (30 Hz - 45 Hz)
- 4 status LEDs
- RDnet Ethercon In/Out connectors

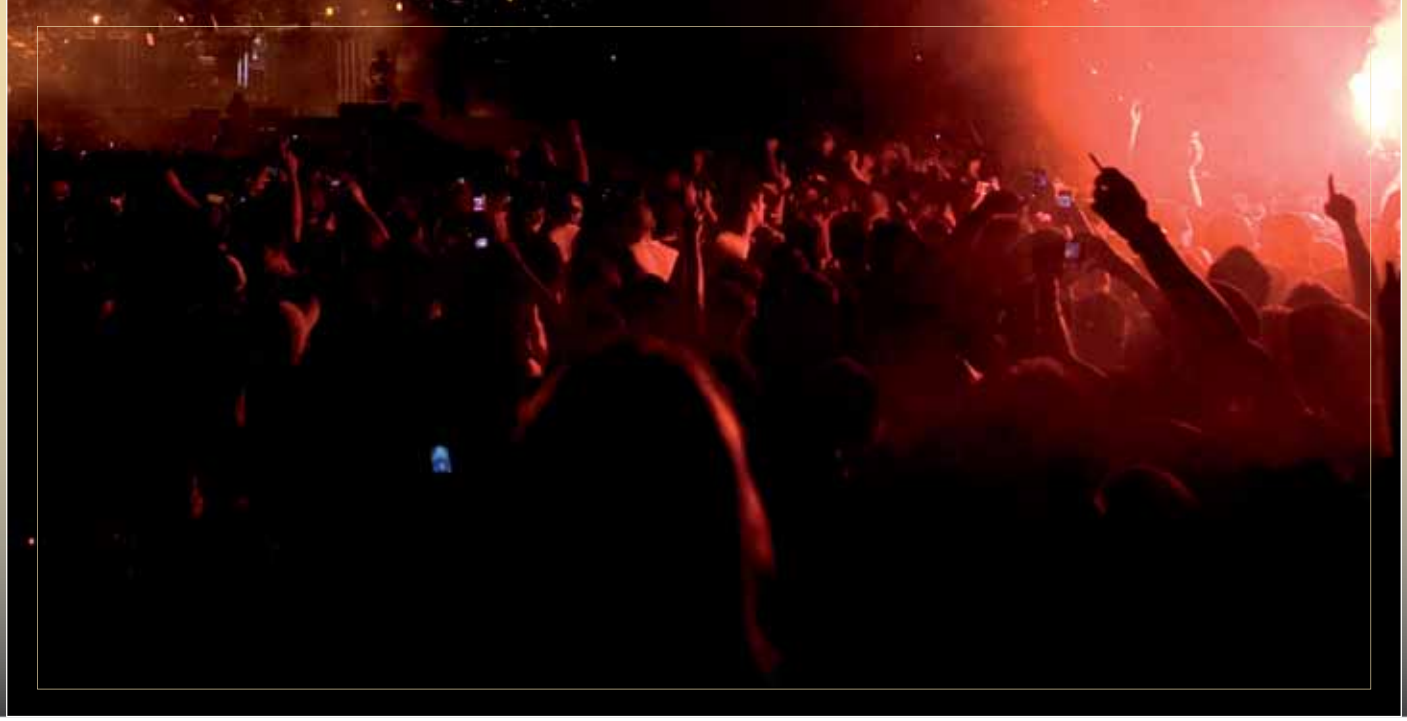
THE INPUT SECTION PROVIDES A SPECIAL SWITCH TO CREATE A CARDIOID CONFIGURATION WHEN TTS56-A SUBWOOFERS ARE USED IN GROUPS OF THREE

TRANSDUCERS

The TTS56-A features two 21" high power neodymium woofers. A new 21" transducer has been specifically designed for the application. The woofer provides very high power handling, low distortion at large excursions and very light weight for the power. The clam shell acoustical configuration provides very high outpour, bass reflex quality sound, very compact footprint.

The new 21" transducer design features:

Very high force, neodymium magnet assembly
115 mm diameter, 33 mm length, inside-outside copper voice coil
reinforced silicon double spiders
carbon fiber doped water resistant cone
heavy duty aluminum basket
magnet assembly complex ventilation for minimum power compression



■ Touring ■ Stadia and Arenas ■ Large clubs extended bass

POWER AMPLIFIERS

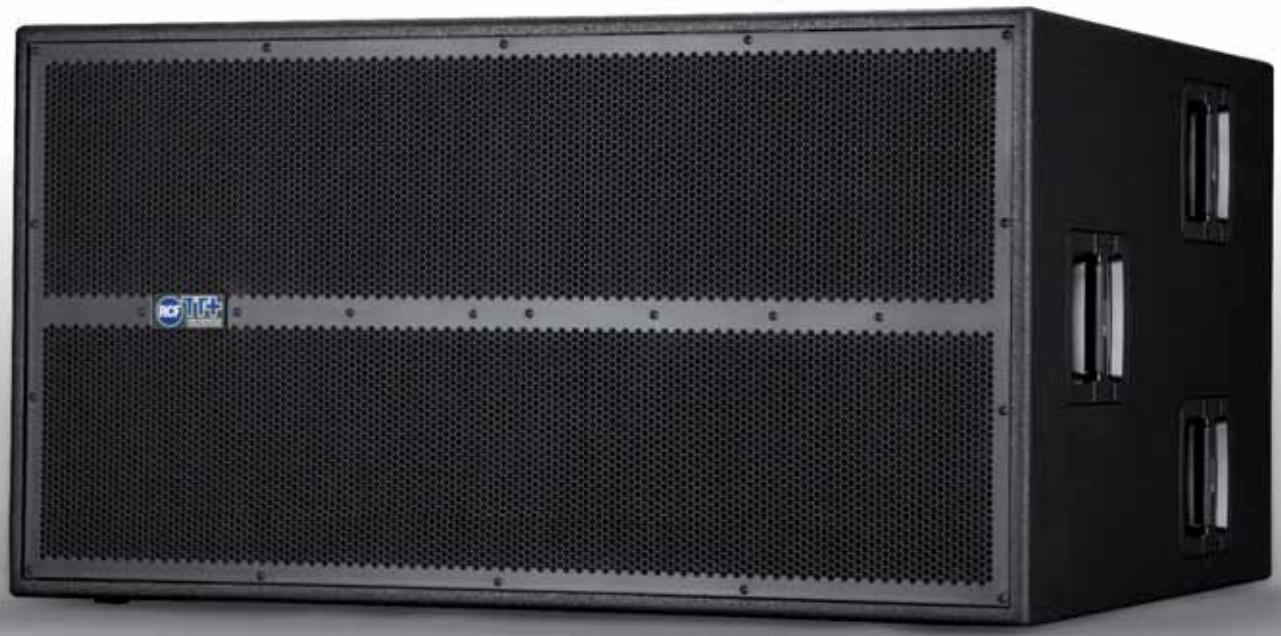
The TTS56-A amplifier section features 2 x 3400 Watt highly advanced digital amplifier modules. The power amplifiers and the input board are housed on a heavy duty aluminum paned suspended from the main cabinet with flexible mounts to obtain the best insulation from vibrations of the electronic parts.

Each module features:

- Power Factor Correction (PFC)
- Separated power supply and amplification
- High efficiency, very low consumption
- Comprehensive, smart protection features: thermal, over-current, non audio signals
- Two "on board" ventilation fans

RDNET

The TTS56-A is equipped with a dedicated RDnet networking board. It is possible to monitor all the system parameters, form the input to the status of each amplifier, to address to single cabinets or groups of cabinets specific presets or modifications of parameters like gain, equalisation or delay.



TT+ HIGH DEFINITION TOURING AND THEATRE

	230V p/n 13000188 115V p/n 13000189 **TTL55-A**	230V p/n 13000192 115V p/n 13000193 **TT45-SMA**	230V p/n 13000190 115V p/n 13000191 **TTS56-A**
ACOUSTICAL SPEC.			
Frequency Response	50 Hz - 20 kHz	50 Hz - 20 kHz	30 Hz - 100 kHz
Max SPL	143 dB	136 dB	145 dB
Horizontal coverage angle	90°	90°	-
Vertical coverage angle	max 7°	45°	-
Compression Driver	3x1.5" neo, 2.5" v.c.	1.5"neo, 3" v.c.	-
Midrange	10" neo, 3.5" v.c.	-	-
Woofer	2 x 12" neo, 4" v.c.	2 x 12"neo, 3.5" v.c.	2 x 21"neo, 4.5" v.c.
INPUT SECTION			
Input connector	xlr, Ethercon	xlr	xlr, Ethercon
Output connector	xlr, Ethercon	xlr	xlr, Ethercon
Input sensitivity	4 dBu	-2 dBu / + 4 dBu	4 dBu
PROCESSOR SECTION			
Crossover frequencies	320 Hz - 1300 Hz	1400 Hz	-
Protections	thermal, excurs., rms	thermal, rms	thermal, excurs., rms
Limiter	soft limiter	soft limiter	soft limiter
Controls	Dsp controlled	sesnsitivity, 2 x side eq.	Dsp controlled
AMPLIFIER			
High frequencies	500 Watt	500 Watt	-
Mid frequency	1000 Watt	-	-
Low frequencies	2 x 1000 Watt	1000 Watt	2 x 3400 Watt
Cooling	convection/forced	convection	convection/forced
Connection	powercon	powercon	powercon
PHYSICAL SPEC.			
Height	380 mm	380 mm	550 mm
Width	1020 mm	800 mm	1100 mm
Depth	550 mm	420 mm	950 mm
Weight	67 Kg	38 Kg	90 Kg
Cabinet	baltic birch plywood	baltic birch plywood	baltic birch plywood
Hardware	array fly-ware	-	array fly-ware
Handles	2 side	2 side	6 side

RCF the rules of sound

10116113 AGC

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