CEL MeshConnect™

Empowering Wireless Connectivity

DISCOVER
THE FAST & EASY APPROACH
TO IMPLEMENTING
ZigBee®

THE CEL ADVANTAGE

Pairing 50+ Years of RF Expertise with the
Industry's Premier ZigBee® PRO Stack from Silicon Labs

- **Simplified Development with Reduced Design Risk**
- **Accelerated Time to Market**
- **Built on the World's Premier ZigBee Stack**
- **Professional Grade Quality & Reliability**
- **Technical Expertise And Support**

ZigBee® Member

- Home Automation
- Building Automation
- Light Link
- Smart Energy

Learn More
www.cel.com/empoweringmesh

CEL MeshConnect™

Empowering Wireless Connectivity

THE CEL ADVANTAGE

Simplified Development with Reduced Design Risk

- Completely integrated RF and baseband solutions
- Designs eliminate need for in-house RF expertise
- Single module can be used across multiple SKUs

Accelerated Time to Market

- Modular form reduces typical design-in time by 88%
- Designs are pre-certified to meet requirements for…
  - ✓ FCC/IC/CE
  - ✓ iControl Open Home Platform
  - ✓ Daintree Networks Control Scope Connected Platform

Built on the World's Premier ZigBee Stack

- Silicon Labs' EmberZNet PRO™ stack is the most robust, reliable and comprehensive ZigBee PRO software solution
- Development kit includes access to Ember's world class software development tools

Increased Reliability

- All products 100% RF tested with traceability
- Extensive JESD22 qualifications
- Robust supply chain

Technical Expertise and Support

- Access to hardware and software engineers fluent in the Ember portfolio
- Guidance on developing ZigBee-compliant solutions for various ecosystems

PROFESSIONAL GRADE CERTIFIED MODULES

FC CE IC RoHS ZigBee Member

iControl CERTIFIED DaintreeNetworks ControlScope CONNECTED ENABLER

PRODUCT OFFERINGS & TECHNICAL INFORMATION

Based on EM3588 SoC

Based on EM357 SoC

MeshConnect Products ▶		EM358x Mini Modules		EM357 Mini Modules		EM357 USB Sticks	
		Standard	Extended Range	Standard	Extended Range	Standard	Extended Range
MCU	Radio Parameters	2405 to 2480 MHz / DSSS / IEEE 802.15.4		2405 to 2480 MHz / DSSS / IEEE 802.15.4		2405 to 2480 MHz / DSSS / IEEE 802.15.4	
	Transceiver Chipset	**Silicon Labs™ EM3588** 32 bit, ARM® Cortex™ - M3		**Silicon Labs™ EM357** 32 bit, ARM® Cortex™ - M3		**Silicon Labs™ EM357** 32 bit, ARM® Cortex™ - M3	
	Memory on Chip	512 kB Flash, 64 kB RAM		192 kB Flash, 12 kB RAM		192 kB Flash, 12 kB RAM	
	Supplemental Memory	–		–		1 MB Flash	
	Inputs / Outputs	Up to 23		Up to 22		N/A	
	USB	USB 2.0 (full speed)		–		USB 2.0 (full speed)	
NETWORK	Mesh Networks	✓		✓		✓	
	Over-the-Air Data Rate	250 kbps		250 kbps		250 kbps	
	Over-the-Air Security	128-bit AES Encryption		128-bit AES Encryption		128-bit AES Encryption	
	Software / ZigBee Stack	EmberZNet PRO™ (ZigBee PRO)		EmberZNet PRO™ (ZigBee PRO)		EmberZNet PRO™ (ZigBee PRO)	
PERFORMANCE	Tx Output Power	+ 8 dBm	+ 20 dBm	+ 8 dBm	+ 20 dBm	+ 8 dBm	+ 20 dBm
	Rx Sensitivity	- 100 dBm	- 103 dBm	- 100 dBm	- 103 dBm	- 100 dBm	- 103 dBm
	RF Link Budget	+108 dB	+123 dB	+108 dB	+123 dB	+108 dB	+123 dB
	Power Supply Voltage	2.1 to 3.6 V		2.1 to 3.6 V		4.0 to 5.25 V	
	Rx Current	30 mA	34 mA	30 mA	34 mA	51 mA	55 mA
	Tx Current @ Max Power	44 mA	150 mA	44 mA	150 mA	65 mA	165 mA
	Sleep / Suspend Current	2.4 µA		1.0 µA		0.24 µA	
	Dimensions	23.9 x 16.6 x 3.9 mm (0.94 x 0.655 x 0.152 in)		23.9 x 16.6 x 3.9 mm (0.94 x 0.655 x 0.152 in)		52.7 x 24.9 x 9.98 mm (2.075 x 0.984 x 0.393 in)	
	Integrated Antenna	✓		✓		✓	
	RF Port for External Antenna	✓		✓		–	
	Temperature Range	-40 °C to 85 °C		-40 °C to 85 °C	-40 °C to 85 / 110 °C**	-30 °C to 70 °C	
CERTIFICATIONS	FCC	✓	✓	✓	✓	✓	✓
	IC	✓	✓	✓	✓	✓	✓
	CE	✓	–	✓	–	✓	–
	RoHS	✓	✓	✓	✓	✓	✓
	iControl	–	✓	–	✓	–	✓
	Daintree ControlScope	✓	✓	✓	✓	✓	✓
	Part Numbers	ZICM3588SP0-1 ZICM3588SP0-1C*	ZICM3588SP2-1 ZICM3588SP2-1C*	ZICM357SP0-1 ZICM357SP0-1C*	ZICM357SP2-1 ZICM357SP2-1-HT** ZICM357SP2-1C* ZICM357SP2-1C-HT**	ZM357S-USB	ZM357S-USB-LR

* Part numbers ending in ***SP0-1C*** have an RF port for external antennas and are not FCC, IC or CE certified.
Part numbers ending in ***SP2-1C*** have an RF port for external antennas and are FCC and IC certified for a Nearson S181AH-2450S antenna.

** Part numbers ending in HT are suited for high temperature applications up to 110 °C