

Design Resources - Automotive ESC System

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Design Resources

Application Notes

Supplier	Device	Title	Date Published
Infineon	TLE6365	TLE6365 Application Circuit Layout- and EMC Filter Design	--
Atmel		Automotive Grade0 - PCB and Assembly Recommendations	--
Freescale		Designing for Electromagnetic Compatibility with Single-Chip Microcontrollers	--
Freescale		Designing for Electromagnetic Compatibility (EMC) with HCMOS Microcontrollers	--
Renesas		Controller Area Network (RCAN-ET) Application Note	July/07
Renesas	HA13721	M16C/29 Group CAN Demo Set Program	Oct/05
Renesas	SH7055F	The interface circuit between SH7055F and	--

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		F-ZTAT programming adapter board	
Renesas	SH7055	SH7055 On-Chip I/O Volume Application Note	--
Renesas		Introduction to CAN	Apr/06
Renesas	H8S/2378F	Flash Development Toolkit Application Note	Jun/06
ST		EMC Design Guide for ST Microcontrollers	Oct/03
ST	ST10F27x	Programming ST10F27x CAN interrupt drivers	Oct/07
Freescale	S12XS	Using the S12XE Family as a Development Platform for the S12XS Family	July/07
Freescale	S12XE	Debugging XGATE Code Debug Features of S12X(E) MCUs	May/07
Freescale		XGATE Library: CAN Driver Providing a Full CAN Mailbox System	Apr/06
Freescale	MPC5500	Power Supplies on the MPC5500	July/07
Freescale	MPC5xx	OSEKturbo OS/MPC5xx V.2.2.1 User's Manual	Jun/03
Microchip		A CAN Physical Layer Discussion	--
Microchip		Ease into the Flexible CANbus Network	--
NXP	TJA1040	TJA1040 CAN Hig-Speed Transceiver	Feb/03
Infineon		High speed CAN Transceivers Application Note	Jan/06
Freescale		How to Configure and Use the XGATE on S12X Devices	Mar/03
Freescale		Servo Motor Control Application on a Local Interconnect Network (LIN)	Dec/05
Freescale		S12XD and S12XE Family Compatibility	July/07
Freescale	MFR4200	Interfacing HCS12 Microcontrollers to the	Feb/06

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		MFR4200 FlexRay Controller	
Freescale	MFR4310	Migrating from MFR4200 to MFR4310	May/07
Freescale	MPX2300DT1	Mounting Techniques, Lead Forming, and Testing of the MPX Series Pressure Sensors	May/08
Fairchild	FDMS2380	Using the FDMS2380 Dual Integrated Solenoid Driver	--
Fairchild		Smart Power Module Motion-SPM in Mini-DIP User's Guide	July/05
Infineon	XC886/888	XC886/888 CM/CLM 8-Bit Flash Microcontroller Sensorless Field Oriented Control for MSM Motors	--
Renesas	SH7216	Controller Area Network, Configuration to Transmit Data Frames	July/09
Renesas	SH7216	Controller Area Network Configuration to Receive Data Frames	July/09
Renesas	SH7216	Controller Area Network Configuration to Receive Remote Frames	July/09
Renesas	SH7216	Controller Area Network Configuration to Transmit Remote Frames	July/09
Renesas	R8C/11	Control of a Brushless DC Motor	Aug/04
IR	IR331x	Programmable High Side Current Switch	--
IR	IPS10xx	Features of the Low-Side Family IPS10xx	--
IR	IPS60xx	Features of the high-side family IPS60xx	--
IR	IR331x	Current Sensing High Side Switch	--
IR		Features of the high-side family IPS70xx-P3-75V	--
Infineon	XC164CM	LIN Application for XC164CM Using Dave LIN Configurationtool	Feb/07

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Renesas	SH7046	SH7046 Group DC Brushless Motor Control	Sep/03
Renesas	SH7046	SH7046 Group DC Motor Control Signal Output	Sep/03
Renesas	SH7144/45	SH7144/45 Group DC Motor Control Signal Output	Sep/03
Renesas	3858	3858 Group PWM Function (Motor Control)	Aug/06
Renesas	H8S/2200	H8S/2200 Series Application Note DC Motor Control Processing Using PWM	Sep/04
ST	L6205	L6205, L6206, L6207 Dual Full Bridge Drivers	Dec/03
ST		PractiSPIN evaluation system configuration and set up guide	Jan/08
ST	L6226	EVAL6226QR demonstration board using a dual full-bridge L6226Q for motor control applications	Jan/09
ST	L6227	EVAL6227QR demonstration board using a dual full-bridge L6227Q for motor control applications	Jan/09

Design Tips & Tricks

Supplier	Device	Design Tips & Tricks Title	Date Published
Infineon	TLE 6251 G	High speed CAN Transceivers Application Note	Jan/06
Freescale	CPU12/CPU12X	CPU12/CPU12X Reference Manual	Mar/08
IR	IR3220S	H-Bridge Controller IC for Automotive DC Motors	--
Freescale	S12XE	S12XE IPLLL Calculator	Jan/09

IR		Intelligent Power Switches (IPS): Operation in an Automotive Environment	--
IR	IR2x771	Accurate Current Sensing in High Voltage Motor Drives	--
IR	IPS54XX	Intelligent Power Switch (IPS) Switching & Diagnostic Capabilities	--
IR	IPS511	Intelligent Power Switches (IPS): Basic Features & Protection	--
Microchip	MCP2515	Ease into the Flexible CANbus Network	--

Evaluation Kits

Supplier	Device	EVKs Part Number	Evaluation Kits Info	Date Published
ST	STM3210C-SK/KEIL	STM3210B-SK/KEI	STM32-SK/KEIL STR91X-SK/KEI, STR7-SK/KEIL starter kits for ST ARM core-based microcontrollers	--
Freescale	XPC560P	XPC560P EVB	XPC560P EVB User Manual	June/08
Freescale	MC56F8006	MC56F8006DEMO-T	MC56F8006DEMO-T Quick Start Guide	--
Freescale	9S12XF512E	EVB9S12XF512E	EVB9S12XF512E Quick Start Guide	Sep/07
Freescale	9S08LG32	DEMO9S08LG32	DEMO9S08LG32— Quick Start Guide	Sep/07
Freescale	9S08SH8/EL32	DEMO9S08SH8/EL32 demo board	DEMO9S08SG32/EL32 LIN Application User Guide	--
Freescale	9S12XEP100	DEMO9S12XEP100	Demo Board for Freescale MC9S12XEP100	--
Microchip	MCP2515	MCP2515DM-PCTL	MCP2515 CAN Controller PICtail Demo Board	--

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Microchip	PIC18C658	PICDEM™ CAN-LIN 1 Development Kit	PICDEM™ CAN-LIN Development Kit User's Guide	--
Renesas	M16C/29 HA13721	M16C/29 starter kit	M16C/29 Group CAN Demo Set Program	Oct/05
Fujitsu	MB89940	Demoboard for MB89940	Demoboard for MB89940	--
Infineon	TLE7241E	TLE7241E Evaluation Board	TLE7241E Evaluation Board Constant Current Control IC	Jun/06
Infineon	TLE7242G	TLE7242G Evaluation Board	TLE7242G Evaluation Board 4 Channel Fixed Frequency Constant Current Control IC	Sep/06
Infineon	2ED3 0 0C1 7 -S/ -ST	2ED300E17-SFO	Evaluation board for 2ED300C17-S /-ST IGBT driver	May/07
Infineon	TLE 8201R	TLE 8201R Evaluation Board	TLE 8201R Evaluation Board	--
Fairchild	Motion-SPM	FAN2103	Motor Control Evaluation Board Using the Motion-SPM in a DIP Package	--
ST	L9349		PTB801DC evaluation board for ABS valve drivers PTB801DC	May/09
Fairchild	FDMS2380	FDMS2380	FDMS2380 Device Evaluation Module	April/06
Fairchild	FEB154-001	FEB154-001	FEB154-001 User's Guide Motor Control Evaluation Board Using the Motion-SPM™ FSBB20CH60) in a Mini-DIP (29mm x 12mm) Package	--
Fairchild	FEB155-001	FEB155-001	FEB155-001 User's Guide Motor Control Evaluation Board Using the Motion-SPM™ (FSB50450)	--

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			in a Tiny-DIP (29mm x 12mm) Package	
Fairchild	FEB207-021	FEB207-021	FEB207-021 User Guide TinyBuck Integrated Synchronous Buck Evaluation Board	--
Fairchild	FEB156-001	FEB156-001	FEB156-001 User's Guide Motor Control Evaluation Board Using the Motion-SPM™ (FSB50450) in a Tiny-DIP (29mm x 12mm) Package	--
Infineon	XC886CM		CANmotion Evaluation Platform with BLDC Motor featuring XC886CM Flash Microcontroller	April/07
Infineon	XC886CM	KIT_AK_XC866_BLDC	12V – Brushless DC Drive Application Kit	--
Microchip	PIC18F6680		PICDEM™ CAN-LIN 3 Development Kit for 64/80-pin Enhanced CAN Devices User's Guide	--
ST	L6205	EVAL6205N	L6205, L6206, L6207 Dual Full Bridge Drivers	Dec/03
ST			PractiSPIN evaluation system configuration and set up guide	--
ST	L6226	EVAL6226QR	EVAL6226QR demonstration board using a dual full-bridge L6226Q for motor control applications	Jan/09
ST	L6227	EVAL6227QR	EVAL6227QR demonstration board using a dual full-bridge L6227Q for motor control applications	--

PodCast

Supplier	PodCast Title
Microchip	An Introduction to Controller Area Network (CAN)
Microchip	Brushed DC Motor Basics
Microchip	EMC Part 1 Introduction to Electro Magnetic Compatibility (EMC)
Microchip	EMC Part 2 What is Electrostatic Discharge (ESD)
Microchip	EMC Part 3 What are Electrical Fast Transients (EFT)
Microchip	EMI and ESD Protection for CAN bus
Microchip	Sensorless BLDC Motor Control

Reference Design

Supplier	Device	Reference Design Title	Date Published
Infineon	TLE 6251 G	High speed CAN Transceivers Application Note	Jan/06
Freescale	DSP56300	DSP56300 Family Manual	Apr/05
Freescale	CPU12/CPU12X	CPU12/CPU12X Reference Manual	Mar/08
IR	IR3220S	H-Bridge Controller IC for Automotive DC Motors	--
Fairchild	FSAM20SM60A	Motor Control Evaluation Board Using the Motion-SPM in a DIP Package	--
Fairchild	FEB155-001	FEB155-001 User's Guide Motor Control Evaluation Board Using the Motion-SPM™ (FSB50450) in a Tiny-DIP (29mm x 12mm) Package	--
Fairchild	FEB156-001	FEB156-001 User's Guide Motor Control Evaluation Board Using the Motion-SPM™	--

		(FSB50450) in a Tiny-DIP (29mm x 12mm) Package	
Infineon	XC886/888	FOC Application Kit using XC886/888 - CD download	--

Spice Model

Supplier	Spice Model Title
IR	Spice Library
IR	Saber Library

VideoStreaming

Supplier	VideoStreaming Title
TI	Automotive - Voltage Regulation in Automotive Electronic systems from TI 1
TI	Automotive - Voltage Regulation in Automotive Electronic systems from TI 2
Fairchild semi	FSFR2100 Fairchild Power Switch (FPS™) for Half Bridge Resonant Converters

WebCast

Supplier	WebCast Title
TI	Resonant DC/DC Developer's Kit Overview
TI	How to Power an MCU
Fujitsu	Fujitsu MCU e-Learning
Renesas	CAN Basics: Part 1
Renesas	CAN Basics: Part 2

Fairchild Semiconductor	Electromagnetic Compatibility Design for Power Supplies
Infineon	Infineon Technologies' Controller Area Network (CAN) Technology
Infineon	Semiconductors - Enabling Technologies for Fuel Efficiency
Freescale	Overview of the S08 Slave LIN Interface Controller (SLIC) Module
Freescale	S08 Controller Area Network (msCAN)
Renesas	An Overview of M16C CAN API

White Paper

Supplier	Device	White Paper Title	Date Published
Fujitsu		Next Generation Car Network - FlexRay	Jun/06
Freescale		Technologies For Optimized Power Management	Feb/06
Freescale		Automotive Control Systems FlexRay™ Protocol	--
Freescale		Freescale Advances into Multi-Market Analog and Power Management	--
Freescale	56F8300	Applications Enabled by High-Performance Hybrid Controllers	--
Freescale		Networking the FlexRay Way	--
Freescale		FlexRay Executable (Reference) Model	Aug/05
Freescale		In-Vehicle Networking	--
TI		Industrial Automation using the CAN Bus Platform White Paper	May/03
TI		Introduction to the Controller Area Network (CAN)	--

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ST		Introduction to CAN Controllers at ST	--
IR		Combined Device and System Simulation for Automotive Application Using SABER	--
IR		Power IC Protects Motor Drives	--
IR	IR3220S	Integrated Power H-Bridge Controller For 80-Watt Automotive DC Motors	--
IR	IR2x77	Accurate Current Sensing in High Voltage Motor Drives	--
IR	IRMCT3UF1	Sensorless Digital Motor Controller for High Reliability Applications	--
ROHM		Controlling DC Brush Motors with H-bridge Driver ICs	--