



THE BEST AUDIO SOLUTIONS

Touch People's Hearts!

Cmedia is Your Truthful Partner!

Founded in 1991, Cmedia is the global leading IC/software solution provider. C-Media's goal has remained consistent over the years: to create and sustain mutually beneficial relationships with customers by providing innovative solutions that address their needs.

Cmedia's Solutions:

- USB Audio Codec
- USB Audio Controller
- Consumer Audio/Voice DSP Processors
- Codec
- Speaker Amplifier
- Xear™ Sound Processing Algorithms/Technologies
- Software Audio Drivers and Applications

Applications:

- PC/GameConsole USB Gaming Headset/Box
- USB MS Teams/UC VOIP Headset
- USB Gaming/Pro Microphone/Guitar Cable
- Notebook/Tablet/iDevice/Android Docking Stations
- Wi-Fi Audio/Speakers/Boom box
- Speakerphone/Smart TV/IP Camera/Home Appliances
(with AEC/LDR)
- Mobile Phone/DECT Phone (with ENC/etc.)
- USB Multimedia/Hi-Fi Speakers
- USB Audio Box/Hi-Fi DAC/Amplifier
- PCI/PCI Express Sound Card
- Karaoke / Live Streaming

USB Audio Codec

Feature		CM6327A	CM6317A	HS-100B(C)	CM108B	CM118B
Hardware	USB2.0 Compliant	Full Speed	Full Speed	Full Speed	Full Speed	Full Speed
	HID Buttons	--	--	●	●	●
	DAC	Channel	--	2	2	2
		SNR	--	≥93dB	≥93dB	≥93dB
		THD+N@1KHz	--	≤-70dB	≤-70dB	≤-70dB
			--	≤0.0316%	≤0.0316%	≤0.0316%
	ADC	Channel	1	2	1	2
		SNR	96dB	96dB	≥90dB	≥90dB
		THD+N@1KHz	≤-92dB	≤-92dB	≤-84dB	≤-84dB
			≤0.0025%	≤0.0025%	≤0.006%	≤0.006%
	Headphone Amp(32Ω)	--	--	●	●	●
	Mic Preamp	PGA Gain (-16 ~ 45dB)	PGA Gain (-16 ~ 45dB)	●	●	●
	Mic AGC	--	--	--	--	--
	Line Input	--	--	--	--	--
	Mic Clipping LED	--	--	--	--	--
	SPDIF In/Out	--	--	--	--/●	--/●
	Sampling Rate	8 ~ 48K	8 ~ 48K	44.1/48K	44.1/48K	44.1/48K
	Bit depth	16bits	16bits	16bits	16bits	16bits
	Firmware	EEPROM	EEPROM	EEPROM	EEPROM	EEPROM
	Customization	24C02	24C02	93C46	93C46	93C46
	SPI/I2C Interface	--/●	--/●	●/--	●/--	●/●
	GPIO PINs	8	8	--	3	3
		--	--	--	--	--
	Power Consumption Active	33mA	33mA	37.25mA	37.25mA	37.25mA
	Power Consumption Suspend	410uA	410uA	1.58mA	1.58mA	1.58mA
	MCU	--	--	--	--	--
	Microsoft® Teams Compatible	--	--	--	--	--
	Package Type	LQFP-48	LQFP-48	LQFP-48(9x9mm)	LQFP-48	LQFP-48
	Include Pin Dimension	9x9mm	9x9mm	QFN-32(4x4mm)	9x9mm	9x9mm
	Audio/Voice Processing	--	--	--	--	--
		--	--	--	--	--
		--	--	--	--	--
		--	--	--	--	--
Software	Xear™ Features	--	--	--	●	--
	DTS® Headphone X	--	--	--	--	--

USB Audio Codec

Feature		CM119BN	CM6542	CM6533(N)	CM6533X1
Hardware	USB2.0 Compliant	Full Speed	Full Speed	Full Speed	Full Speed
	HID Buttons	•	•	•	•
	DAC	Channel	2	2	2
		SNR	≥93dB	≥92dB	≥92dB
		THD+N@1KHz	≤-70dB	≤-87dB	≤-87dB
			≤0.0316%	≤0.0045%	≤0.0045%
	ADC	Channel	1	2	2
		SNR	≥90dB	≥87dB	≥87dB
		THD+N@1KHz	≤-84dB	≤-83dB	≤-83dB
			≤0.006%	≤0.0079%	≤0.0079%
	Headphone Amp(32Ω)	•	•	•	•
	Mic Preamp	•	PGA Gain (-18 ~ 33dB)	PGA Gain (-18 ~ 45dB)	PGA Gain (-18 ~ 45dB)
	Mic AGC	--	•	•	•
	Line Input	--	--	--	--
	Mic Clipping LED	--	--	•	•
	SPDIF In/Out	--/•	--/•	--/•	--/•
	Sampling Rate	44.1/48K	8 ~ 96K	8 ~ 96K	8 ~ 96K
	Bit depth	16bits	16/24bits	16/24bits	16/24bits
	Firmware	EEPROM	Embedded Flash	Embedded Flash	Embedded Flash
	Customization	93C46	512KB	512KB	512KB
	SPI/I2C Interface	•/•	•/•	•/•	•/•
	GPIO PINs	8	12	12	12
		--	(3 PWM LED Control)	(3 PWM LED Control)	(3 PWM LED Control)
	Power Consumption Active	37.25mA	19.3mA	73mA	73mA
	Power Consumption Suspend	1.58mA	0.5mA	2mA	2mA
	MCU	--	•	•	•
	Microsoft® Teams Compatible	--	--	•	--
	Package Type	QFN-48	QFN-48	CM6533 LQFP-48 CM6533N QFN-48	LQFP-48
	Include Pin Dimension	5x5mm	5x5mm	CM6533: 9x9mm CM6533N: 7x7mm	9x9mm
	Audio/Voice Processing	--	5-band	5-band	5-band
		--	Parametric EQ	Parametric EQ	Parametric EQ
		--	--	--	--
Software	Xear™ Features	--	--	--	•
	DTS® Headphone X	--	--	--	--

USB Audio Codec

Feature		CM6535	CM6571	CM6646	CM6206/LX
Hardware	USB2.0 Compliant	Full Speed	Full Speed	High Speed	Full Speed
	HID Buttons	•	•	•	•
	DAC	Channel	2	2	CM6206: 8CH CM6206LX: 6CH
		SNR	≥92dB	≥94dB	95dB
		THD+N@1KHz	≤-87dB	≤-82dB	≤-87dB
			≤0.0045%	≤0.0079%	≤0.0044%
	ADC	Channel	2	2	2
		SNR	≥87dB	≥91dB	94dB
		THD+N@1KHz	≤-83dB	≤-82dB	≤-90dB
			≤0.0079%	≤0.0079%	≤0.0031%
	Headphone Amp(32Ω)	•	•	•	•
	Mic Preamp	PGA Gain(-18 ~ 45dB)	PGA Gain(-14 ~ 49dB)	PGA Gain(-15 ~ 33dB)	PGA Gain(-6 ~ 33dB)
	Mic AGC	•	•	--	--
	Line Input	•	•	--	•
	Mic Clipping LED	•	•	--	--
	SPDIF In/Out	--/•	--/•	--/•	•/•
	Sampling Rate	8 ~ 96K	8 ~ 96K	44.1 ~ 192K	44.1/48K
	Bit depth	16/24bits	16/24bits	16/24/32bits	16bits
	Firmware	Embedded Flash	EEPROM	Embedded Flash	EEPROM
	Customization	512KB	24C02	512KB	93C46
	SPI/I2C Interface	•/•	--/•	•/•	•/--
	GPIO PINs	12	15	7	1
		(3 PWM LED Control)	--	(6 PWM LED Control)	--
	Power Consumption Active	73mA	76mA	54mA	155mA
	Power Consumption Suspend	2mA	1.65mA	1.1mA	250uA
	MCU	•	•	•	--
	Microsoft® Teams Compatible	•	•	--	--
	Package Type	LQFP-64	VQFP-88	QFN-48	LQFP-48
	Include Pin Dimension	9x9mm	10x10mm	5x5mm	9x9mm
Software	Audio/Voice Processing	5-band	Xear™ Surround HP	5-band	--
		Parametric EQ	Xear™ Sound Expander	Parametric EQ	--
		--	Xear™ Sonic	--	--
		--	ENC, AEC, LDR, Array MIC	--	--
		--	--	--	--
Software	Xear™ Features	Option	--	Option	•
	DTS® Headphone X	Option	--	--	--

USB Audio Controller

Feature		CM6530N	CM6212	CM6635	CM6637
Hardware	USB2.0 Compliant	Full Speed	High Speed	High Speed	High Speed
		(Audio Class 1.0/2.0)	(Audio Class 1.0/2.0)	(Audio Class 1.0/2.0)	(Audio Class 1.0/2.0)
	Synchronization Type	Both Synchronize & Asyn	Synchronize	Both Synchronize & Asyn	Both Synchronize & Asyn
	HID Buttons	•	•	•	•
	I2S/HDA/TDM Interface	I2S Out	2CH	2CH + 2CH	8CH + 2CH
		I2S In	2CH	2CH + 2CH	8CH + 2CH
		TDM	8CH	--	8CH
		HDA	•	--	•
	SPDIF In/Out	•/•	•/•	•/•	•/•
	Sampling Rate	8 ~ 96K	44.1/48/96/192K	PCM up 44.1/16bits ~ 768K/32bits,	PCM up 44.1/16bits ~ 768K/32bits,
	Bit depth	16/24bits	16/24bits	DSD up to 22.4MHz	DSD up to 22.4MHz
	MCU	•	•	•	•
	Firmware Customization	Embedded Flash	Embedded Flash	Embedded Flash	Embedded Flash
		512KB	512KB	512KB	512KB
	SPI/I2C Interface	•/•	•/•	•/•	•/•
	GPIO PINs	18	18	18	24
		(3 PWM LED Control)	(6 PWM LED Control)	(6 PWM LED Control)	(6 PWM LED Control)
Software	Power Consumption Active	30mA	45mA	45mA	45mA
	Power Consumption Suspend	2mA	2.3mA	2.3mA	2.3mA
	Package Type	QFN-48	QFN-64	QFN-64	QFN-100
	Include Pin Dimension	5x6.5mm	7.5x7.5mm	7.5x7.5mm	12x12mm
	Xear™ Features	--	•	--	--
	ASIO 2.2 Driver	Option	--	•	•

Speaker Amp.

Feature		CM102S+	CM6119
Hardware	USB2.0 Compliant	Full Speed	--
	Codecs	•	--
	HID Buttons	•	--
	DAC	Channel	2
		SNR	≥97dB
		THD+N@1KHz	≤-53dB
			≤0.224%
	I2S	--	•
	SPDIF Out	•	--
	Sampling Rate	44.1/48K	16/44.1/48/96K
	Bit depth	16 bits	16/20/24/32 bits
	SPI/I2C Interface	--/--	--/•
	GPIO PINs	1	--
	High Efficiency Amp	Class AB 0.5W/CH	Class D 3W/CH
		@4Ω	@4Ω
	Power Consumption	USB Power	PVDD 5V
	Active/Suspend	500mA/320uA	/1.2uA
	OCP/OTP/DC Dection	--/--/--	•/•/•
	Volume Control	•	•
	Beep Generator	--	•
	Line Input	--	--
	Package Type	SOP-18	DFN-12
	Include Pin Dimension	10x11mm	3x3mm

Audio Processor

Feature		CM7001/CM7001N	CM7100	CM7104	
Technologies/ Algorithms	Xear™ VoClear ENC		•	Option	
	Xear™ VoClear AEC		•	Option	
	Xear™ VoClear NR		•	Option	
	FW Upgradable		•	•	
	Xear™ Surround Headphone		•	•	
	Xear™ Surround Max		Option	Option	
	Xear™ Sound Expander		Option	Option	
	Xear™ Parametric EQ		•	•	
	Xear™ Sonic	Dynamic Bass	•	•	
		Voice Clarity	--	Option	Option
		Audio Brilliant	•	Option	Option
		Smart Volume	•	Option	Option
DTS® Headphone: X		--	--		
Hardware	32-bit DSP		•	•	
	DAC	Channel	1	3	2
		SNR	90dB	101dB	101dB
		THD+N@1KHz	-67.5dB	-93dB	-93dB
	ADC	Channel	2	2	2
		SNR	90 dB	102 dB	102 dB
		THD+N@1KHz	-60dB	-95dB	-95dB
	Mic Bias/Pre-amp		●/PGA Gain(0 ~ 31dB)	●/ PGA Gain (20 ~ 52dB)	●/ PGA Gain (20 ~ 52dB)
	Differential Analog I/O		•	•	•
	DMIC		1 stereo	3 stereo	2 stereo
	I2S I/O		1 stereo / 1 stereo	4 stereo/4 stereo	2 stereo/2 stereo
	DAC/ADC Sampling Rate		16KHz	44.1~192KHz	44.1~192KHz
	@bit depth		16bits	16/24bits	16/24bits
	Firmware Customization		EEPROM(24C32 or above)	SPI Interface	SPI Interface
	HW Mode_ Select Pins		•	Programmable	Programmable
	I²C/UART/SPI Interface		●/●/--	●/--/SPI	●/--/SPI
	GPIO PINs		Max. 8 (shared pins)	Max. 4 (shared pins)	1
	Power consumption	DSP: mW/MIPS	1.378mW	0.36mW	0.36mW
		codec: mW	13mW	6mW	6mW
	Power Supply Voltage		1.75-3.6V for DVDD	1.71-3.63V for DVDD	1.71-3.63V for DVDD
			2.4-3.6V for AVDD	1.71-3.63V for AVDD	1.71-3.63V for AVDD
	Package Type		CM7001: WLCSP-30(3x2.6mm)	LQFP-80	LQFP-48
	Include Pin Dimension		CM7001N: QFN-32(5x5mm)	12x12mm	9x9mm

Audio Processor

Feature		CM7106	CM7120	CM7120N
Technologies/ Algorithms	Xear™ VoClear ENC		•	•
	Xear™ VoClear AEC		--	--
	Xear™ VoClear NR		•	•
	FW Upgradable		•	•
	Xear™ Surround Headphone		•	•
	Xear™ Surround Max		•	•
	Xear™ Sound Expander		--	--
	Xear™ Parametric EQ		•	•
	Xear™ Sonic	Dynamic Bass	Option	Option
		Voice Clarity	Option	Option
		Audio Brilliant	Option	Option
		Smart Volume	Option	Option
Hardware	DTS® Headphone: X		•	--
	32-bit DSP		•	•
	DAC	Channel	3	5
		SNR	101dB	114dB
		THD+N@1KHz	-93dB	-93dB
	ADC	Channel	2	5
		SNR	102dB	100dB
		THD+N@1KHz	-95dB	-94dB
	Mic Bias/Pre-amp		●/ PGA Gain (20 ~ 52dB)	●/PGA(-12 ~ 39.75dB)
	Differential Analog I/O		•	•
	DMIC		3 stereo	4 stereo
	I2S I/O		4 stereo/4 stereo	5 stereo/5 stereo
	DAC/ADC Sampling Rate		44.1~192KHz	44.1~192KHz
	@bit depth		16/24bits	16/24bits
	Firmware Customization		SPI Interface	SPI Interface
	HW Mode_ Select Pins		Programmable	Programmable
	I²C/UART/SPI Interface		●/--/SPI	●/●/●
	GPIO PINs		Max. 4(shared pins)	Max. 4(shared pins)
	Power consumption	DSP: mW/MIPS	0.36mW	0.45mW
		codec: mW	6mW	3.3mW
	Power Supply Voltage		1.71-3.63V for DVDD	Digital: 1.2, 1.8, 3.3V
			1.71-3.63V for AVDD	Analog: 5, 3.3, 1.8V
	Package Type		LQFP-80	WLCSP-113
	Include Pin Dimension		12x12mm	4.4x4.4mm
				QFN-88
				10x10mm

Feature		CM9600	CM9601	CM9823	CM7037	
Hardware	Interface		I2S	I2S	HDA	SPDIF
	I2S Output		●	●	●	●
	I2S Input		●	●	--	--
	SPDIF In		--	--	--	●
	SPDIF Out		--	--	●	--
	DAC	Channel	2	2	2 + 2	2
		SNR	100dB	99dB	TBD	96dB
		THD+N@1KHz	≤-86dB	≤-90dB	TBD	≤-91dB
			≤0.0050%	≤0.0031%	TBD	≤0.0028%
	ADC	Channel	2	1	2 + 2	--
		SNR	94dB	94dB	TBD	--
		THD+N@1KHz	≤-83dB	≤-83dB	TBD	--
			≤0.0070%	≤0.0070%	--	--
	Headphone Amp(32Ω)		●	●	●	●
	Line in		●	--	●	--
	Microphone		●	●	●	--
	Mic Preamp		20~52dB	20~52dB	PGA Gain(-18 ~ 29dB)	--
	Mic Bias		●	●	●	--
	I2C Master/Slave		--/●	--/●	●/--	--/●
	SPI Master/Slave		--/--	--/--	--/--	●/--
	GPIO PINs		2	1	2	6
	Power Consumption		≤5.5mW	≤5.5mW	TBD	≤5.5mW
	Playback Silence					
	Package Type		QFN-40	QFN-32	QFN-48	QFN-48
Include Pin Dimension		5x5mm	4x4mm	6x6mm	5x5mm	
Software	Xear™ Features		--	--	TBD	--
	ASIO2.2 Driver		--	--	TBD	--



- **Xear™ Living 1.1**

- ◆ Environmental Effects
- ◆ Equalizer (EQ)
- ◆ 7.1 Virtual Speaker Shifter
- ◆ Smart Volume Normalizer (SVN)
- ◆ FlexBass II (Bass Management and Enhancement)

- **Xear™ SingFx**

- ◆ Pitch Shifting
- ◆ Singing Echo/Reverb
- ◆ Vocal Fading
- ◆ Magic Voice

- **Xear™ Audio Center New Driver/GUI**

- ◆ Matching 7/8/10 APO driver architecture
- ◆ User profile setting
- ◆ Customizable graphics and layout

- **Xear™ VoClear**

- ◆ Environmental Noise Cancellation HD(ENC)
- ◆ Mic Array HD(Broad-Side)
- ◆ Mic Array HD(End-Fire)
- ◆ Acoustic Echo Cancellation HD(AEC) /Noise Reduction HD(NR)/Long Distance Recording HD(LDR)

- **Xear™ Surround**

- ◆ Surround Max (transform 2 CH into 7.1 surround sound, enrich full range surround sound)
- ◆ Surround Headphone (virtual 5.1 surround and 3D positional sounds, natural stereo music out-of-head to reduce fatigue)
- ◆ Surround Speaker (virtual 5.1 surround and 3D positional sounds, widening stereo 3D sound stage)

- **Xear™ Pro**

- ◆ ASIO 2.2 w/ultra low latency/bit-perfect streaming

- **Xear™ Sonic**

- ◆ Dynamic Bass
- ◆ Audio Brilliant
- ◆ Voice Clarity
- ◆ Smart Volume II (Adaptive Volume)

- **3rd-party Technologies**

- ◆ DTS® Headphone X 2.0

Cmedia Electronics Inc.

Address: 6F, 100, Sec. 4, Civil Blvd., Taipei, Taiwan 106, R.O.C