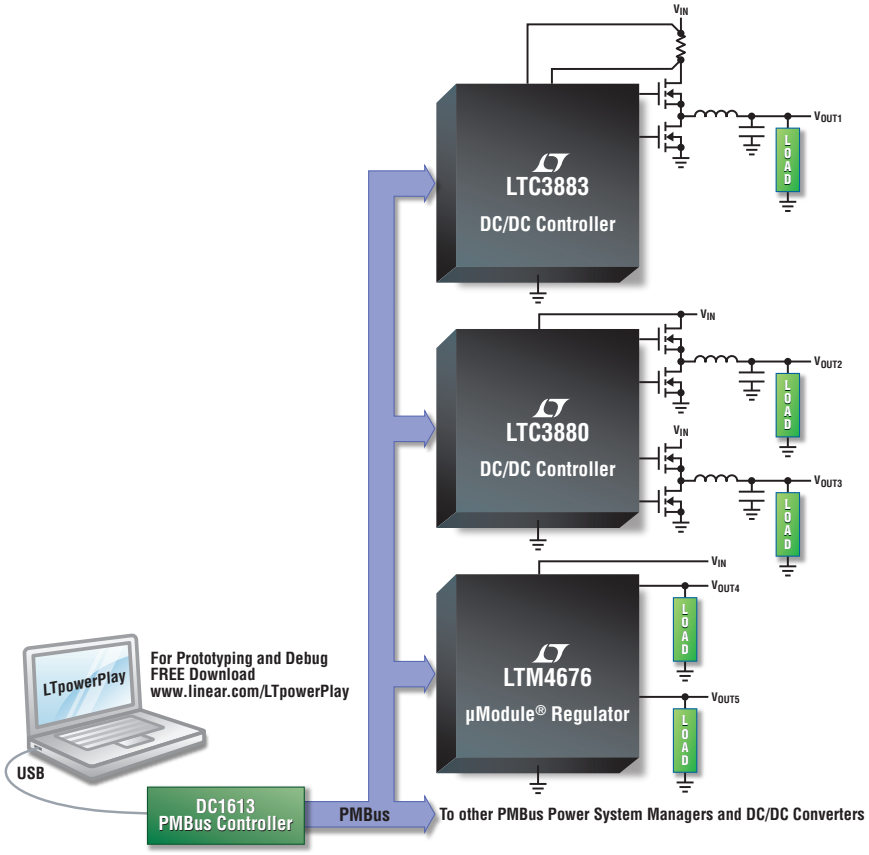
PMBus DC/DC Converters with Power System Management



Features	LTC®3880 Dual Output DC/DC Controller	LTC3883 Single Output DC/DC Controller	LTM®4676 Dual Output µModule Regulator
Power Supply Configuration	Dual	Single	Dual
Sequence, Trim Margin and Supervise	✓	✓	✓
Monitor Telemetry	✓	✓	✓
Manage Faults and Create Fault Logs	✓	✓	✓
LTpowerPlay™ GUI Support	✓	✓	✓
PWM Control Mode	Current	Current	Current
Integrated Power Stage			✓
Accurate Current Monitoring	✓	✓	✓
External Temperature Monitoring	✓	✓	Optional
Input Voltage Sense	✓	✓	✓
Input Current Sense	Inferred	Direct	Inferred
Current Sense Calibration		✓	Factory Trimmed
Time Based Sequencing	✓	✓	✓
Programmable Output Ramp Rate	✓	✓	✓
Trim and Margin Accuracy	0.5%	0.5%	1%
Fault Logging to Internal EEPROM	✓	✓	✓
Autonomous Operation — “Set and Forget”	✓	✓	✓
PMBus Compliant Command Set	✓	✓	✓

LINEAR TECHNOLOGY

Complete Power System Management Family

		Power System Managers					DC/DC Converters with Power System Management		
		LTC2970	LTC2977	LTC2978(A)	LTC2974	LTC2975**	LTC3880	LTC3883	LTM®4676
Overview	Power Supply Channels	2	8	8	4	4	2	1	2
	Sequence		✓	✓	✓	✓	✓	✓	✓
	Trim and Margin	✓	✓	✓	✓	✓	✓	✓	✓
	Supervise	✓	✓	✓	✓	✓	✓	✓	✓
	Monitor Telemetry	✓	✓	✓	✓	✓	✓	✓	✓
	Manage Faults	✓	✓	✓	✓	✓	✓	✓	✓
	Create Fault Logs		✓	✓	✓	✓	✓	✓	✓
	Point-of-Load Buck Controller						✓	✓	✓
	LTpowerPlay GUI Support		✓	✓	✓	✓	✓	✓	✓
Power	Output Channels	–	–	–	–	–	2	1	2
	Output Voltage Range	–	–	–	–	–	0.5V to 5.5V	0.5V to 5.5V	0.5V to 5.4V
	PWM Control Mode	–	–	–	–	–	Current	Current	Current
	Integrated Power Stage								✓
	Maximum Input Voltage	15V	15V	15V	15V	15V	24V	24V	26.5V
Sequencing	Time Based Sequencing		✓	✓	✓	✓	✓	✓	✓
	Shared Timebase (SHARE_CLK)		✓	✓	✓	✓	✓	✓	✓
	Cascade Sequencing				✓	✓			
	Interfaces to Tracking DC/DC Converters		✓		✓	✓			
	Programmable Output Ramp Rate						✓	✓	✓
Servo	Trim Accuracy*	0.5%	0.25%	0.25%	0.25%	0.25%	0.5%	0.5%	1%
	Margin High/Low	✓	✓	✓	✓	✓	✓	✓	✓
	Margin Accuracy*	0.5%	0.25%	0.25%	0.25%	0.25%	0.5%	0.5%	1%
Supervision	Output Voltage Supervision	✓	✓	✓	✓	✓	✓	✓	✓
	Worst Case Voltage Supervisor Accuracy*	0.5%	1.5%	1.5%	1.5%	1.5%	2.0%	2.0%	2.0%
	Typical Analog OV Response Time*	–	–	–	–	–	100ns	100ns	100ns
	Typical OV Fault Off-Time*	–	12µs	12µs	12µs	12µs	30µs	30µs	30µs
	Input Voltage Comparator	✓	✓	✓	✓	✓	✓	✓	✓
	Output Current Supervision	✓			✓	✓	✓	✓	✓
	Temperature Supervision	1 Internal	1 Internal	1 Internal	4 External	4 External	1 Int + 2 Ext	1 Int + 1	2 Int + 1 Ext
Monitoring	Differential Output Voltage Sense Channels	2	8	8	4	4	2	1	2
	Output Current Sense Channels	2	4†	4†	4	4	2	1	2
	External Temperature Channels	–	–	–	4	4	2	1	1 Opt
	Input Voltage Sense	✓	✓	✓	✓	✓	✓	✓	✓
	Input Current Sense	–	–	–	–	Direct	Inferred	Direct	Inferred
	Input Power and Energy					✓			
	Output Power				✓	✓	✓	✓	✓
	Current Sense Calibration							✓	Factory Trimmed
	Duty Cycle						✓	✓	✓
Faults	Fault Logging to Internal EEPROM		✓	✓	✓	✓	✓	✓	✓
	Fault Sharing		✓	✓	✓	✓	✓	✓	✓
	Autonomous Retry on Fault		✓	✓	✓	✓	✓	✓	✓
	Disable DC/DC Converter on Fault	✓	✓	✓	✓	✓	✓	✓	✓
	Disable Intermediate Bus Converter on Fault		✓	✓	✓	✓			
Miscellaneous	Autonomous Operation — "Set and Forget"		✓	✓	✓	✓	✓	✓	✓
	Power Good Support	✓	✓	✓	✓	✓	✓	✓	✓
	Max I^2C w/o Clock Stretching	400kHz	400kHz	400kHz	400kHz	400kHz	100kHz	100kHz	100kHz
	PMBus Compliant Command Set		✓	✓	✓	✓	✓	✓	✓
	Command Plus Command Set		✓			✓			
	Package	4mm × 5mm QFN	9mm × 9mm QFN	9mm × 9mm QFN	9mm × 9mm QFN	9mm × 9mm QFN	6mm × 6mm QFN	5mm × 5mm QFN	16mm × 16mm BGA

For the latest information, see http://www.linear.com/products/Power_System_Management

* Consult data sheet(s) for detailed specifications.
† Not temperature compensated. Available on odd channels only. All other channel features are disabled.
** Future product.