



from

ASTUTE GROUP
E-Design

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requires ESS Tech mNDA

MQA requires MQA mNDA

Audiophile ADC									
	Resolution	Number of Channels	RAW Output	DNR per Channel	DNR in Mono Mode	THD+N	Package	Maximum Sample Rate	Comments
ES9822QPRO	32-Bit	2	yes	125dB	128dB	-117dB	40-QFN	768kHz	DSD, S/PDIF, RAW, TDM, ES9820 upgrade
ES9842QPRO	32-Bit	4	yes	122dB	128dB	-116dB	40-QFN	768kHz	DSD, S/PDIF, RAW, TDM, ES9840 upgrade
ES9820Q	32-Bit	2	no	116dB	119dB	-108dB	40-QFN	768kHz	DSD, S/PDIF, TDM
ES9840Q	32-Bit	4	no	116dB	121dB	-108dB	40-QFN	768kHz	DSD, S/PDIF, TDM
ES9821Q	32-Bit	2	no	120dB	122dB	-112dB	28-QFN	768kHz	HW mode, S/PDIF, TDM, PLL
ES9826Q/QT	32-Bit	2	no	123dB	TBD	-105dB	28-QFN	768kHz	HW, TDM, S/PDIF, MicBias, ProgGainAmp
Audiophile DACs									
	Resolution	Number of Channels	DAC Output Impedance	DNR per Channel	DNR in Stereo Mode	THD+N	Package	Modulator	Comments
ES9039MSPRO	32-Bit	8	195Ω	132dB	137dB	-122dB	64-eTQFP	HyperStream IV	TDM, HW mode & MQA Renderer
ES9039SPRO	32-Bit	8	195Ω	132dB	137dB	-122dB	64-eTQFP	HyperStream IV	TDM, HW mode
ES9038PRO	32-Bit	8	202Ω	132dB	137dB	-122dB	64-eTQFP	HyperStream II	Pin-compatible with ES9018S
ES9028PRO	32-Bit	8	806Ω	129dB	133dB	-120dB	64-eTQFP	HyperStream II	Pin-compatible with ES9018S
ES9026PRO	32-Bit	8	806Ω	124dB	128dB	-110dB	48-LQFP	HyperStream II	Pin-compatible with ES9016S
ES9027S/QPRO	32-bit	8	760Ω	124dB	128dB	-114dB	48-TQFP/48-QFN	HyperStream IV	TDM
ES9017S/Q	32-bit	8	1563Ω	120dB	124dB	-110dB	48-TQFP/48-QFN	HyperStream IV	TDM, HW mode
ES9018S	32-Bit	8	834Ω	129dB	133dB	-120dB	64-LQFP	HyperStream	contact Astute Electronics / ISMOsys
ES9016S	32-Bit	8	834Ω	124dB	128dB	-110dB	48-LQFP	HyperStream	contact Astute Electronics / ISMOsys
ES9008S	24-Bit	8	834Ω	128dB	132dB	-118dB	64-LQFP	HyperStream	contact Astute Electronics / ISMOsys
SABRE9006AS	24-Bit	8	834Ω	120dB	NA	-102dB	48-LQFP	HyperStream	contact Astute Electronics / ISMOsys
Low-Power Audiophile DACs									
	Resolution	Number of Channels	DAC Output Impedance	DNR per Channel	DNR in Stereo Mode	THD+N	Package	Modulator	Comments
ES9068AS	32-Bit	2	781Ω	129dB	129dB	-120dB	64-QFP	HyperStream II	With Mic ADC & MQA Renderer
ES9069Q	32-bit	2	390Ω	130dB	130dB	-120dB	32-QFN	HyperStream IV	ES9039Q2M & MQA Renderer
ES9039Q2M	32-bit	2	390Ω	130dB	130dB	-120dB	32-QFN	HyperStream IV	PCM, DSD, DoP & S/PDIF, Filter bypass
ES9038Q2M	32-Bit	2	774Ω	128dB	128dB	-120dB	30-QFN	HyperStream II	THD compensation
ES9028Q2M	32-Bit	2	403Ω	129dB	129dB	-120dB	32-QFN	HyperStream	
ES9018K2M	32-Bit	2	806Ω	127dB	127dB	-120dB	28-QFN	HyperStream	Pin compatible with ES9016K2M
ES9016K2M	32-Bit	2	806Ω	122dB	122dB	-110dB	28-QFN	HyperStream	Pin compatible with ES9010K2M
ES9010K2M	32-Bit	2	806Ω	116dB	116dB	-106dB	28-QFN	HyperStream	
Audiophile DACs with 2Vrms Integrated Line Drivers									
	Resolution	Number of Channels	DNR per Channel w/ DRE	DNR per Channel w/o DRE	DNR in Mono Mode	THD+N	Package	Modulator	Comments
ES9080Q/QT	32-bit	8	120dB	112dB	127dB	-108dB	40-QFN	HyperStream II	inc TDM, PLL, DRE, S/PDIF
ES9033Q/QT	32-bit	2	122dB	115dB	NA	-108dB	28-QFN	HyperStream II	inc TDM, DRE, HW mode, PLL
ES9023P	24-Bit	2	NA	112dB	NA	-94dB	16-SOP	HyperStream	contact Astute Electronics / ISMOsys
Performance SoCs (DAC & HPA)									
	Resolution	Number of Channels	Output Power into 32Ω	Max Out Voltage	DNR in Stereo Mode	THD+N	Package	Modulator	Comments
ES9219MQ	32-Bit	2	50mW	3 Vrms	121dB	-114dB	42-CSP	HyperStream III	MQA, PLL, LDO & Output Switch
ES9219Q	32-Bit	2	50mW	3 Vrms	121dB	-114dB	42-CSP	HyperStream III	PLL, LDO & Output Switch
ES9218PQ	32-Bit	2	72mW	2 Vrms	121dB	-114dB	40-QFN	HyperStream II	Integrated Output Switch
ES9118EQ	32-Bit	2	31mW	1 Vrms	120dB	-112dB	40-QFN	HyperStream	Integrated Output Switch
Headphone and Power Amplifiers (HPA)									
	Supply Voltage	Number of Channels	Output Power into 32Ω	Ground-Referenced Output	SNR per Channel	THD+N	Package	Modulator	Comments
SABRE9601K	3.3V	2	30mW	Yes	122dB	-117dB	20-QFN		
SABRE9602Q/C	3.3V	2	49mW	Yes	122dB	-117dB	40-QFN/24-CSP		contact Astute Electronics / ISMOsys
SABRE9603Q	3.3V	2	49mW	Yes	122dB	-117dB	30-QFN		Programmable Current
USB CODECS									
	Resolution	Audio Signal Processor	MQA Hardware Rendering	USB	DNR per Channel	THD+N	Package	Modulator	Comments
ES9281AQ PRO	32-bit	Yes	Yes	2.0 High Speed	124dB	-112dB	88-QFN	HyperStream II	With PEQ and MQA Renderer
ES9280AQ PRO	32-bit	Yes	No	2.0 High Speed	124dB	-112dB	88-QFN	HyperStream II	With PEQ
ES9270C	32-bit	No	No	2.0 High Speed	117dB	-110dB	90-CSP	HyperStream II	
ES9260Q	32-bit	No	No	1.1 Full Speed	123dB	-96dB	40-QFN	HyperStream II	Integrated PLL & Regulator
Voltage Regulator									
	Supply Voltage	Number of Channels	Output Voltage	Output Noise Voltage	Output Current per Channel	Overload Protected	Package	Modulator	Comments
ES9311Q	3.5V to 5.5V	2	2.5V - 5.3V	< 1μVrms	150mA	Yes	30-QFN		No output capacitors required
CRESCENDO Sound Bar Products									
	Input Channels	Digital Outputs	Integrated DACs	Embedded DRAM	USB Support	Audio Co-processors / SRAM	Package	Modulator	Comments
ES8680H (C7)	5.1	8	-	-	2.0	Tri 144K	128-TQFP	NA	Dolby and/or DTS license required
ES8680D (C2P)	5.1	8	-	-	1.1	Dual 128K	128-eLQFP	HyperStream	contact Astute Electronics / ISMOsys
ES8680F (C3P)	5.1	8	6	8MB	2 x 1.1	Dual 96K	128-eLQFP	HyperStream	contact Astute Electronics / ISMOsys
ES8620Q / S	5.1	8	6	2MB	2	Dual 96K	128-QFN/128-LQFP	HyperStream	contact Astute Electronics / ISMOsys

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