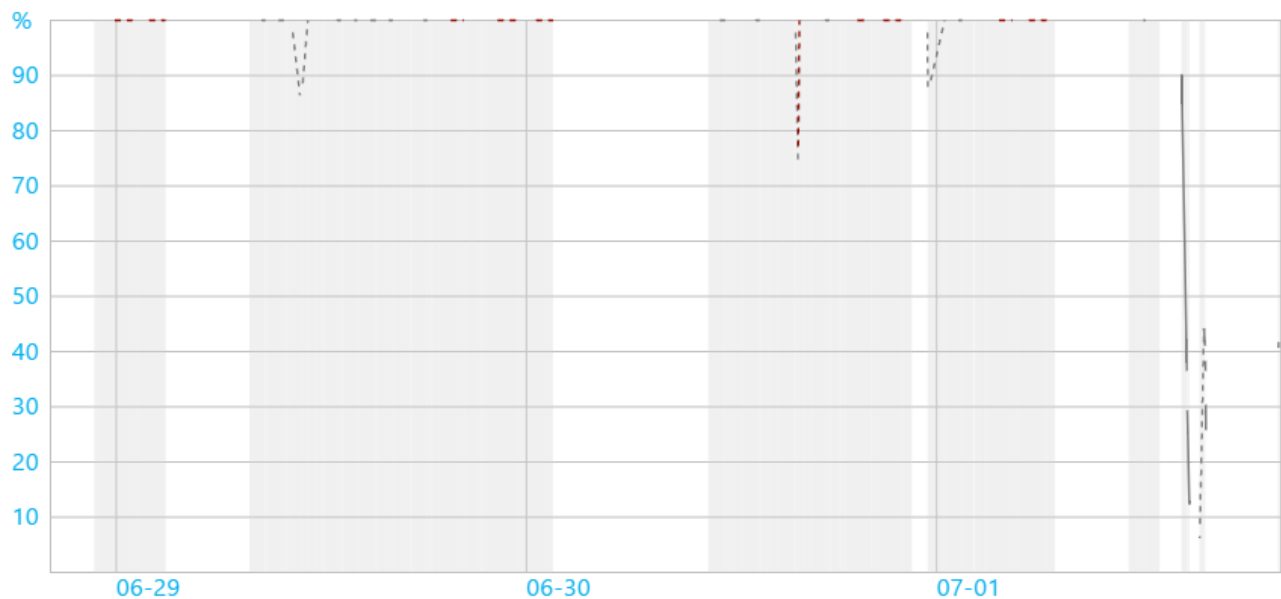


Sleep Study

COMPUTER NAME	TOMSURFACE
SYSTEM PRODUCT NAME	Microsoft Corporation Surface Pro 3
BIOS	3.11.1150 12/09/2015
OS BUILD	10586.420.amd64fre.th2_release_sec.160527-1834
PLATFORM ROLE	Slate
REPORT TIME	2016-07-01 20:09:12

Connected Standby Transitions

Battery drains over the last 3 days



Legend

GRAPH LINE	DESCRIPTION
Dotted	AC power
Solid	Battery power
No line	System powered off
Grey	Active Scenario
Green	Low System Activity
Orange	Moderate System Activity
Red	High System Activity

	START TIME	DURATION	ENERGY CHANGE		CHANGE RATE	% LOW POWER STATE TIME		
1	2016-06-28 22:52:38	4:00:26	-	-	-	Charge (dozed to hibernate)	0%	HW: -
2	2016-06-29 11:22:40	0:44:17	-	-	-	Charge	0%	HW: -
3	16:43:30	0:13:37	-	-	-	Charge	0%	HW: -
4	18:32:55	2:40:02	-	-	-	Charge	0%	HW: -
5	21:23:27	4:09:50	-	-	-	Charge (dozed to hibernate)	0%	HW: -

6	2016-06-30 11:51:56	0:23:33	-	-	-	Charge	0%	HW: -
7	15:54:28	0:24:30	-	-	-	Charge	0%	HW: -
8	18:23:45	4:09:51	-	-	-	Charge (dozed to hibernate)	0%	HW: -
9	2016-07-01 02:35:04	0:10:05	-	-	-	Charge	0%	HW: -
10	02:50:37	4:05:05	-	-	-	Charge (dozed to hibernate)	0%	HW: -

Analysis Results

Analysis of issues that might cause poor battery life

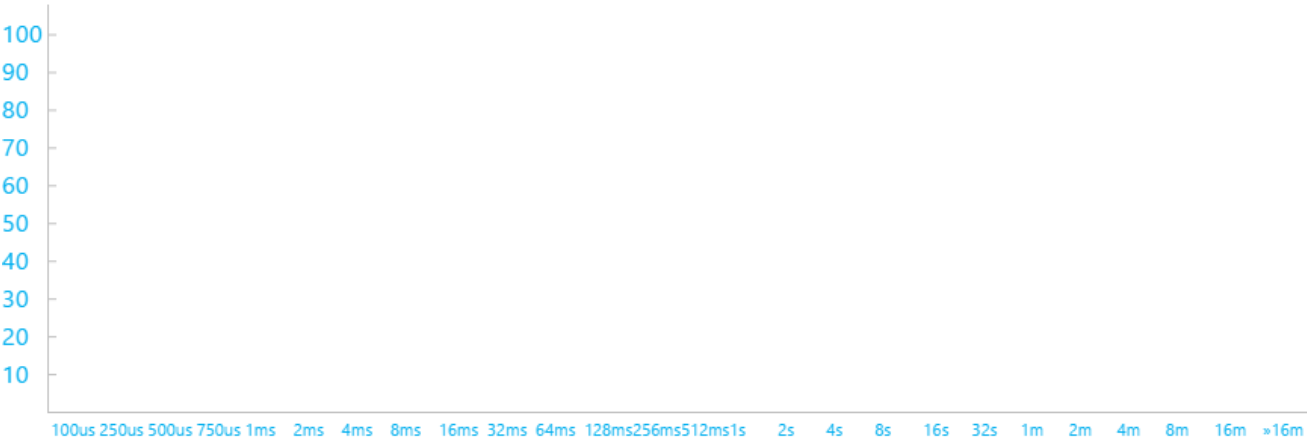


Connected Standby Session 1

	START TIME	DURATION	ENERGY CHANGE		CHANGE RATE	% LOW POWER STATE TIME		
1	2016-06-28 22:52:38	4:00:26	-	-	-	Charge (dozed to hibernate)	0%	HW: -

DRIPS Histogram

Percent of time spent in DRIPS bucketed by time interval length



Top Offenders

Top 5 offenders, ranked by active time

NAME	TYPE	% ACTIVE TIME	ACTIVE TIME
USB xHCI -yhteensopiva isäntäohjain (_SB.PCI0.XHC)	Fx Device	99%	3:57:02
Marvell AVASTAR Wireless-AC Network Controller	Networking	1%	0:02:59
WU	Activator	1%	0:02:24
CPU C0 Time	Processor	0%	0:00:38
Levyasema (_SB.PCI0.SAT0.PRT0)	Fx Device	0%	0:00:21

+ Activators
+ Processors
+ Fx Devices
+ PDC Phases
+ Networking
+ PEP Pre-Vetoes
+ SoC Subsystems

Srum Data

Data obtained from the SRUM database.

+ Energy Estimation



Connected Standby Session 2

	START TIME	DURATION	ENERGY CHANGE		CHANGE RATE		% LOW POWER STATE TIME		
2	2016-06-29 11:22:40	0:44:17	-	-	-	Charge	0%	HW: -	:

DRIPS Histogram

Percent of time spent in DRIPS bucketed by time interval length



Top Offenders

Top 5 offenders, ranked by active time

NAME	TYPE	% ACTIVE TIME	ACTIVE TIME
USB xHCI -yhteensopiva isäntäohjain (_SB.PCI0.XHC)	Fx Device	93%	0:41:20
BI	Activator	5%	0:02:12
CPU C0 Time	Processor	4%	0:01:35
Marvell AVASTAR Wireless-AC Network Controller	Networking	1%	0:00:33
NoCsPhase.WaitingForSleepTimeout	PDC Phase	1%	0:00:22

- + Activators
- + Processors
- + Fx Devices
- + PDC Phases
- + Networking
- + PEP Pre-Vetoes
- + SoC Subsystems

Srum Data

Data obtained from the SRUM database.

+ Energy Estimation



Connected Standby Session 3

ENERGY

	START TIME	DURATION	CHANGE		CHANGE RATE		% LOW POWER STATE TIME		
3	2016-06-29 16:43:30	0:13:37	-	-	-	Charge	0%	HW: -	:

DRIPS Histogram

Percent of time spent in DRIPS bucketed by time interval length



Top Offenders

Top 5 offenders, ranked by active time

NAME	TYPE	% ACTIVE TIME	ACTIVE TIME
USB xHCI -yhteensopiva isäntäohjain (_SB.PCI0.XHC)	Fx Device	61%	0:08:17
Marvell AVASTAR Wireless-AC Network Controller	Networking	38%	0:05:14
Maintenance Phase	PDC Phase	37%	0:05:06
CPU C0 Time	Processor	2%	0:00:14
Low Power Phase	PDC Phase	1%	0:00:05

+ Activators
+ Processors
+ Fx Devices
+ PDC Phases
+ Networking
+ PEP Pre-Vetoes
+ SoC Subsystems

Srum Data

Data obtained from the SRUM database.

+ Energy Estimation

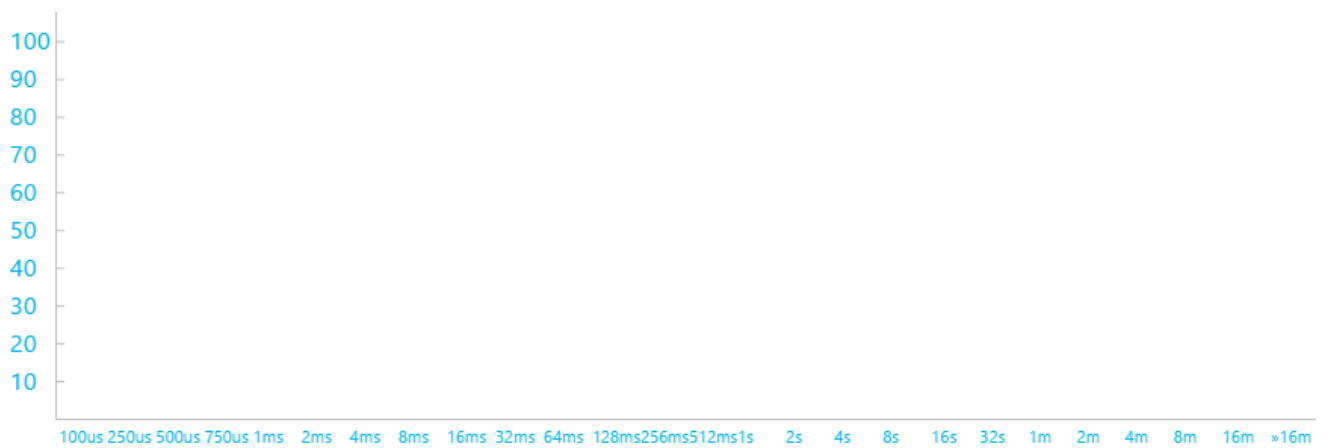


Connected Standby Session 4

	START TIME	DURATION	ENERGY CHANGE		CHANGE RATE		% LOW POWER STATE TIME		
4	2016-06-29 18:32:55	2:40:02	-	-	-	Charge	0%	HW: -	:

DRIPS Histogram

Percent of time spent in DRIPS bucketed by time interval length



Top Offenders

Top 5 offenders, ranked by active time

NAME	TYPE	% ACTIVE TIME	ACTIVE TIME
USB xHCI -yhteensopiva isäntäohjain (_SB.PCI0.XHC)	Fx Device	92%	2:26:36
BI	Activator	5%	0:08:00
NoCsPhase.WaitingForSleepTimeout	PDC Phase	3%	0:04:36
CPU C0 Time	Processor	1%	0:00:57
Marvell AVASTAR Wireless-AC Network Controller	Networking	0%	0:00:22

+ Activators

+ Processors

+ Fx Devices

+ PDC Phases

+ Networking

+ PEP Pre-Vetoes

+ SoC Subsystems

SRM Data

Data obtained from the SRUM database.

+ Energy Estimation

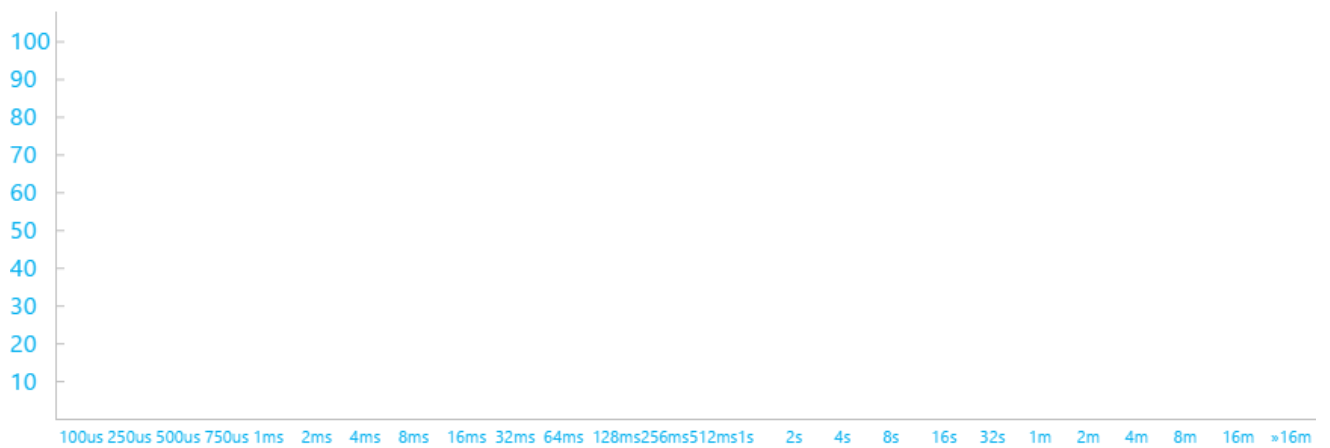


Connected Standby Session 5

	START TIME	DURATION	ENERGY CHANGE		CHANGE RATE		% LOW POWER STATE TIME		
5	2016-06-29 21:23:27	4:09:50	-	-	-	Charge (dozed to hibernate)	0%	HW: -	:

DRIPS Histogram

Percent of time spent in DRIPS bucketed by time interval length



Top Offenders

Top 5 offenders, ranked by active time

NAME	TYPE	% ACTIVE TIME	ACTIVE TIME
USB xHCI -yhteensopiva isäntäohjain (_SB.PCI0.XHC)	Fx Device	91%	3:46:57
Marvell AVASTAR Wireless-AC Network Controller	Networking	5%	0:12:53
NoCsPhase.WaitingForSleepTimeout	PDC Phase	4%	0:09:35
BI	Activator	3%	0:07:29
CPU C0 Time	Processor	1%	0:01:40

+ Activators

+ Processors

+ Fx Devices

+ PDC Phases

+ Networking

+ PEP Pre-Vetoes

+ SoC Subsystems

SRM Data

Data obtained from the SRUM database.

+ Energy Estimation

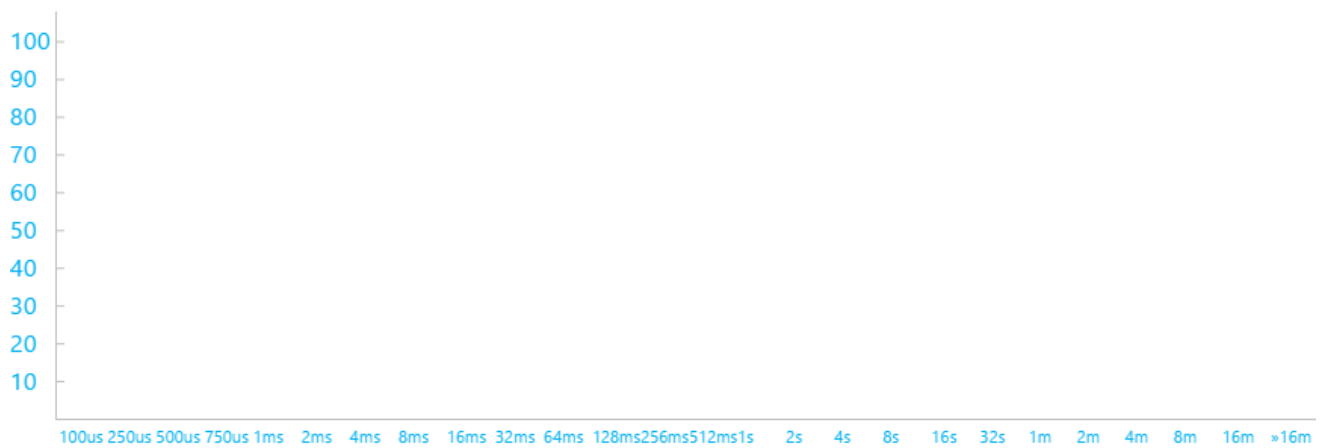


Connected Standby Session 6

	START TIME	DURATION	ENERGY CHANGE		CHANGE RATE		% LOW POWER STATE TIME		
6	2016-06-30 11:51:56	0:23:33	-	-	-	Charge	0%	HW: -	:

DRIPS Histogram

Percent of time spent in DRIPS bucketed by time interval length



Top Offenders

Top 5 offenders, ranked by active time

NAME	TYPE	% ACTIVE TIME	ACTIVE TIME
USB xHCI -yhteensopiva isäntäohjain (_SB.PCI0.XHC)	Fx Device	92%	0:21:43
Intel(R) HD Graphics Family (_SB.PCI0.GFX0)	Fx Device	92%	0:21:43
CPU C0 Time	Processor	89%	0:20:55
BI	Activator	5%	0:01:10
Marvell AVASTAR Wireless-AC Network Controller	Networking	1%	0:00:21

+ Activators

+ Processors

+ Fx Devices

+ PDC Phases

+ Networking

+ PEP Pre-Vetoes

+ SoC Subsystems

SRM Data

Data obtained from the SRUM database.

+ Energy Estimation

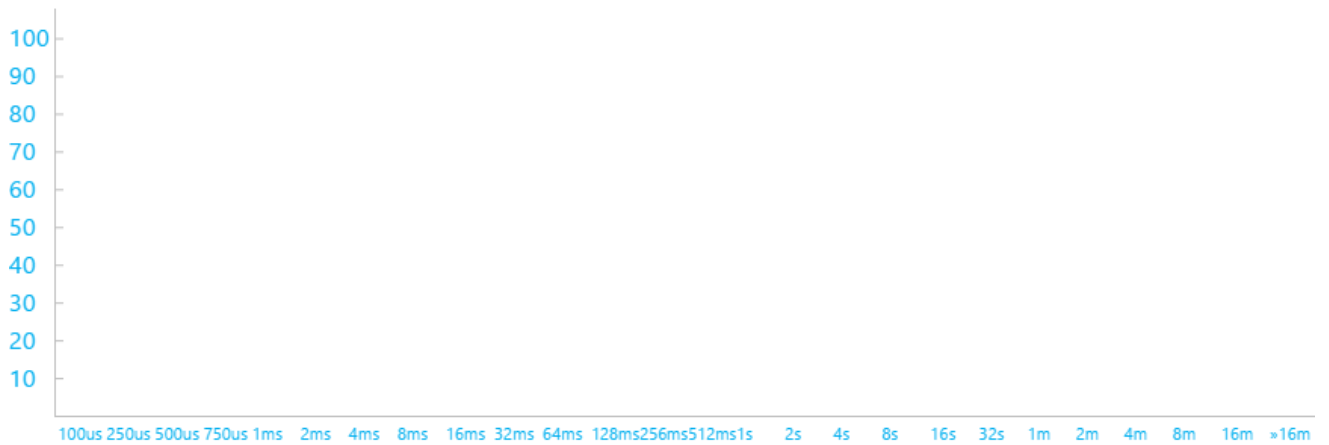


Connected Standby Session 7

	START TIME	DURATION	ENERGY CHANGE		CHANGE RATE		% LOW POWER STATE TIME		
7	2016-06-30 15:54:28	0:24:30	-	-	-	Charge	0%	HW: -	:

DRIPS Histogram

Percent of time spent in DRIPS bucketed by time interval length



Top Offenders

Top 5 offenders, ranked by active time

NAME	TYPE	% ACTIVE TIME	ACTIVE TIME
USB xHCI -yhteensopiva isäntäohjain (_SB.PCI0.XHC)	Fx Device	58%	0:14:05
Intel(R) HD Graphics Family (_SB.PCI0.GFX0)	Fx Device	58%	0:14:05
CPU C0 Time	Processor	55%	0:13:35
Marvell AVASTAR Wireless-AC Network Controller	Networking	39%	0:09:36
NoCsPhase.WaitingForSleepTimeout	PDC Phase	39%	0:09:27

+ Activators
+ Processors
+ Fx Devices
+ PDC Phases
+ Networking
+ PEP Pre-Vetoes
+ SoC Subsystems

SRM Data

Data obtained from the SRUM database.

+ Energy Estimation

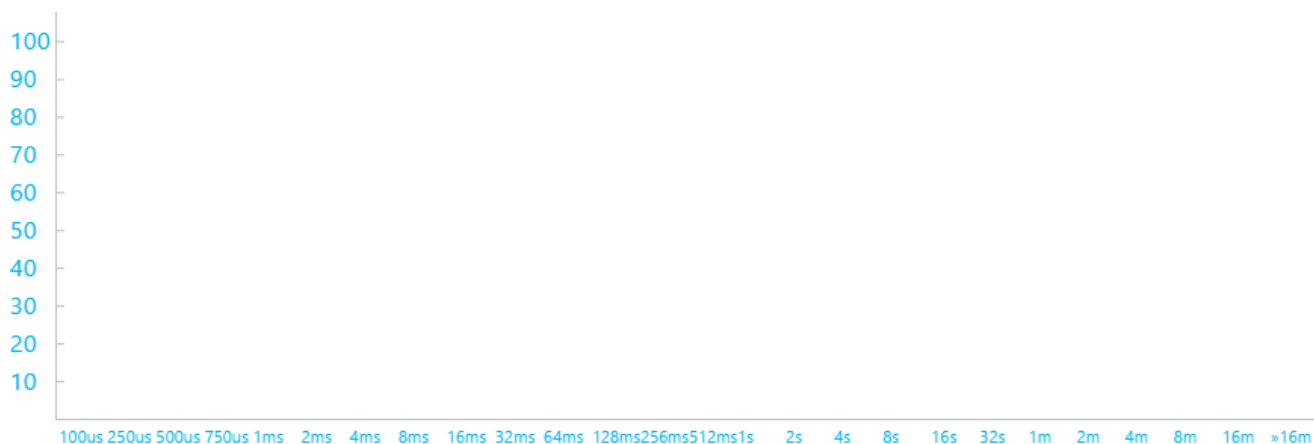


Connected Standby Session 8

	START TIME	DURATION	ENERGY CHANGE		CHANGE RATE		% LOW POWER STATE TIME		
8	2016-06-30 18:23:45	4:09:51	-	-	-	Charge (dozed to hibernate)	0%	HW: -	:

DRIPS Histogram

Percent of time spent in DRIPS bucketed by time interval length



Top Offenders

Top 5 offenders, ranked by active time

NAME	TYPE	% ACTIVE TIME	ACTIVE TIME
USB xHCI -yhteensopiva isäntäohjain (_SB.PCI0.XHC)	Fx Device	89%	3:42:50
Intel(R) HD Graphics Family (_SB.PCI0.GFX0)	Fx Device	89%	3:42:50
CPU C0 Time	Processor	86%	3:34:50
BI	Activator	6%	0:14:59
Marvell AVASTAR Wireless-AC Network Controller	Networking	4%	0:10:20

+ Activators

+ Processors

+ Fx Devices

+ PDC Phases

+ Networking

+ PEP Pre-Vetoes

+ SoC Subsystems

SRM Data

Data obtained from the SRUM database.

+ Energy Estimation

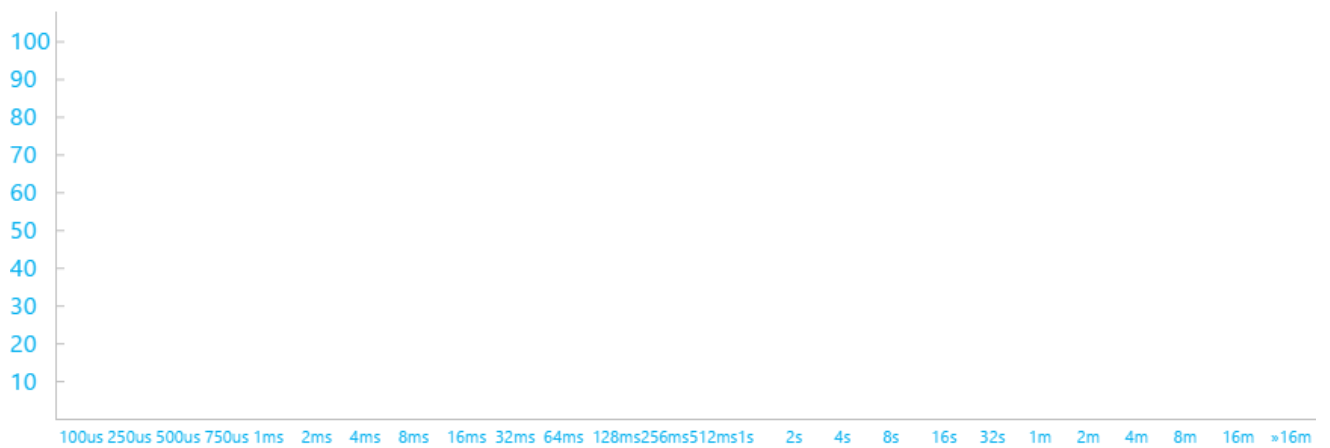


Connected Standby Session 9

	START TIME	DURATION	ENERGY CHANGE		CHANGE RATE		% LOW POWER STATE TIME		
9	2016-07-01 02:35:04	0:10:05	-	-	-	Charge	0%	HW: -	:

DRIPS Histogram

Percent of time spent in DRIPS bucketed by time interval length



Top Offenders

Top 5 offenders, ranked by active time

NAME	TYPE	% ACTIVE TIME	ACTIVE TIME
USB xHCI -yhteensopiva isäntäohjain (_SB.PCI0.XHC)	Fx Device	93%	0:09:24
BI	Activator	2%	0:00:12
Low Power Phase	PDC Phase	2%	0:00:10
Maintenance Phase	PDC Phase	1%	0:00:09
Marvell AVASTAR Wireless-AC Network Controller	Networking	1%	0:00:07

+ Activators

+ Processors

+ Fx Devices

+ PDC Phases

+ Networking

+ PEP Pre-Vetoes

+ SoC Subsystems

SRM Data

Data obtained from the SRUM database.

+ Energy Estimation

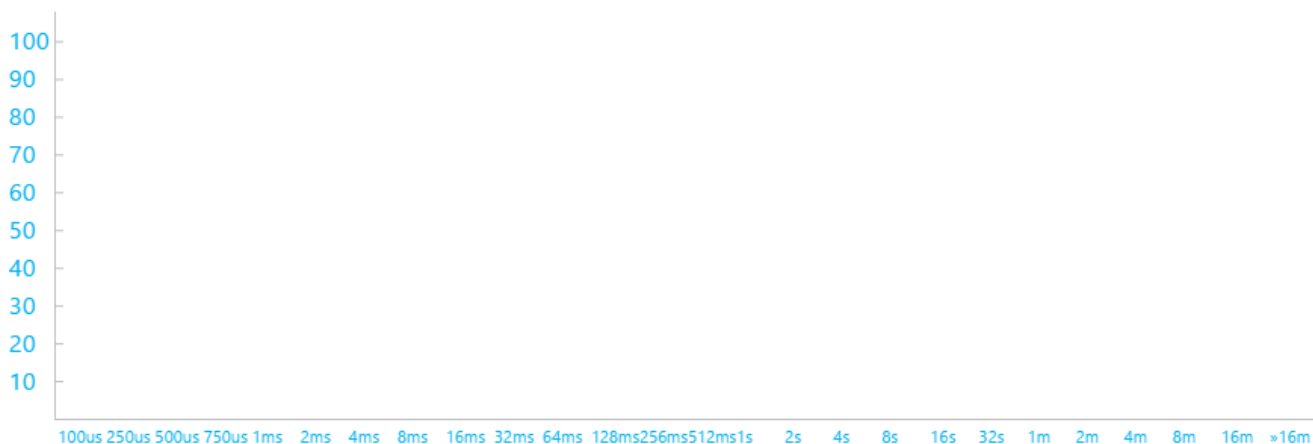


Connected Standby Session 10

	START TIME	DURATION	ENERGY CHANGE		CHANGE RATE		% LOW POWER STATE TIME		
10	2016-07-01 02:50:37	4:05:05	-	-	-	Charge (dozed to hibernate)	0%	HW: -	:

DRIPS Histogram

Percent of time spent in DRIPS bucketed by time interval length



Top Offenders

Top 5 offenders, ranked by active time

NAME	TYPE	% ACTIVE TIME	ACTIVE TIME
USB xHCI -yhteensopiva isäntäohjain (_SB.PCI0.XHC)	Fx Device	94%	3:51:36
BI	Activator	3%	0:07:21
Marvell AVASTAR Wireless-AC Network Controller	Networking	2%	0:05:19
NoCsPhase.WaitingForSleepTimeout	PDC Phase	2%	0:04:32
CPU C0 Time	Processor	0%	0:00:44

- + Activators
- + Processors
- + Fx Devices
- + PDC Phases
- + Networking
- + PEP Pre-Vetoes
- + SoC Subsystems

Srum Data

Data obtained from the SRUM database.

- + Energy Estimation

Installed batteries

Information about each currently installed battery

BATTERY 1	
NAME	X898289
MANUFACTURER	SIMPLO
SERIAL NUMBER	1162549764
CHEMISTRY	LION
DESIGN CAPACITY	mWh
CAPACITY RATIO	9%
CYCLE COUNT	181