

# System Amplifier



## DESCRIPTION

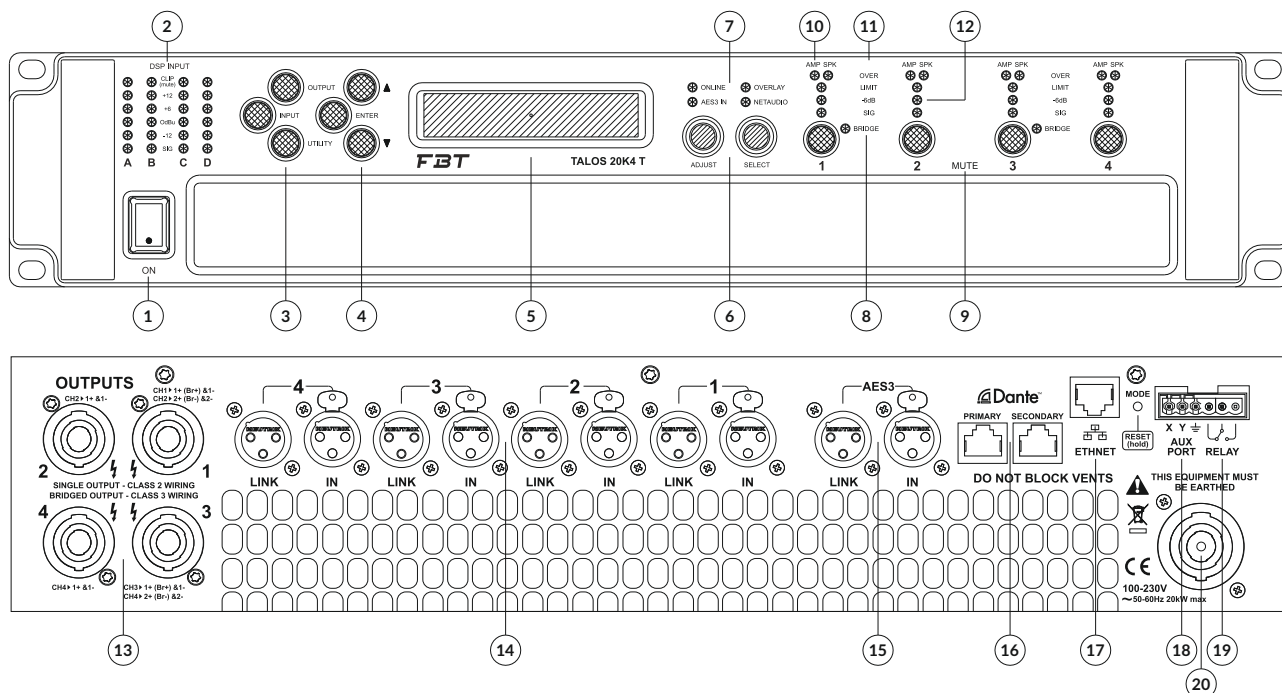
The TALOS 20K4 T amplifier represents current state-of-the-art technology in several areas.

This product is the result of several years of research, from which many advances in switched mode power technologies and ever finer detail in signal processing have stemmed. Taking advantage of the latest advances in analogue to digital conversion technologies, the unit achieves performance levels among the very best that engineering permits.

## KEY FEATURES

- Four channels of sonically pure Class D amplification
- Very high power density packs four channels and 20 kW into just 2U of rack space
- Packed with robust protection and monitoring systems to keep the show going
- External Breaker Protection (EBP) limits the current draw to prevent breakers opening
- FBT minimal signal path design
- Class leading sonic performance achieved by the use of state of the art Amplifier technologies and highly advanced DSP algorithms
- 96 kHz sampling frequency provides for a nominally flat response beyond 40kHz
- Rotary encoders, illuminated buttons and graphical display provide a rapid, intuitive and user-friendly control interface
- High speed Ethernet communications supporting DHCP, static-IP, auto-IP and direct connection to a computer without the need for a router or a switch
- Powerful Drive Module concept, abstraction from device centric to speaker based control
- Innovative Component Presets to allow individual outputs to be used for selected drivers of a loudspeaker system
- Twelve layers of Parameter Overlays for trouble-free Grouping
- Unique VX limiter providing dynamic control for passive 2-way enclosures
- Unique LIR linear phase crossover shapes giving FIR-like performance without the drawbacks
- Linear phase HF system EQ profiling which provides perfect integration between enclosures
- Innovative excursion control limiter with sliding High Pass Filter; limits only the damaging low frequencies
- Transducer thermal modelling provides regulation limiters, addressing long term overload
- Overshoot limiter governs amplitude of transient signals retaining average power whilst constraining peak energy
- Dante audio networking with AVB upgrade path
- AES3 inputs

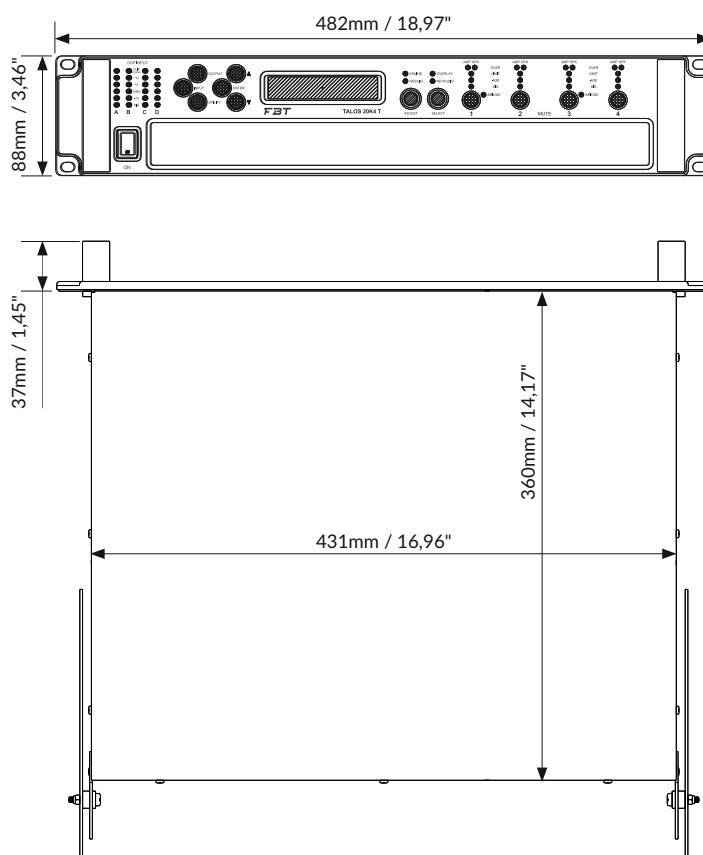
## PANELS LAYOUT



- |                            |                         |                                 |                                  |
|----------------------------|-------------------------|---------------------------------|----------------------------------|
| 1. Power Switch            | 6. Parameter Encoders   | 11. Driver Indicator            | 16. Networked Audio Ports        |
| 2. Input Signal Indicators | 7. Status Indicators    | 12. Limiter Indicators          | 17. Ethernet Communications Port |
| 3. Menu Buttons            | 8. Bridge Indicator     | 13. Loudspeaker Connectors      | 18. Auxiliary Port               |
| 4. Page Selection Buttons  | 9. Mute Buttons         | 14. Audio Input Connectors      | 19. Relay Output                 |
| 5. Graphical Display       | 10. Amplifier Indicator | 15. AES3 Audio Input Connectors | 20. Power Inlet                  |

## MECHANICAL INSTALLATION

The TALOS 20K4 T amplifier is designed to be mounted in a standard 19" rack enclosure. Where the amplifier is used in a fixed installation, as long as the bottom unit is supported and there are no gaps between units, it is acceptable to use only the front panel 19" rack holes when fitting it in a standard rack enclosure.



TECHNICAL SPECIFICATIONS

GENERAL

Number of channels	Four
Total power output	20,000 Watts RMS
Input types	Analog, AES3 (Dante as model option)
Control, monitoring & alarm	Ethernet, configurable function Volt-free relay and contact closure port
Energy saving modes	Standby and deep sleep, both with auto-sleep timers
System sleep and wakeup	Front panel switch, network command, contact closure and audio detection
Max ambient temperature (full power, no audio limiting)	40degC (105degF)

AUDIO

Amplifier topology	Proprietary 5th generation FBT ClassD
Amplifier modulation scheme	Low feedback, multiple loop, with feedforward error correction
Dynamic range (analog input to speaker output)	>113dBA typ
Dynamic range (AES3 or Dante input to output)	>114dBA typ
Frequency response	+/- 0.5dB, 5Hz to 20kHz, 4 Ohms -2.5dB, <3Hz to >30kHz, 4 Ohms
Total harmonic distortion, THD	<0.05% typ, 1kHz, AES17, 4 Ohms
Inter-channel crosstalk (worst combination of channels)	better than -85dBr at 1kHz better than -75dBr at 10kHz
Maximum analog input level	+20dBu
Analog input sensitivity range for full output	0dBu to +20dBu, continuously adjustable
Analog input	20k Ohm, electronically balanced
Analog link	Directly connected to the analog input
Analog ground scheme	AES48 standard compliant
AES3 input	Transformer isolated with active cable equalisation for extended range
AES3 link	Active signal regeneration with automatic direct bypass to the AES3 input if the unit is unpowered
AES3 supported sampling rates	24kHz to 192kHz (auto locking)

PHYSICAL

Cooling	Variable speed fans
Enclosure	Standard 19" 2U (88mm) with handles and optional rear support system
Depth (behind rack ears)	12.5kg (27.5)
Net Weight	12.5kg (27.5 pounds)

DIGITAL PROCESSING

Resolution	40 bit
Sample rate	96kHz throughout
Special functionality:	
Class leading limiter suite	See the 'speaker protection systems' section
Hardman crossover filters	Better out of band rejection than Linkwitz-Riley
LIR crossover filters	Linear Phase without the compromises of FIR filters
FIR Shelving EQ filters	For linear phase filtering
Overlays	Twelve additional independent overlays of EQ, Delay and Gain

POWER OUTPUT

Power specification	RMS output power per channel, all channels driven with continuous program material and a nominal ambient temperature of 40degC / 105degF	
Crest Factor of 4 (12dB), 2-Ohm nominal load	5,000W	
Crest Factor of 2.8 (9dB), 4-Ohm nominal load	3,000W	
Crest Factor of 2 (6dB), 8-Ohm nominal load	1,500W	
Bridged, per channel pair, 4 Ohm load	10,000W	
25V line (CV) operation, Crest Factor 4 (12dB)	1250W	
70V line (CV) operation, Crest Factor 4 (12dB)	3500W	
100V line (CV) operation, Crest Factor 4 (12dB)	5,000W	

POWER SUPPLY

Topology (main power supply)	3rd generation Series Resonant.
Topology (auxiliary and standby supplies)	Low quiescent Eco-Flyback
Internally stored energy	>600 Joules
Mains input voltage range (automatically configured)	85V to 240V
Mains input frequency range	47Hz to 63Hz
Mains inrush current (max for <10ms)	6A at 115V, 12A at 230V