



MATLAB
Enabled



OpenECU M580-24V

EV Supervisory Control

Versatile

- Designed to meet ISO26262 ASIL D functional safety requirements
- 112 pins of flexible I/O
- Integrated charging interface circuitry
- Truly open application-independent Simulink® development environment

High Performance

- Powerful NXP SPC5746 microprocessor and 4x CAN 2.0 channels
- Multiple H-bridges, low side drives and high side outputs
- Comprehensive fault diagnosis supporting functional safety as well as OBD requirements
- High level diagnostics fault reporting resident in platform software

Capable

- Designed for complex EV applications
- High-quality rugged hardware designed for engine compartment mount
- Supports common calibration tools such as ATI Vision, ETAS INCA, and Vector CANape via CCP
- Same proven hardware used for development can be used for volume production

Capabilities

HIGHLIGHTS		I/O SUMMARY	
Processor	SPC5746	Sensor Supplies	2x 5V @ 200mA
Clock Rate	160MHz	Input Pins	40
Code Space	up to 3MB	Output Pins	44
RAM Space	up to 256kB	Communication	4 x CAN 2.0 to main micro, 1x CAN to Secondary
Calibration Space	up to 256kB	OUTPUTS	
Secondary Processor	SPC560P34	H-Bridges	1x 10A, 2x 5A, 1x 3.2A
Clock Rate	64MHz	Low Current Low Side Drives	10x 100mA, 3x 400mA, 14x 700mA, 2x 1A
Total Flash Space	up to 192kB	High Current Low Side Drives	4x 2.2A, 1x 3.2A
Total RAM Space	up to 12kB	High Side Outputs	2x 700mA
INPUTS		PHYSICAL	
Digital Inputs	9x switched, 3x PWM	Dimensions	225x205x45mm (WxDxH)
Analog Inputs	28	Material	Aluminum
INTERNAL FEATURES		Weight	1.1kg
Partial Networking		Connectors	Molex 112pin (1x48, 2x32)
Wake on CAN (2 channels)		Vibration	ISO 16750 chassis mount
Wake on digital/PWM input		Environmental Protection	IP69K Sealed / Gore Vent
Pilot and CC2 pins			
APPLICATION			
Location	Chassis/Passenger Compartment		
Supply Voltage	6.5 - 32V		

The M580 OpenECU is designed to support the most demanding EV supervisory control applications.

Since most supervisory controls demand the highest level of functional safety, the M580 was developed using ISO26262 processes.

The high performance SPC5746 microprocessor supported by the powerful 32-bit SPC560P34 secondary microprocessor provides for sophisticated, high-bandwidth rationality checking and system safety monitoring of full-authority vehicle control applications.

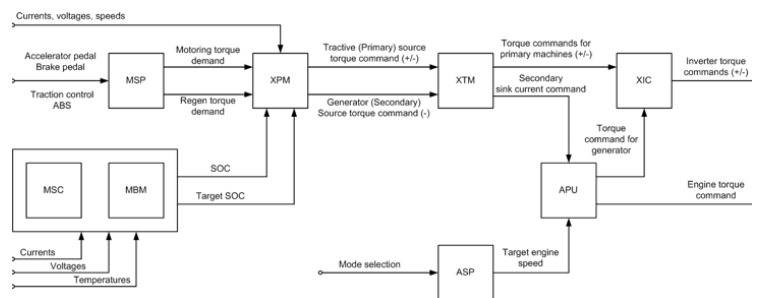
The M580 is designed to support EV supervisory control applications worldwide, the integrated charging circuitry eliminates the need for a separate charger interface module (Charging interface control application software not included.)

ALL 4 MAJOR CHARGING INTERFACES SUPPORTED
CCS Type 1 (SAE J1772)USA
CCS Type 2 (IEC 61851-1)EURO
GB/T AC & DC (18487.1_2015 and 20234_2015)China
CHAdeMO - JEVS G105-1993Japan

Due to its high quantity of customizable I/O, advanced microprocessor, safety oriented architecture and user friendly OpenECU Simulink application interface, the M580 is a great rapid prototyping platform for a broad range of applications.

Pi Innovo also offers a full set of model based strategies suitable to support most EV / NEV architectures allowing it to be taken all the way into production. Pi Innovo systems, controls and software engineers are available to support application implementations from prototype to production.

Strategy Control Structure



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OPEN ECU
By Pi Innovo

Pi Innovo