

# TECHNOLOGY TEARDOWN

## ASSET TRACKING



### GNSS



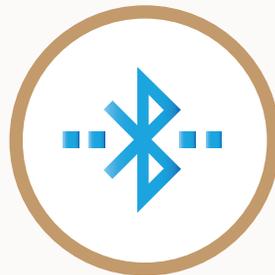
- Vehicle Tracking
- Air Navigation
- Surveying & Mapping
- Consumer Electronics

### CELLULAR



- Location based Services
- Telemetry
- Theft Recovery

### BLE



- Proximity Marketing
- Inventory Management
- Public Transportation
- Logistics Optimization

### Wi-Fi



- Micro-location Tracking
- In-door Navigation
- Biomedical equipment tracking

COMPONENT	TECHNOLOGY	SUPPLIERS	SUGGESTED PRODUCTS	DEVELOPMENT KITS
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## GLOBAL ASSET TRACKING

<b>GNSS/GPS</b>	GPS L1, Glonass L1, Galileo E1 and BeiDou B1	Telit, Antenova, Taiyo Yuden, MediaTek	JF2 (Telit, GPS), SE868 (Telit, GNSS), MTK3339 (MediaTek, GPS), GYSFFMAXC (Taiyo Yuden, GNSS)	EVK-JF2, SE868-EVK
<b>Dead Reckoning</b>	MEMS + DR Support	Telit	SL869-DR, SL869-ADR, SL869-3DR	SL869-ADR-EVK, SL869-3DR-EVK
<b>Synchronized GNSS Timing</b>	1PPS Output	Telit	SL869-T	SL869-T-EVK
<b>Cellular</b>	Location Based Services (LBS)	Telit, Multitech, Nimbelinek, Janus	Telit LE910-NA V2 (Telit LTE Cat-4) Telit LE910-NA1 (Telit LTE Cat-1)	LTE-IN-A-BOX-ATT (Telit: LTE w/ 3G Fallback)
<b>Connectivity Services</b>	SIM Cards & Data Plans	Telit, Aeris	Aeris Neo Platform, Telit IoT Connectivity	Neo Data SIM Telit Starter Kit

## SHORT-RANGE ASSET TRACKING

<b>Bluetooth Low Energy</b>	BLE Beacons	Silicon Labs, Telit, Nordic Semiconductor, MediaTek, Realtek, Taiyo Yuden	Blue Gecko (Silabs, BLE Module), EYSHJNZXZ (Taiyo Yuden, BLE), RTL8762A (Realtek, BLE)	SLWSTK6101B (SiLabs Wireless Starter Kit), EKSHJNZXZ (Taiyo Yuden Kit)
<b>Ultra Wide Band</b>	802.15.4	DecaWave	DW1000 (Chipset), DWM1000 (Module)	EVK1000, TREK1000
<b>LoRa</b>	Low Power Wide Area Network (LPWAN)	Multitech	MultiConnect xDot, MultiConnect Conduit	MultiConnect® xDot™ Micro Developer Kit
<b>RFID</b>	RFID	CAENRFID	RFID E-seal (TAGS), R1170I - qiDmini (Reader)	R1170IDK – QIDMINI (Dev Kit)
<b>Wi-Fi</b>	Positioning System	Silicon Labs, Digi, Redpine, Taiyo Yuden, Gainspan, Lantronix, Mediatek	WGM110 (SiLabs, WiFi module), WiSeMote™ Asset Tags (WM2-20), PremierWave EN (Lantronix)	SLWSTK6120A (SiLabs Starter Kit)
<b>Proprietary Technology</b>	2.4Ghz, Sub 1Ghz	Silicon Labs, Digi, RF Digital, Nordic, Taiyo Yuden	EZR32WG (Silabs, 2.4GHz), Si4XXX EZRadio (Silabs, ISM band RX and TX)	SLWSTK6066A (2.4GHz), Si4356 Wireless Development Kit (ISM band)

## SENSE

<b>Sensors</b>	Optical, Humidity, Temperature, Biometric, Capacitive Touch, and Hall sensors	Silicon Labs, Micronas, IC Haus	Si7023-A20 (Silabs, Relative Humidity and Temp sensors), HAL37xy (Micronas, Hall sensors) Si1132-A10-GMR (Silabs, Optical Sensors with UV index)	SENSOR-PUCK, Thunderboard, Hall Sensor-In-A-Box Development Kit
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## COMPUTE

<b>MCU (8/32 bit)</b>	8 - Bit MCU's, 32 - Bit MCU's, C8051	Silicon Labs, Gigadevice	Sleepy Bee (Silabs, 8 bit MCU), Universal Bee (Silabs, 8 bit MCU), Zero Gecko (Silabs, 32 bit MCU), Pearl Gecko (Silabs, 32 bit MCU)	SLSTK2011A (8 Bit, Sleepy Bee Starter Kit), SLSTK3401A (32 Bit, Zero Gecko Starter Kit)
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## ADDITIONAL COMPONENTS

<b>Analog</b>	Optical Encoder, ADC, Current Sense Amplifiers, Power Management, Operational Amplifiers, Comparators, Low Power Timers, Voltage References	Silicon Labs	TS7001 (Silabs, ADC), TS3001 (Silabs, Low power timer)	TS7001 - EVB (ADC), TS3001 - EVB (Low power timer)
<b>Antenna</b>	Internal (PCB, Flex, SMD), External antenna,	EAD, Antenova, Hirschmann Solutions, Taiyo Yuden	FWTR35292-SM-KR (EAD, Cellular Antenna), A10204-01 (Antenova, GNSS Antenna)	A10204-01 -U1