EM85xx Development Tools

There are two development tool-kits available for the EM85xx devices.

- An entry level evaluation board EMEVB85xx
- A high-end development kit EMDVK85xx.

Each development tool-kits are declined into different variants for the different devices of the EM85xx family

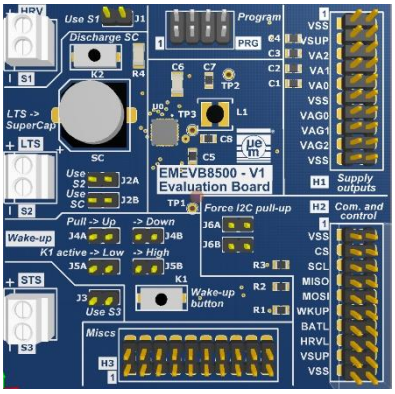
EMEVB85xx

Description

The EMEVB85xx is the entry level development tool used for the evaluation and prototyping of EM85xx integrated energy harvesting solutions. The EMEVB85xx consists on a flexible board with various configurability. It is possible to select the internal or external storage element, and to easily plug a harvester, external storage elements and the application.

Main features

- Long Term and Short Term storage selection (internal or external)
- External harvester connector
- Expansion header for prototyping and external connection
- Configurable wake-up line with push-button
- EM85xx I^2C pull-up selection



EMDVK85xx

Description

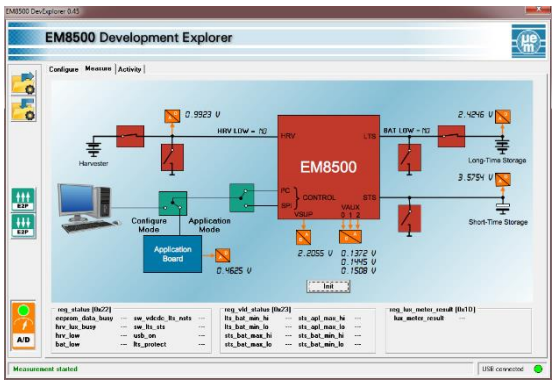
The EMDVK85xx is a powerful tool for the configuration, evaluation, prototyping and measurement of integrated energy harvesting solution based on EM85xx devices. The development kit offers a complete set of features to characterize and configure your hardware application.

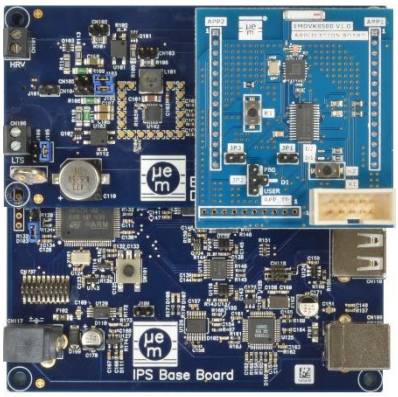
Hardware Main features

- Modular architecture for prototyping and validating your power management enabled application
- Flexible load and harvester source selection
- Ready to measure nodes for lab equipment (oscilloscope, power analyzer, …)
- Up to eight high speed acquisition channels
- Expansion header for application prototyping
- Example application board

Software Main features

- On-board EM85xx configuration tool
- Self powered by USB
- Plug-and-Play environement
- EM85xx Configuration management
- Support for SPI and I^2C access
- Advanced real-time voltage profile recording
- Monitoring and advanced measurement
- Corner cases emulation (e.g. application start-up, …)





Main features comparison

Main Feature	EMEVB85xx	EMDVK85xx
Flexible load and harvester source selection	✓	✓
Expansion header for prototyping and external connection	✓	✓
On board storage elements	✓	✓
On board E2prom configuration unit		✓
On board measurement unit		✓
Graphical user interface		✓
Real-time voltage waveform display		✓
Application board		✓

Ordering

Device	Product	Ordering number
EM8500	**Evaluation board** • EMEVB8500 hardware • EMPB85xx hardware • EMPB85xx software *EM8500 Evaluation board exists in 4 different versions. See Table EM8500 Evaluation board configuration for more details*	
	Factory configuration	**Standard version** **EMEVB8500** **[SV-1297T]**
	Preconfiguration recommended for Lithium-Ion battery applications	**High-Voltage version** **EMEVB8500H** **[SV-1376]**
	Preconfiguration recommended for Lithium Titanate, Electric Double Layer Capacitor battery applications	**Low-Voltage version** **EMEVB8500L** **[SV-1377]**
	Preconfiguration recommended for Lithium Manganese, Hybrid supercap or 3V Lithium-Ion battery applications	**Mid-Voltage version** **EMEVB8500M** **[SV-1378]**
	Development kit • EMDVK8500 hardware • Development Environment software	**EMDVK8500** **[SV-1298T]**
EM8502	**Evaluation board** • EMEVB8502 hardware • EMPB85xx hardware • EMPB85xx software	**EMEVB8502** **[SV-1304T]**
	Development kit • EMDVK8502 hardware • Development Environment software	**EMDVK8502** **[SV-1305T]**
EM8504	**Evaluation board** • EMEVB8504 hardware • EMPB85xx hardware • EMPB85xx software	**EMEVB8504** **[SV-1335]**
	Development kit	*Not available*
EM8506	**Evaluation board** • EMEVB8506 hardware • EMPB85xx hardware • EMPB8506 software	**EMEVB8506** **[SV-1374]**
	Development kit	*Not available*

EM85xx Development Tools ordering number

EM8500 Evaluation board version information

Product		Configuration	
Standard	**EMEVB8500**	**Factory configuration requires user's configuration**	
Preconfigured		**High-Voltage configuration *for 3.7V Li-Ion***	
	EMEVB8500H	Suitable battery type	*Li-ion 3.7V*
		example	*3.7V (Max 4.2V / Min 3.0V)*
		Battery voltage (LTS)	*2.6V*
		Application voltage (VSUP)	*Enabled*
		Application LDO (VSUP)	
		Low-Voltage configuration *for Lithium Titanate Electric Double Layer Capacitor*	
	EMEVB8500L	Suitable battery type	*LTO, EDLC*
		example	*2.4V (Max 2.8V / Min 1.8V)*
		Battery voltage (LTS)	*2.5V down to 1.8V*
		Application voltage (VSUP)	*Disabled*
		Application LDO (VSUP)	
		Mid-Voltage configuration for *Lithium Manganese, Hybrid supercap, 3V Li-Ion*	
	EMEVB8500M	Suitable battery type	*Li-MnO2 / Hybrid supercap / Li-ion*
		example	*3V*
		Battery voltage (LTS)	*3.0V (Max 3.3V / Min 2.5V)*
		Application voltage (VSUP)	*3.3V down to 2.5V*
		Application LDO (VSUP)	*Disabled*
		Main common settings for EMEVB8500H, EMEVB8500L and EMEVB8500M	
		Solar cell type	*Single/Dual cell – all except DSSC*
		MPPT ratio	*80%*
		Sleep mode	*Disabled*
		Auxiliary voltage (VAUX)	*Disabled*
		Auxiliary ground	*Disabled*
		(VAUX_GND)	*Disabled*
		Sleep mode	*Enabled*
		USB charging	*20 mA*
		USB LDO	*0x77*
		I2C Slave address	*4096 ms*
		HRV period	*256 ms*
		HRV meas	*1 ms*
		STS Period	*4096 ms*
		LTS Period	

EM8500 Evaluation board configuration