The Keysight X8712A IoT Device Battery Life Optimization Solution

Battery, the Heart of IoT Devices

The need for convenience and portability has led to increasingly smaller and battery-operated IoT devices. This means that battery life is more important than ever. However, measuring and managing battery life have not been easy.

The X8712A is an IoT device battery life optimization solution which consists of a DC power analyzer, 20 W or 80 W battery drain analyzer source measure unit (SMU) modules, RF event detector and dedicated software in one integrated solution, allowing IoT device designers like you to easily:

Simplify battery life analysis

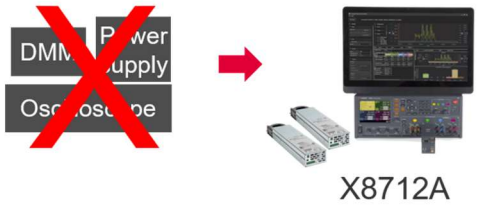

Figure 1: Eliminates the need of multiple instruments, manual data collection or programming

Measure fast changing and wide current range

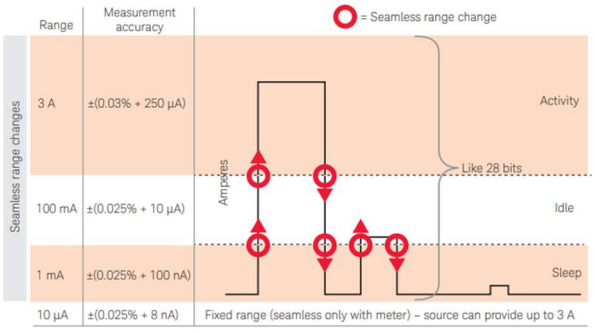

Figure 2: The N6781A source measure unit's seamless measurement range

Estimating battery runtime is critical, but not enough.

To get the most out of your IoT device's battery, you need to understand what RF and sub-circuit events are causing battery charge consumption. This will enable you to make the hardware and firmware programming decisions that will optimize your battery's runtime.

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Detect design weaknesses

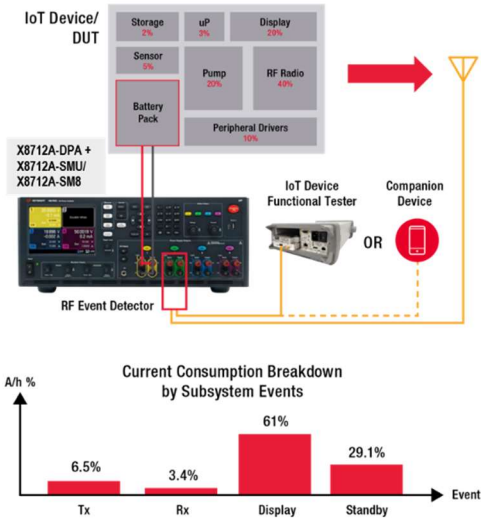

Figure 3: Breaks down the total current consumption by sub-system events for you to easily identify events consuming the most current and require optimization

Easily estimate battery life

Figure 4: Automatically provides battery life estimation based on waveform captured

X8712A Characteristics

Number of channels supported	Up to 4 (Ch 1 – Battery emulator, Ch 2 – RF Power Detector, Ch 3&4 – voltmeter/ammeter/power supply)
Current measurement range	10 uA to 3 A (N6781A) 1 mA to 8 A (N6785A)
Triggering function by channel	Available on all channels

	Number of active channels			
	1	**2**	**3**	**4**
Max. sample size	524,288	262,144	131,072	65,536
Min. time interval	5.12 µs	10.24 µs	20.48 µs	20.48 µs
Max. time interval	0.1 s			

RF Event Detector Characteristics

Operation frequency range	100 MHz to 2.9 GHz
Dynamic range	40 dB typical
Power measurement range	-40 to 0 dBm
Power accuracy	+/- 3 dB
Maximum input damage power	+15 dBm
DC power	5 V @ 30 mA by micro USB adapter

For more information, please visit www.keysight.com/find/X8712A

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