

IP Camera Product Selection Guide



Complete Solutions from TI

IP Cameras

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The world of video surveillance is moving toward the IP network. An IP Network Camera, also known as an IP Camera, can be defined as a camera with networking and video processing combined into one unit. It captures and transmits live images over the network, enabling remote viewing and user control from anywhere, anytime.

Digital video transmission is fast becoming the standard requirement for security and surveillance systems. Both wired and wireless links are of interest for security and surveillance architects.

Texas Instruments has a long history of providing expertise and superior products to the video market. TI's complete solutions cover the entire video chain – everything from power and signal chain solutions to interface and processing solutions.

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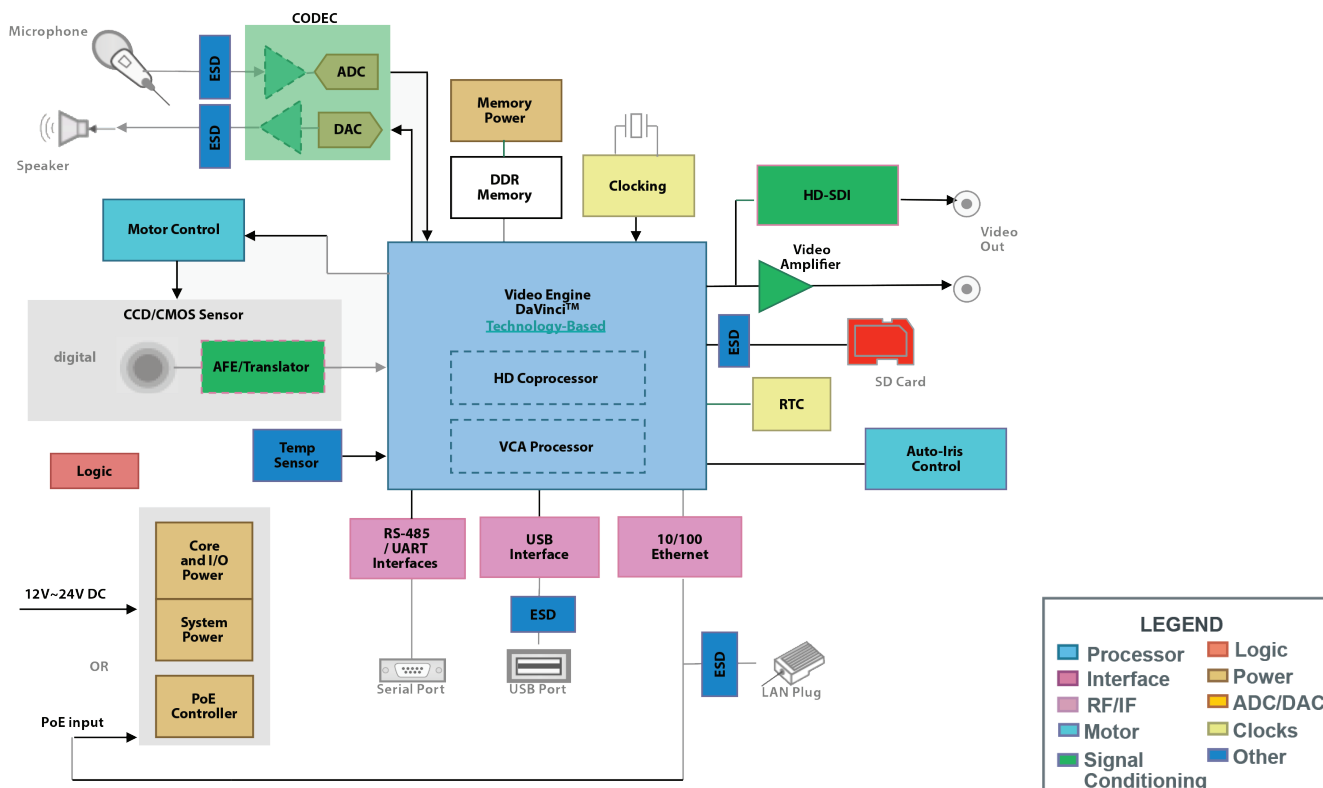
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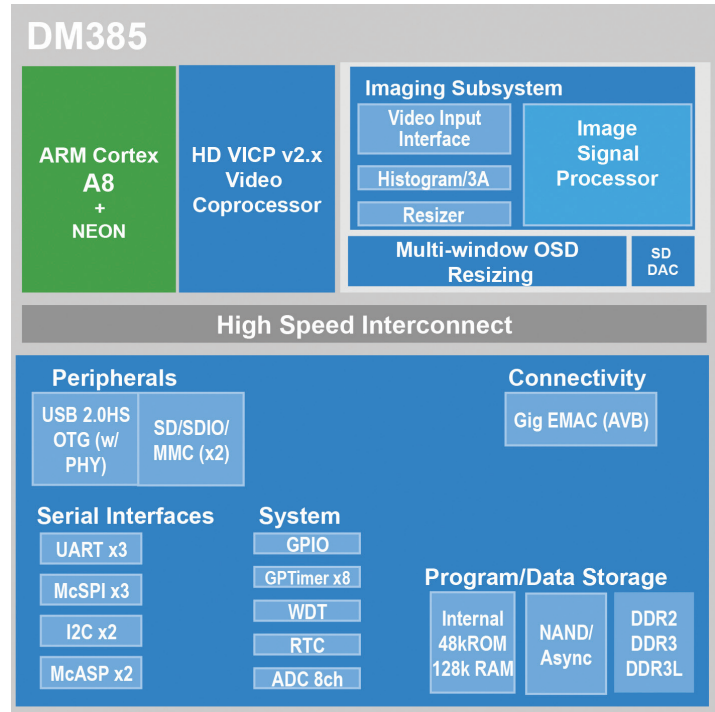
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IP Surveillance Camera



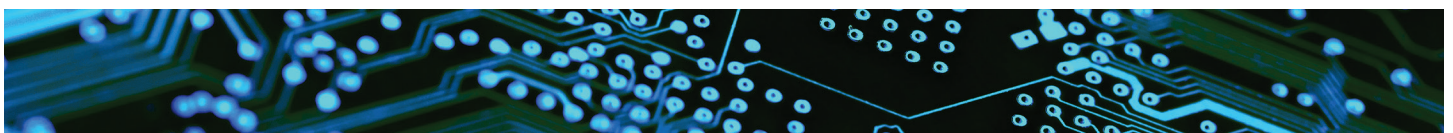
Video Processor Solutions

Video processors from Texas Instruments offer a broad range of performance and power consumption options. These processors support multiple HD video encode/decode channels and include video accelerators, advanced graphics coupled with display capabilities and a rich set of peripherals that are optimized for a broad spectrum of digital video end equipment.



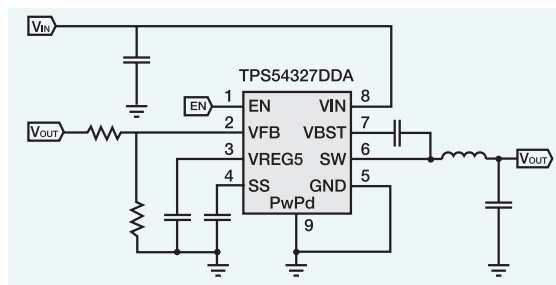
Processors

Device	Video Resolution/ Frame Rate	Processor	Speed MHz (Max.)	Video Acceleration	Video Capability	TI Video Codecs	IO Supply (V)	ARM MIPS (Max.)	Operating Systems	EVM	Pin/Package	Approx. Price (US\$)
DM8127	1080p60	1 ARM-A8, 1 DSP	1000(ARM), 750(DSP)	1 HDVICP	Encode, Decode, Transcode, Image, Enhance	H.264, MPEG4, MPEG2, Others	1.8, 3.3	2000	Linux	TMD5IPCAM8127J3	684PBGA	Call
DM388	1080P60	ARM Cortex A8	1000	1 HDVICP 1 MCTNF	Smart Motion Compensated NF, WDR, Encode, Decode, Transcode	H.264, MPEG4, MJPEG, MPEG2, Others	1.8, 3.3	2000	Linux	TMD5IPCAM388X36	609FCBGA	Call
DM385	1080p60	ARM-A8	1000	1 HDVICP	Encode, Decode, Transcode, Image, Enhance	H.264, MPEG4, MPEG2, Others	1.8, 3.3	2000	Linux	TMD5IPCAM385M34	609FCBGA	Call
DMVA3	1080P30	ARM Cortex A8	720	1 HDVICP 1 Vision-Cop	Video Analytics, Encode, Decode, Transcode	H.264, MPEG4, MJPEG, MPEG2, Others	1.8, 3.3	1440	Linux	TMD5IPCAMVA3	609FCBGA	Call
DM369	1080P60	ARM Cortex A8	432	1 HDVICP 1 TNF3	Video Noise Filter, Encode, Decode, Transcode	H.264, MPEG4, MJPEG, MPEG2, Others	1.8, 3.3	432	Linux	TMD5IPCAM369X104	338NFBGA	Call
TMS320DM368	1080p30	1 ARM9	432	1 MJCP 1 HDVICP	Decode, Encode Image, Enhance, Single Channel	H.264 BP/MP/ HP, MPEG4, MPEG2, MJPEG, VC1/ WMV9	1.8, 3.3	432	Linux	TMD5IPCAMVA2MT5	338PBGA	Call
DMVA2	720p30, 1080p	ARM9	432	H.264-CP Vision-CP	Encode, Decode, Transcode, Image, Enhance	H.264, MPEG4, MJPEG	1.8, 3.3	432	Linux	TMD5IPCAMVA2MT5	338PBGA	Call
TMS320DM365	D1 or Less, 720p	1 ARM9	216, 270	1 MJCP, 1 HDVICP	Encode, Decode, Image Enhance	H.264-BP, JPEG, MPEG4-SP	1.8, 3.3	270	Neutrino, ProS, Integrity, Windows Embedded CE, Linux	TMDXEVM365	338NFBGA	14.7 / 1ku
DMVA1	D1-30, 720p	ARM9	300	H.264-CP Vision-CP	Encode, Decode, Transcode, Image, Enhance	H.264, MPEG4, MJPEG	1.8, 3.3	300	Linux	-same as for DMVA2-	338PBGA	Call
609FCBGA	1080p30	1 ARM9	432	1 MJCP, 1 HDVICP	Decode, Encode Image, Enhance, Single Channel	H.264 BP/MP/ HP, MPEG4, MPEG2, MJPEG, VC1/ WMV9	1.8, 3.3	432	Neutrino, ProS, Integrity, Windows Embedded CE, Linux	TMDXEVM368	338NFBGA	29 / 1ku



Power Management Solutions

Texas Instruments (TI) offers complete power solutions with a full line of high performance products. These products, which range from standard linear regulators to highly efficient DC/DC converters and Power over Ethernet (PoE), are tailored to meet your design challenges.



Power Over Ethernet (PoE) Interface

	PD Power Level	Duty Cycle (%)	Switching Frequency	UVLO	rDS(on) per FET (Typ) (mOhms)	Driven/Active Clamp (Second Gate Drive)	PoE Current Limit (Min) (mA)	PoE Inrush Limit (Typ) (mA)	PoE Standards Supported	Frequency (Max) (kHz)	EVM	Pin/Package	Approx. Price (US\$)
TPS23752	25W	85	Adjustable	Yes	450	No	850	140	802.3at type1,2	Adjustable	TPS23752EVM-145	20HTSSOP	1.10 1ku
TPS23751	25W	85	Adjustable	Yes	450	No	850	140	802.3at type1,2	Adjustable	TPS23751EVM-104	16HTSSOP	1.10 1ku
TPS23754	25W	78	Synchronizable and Programmable	Unified	430	Yes	850	140	802.3at type1,2	Adjustable	TPS23754EVM-420	20HTSSOP	1.25 1ku
TPS23753A	13W	78	Synchronizable and Programmable	Unified	700	No	405	140	802.3at type1	Adjustable	TPS23753AEVM-004	14TSSOP	1.10 1ku
TPS23750	13W	50	Programmable	802.3af	600	No	405	140	802.3at type 1	Adjustable	TPS23750EVM-107	20HTSSOP	1.25 1ku

Value Conscious single Channel Switching Regulators

	Vin (Min) (V)	Vin (Max) (V)	Vout (Min) (V)	Vout (Max) (V)	Iout (Max) (A)	Topology	Switch Current Limit (Typ) (A)	Iq (Typ) (mA)	Duty Cycle (Max) (%)	Soft Start	Special Features	Pin/Package	EVM	Approx. Price (US\$)
TPS5401	3.5	42	0.8	39	0.5	Buck	0.94	0.116	98	Adjustable	Enable	10MSOP-PowerPAD	TPS5401EVM-708	0.85 1ku
TPS54329	4.5	23	0.76	7	3	Buck, Synchronous Buck	4.1	0.85	85	Adjustable	Enable, OVP	8SO PowerPAD	TPS54329EVM-056	1.20 1ku
TPS54427	4.5	18	0.76	7	4	Buck, Synchronous Buck	5.3	0.5	95	Adjustable	Enable	8SO PowerPAD	TPS54427EVM-052	1.63 100u
TPS54227	4.5	18	0.76	7	2	Buck, Synchronous Buck	3.3	0.8	90	Adjustable	Enable	8SO PowerPAD	TPS54227EVM-686	1.10 1ku
TPS54327	4.5	18	0.76	7	3	Buck, Synchronous Buck	4.2	0.85	90	Adjustable	Enable	8SO PowerPAD	TPS54327EVM-686	1.20 1ku
TPS54229	4.5	18	0.76	7	2	Buck, Synchronous Buck	3.3	0.8	90	Adjustable	Enable	8SO PowerPAD	TPS54229EVM-056	1.04 100u
TPS54627	4.5	18	0.76	5.5	6	Buck, Synchronous Buck	7.3	0.95	85	Adjustable	Enable	8SO PowerPAD	TPS54627EVM-056	Call
TPS5432	2.95	6	0.808	4.5	3	Buck, Synchronous Buck	5.6	0.36	98	Adjustable	Enable	8SO PowerPAD	TPS5432EVM-052	1.10 1ku
TLV62065	2.9	5.5	0.8	5.5	2	Buck	2.75	18	100	Fixed	Enable, Light Load Efficiency	8WSO	TLV62065EVM-719	0.75 1ku
TPS62560	2.5	5.5	0.85	5.5	0.6	Buck, Synchronous Buck	1	0.015	100	Fixed	Enable, Light Load Efficiency	6SON	TPS62560EVM-330	0.50 1ku

Single Channel High Performance Switching Regulators

	Vin (Min) (V)	Vin (Max) (V)	Vout (Min) (V)	Vout (Max) (V)	Iout (Max) (A)	Topology	Switch Current Limit (Typ) (A)	Iq (Typ) (mA)	Duty Cycle (Max) (%)	Soft Start	Special Features	Pin/Package	EVM	Approx. Price (US\$)
LM22676	4.5	42	1.29	37	3	Buck	4.2	3.4	90	Fixed	Enable	7PFM, 8SO Power PAD	LM22670EVAL	1.80 1ku
LM21305	3	18	0.6	15	5	Buck, Synchronous buck	7	9	100	Fixed	Enable	28WQFN	LM21305EVM	2.50 1ku
TPS54620	4.5	17	0.8	15	6	Buck, Synchronous buck	10	0.6	98	Adjustable	Current sharing, Enable, Power Good, Tracking	14QFN, 14VQFN	TPS54620EVM-374	2.50 1ku
TPS64200	1.8	6.5	1.2	6.5	3	Buck	—	0.02	100	Fixed	—	6SOT-23	TPS64202EVM-023	0.55 1ku
TPS62260	2	6	0.6	6	0.6	Buck, Synchronous buck	1	0.015	100	Fixed	Enable, Light Load Efficiency	5SOT, 6SON	TPS62260EVM-229	0.65 1ku
LM20143	2.95	5.5	0.8	5	3	Buck, Synchronous buck	4.8	3.5	85	Adjustable	Enable, Power Good, Tracking	16HTSSOP	LM20143EVAL	1.25 1ku

Power Management Solutions

Fully Integrated Switching Regulators

	Vin (Min) (V)	Vin (Max) (V)	Vout (Min) (V)	Vout (Max) (V)	Iout (Max) (A)	Soft Start	EVM	Pin/Package	Approx. Price (US\$)
LMZ1200X (1,2,3)	4.5	20	0.8	6	1	Adjustable	LMZ12001EVAL	PFM	4.25 1ku
TPS84621	2.95	14.5	0.6	5.5	6	Adjustable	TPS84620EVM-692	B1QFN	4.15 1ku
TPS84210	2.95	6	0.8	3.6	2	Adjustable	TPS84210EVM-002	B1QFN	2.95 1ku
LMZ10500	2.7	5.5	0.6	3.6	0.65	Fixed	LMZ10500EVAL	8POS	1.30 1ku
TPS82670	2.3	4.8	1.86	1.86	0.6	Fixed	TPS82671EVM-646	8uSiP	1.30 1ku
TPS82677	2.3	4.8	1.2	1.2	0.6	Fixed	TPS82675EVM-646	8uSiP	1.30 1ku
TPS82690	2.3	4.35	2.85	2.85	0.5	Fixed	TPS82690EVM-646	8uSiP	1.50 1ku
TPS82695	2.3	4.35	2.5	2.5	0.5	Fixed	TPS82695EVM-646	8uSiP	1.30 1ku

Multi-channel Switching Regulators

	Regulated Outputs (#)	Vin (Min) (V)	Vin (Max) (V)	Vout (Min) (V)	Vout (Max) (V)	Iout (Max) (A)	Vout2 (Min) (V)	Vout2 (Max) (V)	Topology	Switch Current Limit (Typ) (A)	Iq (Typ) (mA)	Duty Cycle (Max) (%)	EVM	Pin/Package	Approx. Price (US\$)
TPS54394	2	4.5	18	0.76	7	3	0.76	7	Buck	4.7	1.2	85	TPS54394EVM-057	16HTSSOP	2.80 1ku

	Regulated Outputs (#)	Vin (Min) (V)	Vin (Max) (V)	Vout (Max) (V)	Step-Down DC/DC Converter	Iout (Max) (A)	EVM	Pin/Package	Approx. Price (US\$)
TPS652510	3	4.5	16	Vin – Vout	3	3	TPS652510EVM	40VQFN	3.05 1ku

Low Noise LDO

	Vin (Min) (V)	Vin (Max) (V)	Vout (Min) (V)	Vout (Max) (V)	Fixed Output Options (V)	Iout (Max) (A)	Iq (Typ) (mA)	Vdo (Typ) (mV)	Accuracy (%)	Noise (uVrms)	PSRR @ 100KHz (dB)	Output Options	EVM	Pin/Package	Approx. Price (US\$)
TPS7A4901	3	36	1.2	33	3.3	0.15	0.06	260	1.5	58	68	Fixed	TPS7A30-49EVM-567	8MSOP-PowerPAD	1.10 1ku
TPS7A4700	3	35	1.4	18	Adjustable	1	0.36	216	1	3.5	68	Adjustable	TPS7A4700EVM-094	20VQFN	2.10 1ku
TPS79901	2.7	6.5	1.2	6.5	Adjustable	0.2	0.04	90	2	29.5	58	Adjustable	TPS799XXEVM-105	5DSBGA	0.28 1ku
TPS79918	2.7	6.5	1.8	1.8	1.8	0.2	0.04	100	2	29.5	58	Fixed	TPS799XXEVM-105	5DSBGA, 5SOT, 6SON	0.28 1ku
TPS79932	2.7	6.5	3.2	3.2	3.3	0.2	0.04	100	2	29.5	58	Fixed	TPS799XXEVM-105	5DSBGA, 6SON	0.33 1ku
TPS799275	2.7	6.5	2.7	2.7	2.8	0.2	0.04	100	2	29.5	58	Fixed	TPS799XXEVM-105	5DSBGA	0.33 1ku
TPS799285	2.7	6.5	2.85	2.85	2.85	0.2	0.04	100	2	29.5	58	Fixed	TPS799XXEVM-105	5DSBGA, 5SOT, 6SON	0.28 1ku
TPS799L57	2.7	6.5	5.7	5.7	1.8	0.2	0.04	100	2	29.5	58	Fixed	TPS799XXEVM-105	5DSBGA	0.35 1ku
LP5900	2.5	5.5	1.5	3.3	1.5, 2.8, 3.3	0.15	0.025	80	2	6.5	40	Fixed	LP5900TL-2.2EV	4DSBGA, 6WSON	0.20 1ku

LDOs optimized for Size and Value

	Output Options	Vin (Min) (V)	Vin (Max) (V)	Vout (Min) (V)	Vout (Max) (V)	Iout (Max) (A)	Iq (Typ) (mA)	Vdo (Typ) (mV)	Accuracy (%)	Noise (uVrms)	PSRR @ 100KHz (dB)	EVM	Pin/Package	Approx. Price (US\$)
LP5907	Adjustable	2.2	5.5	1.2	4.5	0.25	0.012	50	2	6.5	60	LP5907UV-1.2EVM	4DSBGA, 4X2SON, 5SOT-23	0.23 1ku
TLV70718	Fixed	2	5.5	1.8	1.8	0.2	0.02	250	1.5	45	42	TLV70728EVM-612	4X2SON	0.22 1ku
TLV70725	Fixed	2	5.5	2.5	2.5	0.2	0.02	250	1.5	45	42	TLV70728EVM-612	4X2SON	0.22 1ku
TLV707085	Fixed	2	5.5	0.85	0.85	0.2	0.02	250	1.5	45	42	TLV70728EVM-612	4X2SON	0.22 1ku
TLV70715P	Fixed	2	5.5	1.5	1.5	0.2	0.02	250	1.5	45	42	TLV70728EVM-612	4X2SON	0.22 1ku
TLV70736P	Fixed	2	5.5	3.6	3.6	0.2	0.02	250	1.5	45	42	TLV70728EVM-612	4X2SON	0.22 1ku
TLV713185P	Fixed	1.4	5.5	1.85	1.85	0.15	0.05	330	1.5	55	55	TLV71312PEVM-171	4X2SON, 5SOT-23	0.22 1ku
TLV71312P	Fixed	1.4	5.5	1.2	1.2	0.15	0.05	330	1.5	55	55	TLV71312PEVM-171	4X2SON, 5SOT-23	0.22 1ku
TLV71328P	Fixed	1.4	5.5	2.8	2.8	0.15	0.05	330	1.5	55	55	TLV71312PEVM-171	4X2SON, 5SOT-23	0.22 1ku
TLV71330P	Fixed	1.4	5.5	3	3	0.15	0.05	330	1.5	55	55	TLV71312PEVM-171	4X2SON, 5SOT-23	0.22 1ku
TLV71333P	Fixed	1.4	5.5	3.3	3.3	0.15	0.05	330	1.5	55	55	TLV71333PEVM-171	4X2SON, 5SOT-23	0.22 1ku

PMU – Power Management Unit

	Regulated Outputs (#)	Processor Supported	Vin (Min) (V)	Vin (Max) (V)	Vout (Max) (V)	Step-Up DC/DC Controller	LDO	Step-Up DC/DC Converter	Step-Down DC/DC Converter	Iout (Max) (A)	Iq (Typ) (mA)	Pin/Package	EVM	Approx. Price (US\$)
TPS659113	12	DM385, DM812x	2.7	5.5		1	9	1	3	15	—	98BGA	—	4.45 1ku
TPS650231	6	DM368, DM357x	2.5	6	2.5	—	3	—	3	1.7	0.085	40WQFN	TPS650231EVM-664	3.30 1ku
TPS65023B	6	DM368, DM357x	2.5	6	2.5	—	3	—	3	1.7	0.085	40WQFN	TPS65023BEVM-664	3.30 1ku
TPS65023-Q1	6	DM357x	2.5	6	6	—	3	—	3	1.7	0.1	40VQFN	—	3.90 1ku
TPS65070	5	DM365, DM367	2.8	6.3	3.3	—	2	—	3	1.5	0.08	48VQFN	TPS65070EVM-430	3.95 1ku
TPS65053	5	DM365, DM367, DM355	2.5	6		—	3	—	2	1	0.145	24VQFN	TPS65053EVM-217	1.85 1ku

DDR Memory Power Solutions (Switcher + LDO)

	Vin (Min) (V)	Vin (Max) (V)	Vout (Min) (V)	Vout (Max) (V)	Iout (Max) (A)	Switching Frequency (Max) (kHz)	Iq (Typ) (mA)	Duty Cycle (Max) (%)	Regulated Outputs (#)	EVM	Pin/Package	Approx. Price (US\$)
TPS51020	4.5	28	0.9	24	20	450	1.4	88	2	TPS51020EVM-001	30TSSOP	2.10 1ku
TPS51116	3	28	1.5	3	10	400	0.8	84	1	TPS51116EVM-001	20HTSSOP, 24VQFN	1.00 1ku
TPS51216	3	28	0.7	1.8	20	400	0.8	84	1	—	20WQFN	1.00 1ku

Power Management Solutions

Voltage Supervisors

	Reset Threshold Accuracy (%)	# of supplies monitored	Threshold Voltage 1 (typ) (Typ) (V)	VCC (Min) (V)	VCC (Max) (V)	Iq (Typ) (uA)	Output Driver Type / Reset Output	Time Delay (ms)	EVM	Pin/Package	Approx. Price (US\$)
TPS3780	0.25	2	Adjustable	1.5	6.5	1.8	Active-low, Open-drain	0.01	TPS3780EVM-154	6SON	0.50 1ku
TPS3895	0.25	1	Adjustable	1.7	6.5	6	Active-high, Push-pull	0.04, Programmable	TPS3897A-6P-EVM047	6SON	0.48 1ku
TPS3808-EP	0.5	1	Adjustable	1.8	6.5	2.4	Active-low, Open-drain	Programmable	—	6SOT-23	2.00 100u
TPS3839A09	2	1	0.9	0.6	6.5	0.15	Active-low, Push-pull	200	TPS3839K33EVM-112	3SOT-23, 4X2SON	0.21 1ku
TPS3839E16	2	1	1.52	0.6	6.5	0.15	Active-low, Push-pull	200	TPS3839K33EVM-112	3SOT-23, 4X2SON	0.21 1ku
TPS3839K50	2	1	4.38	0.6	6.5	0.15	Active-low, Push-pull	200	TPS3839K33EVM-112	3SOT-23, 4X2SON	0.21 1ku
TPS3839L30	2	1	2.63	0.6	6.5	0.15	Active-low, Push-pull	200	TPS3839K33EVM-112	3SOT-23, 4X2SON	0.21 1ku
TLV803M	2	1	4.38	1.1	6	9	Active-low, Open-drain	200	—	3SOT-23	0.20 1ku
TLV810R	2	1	2.63	1.1	6	9	Active-high, Push-pull	200	—	3SOT-23	0.20 1ku
TPS3831A09	2	1	0.9	0.6	6.5	0.15	Active-low, Push-pull	200	TPS3831G33EVM-187	4X2SON	0.30 1ku
TPS3831K50	2	1	4.38	0.6	6.5	0.15	Active-low, Push-pull	200	TPS3831G33EVM-187	4X2SON	0.30 1ku

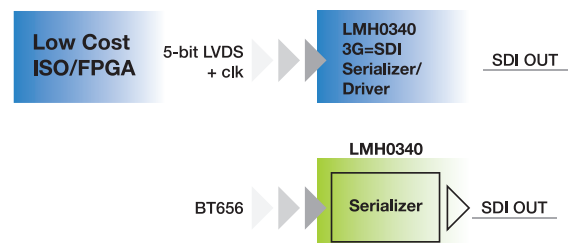
Battery Chargers

	Cell Chemistry	Vin (Max) (V)	Charge Current (Max) (A)	# Series Cells	Battery Charge Voltage (V)	Control Topology	Control Interface	Special Features	EVM	Pin/Package	Approx. Price (US\$)
BQ24618	Li-Ion, Li-Polymer	28	10	1	Adjustable	Switch-Mode	Standalone	Power Path	—	24VQFN	2.75 1ku
BQ24171	Li-Ion, Li-Polymer	17	4	1, 2, 3	Adjustable	Switch-Mode	Standalone	JEITA, Power Path	BQ24171EVM-706-15V	24VQFN	1.70 1ku
BQ24160A	Li-Ion	10	2.5	1	Adjustable	Switch-Mode	I2C	—	—	24VQFN	1.95 1ku
BQ24163	Li-Ion, Li-Polymer	10	2.5	1	Adjustable	Switch-Mode	I2C	PG	BQ24163EVM-742	24VQFN, 49DSBGA	1.95 1ku
BQ24165	Li-Ion, Li-Polymer	10	2.5	1	4.2	Switch-Mode	I2C	—	BQ24165EVM-720	24VQFN, 49DSBGA	1.95 1ku
BQ24168	Li-Ion, Li-Polymer	6	2.5	1	Adjustable	Switch-Mode	I2C	Power Path, Temp Monitoring, Thermal Regulation	BQ24168EVM-721	24VQFN, 49DSBGA	1.95 1ku
BQ24158	Li-Ion, Li-Polymer	6	1.25	1	Adjustable	Switch-Mode	I2C	Safety Charge Timer, Temp Monitoring, USB OTG	BQ24158EVM-697	20DSBGA	0.95 1ku
BQ24161B	Li-Ion, Li-Polymer	4	2.5	1	Adjustable	Switch-Mode	I2C	JEITA	—	24VQFN	1.95 1ku

Signal Chain Solutions

Texas Instruments offers a comprehensive high-performance portfolio. With a variety of signal chain products such as HD-SDI, LVDS translator, SerDes and Analog Front Ends, TI delivers a variety of options for your signal chain needs.

Video Serializer — HD-SDI Video Generator



AFE for CCD

	Input Sample Rate (MSPS) (MHz)	SNR (dB)	Bits out	Gain, db (min)	Gain, db (max)	Power (mW)	DNL (+-LSB)	INL (+-LSB)	Output data format	Supply Voltage(V)	Features	EVM	Package	Approx. Price (US\$)
VSP8133	50	80	14	0	51	140	0.5	12	CMOS Parallel	2.7 to 3.3	High image quality, flexible CCD support	—	QFN-64	Call

Signal Chain Solutions

SerDes

	Function	Pixel Clock (Max) (MHz)	Color Depth (bpp)	Input Compatibility	Output Compatibility	Control Channel	Special Features	Signal Conditioning	EMI Reduction	Total Throughput (Mbps)	EVM	Package	Approx. Price (US\$)
DS90UB913Q-Q1	Serializer	100	12	LVC MOS	FPD-Link III LVDS	I2C, GPIO	CRC, I2C Config	—	—	1400	SERDESUB-913ROS	32-WQFN (RTV)	5.36 1ku
DS90UB914Q-Q1	Deserializer	100	12	FPD-Link III LVDS	LVC MOS	I2C, GPIO	CRC, 2:1 input multiplexer, I2C Config	Adaptive Equalization	SSCG, Staggered Outputs	1400	SERDESUB-913ROS	48-WQFN (RTV)	5.36 1ku
DS90UB925Q-Q1	Serializer	85	24	LVC MOS	FPD-Link III LVDS	I2C, GPIO	I2S Audio, I2C Config	—	SSC Compatible	2550	DS90UB925QSEVB	48-WQFN (RTV)	8.20 1ku
DS90UB926Q-Q1	Deserializer	85	24	FPD-Link III LVDS	LVC MOS	I2C, GPIO	I2S Audio, I2C Config	Adaptive Equalizer	SSCG, Staggered Outputs	2550	DS90UB926QSEVB	60-WQFN (RTV)	8.20 1ku
DS90UB903Q-Q1	Serializer	43	18	LVC MOS	FPD-Link III LVDS	I2C, GPO	I2C Config	—	—	900	SERDESUB-21USB	40-WQFN (RTV)	4.84 1ku
DS90UB904Q-Q1	Deserializer	43	18	FPD-Link III LVDS	LVC MOS	I2C, GPI	I2C Config	Programmable Equalizer	SSCG, Staggered Outputs	900	SERDESUB-21USB	48-WQFN (RTV)	4.84 1ku
DS90UB901Q-Q1	Serializer	43	14	LVC MOS	FPD-Link III LVDS	I2C, GPIO	CRC, I2C Config	—	—	688	SERUB-160VT	32-WQFN (RTV)	4.66 1ku
DS90UB902Q-Q1	Deserializer	43	14	FPD-Link III LVDS	LVC MOS	I2C, BIST	CRC, I2C Config	Programmable Equalizer	SSCG, Staggered Outputs	688	SERDESUB-160VT	32-WQFN (RTV)	4.66 1ku

LVDS (Sensor Interface)

	Data Throughput (MB/s)	ICC (mA)	Number of Data Lanes Inputs	Number of Parallel Outputs	Operating Temperature Range (C)	Pin/Package	Receiver	Serial Data Receiver Channels	Serial Data Transmitter Channels	Supply Voltage(s) (V)	Transmitter	Approx. Price (US\$)
SN65LVDS324	324	83	12	18	-40 to 85	59BGA Microstar Junior	—	12	16	1.8	—	Call

HD-SDI

	Function	Max Data Rate (Mbps)	Power Consumption (mW)	Supply Voltage (V)	Input Type	Output Type	Control Interface	Special Features	Operating Temperature Range (C)	EVM	Approx. Price (US\$)
LMH0340	Serializer	2970	475	2.5, 3.3	LVDS	1 diff	Pin/SMBus	Cable Driver	-40 to 85	SDXILEVK	18.55 1ku
LMH0030	Serializer	1485	430	2.5, 3.3	10/20 bit	1 diff	Pin/I2C	Cable Driver	0 to 70	—	20.95 1ku

Video Amplifier

	Number of Channels	Vs (Min) (V)	Vs (Max) (V)	Bypass Bandwidth (Typ) (MHz)	Filter -3dB Freq (Typ) (MHz)	No. Filter Poles	Gain (dB)	Diff Gain (%)	Diff Phase (deg)	Device Control Method	Iq Total (Typ) (mA)	EVM	Pin/Package	Approx. Price (US\$)
THS7372	4	2.7	6	-	9.5, 72	10	6	0.15	0.25	GPIO	28.5	THS7372PWEVM	14TSSOP	0.70 1ku
THS7368	6	2.6	5.5	150	9.5, 18, 36, 72	6	6	0.2	0.35	GPIO	23.4	THS7368EVM	20TSSOP	0.95 1ku
THS7373	4	2.6	5.5	350	9.5, 36	6	6	0.15	0.25	GPIO	16.2	THS7373EVM	14TSSOP	0.60 1ku
THS7374	4	2.85	5.5	150	9.5	6	6	0.1	0.3	GPIO	10	THS7374EVM	14TSSOP	0.55 1ku
THS7375	4	2.85	5.5	70	9.5	6	15	0.5	0.5	GPIO	14	THS7375EVM	14TSSOP	0.55 1ku
THS7316	3	2.85	5.5	-	36	5	6	0.1	0.1	-	18.3	THS7316EVM	8SOIC	0.55 1ku

SD Card

	VCCA_Min (V)	VCCA_Max (V)	VCCB_Min (V)	VCCB_Max (V)	Static Current	EVM	Pin/Package	Approx. Price (US\$)
TXS0206A	1.1	3.6	1.1	3.6	0.011	TXS0206A IBIS Model	20DSBGA	0.55 1ku
TXS0206-29	1.1	3.6	2.95	5.5	0.011	—	20DSBGA	0.60 1ku
SN74AVCA406E	1.2	3.6	1.2	3.6	0.015	—	20BGA Microstar Junior, 24BGA Microstar Junior	1.65 1ku

Audio Codec

	ADC SNR (Typ) (dB)	DAC SNR (Typ) (dB)	# ADCs (Typ)	# DACs	# Inputs & # Outputs	Sampling Rate (Max) (kHz)	Control Interface	Speaker Amp Type	Speaker Amp Outputs	Speaker Amp Output Power (Max) (W)	EVM	Pin/Package	Approx. Price (US\$)
TLV320AIC3204	93	100	2	2	6 & 4	192	SPI	—	—	—	TLV320AIC3204EVM-K	32QFN	2.25 1ku
TLV320AIC3104	92	102	2	2	6 & 6	96	I2C	—	—	—	TLV320AIC3104EVM-K	32QFN	1.95 1ku
TLV320AIC3106	92	102	2	2	10 & 7	96	SPI, I2C	—	—	—	TLV320AIC3106EVM-K	48VQFN, 80BGA Microstar Junior	2.25 1ku
TLV320AIC26	92	97	1	2	2 & 2	53	SPI	Class-AB	1	0.325	—	32QFN	2.75 1ku
TLV320AIC23B	90	100	1	1	3 & 4	96	SPI, I2C	—	—	—	TLV320AIC23EVM2	28TSSOP, 28VQFN, 80BGA Microstar Junior	3.35 1ku
TLV320AIC3100	90	95	1	2	3 & 3	192	I2C	Class-D	1	2.5	TLV320AIC3100EVM-U	32QFN	1.95 1ku
TLV320AIC3120	90	95	1	1	3 & 2	192	I2C	Class-D	1	2.5	TLV320AIC3120EVM-U	32QFN	2.25 1ku

Signal Chain Solutions

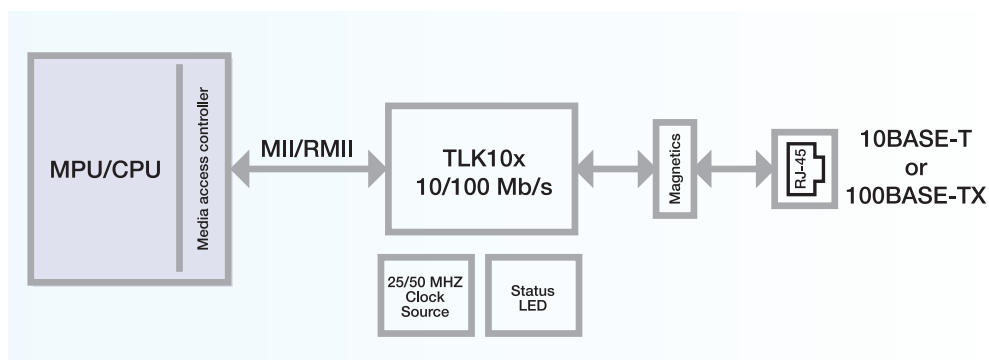
Comparators

	Vs (Max) (V)	Vs (Min) (V)	Number of Channels	tRESP Low - to - High (us)	Vio (25C) (Max) (mV)	Iq per channel (Max) (mA)	Output Type	Input Bias Current (+/-) (Max) (nA)	Model	Pin/Package	Approx. Price (US\$)
TL331	36	2	1	0.3	5	0.7	Open Collector Open Drain	250	—	5SOT-23	0.23 1ku
LM211	30	3.5	1	0.115	3	6	Open Collector	—	LM211 PSpice Model	8PDIP, 8SOIC, 8TSSOP	0.18 1ku
LMV339	5.5	2.7	4	0.2	7	0.075	Open Collector Open Drain	250	—	14QFN, 14SOIC, 14TSSOP	0.39 1ku
LMV393	5.5	2.7	2	0.2	7	0.1	Open Collector Open Drain	250	—	8SOIC, 8TSSOP, 8VSSOP	0.30 1ku
LMV331	5.5	2.7	1	0.2	7	0.12	Open Collector Open Drain	250	—	5SC70, 5SOT-23	0.26 1ku

Interface and Signal Conditioning Solutions

TI's interface and Signal conditioning solutions enable system connectivity with a wide-range of products such as Ethernet PHY, RS485, USB interface, temperature sensors and motor controllers.

TLK105/106 Industrial 10/100 EPHY



Ethernet PHY

Device	Supply Voltage (Volt)	Interface	Cable Length (m)	ESD (kV)	LED (#)	JTAG1149.1	Special Features	Datarate (Mbps)	EVM	Pin/Package	Approx. Price (US\$)
TLK100	3.3	MII	200	16	3	Yes	Cable Diagnostics	10/100	TLK100EXTEVM	48HTQFP	2.25 1ku
TLK105	3.3	MII, RMII	150	16	1	No	—	10/100	TLK110CUSEVM	32QFN	0.99 1ku
TLK106	3.3	MII, RMII	150	16	1	No	Cable Diagnostics	10/100	TLK110CUSEVM	32QFN	1.19 1ku
DP83848J	3.3	MII, RMII	137	4	2	No	—	10/100	—	40WQFN	0.99 1ku
DP83848K	3.3	MII, RMII	137	4	2	No	—	10/100	DP83848K-MAU-EK	40WQFN	1.18 1ku

RS485

Device	# of TX/RX	Isolated	Common Mode Range	Number of Nodes	Duplex	Signaling Rate (Mbps)	ESD (kV)	Fault Protection (V)	Fail Safe	ICC (Max) (mA)	Supply Voltage(s) (V)	EVM	Pin/Package	Approx. Price (US\$)
SN65HVD82	1 TX / 1 RX	No	-7 to 12	256	Half	0.25	16	-18 to 18	Idle, Open, Short	0.9	5	SN65HVD72EVM	8SOIC	1.00 1ku
SN65HVD3082E	1 TX / 1 RX	No	-7 to 12	256	Half	0.2	15	-9 to 14	Idle, Open, Short	0.9	5	RS485-HF-DPLX-EVM	8PDIP, 8SOIC 8VSSOP	0.90 1ku
SN65LBC184	1 TX / 1 RX	No	-7 to 12	128	Half	0.25	15	-15 to 15	Open	25	5	—	8PDIP, 8SOIC	1.30 1ku



Interface and Signal Conditioning Solutions

RS232

Device	Drivers Per Package	Receivers Per Package	Data Rate (kbps)	Supply Voltage(s) (V)	ESD HBM (kV)	ICC (Max) (mA)	Footprint	Pin/Package	Approx. Price (US\$)
MAX3243E	3	5	500	3.3 or 5.0	+/-15	1	MAX3243	28SOIC, 28SSOP, 28TSSOP, 32QFN	0.88 1ku
GD75232	3	5	120	+/-9.0 & 5.0	+/-15	-130	GD75232	20PDIP, 20SOIC, 20SSOP, 20TSSOP	0.34 1ku
SN75C1406	3	3	120	+/-12.0 & 5.0	+/-2	-1	MC14506	16PDIP, 16SO, 16SOIC	0.86 1ku
LMS202E	2	2	230	5	+/-15	7	—	16SOIC	1.40 1ku
MAX202	2	2	120	5	+/-15	15	MAX202	16SOIC, 16TSSOP	0.48 1ku
MAX3227	1	1	1000	3.3 or 5.0	+/-15	2	MAX3227	16SSOP	1.36 1ku

USB Interface

Device	SubFamily	USB Speed	App Proc Local Bus	Operating Temperature Range (C)	Pin/Package	Approx. Price (US\$)
TUSB8040A	USB Hub Controller	SuperSpeed	SMBus	0 to 70	100WQFN	3.50 1ku
TUSB1310A	USB Transceiver	SuperSpeed	PIPE3 and ULPI	-40 to 85	175NFBGA	6.60 1ku
TUSB1210	USB Transceiver	High	ULPI	-40 to 85	32QFN	0.80 1ku
TUSB1211	USB Transceiver	High	ULPI	-40 to 85	36BGA Microstar Junior	1.15 1ku
TUSB2036	USB Hub Controller	Full	—	0 to 70	32LQFP	1.40 1ku
TUSB2046B	USB Hub Controller	Full	—	-40 to 85, 0 to 70	32LQFP, 32QFN	1.35 1ku
TUSB2077A	USB Hub Controller	Full	—	0 to 70	48LQFP	2.35 1ku
SN65LVPE502	USB Repeater		—	0 to 85	24VQFN	4.25 1ku
TUSB1105	USB Transceiver	Full	Single or Differential	-40 to 85	16QFN	0.55 1ku
TUSB1106	USB Transceiver	Full	Differential	-40 to 85	16QFN, 16TSSOP, 16UQFN, 16WQFN	0.55 1ku
TUSB2551A	USB Transceiver	Full	Single	-40 to 85	14TSSOP, 16QFN, 16TSSOP	0.55 1ku

ESD

Device	Application	IEC 61000-4-2 Contact (+/- kV)	IEC 61000-4-2 Air-Gap (+/- kV)	Number of Channels	IO Capacitance (Typ) (pF)	Breakdown Voltage (Min) (V)	IO Leakage Current (nA)	EVM	Pin/Package	Approx. Price (US\$)
TPD1E10B06	Codecs	30	30	1	12	6	100	ESD-EVM-001	2X2SON	0.04 1ku
TPD1E10B09	Codecs	20	20	1	10	9.5	100	ESD-EVM-001	2X2SON	0.04 1ku
TPD4S014	USB	15	15	4	1.5	6V, 28V (VBUS)	1000	TPD4S014EVM	10SON, 6SC70, 6SOT-23	0.55 1ku
TPD4E1U06	Ethernet / USB	15	15	4	0.7	6.5	10	TPD4E1U06DCEVM	6SC70, 6SOT-23	0.08 1ku
TPD4E101	Codecs	15	15	4	4.8	6	100	—	4X2SON	0.14 1ku
TPD8E003	SD Card	12	15	8	9	6	100	—	8WSON	0.18 1ku
TPD5E003	SD Card	8	15	5	9	6	10	TPD5E003DPFEVM	6X2SON	0.0704 1ku
TPD2E001	USB	8	15	2	1.5	11	1	—	4SOP, 5SOT, 6SON	0.15 1ku

Temp Sensors

Device	Local Sensor Accuracy (Max) (+/- C)	Interface	Iq (Typ) (uA)	Operating Temperature Range (C)	Sensor Type	Special Features	Supply Voltage (Max) (V)	Supply Voltage (Min) (V)	EVM	Pin/Package	Approx. Price (US\$)
TMP275	0.5	SMBus	50	-40 to 125	Local	Programmable Alert	5.5	2.7	—	8SOIC, 8VSSOP	1.15 1ku
TMP75	1.5	I2C, SMBus	50	-40 to 125	Local	Programmable Alert	5.5	2.7	—	8SOIC, 8VSSOP	0.65 1ku
LM75A	2	2-Wire, I2C	280	-55 to 125	Local	Thermal Watchdog	5.5	2.7	—	8SOIC, 8VSSOP	0.50 1ku
TMP102	2	I2C, SMBus	10	-40 to 125	Local	Programmable Alert	3.6	1.4	TMP102EVM	6SOT	0.75 1ku
LM20B	2.5	Analog output	10	-55 to 130	Local	—	5.5	2.4	LM20XEVM	SC70	0.32 1ku
TMP103	3	I2C, SMBus	1.5	-40 to 125	Local	—	3.6	1.4	TMP103EVM	4DSBGA	0.39 1ku

Interface and Signal Conditioning Solutions

Brushed & VCM Motor Drivers

Device	Vs (Min) (V)	Vs (Max) (V)	RMS Output Current (A)	Peak Output Current (A)	# of Full Bridges	Control I/F	Additional Features	RDS(ON) (HS + LS) (mOhms)	EVM	Pin/Package	Approx. Price (US\$)
DRV8823	8	32	1	1.5	4	Serial	SPI Control Interface	550	—	48HTSSOP	2.00 1ku
DRV8837	1.8	11	1.8	1.8	1	PWM	Split Vcc/Vm Supplies, 35nA Sleep Current	280	DRV8837EVM	8WSO	0.45 1ku
DRV8835	2	11	1.5	1.5	2	PWM, PH/EN	Dual Power Supplies, Outputs Can Be Paralleled for 3A Output	305	DRV8835EVM	12WSO	0.70 1ku
DRV8830	2.75	6.8	1	1	1	Serial	Speed Regulation, I2C I/F	450	DRV8830EVM	10MSOP-PowerPAD, 10SON	0.85 1ku
DRV201	2.5	4.8	0.1	0.16	—	PWM	I2C Control Interface Advanced Ringing Compensation	—	DRV201EVM	6DSLGA, 6Picostar	0.95 1ku

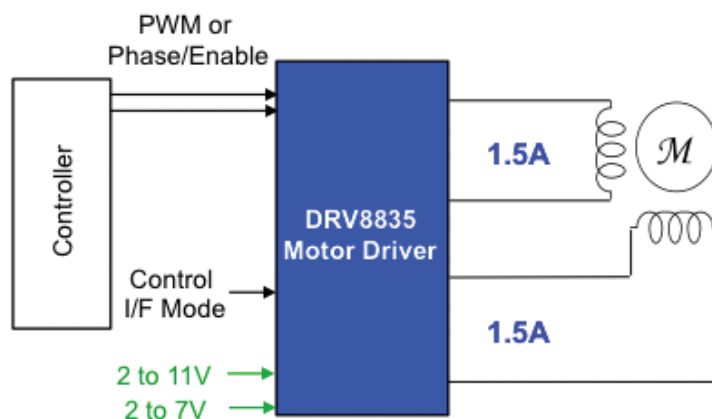
Value Line MSP430 (for Motor Control)

Device	Flash (KB)	SRAM (kB)	GPIO	Cap touch I/O	Timers 16-bit	Brown Out Reset	Comparators	Temp Sensor	ADC	ADC Channels	Frequency (MHz)	USCI_A (UART/LIN/IrDA/SPI)	USCI_B (I2C & SPI)	Watchdog	EVM	Pin/Package	Approx. Price (US\$)
MSP430G2101	1	0.125	10	—	1	Yes	—	—	—	—	16	—	—	Yes	MSP-FET-430U28A	14PDIP, 14 TSSOP, 16QFN	0.44 1ku
MSP430G2211	2	0.125	10	—	1	Yes	Yes	—	Slope	—	16	—	—	Yes	MSP-FET-430U28A	14PDIP, 14 TSSOP, 16QFN	0.49 1ku
MSP430G2333	4	0.25	24	Yes	2	Yes	—	Yes	10-bit SAR	8	16	1	1	Yes	430B00ST-SENSE1	20PDIP, 20TSSOP, 28TSSOP, 32QFN	0.65 1ku
MSP430G2403	8	0.5	24	Yes	2	Yes	—	—	—	—	16	1	1	Yes	430B00ST-SENSE1	20PDIP, 20TSSOP, 28TSSOP, 32QFN	0.75 1ku
MSP430G2513	16	0.5	24	Yes	2	Yes	Yes	—	Slope	—	16	1	1	Yes	430B00ST-SENSE1	20PDIP, 20TSSOP, 28TSSOP, 32QFN	0.90 1ku

Stepper Motor Drivers

Device	Vs (Min) (V)	Vs (Max) (V)	# of Full Bridges	RDS(ON) (HS + LS) (mOhms)	RMS Output Current (A)	Peak Output Current (A)	Current Regulation Levels	Control I/F	Additional Features	EVM	Pin/Package	Approx. Price (US\$)
DRV8828	8.2	45	1	650	2.1	3	32	PH/EN	—	DRV8828EVM	28HTSSOP	1.65 1ku
DRV8823	8	32	4	550	1	1.5	8	Serial	SPI Control Interface	DRV8823EVM	48HTSSOP	2.00 1ku
DRV8835	2	11	2	305	1.5	1.5	0	PWM, PH/EN	Dual Power Supplies, Outputs Can Be Paralleled for 3A Output	DRV8835EVM	12WSO	0.70 1ku
DRV8834	2.5	10.8	2	305	1.5	2.2	32	Indexer, PH/EN	1/32 Microstepping, Higher Microstepping with External Reference	DRV8834EVM	24HTS-SOP, 24VQFN	1.15 1ku

DRV8835 1.5A Low Voltage Stepper or Single / Dual Brushed DC motor Driver



Interface and Signal Conditioning Solutions

Amplifiers

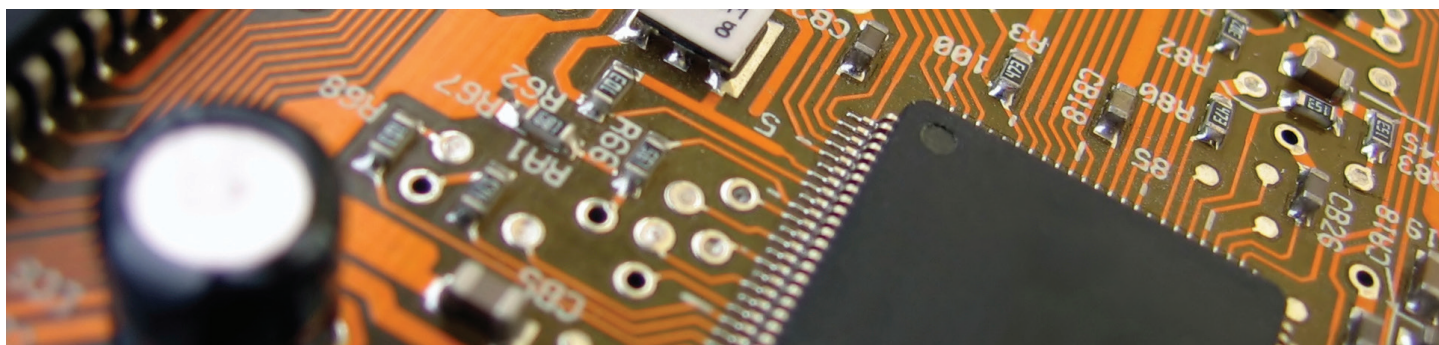
Device	Total Supply Voltage (Min) (+5V=5, +/-5V=10)	Total Supply Voltage (Max) (+5V=5, +/-5V=10)	Number of Channels	GBW (Typ) (MHz)	Slew Rate (Typ) (V/us)	CMRR (Min) (dB)	Iq per channel (Max) (mA)	Offset Drift (Typ) (uV/C)	EVM	Pin/Package	Approx. Price (US\$)
TL084	7	36	4	3	13	70	2.8	18	OPAMPEVM	14PDIP	0.20 1ku
TL064	7	36	4	1	3.5	3	0.25	10	OPAMPEVM	14PDIP	0.17 1ku
TL082	7	36	2	3	13	70	2.8	18	OPAMPEVM	8PDIP	0.29 1ku
TL062	7	36	2	1	3.5	70	0.25	10	OPAMPEVM	8PDIP	0.29 1ku
TL071	7	36	1	3	13	70	2.5	18	OPAMPEVM	8PDIP	0.18 1ku
TL061	7	36	1	1	3.5	3	0.25	10	OPAMPEVM	8PDIP	0.22 1ku
TL054	10	30	4	2.7	17.8	75	2.8	23	OPAMPEVM	14PDIP	1.30 1ku
TL034A	10	30	4	1.1	5.1	75	0.28	12	OPAMPEVM	14PDIP	2.97 1ku
TS321	3	30	1	0.8	0.4	65	1	—	OPAMPEVM	8SOIC, 5SOT-23	0.30 1ku
LMV324	2.7	5.5	4	1	1	50	0.17	5	OPAMPEVM	14SOIC, 14TSSOP	0.30 1ku
LMV358	2.7	5.5	2	1	1	50	0.17	5	OPAMPEVM	8SOIC, 8TSSOP, 8VSSOP	0.30 1ku
LMV321	2.7	5.5	1	1	1	50	0.17	5	OPAMPEVM	5SC70, 5SOT-23	0.26 1ku

Clocks – Single Ended I/O: LVCMOS Output Only

Device	No. of Outputs	Input Level	Output Level	Jitter-Peak to Peak(P-P) or Cycle to Cycle(C-C)	VCC (V)	IO Supply (V)	Output Frequency (Max) (Mhz)	Output Skew (ps)	Multiplier Ratio	Divider Ratio	EVM	Pin/Package	Approx. Price (US\$)
CDCE949	9	Crystal, LVCMOS	LVCMOS	60 ps	1.8	2.5 to 3.3	230	150	Universal	Universal	CDCE949PERF-EVM	24TSSOP	2.85 1ku
CDCEL949	9	Crystal, LVCMOS	LVCMOS	60 ps	1.8	1.8	230	150	Universal	Universal	CDCEL9XXPROGEVM	24TSSOP	2.85 1ku
CDCE937	7	Crystal, LVCMOS	LVCMOS	60 ps	1.8	2.5 to 3.3	230	150	Universal	Universal	CDCEL9XXPROGEVM	20TSSOP	2.60 1ku
CDCEL937	7	Crystal, LVCMOS	LVCMOS	60 ps	1.8	1.8	230	150	Universal	Universal	CDCEL9XXPROGEVM	20TSSOP	2.57 1ku
CDCE925	5	Crystal, LVCMOS	LVCMOS	60 ps	1.8	2.5 to 3.3	230	150	Universal	Universal	CDCE925PERF-EVM	16TSSOP	2.35 1ku
CDCEL925	5	Crystal, LVCMOS	LVCMOS	60 ps	1.8	1.8	230	150	Universal	Universal	CDCEL925PERF-EVM	16TSSOP	2.20 1ku
CDCE913	3	Crystal, LVCMOS	LVCMOS	60 ps	1.8	2.5 to 3.3	230	150	Universal	Universal	CDCE913PERF-EVM	14TSSOP	1.95 1ku
CDCEL913	3	Crystal, LVCMOS	LVCMOS	60 ps	1.8	1.8	230	150	Universal	Universal	CDCEL913PERF-EVM	14TSSOP	1.95 1ku

Clocks – Mixed I/O: LVPECL/ LVDS/ LVCMOS/CML Outputs

Device	No. of Outputs	Input Level	Output Level	RMS Jitter	Min VCO Freq (MHz)	Max VCO Freq (MHz)	Output Frequency (Max) (Mhz)	Output Frequency (Min) (Mhz)	Supply Current (mA)	Voltage Range	EVM	Pin/Package	Approx. Price (US\$)
CDCE62005	5	LVPECL, LVDS, LVCMOS	LVPECL, LVDS, LVCMOS	1	1750	2356	1175	4.25	—	3.3	CDCE62005EVM	48VQFN	7.50 1ku
CDCE62002	2	LVPECL, LVDS, LVCMOS	LVPECL, LVDS, LVCMOS	0.316	1750	2356	1175	10.94	230	3.3	CDCE62002EVM	32QFN	6.60 1ku



Reference Designs



For more IP Net Camera information take a look at our reference designs at www.ti.com/tool/ipcamerard

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Domestic	Toll-Free Number
Note: Toll-free numbers do not support mobile and IP phones.	
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Hong Kong	800-96-5941
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