WONDOM

Car DSP Amplifier Catalog

CORE SERIES · TENSOR SERIES

Complete datasheets for all six processors.

CORE 6	4 in / 6 out · 4 × 30 W @ 4 ohm
CORE 8	4 in / 8 out · 4 × 30 W + 2 × 20 W @ 4 ohm
CORE 12	12 in / 12 out · 10 × 60 W + 2 × 80 W @ 4 ohm
TENSOR 8	6 in / 8 out · 8 × 40 W + 2 × 80 W @ 4 ohm
TENSOR 12	12 in / 12 out · 8 × 40 W + 4 × 100 W @ 4 ohm
TENSOR 18	16 in / 18 out · 16 × 60 W @ 4 ohm

DESIGNED IN GERMANY

Key specifications at a glance

	CORE 6	CORE 8	CORE 12	TENSOR 8	TENSOR 12	TENSOR 18
DSP inputs / outputs	4 / 6	4 / 8	12 / 12	6 / 8	12 / 12	16 / 18
DSP processor	WONDOM W7	WONDOM W7	WONDOM W7	WONDOM W8	WONDOM W8	Analog Devices ADAU1452
DAC	CJC4344H × 3	CJC4344H × 4	CJC4344H × 6	CJC4344H × 4	CJC4344H × 6	PCM1681 × 2 + PCM1754
Max sampling rate	96 kHz	192 kHz	192 kHz	192 kHz	192 kHz	192 kHz
Inputs	USB, high-level input	USB, high-level input, Optical	USB, high-level input, Optical, Coaxial	USB, high-level input, Optical	USB, high-level input, Optical, Coaxial, OTG 96K/192K (AMP1821)	USB 3.0, high-level input, Optical, Coaxial
Bluetooth	Bluetooth 5.4	Bluetooth 5.4	Bluetooth 6.0	Bluetooth 5.4	Bluetooth 5.4	Bluetooth 6.0
Amplifier class	Class AB	Class AB	Class D	Class AB	Class AB + Class D	Class D
Power @ 4 ohm	4 × 30 W	4 × 30 W + 2 × 20 W	10 × 60 W + 2 × 80 W	8 × 40 W + 2 × 80 W	8 × 40 W + 4 × 100 W	16 × 60 W
Power @ 2 ohm	4 × 51 W	4 × 51 W + 2 × 35 W	10 × 100 W + 2 × 150 W	8 × 80 W + 2 × 160 W	8 × 80 W + 4 × 200 W	16 × 100 W
RCA output	6-channel	8-channel	12-channel	8-channel	12-channel	18-channel
SNR	102 dB (typ.)	102 dB (typ.)	102 dB (typ.)	102 dB (typ.)	102 dB (typ.)	105 dB (typ.)
THD+N	0.009% (typ.)	0.009% (typ.)	0.009% (typ.)	0.009% (typ.)	0.009% (typ.)	0.002% (typ.)
Dimensions	172 × 117 × 43 mm	172 × 117 × 43 mm	227 × 171 × 45 mm	230 × 197 × 50 mm	280 × 210 × 53 mm	282 × 200 × 53 mm

Every model includes W-ILM (WONDOM Intelligent Load Management), 24-bit processing, 31-band EQ and a 10 – 16 V operating range. Full specifications follow on the model datasheets.

CORE SERIES

CORE 6

4-input, 6-output car DSP amplifier

The CORE 6 is a compact 4-input, 6-output car DSP amplifier that brings precise digital signal processing and 4 × 30 W of built-in power to a factory audio system. It is the simplest way to upgrade passive OEM speakers and add an external subwoofer, without replacing the head unit.

DSP IN / OUT	POWER @ 4 OHM	POWER @ 2 OHM	SNR
4 / 6	4 × 30 W	4 × 51 W	102 dB

DSP AND PROCESSING

DSP inputs / outputs	4 / 6
DSP processor	WONDOM proprietary DSP IC (W7)
ADC	ES7210 × 1
DAC	CJC4344H × 3 (2-channel)
Audio resolution	24-bit
Max sampling rate	96 kHz
PC tuning	Supports 6 channels
Equaliser	31-band
Audio decoding	MP3 / FLAC / WAV

INPUTS AND OUTPUTS

Inputs	USB, high-level input
High-level input	4-channel
AUX input	2-channel
USB flash drive	Supported
Bluetooth	Bluetooth 5.4 (JL AC6951C8)
High-level output	4-channel
RCA output	6-channel

AMPLIFIER

Amplifier	TDA7851 Class AB × 1
Amplifier class	Class AB
Output power @ 4 ohm	4 × 30 W
Output power @ 2 ohm	4 × 51 W
Power notes	120 W stated total; 4 ohm
Load impedance	2 ohm / 4 ohm

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	172 × 117 × 43 mm
W-ILM load management	Integrated across model range

CORE SERIES

CORE 8

4-input, 8-output car DSP amplifier

The CORE 8 is a 4-input, 8-output car DSP amplifier built for active front two-way systems. With 4 × 30 W + 2 × 20 W of built-in power and independent processing on every output, it lets you run tweeters and midwoofers on their own channels while the rear stays on built-in power.

DSP IN / OUT	POWER @ 4 OHM	POWER @ 2 OHM	SNR
4 / 8	4 × 30 W + 2 × 20 W	4 × 51 W + 2 × 35 W	102 dB

DSP AND PROCESSING

DSP inputs / outputs	4 / 8
DSP processor	WONDOM proprietary DSP IC (W7)
ADC	ES7210 × 1
DAC	CJC4344H × 4 (2-channel)
Audio resolution	24-bit
Max sampling rate	192 kHz
PC tuning	Supports 8 channels
Equaliser	31-band
Audio decoding	MP3 / FLAC / WAV

INPUTS AND OUTPUTS

Inputs	USB, high-level input, Optical
High-level input	4-channel
AUX input	2-channel
Optical / coaxial	Optical
USB flash drive	Supported
Bluetooth	Bluetooth 5.4 (JL AC6951C8)
High-level output	6-channel
RCA output	8-channel

AMPLIFIER

Amplifier	TDA7377 + TDA7851 Class AB
Amplifier class	Class AB
Output power @ 4 ohm	4 × 30 W + 2 × 20 W
Output power @ 2 ohm	4 × 51 W + 2 × 35 W
Power notes	160 W stated total; 4 ohm
Load impedance	2 ohm / 4 ohm

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	172 × 117 × 43 mm
W-ILM load management	Integrated across model range

CORE SERIES

CORE 12

12-input, 12-output car DSP amplifier

The CORE 12 is a 12-input, 12-output car DSP amplifier for active multi-way and audiophile systems. Seven CSC3601 amplifier devices deliver 10 × 60 W + 2 × 80 W at 4 ohm, enough to run a fully active three-way front stage and rear speakers from a single unit.

DSP IN / OUT	POWER @ 4 OHM	POWER @ 2 OHM	SNR
12 / 12	10 × 60 W + 2 × 80 W	10 × 100 W + 2 × 150 W	102 dB

DSP AND PROCESSING

DSP inputs / outputs	12 / 12
DSP processor	WONDOM proprietary DSP IC (W7)
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
High-level input	12-channel
AUX input	2-channel
Optical / coaxial	Optical and coaxial
USB flash drive	Supported
Bluetooth	Bluetooth 6.0 (JL7031C8 (Dual Core))
High-level output	12-channel
RCA output	12-channel

AMPLIFIER

Amplifier	CSC3601 × 7
Amplifier class	Class D
Output power @ 4 ohm	10 × 60 W + 2 × 80 W
Output power @ 2 ohm	10 × 100 W + 2 × 150 W
Power notes	760 W stated total; 4 ohm. Five CSC3601 devices provide 10 × 60 W; two remaining devices are bridged for 2 × 80 W.
Load impedance	2 ohm / 4 ohm

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	227 × 171 × 45 mm
W-ILM load management	Integrated across model range

TENSOR SERIES

TENSOR 8

8-Channel DSP with 10-Channel Integrated Amplification.

The TENSOR 8 is an 8-channel DSP with 10-channel integrated amplification, designed for compact high-performance systems. It delivers 8 × 40 W + 2 × 80 W at 4 ohm across 10 physical amplified channels, driven by WONDOM's W8 DSP.

DSP IN / OUT	POWER @ 4 OHM	POWER @ 2 OHM	SNR
6 / 8	8 × 40 W + 2 × 80 W	8 × 80 W + 2 × 160 W	102 dB

DSP AND PROCESSING

DSP inputs / outputs	6 / 8
DSP processor	WONDOM proprietary DSP IC (W8)
ADC	ES7210 × 2
DAC	CJC4344H × 4 (2-channel)
Audio resolution	24-bit
Max sampling rate	192 kHz
PC tuning	Supports 8 channels
Equaliser	31-band
Audio decoding	MP3 / FLAC / WAV

INPUTS AND OUTPUTS

Inputs	USB, high-level input, Optical
High-level input	6-channel
AUX input	2-channel
Optical / coaxial	Optical
USB flash drive	Supported
Bluetooth	Bluetooth 5.4 (JL AC6951C8)
High-level output	8 + 2-channel
RCA output	8-channel

AMPLIFIER

Amplifier	TDA7851 + 2 pairs Toshiba 2SC5200 / 2SA1943
Amplifier class	Class AB
Output power @ 4 ohm	8 × 40 W + 2 × 80 W
Output power @ 2 ohm	8 × 80 W + 2 × 160 W
Power notes	10 physical amplified output channels. Delivers 8 × 40 W + 2 × 80 W @ 4 ohm, with DSP channels 5 and 6 each controlling two 40 W amplifier channels.
Load impedance	2 ohm / 4 ohm

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	230 × 197 × 50 mm
W-ILM load management	Integrated across model range

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

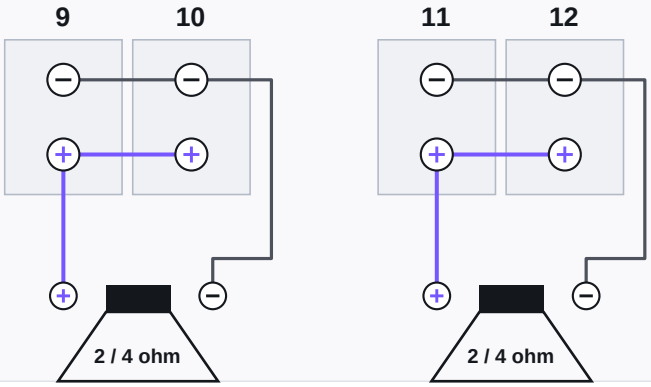
100 W CHANNEL MODES (CH9–CH12)

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)

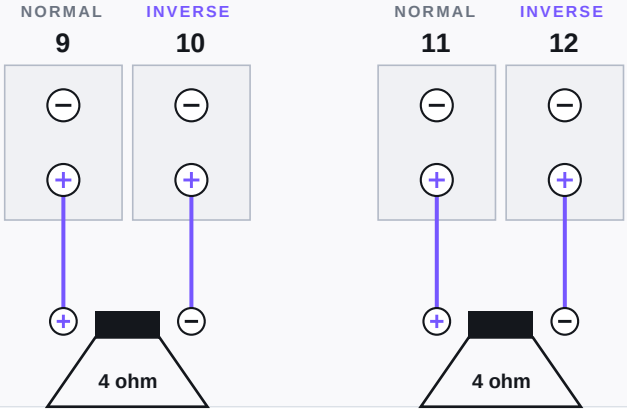
1 Parallel output 2 × 200 W



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

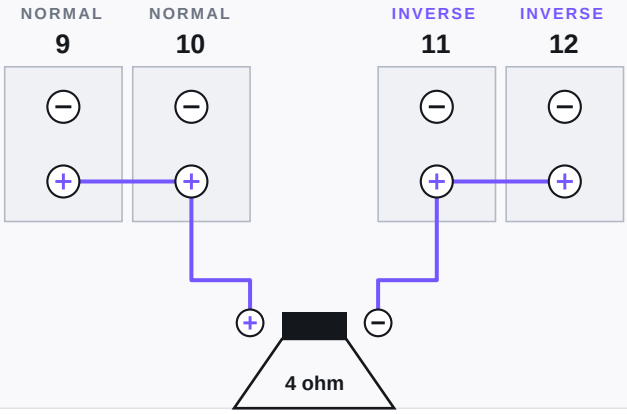


Connect CH9 + to the speaker + and CH10 + to the speaker -. Wire CH11 and CH12 the same way for the second speaker. The - terminals are not used.

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

TENSOR SERIES

TENSOR 18

16-input, 18-output car DSP amplifier

The TENSOR 18 is WONDOM's flagship 16-input, 18-output car DSP amplifier for multi-way and multi-zone systems. Built around the Analog Devices ADAU1452 with 16 × 60 W at 4 ohm, it reaches 105 dB SNR and 0.002% THD+N, the highest performance in the range.

DSP IN / OUT	POWER @ 4 OHM	POWER @ 2 OHM	SNR
16 / 18	16 × 60 W	16 × 100 W	105 dB

DSP AND PROCESSING

DSP inputs / outputs	16 / 18
DSP processor	Analog Devices ADAU1452
ADC	ES7210 × 4
DAC	PCM1681 × 2 (8-channel) + PCM1754 × 1 (2-channel)
Audio resolution	24-bit
Max sampling rate	192 kHz
PC tuning	Supports 18 channels
Equaliser	31-band
Audio decoding	MP3 / FLAC / WAV / WMA / APE

INPUTS AND OUTPUTS

Inputs	USB 3.0, high-level input, Optical, Coaxial
High-level input	16-channel
AUX input	2-channel
Optical / coaxial	Optical and coaxial, 192 kHz decoding
USB flash drive	Supported
Bluetooth	Bluetooth 6.0 (JL7031C8 (Dual Core))
High-level output	16-channel
RCA output	18-channel

AMPLIFIER

Amplifier	CSC3601 × 8
Amplifier class	Class D
Output power @ 4 ohm	16 × 60 W
Output power @ 2 ohm	16 × 100 W
Power notes	960 W stated total; 4 ohm
Load impedance	2 ohm / 4 ohm
Output note	OUT 1–16 run on the built-in channels; OUT 17–18 are signal outputs for an external amplifier.

AUDIO PERFORMANCE

Signal-to-noise ratio	105 dB (typ.)
THD+N	0.002% (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	282 × 200 × 53 mm
W-ILM load management	Integrated across model range