TENSOR SERIES

TENSOR 12

12-input, 12-output car DSP amplifier

The TENSOR 12 is a 12-input, 12-output car DSP amplifier for high-power active and subwoofer systems. Alongside 8 × 40 W, its four 100 W channels can run in Regular, Parallel, Bridged or Parallel Bridged mode, up to 1 × 400 W at 4 ohm for a subwoofer.

DSP IN / OUT	POWER @ 4 OHM	POWER @ 2 OHM	SNR
12 / 12	8 × 40 W + 4 × 100 W	8 × 80 W + 4 × 200 W	102 dB

DSP AND PROCESSING

DSP inputs / outputs	12 / 12
DSP processor	WONDOM proprietary DSP IC (W8)
ADC	ES7210 × 3
DAC	CJC4344H × 6 (2-channel)
Audio resolution	24-bit
Max sampling rate	192 kHz
PC tuning	Supports 12 channels
Equaliser	31-band
Audio decoding	MP3 / FLAC / WAV

INPUTS AND OUTPUTS

Inputs	USB, high-level input, Optical, Coaxial, OTG 96K/192K (AMP1821)
High-level input	12-channel
AUX input	2-channel
Optical / coaxial	Optical and coaxial
USB flash drive	Supported
OTG audio input	Android, iOS and Windows sources, 96 kHz / 192 kHz
Bluetooth	Bluetooth 5.4 (JL AC6951C8)
High-level output	12-channel

RCA output	12-channel

AMPLIFIER

Amplifier	TDA7851 + 2 × MA5302MS
Amplifier class	Class AB + Class D
Output power @ 4 ohm	8 × 40 W + 4 × 100 W
Output power @ 2 ohm	8 × 80 W + 4 × 200 W
Power notes	Regular: 4 × 100 W @ 4 ohm; Parallel: 2 × 200 W (2 ohm / 4 ohm as supplied); Bridged: 2 × 200 W @ 4 ohm; Parallel bridged: 1 × 400 W @ 4 ohm.
Load impedance	2 ohm / 4 ohm

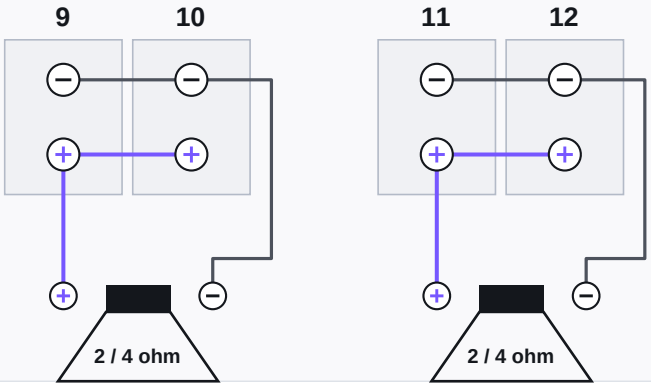
100 W CHANNEL MODES (CH9–CH12)

Regular	4 × 100 W @ 4 ohm, one speaker per channel
Parallel	2 × 200 W, CH9 + CH10 and CH11 + CH12 in parallel, 2 ohm or 4 ohm speaker per pair
Bridged	2 × 200 W @ 4 ohm, CH9 / CH10 and CH11 / CH12 bridged
Parallel bridged	1 × 400 W @ 4 ohm across CH9–CH12

See the wiring diagrams on the following page.

WIRING DIAGRAMS · CH9–CH12 (CLASS D OUTPUTS)

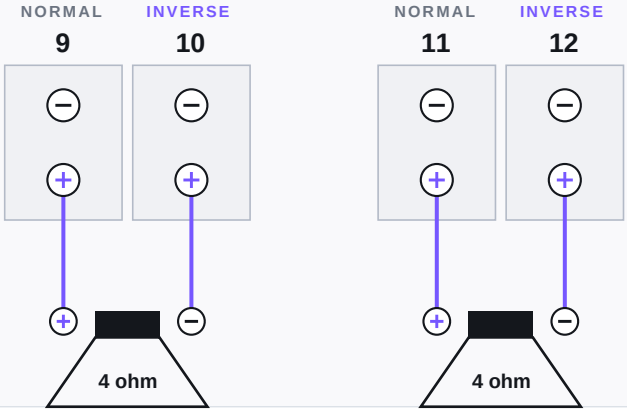
1 Parallel output 2 × 200 W



Join CH9 + and CH10 + to the speaker +, and CH9 - and CH10 - to the speaker -. Wire CH11 and CH12 the same way for the second speaker.

Use a 2 ohm or 4 ohm speaker on each pair.

2 Bridged 2 × 200 W @ 4 ohm

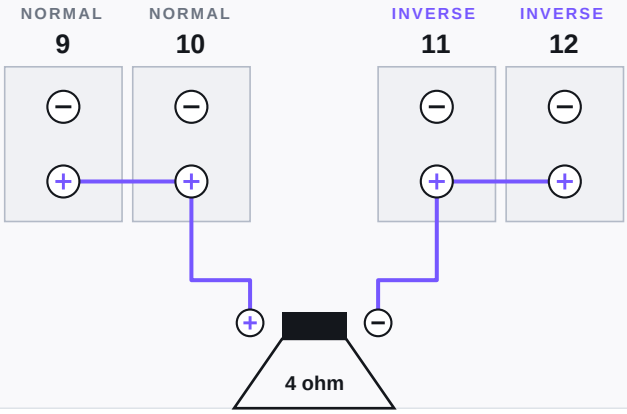


Connect CH9 + to the speaker + and CH10 + to the speaker -. Wire CH11 and CH12 the same way for the second speaker. The - terminals are not used.

Use 4 ohm speakers.

Software phase: CH9 normal, CH10 inverse, CH11 normal, CH12 inverse.

3 Parallel bridged 1 × 400 W @ 4 ohm



Join CH9 + and CH10 + to the speaker +, and CH11 + and CH12 + to the speaker -. No negative terminal connection.

Use one 4 ohm speaker.

Software phase: CH9 and CH10 normal, CH11 and CH12 inverse.

IMPORTANT

Set the channel phase in the tuning software exactly as shown before powering up. A phase setting that does not match the wiring risks damaging the amplifier.

AUDIO PERFORMANCE

Signal-to-noise ratio	102 dB (typ.)
THD+N	0.009% (typ.)
Dynamic range	> 102 dB
Channel separation	> 90 dB
Frequency response	20 Hz – 36 kHz
Signal input range	0.05 – 10 Vrms

POWER, ENVIRONMENT AND SIZE

Operating voltage	10 – 16 V
Standby current	< 1 mA
Standby power	< 0.1 W
Operating temperature	-40 °C to 80 °C
Dimensions	280 × 210 × 53 mm
W-ILM load management	Integrated across model range