GENERAL SPECIFICATIONS

Output Power (W) 128V(US) 228V(EU) 128V(US) 148V(US) 148V(US) 128V(US) 128V(US) <th></th> <th colspan="2"></th> <th colspan="2">T5n</th> <th>T4</th> <th>4n</th> <th colspan="2">T3n</th>				T5n		T4	4n	T3n		
20 pr channel 2500 2500 2000 1400 1400 40 pr channel 1350 1350 1150 1150 1750 1H/z 40 bridge 5000 5000 4400 4700 2800 2800 1H/z 20 per channel 3400 3900 4100 2800 1400 4700	Output Power (W	/)			120V(US)	230V(EU)	120V(US)	230V(EU)	120V(US)	230V(EU)
40 per channel 2200 2350 1950 1050 1750 11Hz 40 bridge 5000 5000 4400 4400 2800 2800 2800 2800 2800 2800 2800 2800 2800 2800 2800 2800 2800 2800 2800 1800 2800 1800 2800 2800 1800 2800 1800 2800 1800 2800 1800 2800 1800 2800 1800 2800 1800 2800 1800 1800 400		,	2Ω per ch	nannel	2500	2500	2200	2200	1900	1900
BC per channel 1350 1150 1150 790 750 HH2 400 bridge 5000 5000 4400 3800 2800 2800 2800 2800 2800 2800 2800 2800 2800 2800 2800 2800 2800 2800 4100 2800 2800 4300 2900 3100 2200 2150 106 2800 4300 4300 4300 4300 4300 4300 4300 4300 4300 4300 106 1074B 106dB 1056W / 430 115			4Ω per ch	nannel	2200	2350	1950	2050	1400	1400
1Hz 410 bridge 5000 4400 4400 4400 2800 2800 2800 2800 2800 2800 2800 2800 2800 2800 2800 2800 2800 2800 2800 2800 2800 4800 3400 2800 4800 4400 4300 4400 4300 4400 4300 4400 4300 4400 4300 4400 4300 4400 4300 4400 4300 4400 4300 4400 4300 4400 4300 4400 4300 4400 4300 4400			8Ω per cł	nannel	1350	1350	1150	1150	790	750
HH-H-1% £0.0 bridge 4400 3400 2100 2800 2150 20m S burst AD bridge 6800 6800 5800 6200 4300 2300 Constant STEREO mode: 100V line, - 625W / 80 - - 625W / 80 - - 630 - - 630 - - - 630 - - 100 - U - - - 630 - - - 630 - - 630 - - - 630 - - 100 - U -		1kHz	4Ω bridge	э	5000	5000	4400	4400	3800	3800
Hkt 20 per channel 3400 3400 2200 3100 2200 4300 Constant STEREO mode: 100V line, - 70.7V line, - 625W / 80. 6200 4400 4300 SN ratio 2014:2014/z (DIN AUDIO) 107.7B 106dB 105.4E 625W / 80. 1250W / 160. 1200W		THD+N=1%	8Ω bridge	Э	4400	4700	3900	4100	2800	2800
20mS burst 40 bridge 6800 5800 6200 4400 4300 Constant STEREO mode: 100V line, . 628W / 80. 628W / 80. BRIDGE mode: 200V / 160. . 141.4V line, 141.4V line, 1250W / 160. 120W / 160. 120W / 120W 120W / 120W <td< th=""><th></th><th>1kHz</th><th>2Ω per ch</th><th>nannel</th><th>3400</th><th>3400</th><th>2900</th><th>3100</th><th>2200</th><th>2150</th></td<>		1kHz	2Ω per ch	nannel	3400	3400	2900	3100	2200	2150
Constant voltage line STERED mode: BRIDGE mode: 200V line, 200V line,		20mS burst	4Ω bridge	э	6800	6800	5800	6200	4400	4300
voltage line BRIDGE mode: 2200V line, 200V line, 200W / 16Q 141.4V line, 141.4V line, 2500W / 16Q SN ratio 20Hz-20kHz (DIN AUDIO) 107dB 106dB 105dB Power consumption (W) Ide 70W 1200W / 16Q 1200W 1/8 ⁻¹ (2Ω / Pink noise) 1600W 1400W 1200W All Models 106 ⁻¹ (2Ω / Pink noise) 1600W 1400W 1200W All Models 0.1% 108 Power consumption at 1/8 maximum output power 1/8 = Power consumption at 1/8 maximum output power 1/8 = Power consumption at 1/8 maximum output power 1/8 = Power RL=40, Point 0.1% Frequency response MAX 0.1% 0.1% 1/8 Frequency response MAX 0.1% 0.1% 1/8 Channel Half Power RL=40, Point 67dB 1/8 1/8 Separation Att max input 6000 shuth 67dB 1/8 1/8 1/8 Damping Factor RL=60, Point 800 1/0KQ (unbalanced) 1/8 1/8 Controls Front Panel POWER Switch (Push on / push off) attenuator (31 position) × 2 1/8 1/8		Constant	STEREO	mode:	100\	/ line,		_	70.7\	/ line,
BRIDGE mode: 200V line, 200W / I&O 141.44 line, 1250W / I&O SN ratio 20Hz-20kHz (DIN AUDIO) 107dB 106dB 105dB Power Stand-by 5W 5W 105dB consumption (W) Idle 7W 141.44 line, 1250W / I&O 1000W 1200W 1/8*1 (20 / Pink noise) 1600W 1400W 1200W 1200W All Models 0.1% 1400W 1200W 1200W All Models 0.1% 0.1% 1000W 1200W 1200W All Models 0.1% 0.1% 0.1% 1000W 1200W 1200W </th <th></th> <th>voltage line</th> <th></th> <th></th> <th>1250V</th> <th>V / 8Ω</th> <th></th> <th></th> <th>625W</th> <th>/ 8Ω</th>		voltage line			1250V	V / 8Ω			625W	/ 8Ω
Sh ratio 20H2-20KH2 (DIN AUDIO) 107dB 106dB 105dB Power Stand-by 5W 5W consumption (W) Idle 70W 140°1 20H2 INB Power consumption at 1/8 maximum output power 1600W 1400W 1220W All Models 0.1% 0.1% 120W 120W THD+N 20H2-20KH2 0.1% 0.1% 17% Intermodulation Distribute 06W: 7KH2, 4.1, Hall Power 2 0.1% 17% 17% Frequency response MAX 0dB 17% 17% Channel Half Power RL=80, 1HW 67dB 1600W 105QUH2 Separation Att. max input 600Q shurt 67dB 10%QUh2 10%QUh2 10%QUh2 Input Impedance 20K2 (balanced) 10KQ (unbalanced) 0Controls Front Panel POWER switch (push on / push off) 10%DE switch (PD IP) x 1 XLR-331 type x 2 10%DE switch (STEREG V BRIDGE / PARALLEL) x 1 GAIN switch (32dB/26dB) x 1 AMP ID switch (GP DIP) x 1 XLR-331 type x 2 10%DE switch (PD RN IA x 2, 5-sway binding post x 2 pain			BRIDGE	mode:	200\	/ line,		-	141.4	V line,
SN ratio 20H-20kHz (DIN AUDIO) 107dB 106dB 105dB Power Stand-by 5W consumption 5W consumption (W) tale TOW 1200W 1200W 1200W All Models 160.0V 140.0V 1200W 1200W 1200W All Models 0.1% 0.1% 10% 1200W					2500W	//16Ω			1250W	//16Ω
Power Stand-by consumption (W) Idle SW 1/8 ⁻¹ (2Ω / Pink noise) 1600W 1400W 1200W 1/8 ⁻¹ (2Ω / Pink noise) 1600W 1400W 1200W 1/8 ⁻¹ (2Ω / Pink noise) 1600W 1400W 1200W 1/8 ⁻¹ (2Ω / Pink noise) 0.1% Imaximum output power 0.1% All Models 0.1% Imaximum output power 0.1% Immendulation Stations 60Hz, 7kHz, 4:1, Haif Power ⁻² 0.1% Imaximum output power 0.1% Oth-20HZ MAX 0dB Imaximum output power 0.1% Imaximum output power 0.1% Oth-20HZ MIN 0.5dB Imaximum output power 0.1% Imaximum output power 0.1% Separation Att. max input 600Q shunt 900 Imaximum input Voltage 424dBu ⁻³ Imaximum input Voltage 424dBu ⁻³ Input impedance 20kΩ (balanced) 10kΩ (unbalanced) Imaximum input Voltage 10kAl M2 (Sal P26dB) × 1 Imaximum input Voltage 12kAl M2 Imaximum input Voltage 12kAl M2 Imaximum input Voltage 10kG (Sinth (STEREO / BRIDGE / PARALLEL) ×	SN ratio	20Hz-20kHz	(DIN AUDI	0)	107	7dB	106dB		105dB	
consumption (W) Ide 70W 1/8*1 (20 / Pink noise) 1600W 1400W 1200W All Models 1600W 1400W 120W THD+N 20H2-20kHz, Haif Power RL=40, 8Q 0.1% 0.1% Frequency response MAX 0dB RE-8Q, Po-1W RE-8Q, Po-1W 20H2-20kHz MIN 0.5dB 67dB RE-8Q, Po-1W 20H2-20kHz MIN 0.5dB 67dB 7dB Separation Att, max input 6000_shunt 67dB 800 000 Voltage Gain Att.max 32dB / 26dB MAX 0dB Maximum input Voltage +24dBur3 2dBI / 26dB MAX 0dB Maximum input Voltage +24dBur3 2dBI / 26dB MOXQ (unbalanced) 0CQ (unbalanced)	Power	Stand-by				5W				
186 ⁻¹ (20 / Pink noise) 1600W 1400W 1200W 1/8 = Power consumption at 1/8 maximum output power All Models 0.1% 0.1% THD+N 20Hz-20KHz, Haif Power RL=40, 80 0.1% 0.1% Intermodulation Distortion 60Hz 7kHz, 4:1, Haif Power 2 0.1% 0.1% Frequency response MAX 0dB 0.1% RL=80, Po=1W TYP 0dB 0.0% Oth-20Hz MIN -0.5dB 0.1% Channel Haif Power RL=80,1kHz 800 0 Separation Att.max 32dB / 26dB 0.1% Jontage Gain Att.max 32dB / 26dB 0.1% Maximum Input Voltage +24dBur3 0.1% 0.1% Input Impedance 20KQ (balanced) 10kΩ (unbalanced) 0 0.1% Controls Front Panel POWER switch (32tB/26dB) x 1 AMP ID switch (32tB/26dB) x 1 Indicators Input NUTE XLR-331 type x 2 Euroblock connector (balanced) x 2 Indicators POWER/STANDBY x 1 (Green / Orange) <td< th=""><th>consumption (W)</th><th>Idle</th><th></th><th></th><th></th><th></th><th>70</th><th>W</th><th></th><th></th></td<>	consumption (W)	Idle					70	W		
All Models 1/8 = Power cnsumption at 1/8 maximum output power All Models 20H2-20KHz, Half Power RL=40, 80 0.1% Intermedulation Distring Response MAX 0.0% RL=80, Po=HW TYP 0dB 20H2-20KHz MIN -0.5dB Channel Half Power RL=80, 1KHz 67dB Separation Att.max input 6000 shunt 67dB Damping Factor RL=80, 1KHz 800 Voltage Gain Att.max 322B / 26dB Maximum Input Voltage +24dBur ³ 10kD Input Impedance 20KQ (balanced) 10kQ (unbalanced) 0 Controls Front Panel MODE switch (gDish on / push off) attenuator (31 position) x 2 1 Rear Panel MODE switch (GP DIP) x 1 Connectors Input XLR=3-31 type x 2 Indicators Input XLR=3-31 type x 2 1 1 POWER/STANDBY x 1 (Green / Orange) REMOTE x 1 (Green / Orange) 1 REMOTE x 1 (Green / Orange) REMOTE x 1 (Green) 2 POWER/STANDBY x 1 (Red) heatsink temp ≥ 85°C SiGNAL x 2 (Green) US&CANA		1/8 ^{*1} (2Ω / F	'ink noise)		160	W00	140	W00	120	W00
All Models THD+N 20H2-20kHz, Hat Power RL=4Q, 8Q 0.1% Intermedulation Distortion 60H2 7.kHz, 41, Hatl Power ² 0.1% Frequency response MAX OdB RL=0Q, Po-IW TYP OdB 20H2-20kHz MIN 0.5dB Channel Hatf Power RL=8Q, 1kHz 800 Separation Att.max input 600Q shunt 67dB Maximum Input Voltage +24dBur ⁻³ 1kHz Maximum Input Voltage +24dBur ⁻³ 1kHz Input Impedance 20kQ (balanced) 10kQ (unbalanced) 0 Controls Front Panel POWER switch (push on / push off) attenuator (31 position) x 2 Rear Panel MODE switch (6FEDC / BRIDGE / PARALLEL) x ' GAIN switch (32dB/26dB) x 1 AMP ID switch (6P DIP) x 1 AMP ID switch (6P DIP) x 1 Connectors Indicators POWER/STANDBY x 1 (Green / Orange) REMOTE REMOTE x 1 (Green) PENOTECTION x 1 (Red) TEMP x 2 (Green) MUTE x 2 (Red) MUTE x 2 (Red) CLIP/LIMIT x 2 (Red) CLIP/LIMIT x 2 (Red)					1/8 =	Power co	nsumption	at 1/8 ma	ximum out	put powe
THD+N 20H2-20MHz, Half Power RL=40, 8Ω 0.1% Intermedulation Distortion 60Hz, 7kHz, 4:1, Half Power ²² 0.1% Frequency response MAX 0dB RL=8Ω, Po=1W TYP 0dB Obl-20MHz MIN -0.5dB Channel Half Power RL=8Ω, 1kHz 67dB Separation Att, max input 600Ω shunt 67dB Jamping Factor RL=8Ω 1kHz 800 Voltage Gain Att.max 32dB / 26dB Maximum Input Voltage +24dBu*3 Input Impedance 20kΩ (balanced) 10kΩ (unbalanced) Controls Front Panel POWER switch (gustAl/2/2dB) x 1 AMP ID switch (32dB/2dB) x 1 AMP ID switch (32dB/2dB) x 1 AMP ID switch (6P DIP) x 1 Connectors Input XLR-3-31 type x 2 Output Neutrik® SPEAKON™ NL4 x 2, 5-way binding post x 2 pairs DATA PORT RJ45 ×2 Indicators POWER/STANDBY x 1 (Green / Orange) REMOTE x 1 (Red) TEMP x 1 (Red) TEMP x 1 (Red) TEMP x 1 (Red) Connectors CLIP/LIMIT NUTE x 2 (Red) CLIP/LIMIT x 2 (Red) CLIP/LIMIT x 2 (Red)	All Models									
Intermodulation Distrition 60Hz: 7kHz, 4:1, Half Power ?2 O. 1% Frequency response MAX OdB RL=80, Po=1W TYP OdB 20Hz-20Hz MIN -0.5dB Channel Half Power RL=80, 1kHz 87dB Separation Att. max input 600Ω shunt 87dB Damping Factor RL=80, 1kHz 800 Voltage Gain Att.max 32dB / 26dB Maximum Input Voltage +24dBu*3 Input Impedance 20kQ (balanced) 10kQ (unbalanced) Controls Front Panel POWER switch (pst on / push onf) attenuator (31 position) x 2 Rear Panel MODE switch (PD IP) x 1 Connectors Input XLR-3-31 type x 2 Euroblock connector (balanced) x 2 Output Neutrike SPEAKON® NL4 x 2, 5-way binding post x 2 pairs DATA PORT RJ45 ×2 Indicators POWER/STANDBY x 1 (Green) PPOTECTION PREMOTE x 1 (Red) Neutrike SPEAKON® NL4 x 2, 5-way binding post x 2 pairs GIAL x 2 (Green) MUTE x 2 (Red) Load protection X 1	THD+N	20Hz-20kl	Ηz,		0.1%					
Intermodulation Distortion 60Hz: 7kHz, 4:1, Half Power ²⁴ 0.1%. Frequency response MAX OdB RE40C, Po-IW TYP OdB 20Hz-20kHz MIN -0.5dB Channel Half Power RL=8Q,1kHz 800 Separation Att. max input 600Ω shuth 67dB Damping Factor RL=8Q, 1kHz 800 Voltage Gain Att. max 32dB / 26dB Maximum Input Voltage +24dBu*3 10kΩ (unbalanced) Input Impedance 20kQ (balanced) 10kΩ (unbalanced) 0 Controls Front Panel POWER switch (push on / push off) 1 attenuator (31 position) x 2 GAIN switch (32dB/26dB) x 1 AMP ID switch (6P DIP) x 1 Connectors Input XLR-3-31 type x 2 Euroblock connector (balanced) x 2 Output Neutrik® SPEAKON® NL4 x 2, 5-way binding post x 2 pairs 2 DATA PORT RJ45 ×2 Indicators POWER/STANDBY REMOTE x 1 (Green / Orange) REMOTE x 1 (Green) REMOTE x 1 (Red) DC-fault: Amplifier shuts down automatically. <		Half Powe	r RL=4Ω, 8	Ω	0					
Frequency response MAX OdB RL=8Ω, Po=1W TYP OdB OdB OdH=204Hz MIN -0.5dB 67dB Channel Half Power RL=8Ω,1kHz 67dB 67dB Separation Att. max input 600Ω shunt 800 VOItage Gain Att.max Maximum Input Voltage +24dBu*3 20KQ (balanced) 10kΩ (unbalanced) Input Impedance 20KQ (balanced) 10kΩ (unbalanced) Controls Front Panel POWER switch (push on / push off) attenuator (31 position) × 2 Rear Panel MODE switch (PD IP) × 1 GAIN switch (32dB/26dB) × 1 AMP ID switch (PD IP) × 1 Connectors Input XLR-3-31 type × 2 Output Neutrik® SPEAKON® NL4 × 2, 5-way binding post × 2 pains DATA PORT RJ45 × 2 Indicators POWER/STANDBY × 1 (Green) PROTECTION × 1 (Red) TEMP × 1 (Red) TEMP × 1 (Red) OLIP/LIMIT × 2 (Red) OLIP/LIMIT × 2 (Red) OLIP/LIMIT ×	Intermodulation Disto	ortion 60Hz: 7kHz	2, 4:1, Half P	ower*2	0.1%					
RL=80, Po=1W TYP OdB 20Hz-20kHz MIN -0.5dB Channel Half Power RL=8Ω, 1kHz 67dB Separation Att. max input 600Ω shunt 67dB Maximum Input Voltage +24dBu ⁻³ Input Impedance 20kΩ (balanced) 10kΩ (unbalanced) Controls Front Panel POWER switch (push on / push off) Rear Panel MODE switch (STEREO / BRIDGE / PARALLEL) x : GAIN switch (32dB/26dB) x 1 AMP ID switch (STEREO / BRIDGE / PARALLEL) x : GAIN switch (32dB/26dB) x 1 AMP ID switch (STEREO / BRIDGE / PARALLEL) x : GAIN switch (32dB/26dB) x 1 AMP ID switch (STEREO / BRIDGE / PARALLEL) x : GAIN switch (32dB/26dB) x 1 AMP ID switch (STEREO / BRIDGE / PARALLEL) x : GAIN switch (32dB/26dB) x 1 AMP ID switch (STEREO / BRIDGE / PARALLEL) x : GAIN switch (32dB/26dB) x 1 AMP ID switch (STEREO / BRIDGE / PARALLEL) x : GAIN switch (32dB/26dB) x 1 AMP ID switch (STEREO / BRIDGE / PARALLEL) x : GAIN switch (32dB/26dB) x 1 AMP ID switch (STEREO / BRIDGE / PARALLEL) x : GAIN switch (32dB/26dB) x 1 Indicators Input POWER/STANDBY x 1 (Green / Orange) REMOTE x 1 (Green / Orange) REMOTE x	Frequency respon	se		MAX	0dB					
20Hz 20Hz MIN -0.5dB Channel Half Power RL=8Ω, 1kHz 67dB Separation Att, max input 600Ω shunt 800 Maximum Input Voltage +24dBu*3 Input Impedance 20kΩ (balanced) 10kΩ (unbalanced) Controls Front Panel POWER switch (push on / push off) attenuator (31 position) x 2 GAIN switch (32dB/26dB) x 1 MODE switch (6P DIP) x 1 AMP ID switch (6P DIP) x 1 Connectors Input XLR-3-31 type x 2 Output Neutrik® SPEAKON® NL4 x 2, 5-way binding post x 2 pairs DATA PORT RJ45 x2 Indicators POWER/STANDBY x 1 (Green / Orange) REMOTE x 1 (Green / Orange) REMOTE x 2 (Green) MUTE x 2 (Green) VI imiter (RL ≤ 1Ω) : Limit the output	RL=8Ω, Po=1W			TYP	0dB					
Channel Half Power RL=80, 1kHz 67dB Separation Att, max input 6000, shunt 67dB Outlage Gain Att.max 32dB / 26dB Maximum Input Voltage +24dBu*3 Input Impedance 20kQ (balanced) 10kQ (unbalanced) Controls Front Panel POWER switch (push on / push off) attenuator (31 position) x 2 Rear Panel MODE switch (BP DIP) x 1 Connectors Input XLR-3-31 type x 2 Output Neutrik® SPEAKON® NL4 x 2, 5-way binding post x 2 pairs DATA PORT RJ45 ×2 Indicators POWER/STANDBY x 1 (Green / Orange) REMOTE x 1 (Red) heatsink temp ≥ 85°C SIGNAL x 2 (Green) MUTE x 2 (Red) CLIP/LIMIT x 2 (Red) CLIP/LIMIT x 2 (Red) Cliptimiting: THD ≥ 0.5% cliptimiting: THD ≥ 0.5% Amplifier protection thermal: Amplifier shuts down automatically. VI imiter (RL ≤ 1Ω) : Limit the output thermal: Amplifier shuts down automatically. Power requirements US&CANADA: 120V / 60Hz US&CANADA: 120V / 60Hz EUROPE: 230V / 50Hz Dimensions(WxHxD) 480 x 88 x 456mm (2U) WUTE x 2 (with flat-head screw x 4), Euroblock connector x 2, Owner's Manual, <th>20Hz-20kHz</th> <th></th> <th></th> <th>MIN</th> <th>-0.5dB</th> <th></th> <th></th> <th></th> <th></th> <th></th>	20Hz-20kHz			MIN	-0.5dB					
Separation Att, max input 600Ω shunt Max Damping Factor RL=8Ω 1kHz 800 Voltage Gain Att, max 32dB / 26dB Maximum Input Voltage +24dBu*³ Input Impedance 20kΩ (balanced) 10kΩ (unbalanced) Controls Front Panel POWER switch (push on / push off) attenuator (31 position) × 2 Rear Panel MODE switch (STEREO / BRIDGE / PARALLEL) × 3 GAIN switch (32dB/26dB) × 1 AMP ID switch (6P DIP) × 1 ALR-3-31 type × 2 Connectors Input XLR-3-31 type × 2 Euroblock connector (balanced) × 2 Output Neutrik® SPEAKON® NL4 × 2, 5-way binding post × 2 pairs DATA PORT RJ45 × 2 Indicators POWER/STANDBY × 1 (Green) REMOTE × 1 (Green) PROTECTION × 1 (Red) × 2 (Green) MUTE × 2 (Red) CLIP/LIMIT × 2 (Red) Clip limiting: THD ≥ 0.5% MuTE Contrautomatically. VI limiter (RL ≤ 1Ω) : Limit the output thermal: Amplifier shuts down automatically. (heatsink temp ≥ 100°C) VI limiter (RL ≤ 1Ω) : Limit the output Power supply protection thermal: Amplifier shu	Channel	Half Powe	r RL=8Ω,1	kHz	67dB					
Damping Factor RL=8Ω 1kHz 800 Voltage Gain Att.max 32dB / 26dB Maximum Input Voltage +24dBu*3 Input Impedance 20kΩ (balanced) 10kΩ (unbalanced) Controls Front Panel POWER switch (push on / push off) attenuator (31 position) x 2 Rear Panel MODE switch (STEREO / BRIDGE / PARALLEL) x : GAIN switch (32dB/26dB) x 1 AMP ID switch (GP DIP) x 1 XLR-3-31 type x 2 Connectors Input XLR-3-31 type x 2 Output Neutrik® SPEAKON® NL4 x 2, 5-way binding post x 2 pairs DATA PORT RJ45 x2 Indicators POWER/STANDBY x 1 (Green / Orange) REMOTE x 1 (Green) PROTECTION x 1 (Red) TEMP x 1 (Red) TEMP x 1 (Red) TEMP x 2 (Red) CLIP/LIMIT x 2 (Red) CLIP/LIMIT x 2 (Red) Load protection thermal: Mute the output (heatsink temp ≥ 90°C) (return automatically). VI (imiter (RL ≤ 1Ω)): Limit the output Power supply protection thermal: Amplifier shuts down automatically. (return automatically.) Power requirements US&CANADA: 120V / 60Hz	Separation	Att, max ir	nput 600Ω	shunt	0.45					
Voltage Gain Att.max 32dB / 26dB Maximum Input Voltage +24dBu*3 Input Impedance 20kΩ (balanced) 10kΩ (unbalanced) Controls Front Panel POWER switch (push on / push off) attenuator (31 position) x 2 Rear Panel MODE switch (STEREO / BRIDGE / PARALLEL) x ' GAIN switch (32dB/26dB) x 1 Connectors Input XLR-3-31 type x 2 Output Neutrik® SPEAKON® NL4 x 2, 5-way binding post x 2 pairs DATA PORT RJ45 x2 Indicators POWER/STANDBY x 1 (Green / Orange) REMOTE x 1 (Green) PROTECTION x 1 (Red) TEMP x 1 (Red) heatsink temp ≥ 85°C SIGNAL x 2 (Green) MUTE x 2 (Red) CLIP/LIMIT x 2 (Red) CLIP/LIMIT x 2 (Red) Clip limiting: THD ≥ 0.5% VI limiter (RL ≤ 1Ω) : Limit the output Power supply protection thermal: Amplifier shuts down automatically. (return automatically) VI limiter (RL ≤ 120) / 50Hz US&CANADA: 120V / 60Hz EUROPE: 230V / 50Hz US&CANADA: 120V / 60Hz EUROPE: 230V / 50Hz US&CANADA: 120V / 60Hz <t< th=""><th colspan="3">Damping Factor RL=8Ω 1kHz</th><th colspan="5">800</th></t<>	Damping Factor RL=8Ω 1kHz			800						
Maximum Input Voltage +24dBu*3 Input Impedance 20kΩ (balanced) 10kΩ (unbalanced) Controls Front Panel POWER switch (push on / push off) attenuator (31 position) x 2 Rear Panel MODE switch (STEREO / BRIDGE / PARALLEL) x : GAIN switch (32dB/26dB) x 1 AMP ID switch (GP DIP) x 1 XLR-3:31 type x 2 Connectors Input XLR-3:31 type x 2 Output Neutrik®SPEAKON® NL4 x 2, 5-way binding post x 2 pairs DATA PORT RJ45 x2 Indicators POWER/STANDBY x 1 (Green / Orange) REMOTE x 1 (Green) PROTECTION x 1 (Red) TEMP x 1 (Red) TEMP x 1 (Red) TEMP x 1 (Red) MUTE x 2 (Green) VI limiting: THD ≥ 0.5% thermal: Mute the output (heatsink temp ≥ 90°C) (return automatically.) VI limiting: THD ≥ 0.5% thermal: Amplifier shuts down automatically.<	Voltage Gain Att.max			32dB / 26dB						
Input Impedance 20kΩ (balanced) 10kΩ (unbalanced) Controls Front Panel POWER switch (push on / push off) attenuator (31 position) x 2 MODE switch (STEREO / BRIDGE / PARALLEL) x ' GAIN switch (32dB/26dB) x 1 AMP ID switch (6P DIP) x 1 Connectors Input XLR-3-31 type x 2 Output Neutrik® SPEAKON® NL4 x 2, 5-way binding post x 2 pairs DATA PORT RJ45 x 2 Indicators POWER/STANDBY x 1 (Green / Orange) REMOTE x 1 (Green) PROTECTION x 1 (Green) PROTECTION x 1 (Red) heatsink temp ≥ 85°C SIGNAL x 2 (Green) MUTE x 2 (Red) CLIP/LIMIT x 2 (Red) CLIP/LIMIT x 2 (Red) Clip limiting: THD ≥ 0.5% Mermal: Amplifier shuts down automatically. Amplifier protection thermal: Amplifier shuts down automatically. (heatsink temp ≥ 90°C) (return automatically.) VI limiter (RL ≤ 1Ω) : Limit the output Power supply protection thermal: Amplifier shuts down automatically. (heatsink temp ≥ 100°C) Continuously variable-speed fan: x 2 US&CANADA: 120V / 6	Maximum Input	Voltage			+24dBu**					
Controls Front Panel POWER switch (push on') push oft) attenuator (31 position) x 2 Rear Panel MODE switch (STERC / BRIDGE / PARALLEL) x · GAIN switch (32dB/26dB) x 1 AMP ID switch (32dB/26dB) x 1 AMP ID switch (6P DIP) x 1 Connectors Input XLR-3-31 type x 2 Euroblock connector (balanced) x 2 Output Neutrik® SPEAKON® NL4 x 2, 5-way binding post x 2 pairs DATA PORT RJ45 x 2 Indicators POWER/STANDBY x 1 (Green / Orange) REMOTE x 1 (Green) PROTECTION x 1 (Red) TEMP x 1 (Red) TEMP x 2 (Green) MUTE x 2 (Red) CLIP/LIMIT x 2 (Red) Load protection thermal: Mute the output (heatsink temp ≥ 90°C) (return automatically.) VI limiter (RL ≤ 1Ω) : Limit the output Power supply protection thermal: Amplifier shuts down automatically. (heatsink temp ≥ 90°C) Coling Continuously variable-speed fan: x 2 Power requirements US&CANADA: 120V / 60Hz EUROPE: 230V / 50Hz EUROPE: 230V / 50Hz Dimensions(WxH×D) 480 x 88 x 456mm (2U)	Input Impedance)			20kΩ (balanced) 10kΩ (unbalanced)					
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Euroblock connector x 2, Owner's Manual, 1: 1/8 power = 9dB below rated power Neutrik [®] and Speakon [®] are trademarks of Neutrik [®]	Accessory				Handle	x 2 (with	flat-head	screw x	4),	
1: 1/8 power = 9dB below rated power Neutrik [®] and Speakon [®] are trademarks of Neutrik [®]	-				Euroblo	ck conne	ctor x 2, (<u>Owner'</u> s I	Manual,	
	1: 1/8 power = 9dB b	elow rated pow	er			Neutrik	and Speal	kon® are tra	demarks o	f Neutrik®

*2: Half power = 3dB below rated power *3: OdBu = 0.775Vrms

Specifications and appearance are subject to change without notice.

For details please contact:

Tn Series Dimensions





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SYAMAHA

power amplifier Tn series



- T5

The New Standard for Large-scale Live Sound

In the 30 years that have passed since the P2200 power amplifier was introduced in 1976, Yamaha has been dedicated to the development of power amps that deliver superior sound, power, and reliability. And now, in 2006, Yamaha is proud to announce a new flagship series that marks this 30th anniversary with unprecedented performance: the Tn Series.

The Tn series amplifiers are ruggedly designed to deliver optimum performance even under tortuous tour conditions, while offering sonic quality befitting a top-line model with up to 2500 watts power output (T5n, stereo $@2\Omega$). The ability to stably drive load impedances as low as 2 ohms makes the Tn series amplifiers ideal for powering line-array systems on the road. A high-volume fan cooling system and comprehensive protection circuitry help to maintain high reliability, and power consumption has been reduced by 50% compared to conventional amplifiers thanks to Yamaha's high-efficiency EEEngine amplifier technology. Of course the Tn Series includes on-board networking capability for remote control and monitoring, aptly denoted by the "n" of Tn.

Representing the culmination of 30 years of development and experience, Yamaha new amplifier for Touring with Network capability, the so called Tn series amplifiers are set to become the standard for a new generation of large-scale live sound systems.

POWER AMPLIFIER T5n/T4n/T3n

Model	Power 2 Ω	Power 4 Ω	Power 8 Ω
T5n	2500W	2350W*	1350W
T4n	2200W	2050W*	1150W
T3n	1900W	1400W	750W
			*230V(EU)



Main Features High power lications: T5n = 2500W ge and high end detail with solid. Extraordinary midra ive vibration-reduction measures have resulted in unpre nted sound quality Stable 2-ohm drive capability is ideal for line array speaker systems • A d e exterior, large cooling fans and fan guards, easily replaceable filters, and other reliability features help to deliver total dep ity even under demanding tour conditions. amaha EEEngine amp drive technology realizes a 50% reduction in power consumption compared to conventional amplifiers. Oric • Rem lifier control and monitoring via the Yamaha ACU-16C Amp Control Unit. A variety of input terminals, removable handles, and other features for maximum installation and handling versatility. * Stereo, 2Ω.



power amplifier T5n/T4n/T3n





T5n REAR PANEL

Iayout. Iransformer 200v Primary tank capacitors 220v Secondary tank capacitors Insulted Gate Bipolar Transistor (for switching power supply) Class AB High Quality Amplifier High Voltage Thin film Bipolar Transistor Thermo Sensor (for Fan Control, Protection, and Status Monitor)

T5n internal

Solid Power for Any Application

In touring applications that require the ability to drive large numbers of speakers, amp drive capability and power become extremely important criteria. Furthermore, since the entire system has to be set up, taken down, and transported for every show, the total number of amps required, and their total weight, has a significant influence on manpower and cost. While the Tn series power amps are all compact 2U-size units, they deliver remarkably high power: 2500 watts from the T5n, 2200 watts from the T4n, and 1900 watts from the T3n, stereo into 2 ohms. Tn series amplifiers are capable of driving line array or other large-scale speaker setups in systems that take up less space than ever before.

Output Power (W)

		T5n	T4n	T3n			
1	2Ω per channel	2500	2200	1900			
	4Ω per channel	2350	2050	1400			
U	8Ω per channel	1350	1150	750			
N	4Ω bridge	5000	4400	3800			
	8Ω bridge	4700	4100	2800			
	230V(EU), 1kHz, THD+N=1%						

High Definition, Serious Impact



By applying the full gamut of technology, experience, and resources acquired through the development and production of industry-standard digital mixing consoles and signal processors, as well as extensive know-how gained through years of hall and installation system design, The Tn series amplifiers have been refined to unprecedented levels of performance and sound quality. Transparency across the entire audio spectrum is a basic requirement, but the Tn amplifiers go beyond the basics with extraordinary midrange presence and a low end that is huge and authoritative while maintaining maximum reproduction accuracy. This has been achieved not only through no-compromise parts selection and circuit design, but also through extensive vibration-reduction measures that effectively suppress internal vibration that can have a negative impact on sound quality. The heat sinks, for example, are solidly screwed to the chassis side panels at numerous points, but with special insulators that are designed to absorb vibration and chassis resonance that would otherwise interfere with optimum reproduction. The detailed work involved goes well beyond the normal definition of manufacturing and crosses over into the realm of craftsmanship.



Stable 2-ohm Drive Capability

Line array systems offer many benefits for large scale live sound applications, but because of the many speakers involved they normally need to be driven by a correspondingly large number of power amplifiers. The 2-ohm drive capability of the Tn series amplifiers easily drives multiple speakers in line array systems. And also Tn series is an excellent choice for driving multiple parallel-connected Yamaha Installation Series speakers as well as multiple parallel-connected monitor speakers allocated on the stage. In order to provide stable low-impedance drive capability the Tn amplifiers employ newly developed thin-film power transistors, and flat-wire power transformer windings to minimize heat loss. Many other details contribute, but the final result is totally stable drive capability down to 2 ohms.

Durability to Handle the Most Demanding Tours

Daily setup, take down, and transportation is an unavoidable part of the touring routine, and the Tn series amplifiers are built to take it all in their stride. A durable exterior resists dents and breakage, while dual high-volume cooling fans maintain stable operation under a wide range of ambient conditions. Large, tough fan guards prevent damage during transportation. Fan speed is automatically varied according to the current output power to minimize noise and maximize motor life. Dust filters at the fan intakes can be easily removed for cleaning. A comprehensive range of protection circuits is also provided: DC, muting, thermal protection, and an advanced output short sensing circuit (PC limiting) that contributes to reliable low-impedance drive



: Mono Amp x 2 = Dual Mono Amp structure

capability. There's also a VHF protection circuit that will prevent damage to HF speaker units if input signals with frequencies higher than 20 kHz continue for more than a few seconds. All in all the Tn series amplifiers offer failsafe performance that will keep the show running night after night under even the severest conditions.



Ultra-efficient Yamaha EEEngine Amp Drive



Original Yamaha EEEngine technology reduces power consumption by approximately 50% compared to conventional amplifiers. Power supply quality and capacity are perennial obstacles in large-scale live sound systems, but the Tn series amplifiers' high power output with dramatically reduced power

consumption goes a long way towards alleviating the problem. Reduced power consumption simultaneously achieves reduced heat generation, significantly increasing part life and reliability. Reduced heat generation further means that smaller, less-obtrusive cooling fans can be used, providing greater freedom for internal layout. That, in turn, translates into overall design that emphasizes sound quality rather than simply keeping the amp stable. In order to achieve stable 2-ohm drive capability the EEEngine circuitry in the Tn series amplifiers features a newly developed high-efficiency FET current buffer drive circuit. Only Yamaha can deliver this level of high efficiency and stability with low-impedance loads.

power amplifier T5n/T4n/T3n

Advanced Networking Capability

The rear panels of the Tn series power amplifiers feature RJ45 connectors that allow connection to a Yamaha ACU-16C Amp Control Unit for remote status monitoring and control of parameters such as on/off switching, muting, and attenuation from a computer. Furthermore, warnings can be displayed when preset parameter limits are exceeded, and automatic logging contributes to easy, efficient troubleshooting. With an NHB32-C Network Hub/Bridge it also becomes possible to remotely control multiple units via a CobraNet[™] network. In addition to the ACU-16C's amp control features, it can also function as a high-precision 16-channel DA converter, receiving 24-bit digital audio data over a CobraNet[™] network.



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NETWORK HUB / BRIDGE NHB32-C The network hub/bridge for CobraNet[™] networking with up to 32-channel digital audio and control signal reception/transmission capabilities.





Monitoring and control of multiple amplifiers with NetworkAmp Manager

 The ACU16-C amplifier control unit and a PC running NetworkAmp Manager can monitor/control the operating conditions of up to 32 amplifiers, including power, attenuation, inputs, outputs, temperature and load impedance.

 A PC running NetworkAmp Manager can be connected not only to an ACU16-C via a USB port, but also to an NHB32-C network hub/bridge on the CobraNet[™] network. This versatility gives you full remote amp control capability — for dramatically improved operating efficiency.
 Using CobraNet[™], the ACU16-C's D/A

• Using Cooraiver¹, the ACU Ib-C S D/A conversion function can convert up to 16 channels of digital audio signals to high-quality analog audio signals.

• One CobraNet™ network can be used to connect up to 8 NHB32-C units and 16 ACU16-C units — giving you the freedom to configure large-scale audio networks.

Superior Handling through Extensive Experience In the Field

The Tn series power amplifiers represent the culmination of over 30 years of know-how acquired through amp development and manufacture as well as feedback from professionals in the field. Details can make a huge difference in real-world handling ... such as detachable front-panel handles to meet the needs of various situations. Also, Euroblock connectors are provided in addition to XLR connectors for full compatibility with installation wiring. The Euroblocks can also be used as link out connectors for flexible integration with the widest possible range of system needs.



EEEngine delivers incredible power while preserving sound quality Combines highly efficient driving function with tremendous power conservation

State of the Art: YAMAHA EEEngine Evolution with supporting 2-ohm drive

EEEngine overcomes the problem existed in the conventional power amplifier system while providing advantages in all areas, offering a dramatic leap in power amplifier design. It realizes efficiency that matches Class D without compromising the sound quality of a Class AB amplifier. Furthermore, EEEngine solves all of the problems of weight, size, and heat generation that users of large-output power amplifiers often encounter. Additionally new Tn series amplifiers has the evolution comparing to the PC-1N series by having stable 2-ohm drive capability thank to the new developed high efficiency electrical current buffer FET drive circuit.

EEEngine tracks the audio signal to always provide the minimum power needed for the final output stage, allowing for surprising improvement in efficiency. It utilizes Class D operation to provide the power at the final output stage of Class AB operation. Almost all of the current energy is outputted as the audio signal, and just a small fraction of the remaining energy is emitted as heat dissipation through the heat sink.

With the final output stage operating at Class AB, the output signal is of remarkably high sound quality. The signal remains analog from input to output, without being converted to a PWM signal. There is none of the deterioration of frequency response and damping factor found with Class D systems. Plus, EEEngine is designed to operate perfectly

while keeping the power

amplifier heat generation to a minimum, regardless of the load requirements. All together, you get Class AB sound quality with efficiency that matches Class D.





• A main power supply line that supplies driving power to the speaker

 A high-efficiency current buffer combing a switching element that switches the main power supply line on and off with a leveling circuit

 A control circuit that varies the on/off switching frequency according to the input signal level

 An auxiliary power line that supplies power independent of the main power supply in quick response to the input signal level

 A high-speed voltage buffer and current detector that adjust and control the auxiliary power supply level This arrangement ensures efficient and highly accurate power amplification even when input signal amplitude rises steeply

Keeps up with sharp increases in sound

EEEngine's auxiliary power supply works with the main power supply to always drive at just the right power current to obtain maximum output, providing a high following capability even when there are steep increases in sound. This reduces power

consumption while maintaining the special features of a "fast amp." Plus, even when driving the fast auxiliary power supply in this method at ample voltage, power provided from the main power supply unit is very efficient at normal times, reducing the average current value and dramatically improving power loss.



Improved parts life and reliability

In addition to its tremendous improvements in efficiency and preservation of great sound quality, EEEngine plays yet another

important role. It is often said that a power amplifier's parts will last twice as long if the internal temperature is reduced by 10 degrees Celsius. EEEngine's heat generation during usage is 35% less than previous systems, contributing greatly to improvements in durability and reliability.

