Toshiba Sensors Driver User's Guide

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About this Guide

The guide describes how to install, configure, and use the Toshiba Sensors Driver 3.10.x.

Who should read this guide?

This guide is intended for personnel who will be using sensors information, temperatures, fan speeds and voltages, provided by Sensors Driver on a system management environment.

Summary of Changes

August 2023

This release is including support for the following system:

- Toshiba TCx® 900 4901-91x/E1x/C1x

November 2021

This release is including support for the following systems:

- Toshiba SurePOS 300 4810-x50

- Toshiba TCx® Wave 6140-10x/E1x/x2x
- Toshiba TCx® Wave 6140-x3x
- Toshiba TCx® Wave 6140-x4x
- Toshiba TCx® Wave 6140-x5x

- Toshiba TCx® 300 4810-xx0/xxA
- Toshiba TCx® 300 4810-xx1
- Toshiba TCx® 700 4900-xx6
- Toshiba TCx® 700 4900-xx7
- Toshiba TCx® 800 6200-1xx/Exx
- Toshiba TCx® 810 6201-2xx/Exx
- Toshiba TCx® 810E 4828-T2x/E2x

Chapter 1. Introduction

Toshiba POS Sensor driver for Microsoft Windows® is designed to provide information about the internals of POS systems like temperatures, fan speeds and voltages by making CIM (*Common Information Model*) client requests for system management purposes.

Supported Hardware

Toshiba POS Sensors Driver can be deployed in the following POS systems:

System	Model Number
Toshiba SurePOS 300	4810 - 350/E50
Toshiba TCx® Wave	6140 - 100/10D/E10/E1D 6140 - 120/12D/E20/E2D
Toshiba TCx® Wave	6140 - A30/A3R/E30/E3R
Toshiba TCx® Wave	6140 - 14C/E4C 6140 - 145/E45
Toshiba TCx® Wave	6140 - 15C/E5C 6140 - 155/E55
Toshiba TCx® 300	4810 - 360/E60/36A/E6A 4810 - 370/E70/37A/E7A 4810 - 380/E80
Toshiba TCx® 300	4810 - 361/E61 4810 - 371/E71 4810 - 381/E81 4810 - 391/E91
Toshiba TCx® 700	4900 - 746/E46/C46 4900 - 786/E86/C86
Toshiba TCx® 700	4900 - 767/E67/C67 4900 - 777/E77/C77 4900 - 787/E87/C87 4900 - 797/E97/C97
Toshiba TCx® 800	6200 - 10C/E0C 6200 - 11C/E1C 6200 - 13C/E3C

	6200 - 103/E03 6200 - 113/E13 6200 - 133/E33 6200 - 105/E05 6200 - 115/E15 6200 - 135/E35 6200 - 10/E07 6200 - 117/E17 6200 - 137/E37
Toshiba TCx® 810	6201 - 25C/E5C 6201 - 26C/E6C 6201 - 29C/E9C 6201 - 253/E53 6201 - 263/E63 6201 - 293/E93 6201 - 255/E55 6201 - 265/E65 6201 - 295/E95 6201 - 257/E57 6201 - 267/E67 6201 - 297/E97
Toshiba TCx® 810E	4828 - T2C/E2C 4828 - T25/E25
Toshiba TCx® 900	4901 – 91C/913/915/917 4901 – E1C/E13/E15/E17 4901 – C1C/C15

Software Requirements

Toshiba POS Sensors Driver does not have support on 32-bit architecture. The Microsoft Windows® version that is supported and that has been tested on are listed in the table below:

Operating System	**Architecture**
Windows® 10[1]	64-bit

[1] Best effort will be provided for no tested Microsoft Windows versions.

Chapter 2. Installation and Removal Instructions.

This chapter describes the process to deploy the Toshiba Sensors Driver on the supported systems.

Installation

The installer will first analyze the Toshiba POS System to determine if the package is supported for the hardware (the installation will not continue if it is not supported):

- If installing in UI mode a message box is displayed.
- If installing in silent mode a message will be written to the installing log, if MSI logging is enabled.

Silent Installation

To do a silent (unattended) installation, open Windows Command Prompt as Administrator and enter the following:

```
setup.exe -q
```

Note: To launch the `*setup.exe*` in silent mode you must run `*cmd*` as administrator and launch it from where the installer is located at.

Silent Removal

To execute the silent uninstall, open Windows Command Prompt as Administrator and enter the following:

```
setup.exe -uninstall -quiet
```

Notes:

- To launch the `setup.exe` in silent mode you must run `*cmd*` as administrator and launch it from where the installer is located at.
- Upgrade and migration operations are not currently supported.

Chapter 3. Configuring the Driver

The Toshiba Sensors Driver includes configuration files for its operation, please refer to this section to know about them.

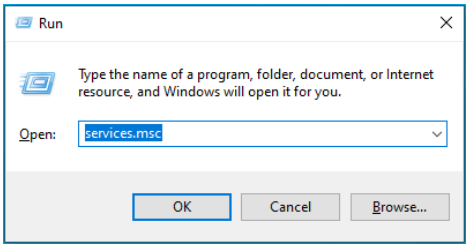
Logging

The driver logs to **<install_ dir>\Toshiba\IPSDW3\LOG\ipsdw3.log**. For normal production usage there is no need to change this behaviour. In fact, it is not recommended.

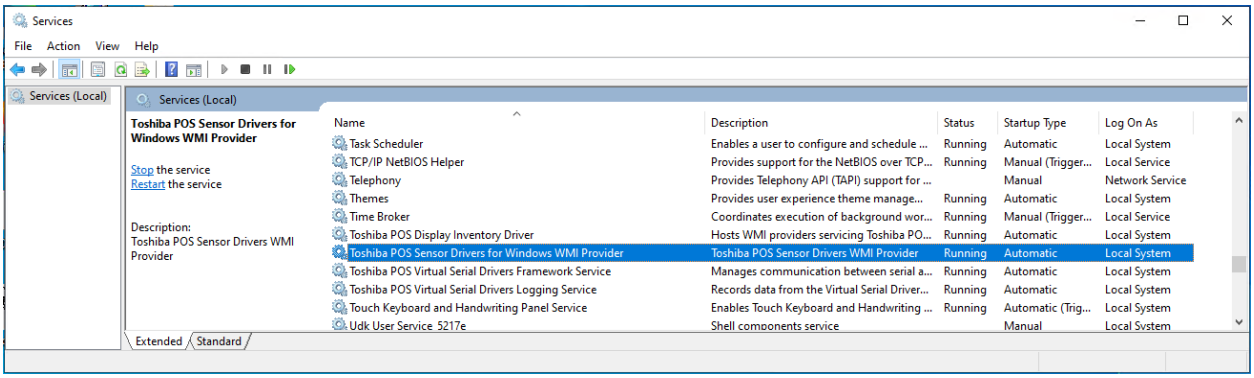
However, if any problems arise, additional information may be required logging for support purposes.

To enable detailed logging:

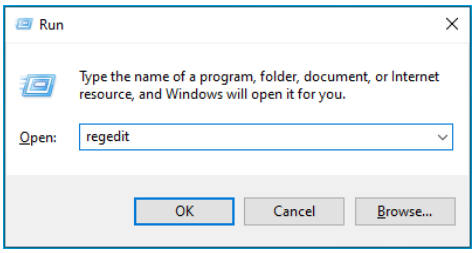
1. Open `*services.msc*` by pressing "Windows + R"



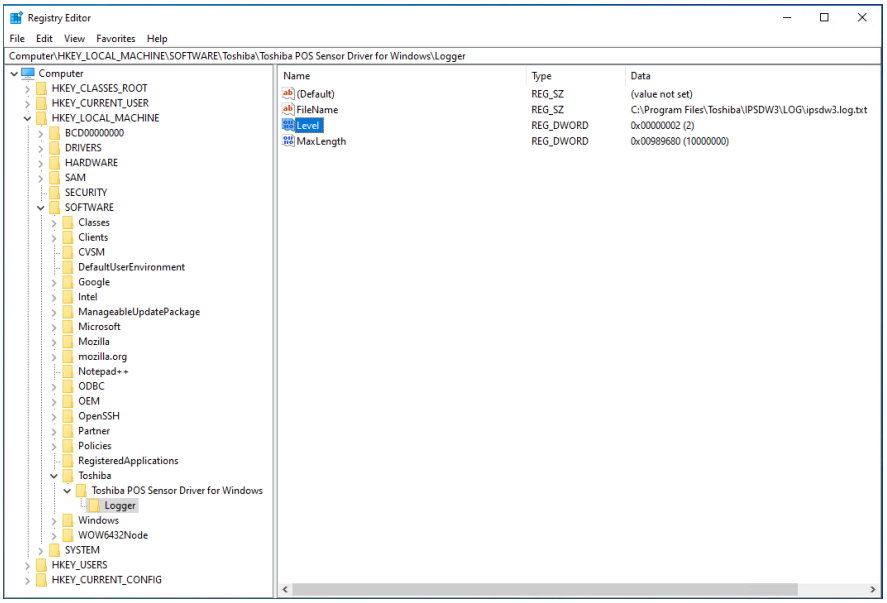
2. Stop `***IPSDW3Svc***` service in Windows application `*services.msc*`.



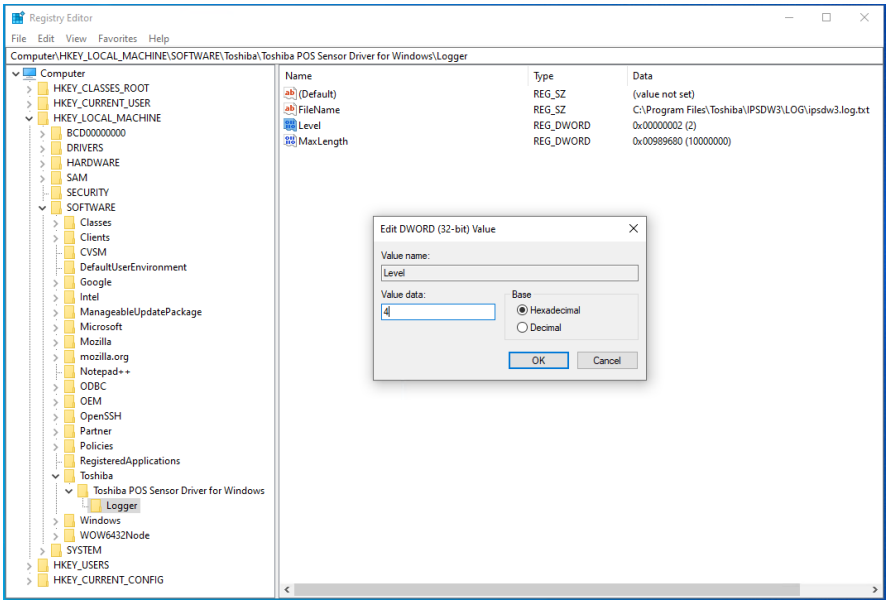
3. Open the `*regedit*` Windows application:



4. Navigate to '**HKEY_LOCAL_MACHINE\SOFTWARE\Toshiba\Toshiba POS Sensor Driver\Logger**':



Under Logger, change the registry '**Level'** to **3** or **4** for a detailed trace logging by double-clicking on it.



Log Levels:

0 - Off
1 - Error
2 - Information (default)
3 - Debug

4 - Trace

It may also be required to increase the log file size by adjusting the '**MaxLength'** value if logging for an extended period.

MaxLength=10000000 (production default)

There are a couple of things to take account:

- Digits should not be separated.
- When reaches to MaxLenght no more logging is recorded.

5. After you set up the log configuration, restart the '**IPSDW3Svc'** service.

Chapter 4. Data Provided by Sensors Driver

Property	Description
Accuracy	Accuracy of a data retrieved from sensor
BaseUnits	Measurement units (volts, rpms, temperatures)
Caption	Sensor name caption
CreatingClassName	(e.g.: RSS_NumericSensor)
CurrentReading	Current sensor reading at data retrieval
Description	Sensor description (e.g.: VCore(0000002d) : Voltage sensor)
DeviceID	Device Identificator (e.g.: 0000002d)
Hysteresis	User statistics for sensor hysteresis
IsLinear	Tell if the sensor behaviour is linear
LowerThresholdCritical	Low critical threshold value of the sensor
LowerThresholdFatal	Low fatal threshold value of the sensor
LowerThresholdNonCritical	Low non-critical threshold value of the sensor
MaxReadable	Max date read value
MinReadable	Minimum data read value
Name [Key]	It describes the supported resolution and refresh rates supported by the monitor (e.g.: “+12V(00000025)”)
NominalReading	Nominal data read value
OtherSensorTypeDescription	Other sensor type description *
RateUnits	(e.g.: 0)
Resolution	Sensor data resolution (e.g.: 10)
SensorType	Type of sensor (voltage, temperature, fan speed)
SystemCreationClassName	“Computer System”
SystemName	"Toshiba POS Sensor Drivers and System Event Log"
UnitModifier	‘-3’
UpperThresholdCritical	Upper threshold critical value
UpperThresholdFatal	Upper threshold fatal value
UpperThresholdNonCritical	Upper non-critical threshold value

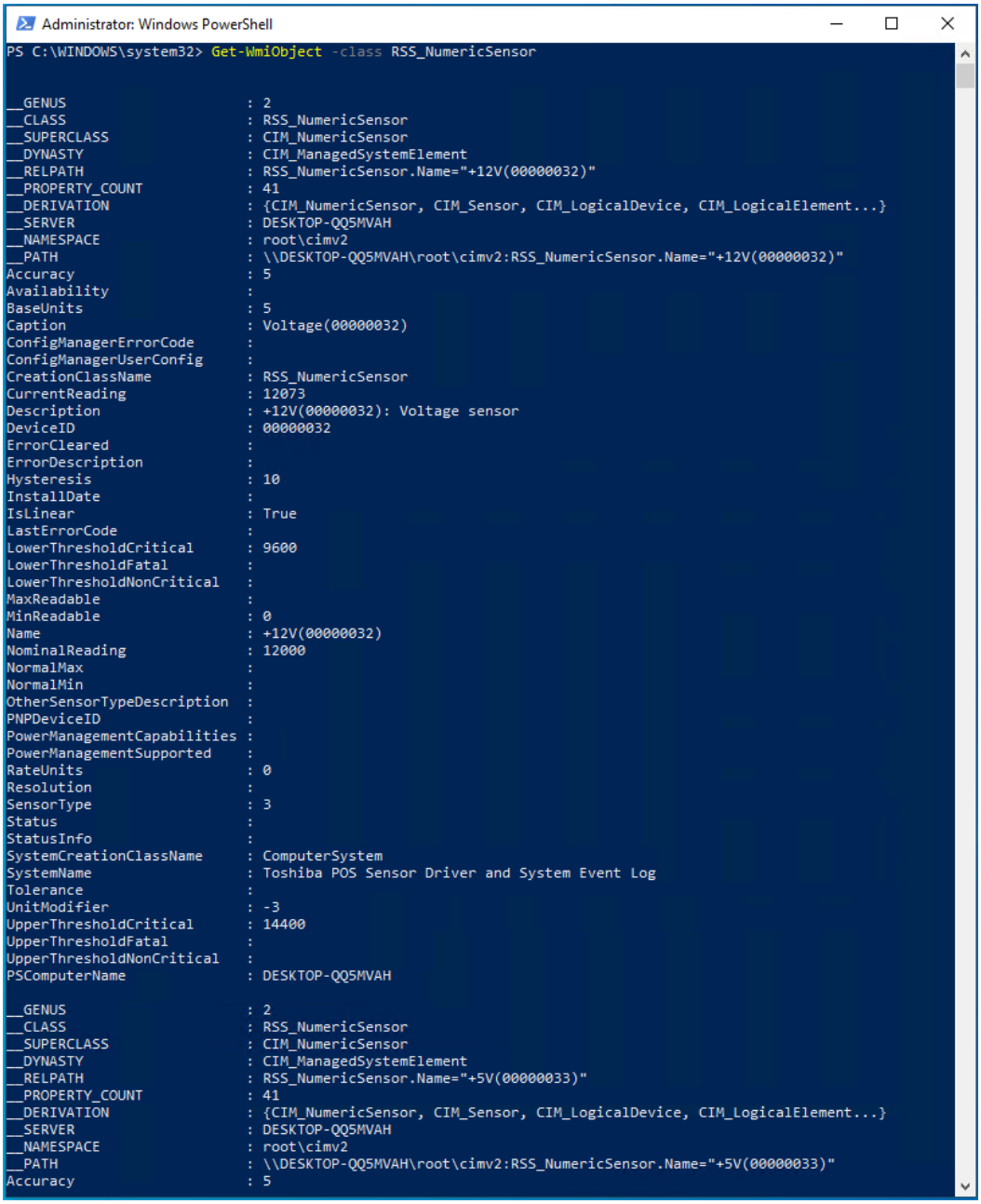
Chapter 5. Accessing the Sensors Information

In this section discuss how to retrieve the information and how to interact with what the Sensors Driver provides.

Enumerating Instance Names

To querying the WMI (Windows Management Instrumentation) class “RSS_NumericSensor” and get information from each instance name supported by Sensors you can use `*Get-WmiObject*` command in *PowerShell (as Administrator)*, to do so, please run the next command:

```
> Get-WmiObject -class RSS_NumericSensor
```



```
Administrator: Windows PowerShell
PS C:\WINDOWS\system32> Get-WmiObject -class RSS_NumericSensor


__GENUS                     : 2
__CLASS                     : RSS_NumericSensor
__SUPERCLASS                : CIM_NumericSensor
__DYNASTY                   : CIM_ManagedSystemElement
__RELPATH                   : RSS_NumericSensor.Name="+12V(00000032)"
__PROPERTY_COUNT            : 41
__DERIVATION                : {CIM_NumericSensor, CIM_Sensor, CIM_LogicalDevice, CIM_LogicalElement...}
__SERVER                    : DESKTOP-QQ5MVAH
__NAMESPACE                 : root\cimv2
__PATH                      : \\DESKTOP-QQ5MVAH\root\cimv2:RSS_NumericSensor.Name="+12V(00000032)"
Accuracy                    : 5
Availability                :
BaseUnits                   : 5
Caption                     : Voltage(00000032)
ConfigManagerErrorCode      :
ConfigManagerUserConfig     :
CreationClassName           : RSS_NumericSensor
CurrentReading              : 12073
Description                 : +12V(00000032): Voltage sensor
DeviceID                    : 00000032
ErrorCleared                :
ErrorDescription            :
Hysteresis                  : 10
InstallDate                 :
IsLinear                    : True
LastErrorCode               :
LowerThresholdCritical      : 9600
LowerThresholdFatal         :
LowerThresholdNonCritical   :
MaxReadable                 :
MinReadable                 : 0
Name                        : +12V(00000032)
NominalReading              : 12000
NormalMax                   :
NormalMin                   :
OtherSensorTypeDescription  :
PNPDeviceID                 :
PowerManagementCapabilities :
PowerManagementSupported    :
RateUnits                   : 0
Resolution                  :
SensorType                  : 3
Status                      :
StatusInfo                  :
SystemCreationClassName     : ComputerSystem
SystemName                  : Toshiba POS Sensor Driver and System Event Log
Tolerance                   :
UnitModifier                : -3
UpperThresholdCritical      : 14400
UpperThresholdFatal         :
UpperThresholdNonCritical   :
PSComputerName              : DESKTOP-QQ5MVAH

__GENUS                     : 2
__CLASS                     : RSS_NumericSensor
__SUPERCLASS                : CIM_NumericSensor
__DYNASTY                   : CIM_ManagedSystemElement
__RELPATH                   : RSS_NumericSensor.Name="+5V(00000033)"
__PROPERTY_COUNT            : 41
__DERIVATION                : {CIM_NumericSensor, CIM_Sensor, CIM_LogicalDevice, CIM_LogicalElement...}
__SERVER                    : DESKTOP-QQ5MVAH
__NAMESPACE                 : root\cimv2
__PATH                      : \\DESKTOP-QQ5MVAH\root\cimv2:RSS_NumericSensor.Name="+5V(00000033)"
Accuracy                    : 5
```

This command will enumerate all the instance names and instance information that belongs to **RSS_NumericSensor** class, depending on the POS system used, the enumeration of the sensors might be a little different.

Note: Some of the properties gotten from get instance command might not be filled.

Chapter 6. List of Sensors Supported on Each System

In this section lists the sensors supported on the systems described in the Supported Hardware table.

System	Supported Sensors
SurePOS 300 4810-x50	root/cimv2:RSS_NumericSensor.Name="+12V(00000033)" root/cimv2:RSS_NumericSensor.Name="+5V(00000034)" root/cimv2:RSS_NumericSensor.Name="VCC3(00000037)" root/cimv2:RSS_NumericSensor.Name="Chipset(0000003a)" root/cimv2:RSS_NumericSensor.Name="System Memory(0000003d)" root/cimv2:RSS_NumericSensor.Name="CPU Temperature(00000040)" root/cimv2:RSS_NumericSensor.Name="CPU FAN(00000043)" root/cimv2:RSS_NumericSensor.Name="System Temperature(00000046)" root/cimv2:RSS_NumericSensor.Name="System FAN(00000049)" root/cimv2:RSS_NumericSensor.Name="Ambient Temperature(0000004c)" root/cimv2:RSS_NumericSensor.Name="Power Supply FAN(0000004f)"
Toshiba TCx® Wave 6140-10x/E1x/x2x	root/cimv2:RSS_NumericSensor.Name="+12V(00000021)" root/cimv2:RSS_NumericSensor.Name="+5V(00000024)" root/cimv2:RSS_NumericSensor.Name="VCC3(00000027)" root/cimv2:RSS_NumericSensor.Name="PCH(0000002a)" root/cimv2:RSS_NumericSensor.Name="System Memory(0000002d)" root/cimv2:RSS_NumericSensor.Name="CPU Temperature(00000030)" root/cimv2:RSS_NumericSensor.Name="CPU FAN(00000033)" root/cimv2:RSS_NumericSensor.Name="Enclosure Ambient Temperature(00000036)" root/cimv2:RSS_NumericSensor.Name="System FAN(00000039)"
Toshiba TCx® Wave 6140-x3x	root/cimv2:RSS_NumericSensor.Name="+12V(00000020)" root/cimv2:RSS_NumericSensor.Name="+5V(00000023)" root/cimv2:RSS_NumericSensor.Name="VCC3(00000026)" root/cimv2:RSS_NumericSensor.Name="CPU Temperature(00000029)" root/cimv2:RSS_NumericSensor.Name="CPU FAN(0000002c)" root/cimv2:RSS_NumericSensor.Name="Enclosure Ambient Temperature(0000002f)"
Toshiba TCx® Wave 6140-x4x	root/cimv2:RSS_NumericSensor.Name="+12V(00000016)" root/cimv2:RSS_NumericSensor.Name="CPU VCORE Volt(00000019)" root/cimv2:RSS_NumericSensor.Name="CPU IO Volt(0000001c)" root/cimv2:RSS_NumericSensor.Name="DDR4 VPP(0000001f)" root/cimv2:RSS_NumericSensor.Name="+5V(00000022)" root/cimv2:RSS_NumericSensor.Name="DDR4 VDDQ(00000025)" root/cimv2:RSS_NumericSensor.Name="PCH IO Volt(00000028)"

	root/cimv2:RSS_NumericSensor.Name="CPU Temperature(0000002b)" root/cimv2:RSS_NumericSensor.Name="CPU FAN(0000002e)" root/cimv2:RSS_NumericSensor.Name="System Ambient Temperature(00000031)" root/cimv2:RSS_NumericSensor.Name="HDD Temperature(00000034)"
Toshiba TCx® Wave x5x	root/cimv2:RSS_NumericSensor.Name="+12V(00000016)" root/cimv2:RSS_NumericSensor.Name="CPU VCORE Volt(00000019)" root/cimv2:RSS_NumericSensor.Name="CPU IO Volt(0000001c)" root/cimv2:RSS_NumericSensor.Name="DDR4 VPP(0000001f)" root/cimv2:RSS_NumericSensor.Name="+5V(00000022)" root/cimv2:RSS_NumericSensor.Name="DDR4 VDDQ(00000025)" root/cimv2:RSS_NumericSensor.Name="PCH IO Volt(00000028)" root/cimv2:RSS_NumericSensor.Name="CPU Temperature(0000002b)" root/cimv2:RSS_NumericSensor.Name="CPU FAN(0000002e)" root/cimv2:RSS_NumericSensor.Name="System Ambient Temperature(00000031)" root/cimv2:RSS_NumericSensor.Name="HDD Temperature(00000034)"
Toshiba TCx® 300 4810-xx0/xxA	root/cimv2:RSS_NumericSensor.Name="+12V(00000020)" root/cimv2:RSS_NumericSensor.Name="+5V(00000023)" root/cimv2:RSS_NumericSensor.Name="VCC3(00000026)" root/cimv2:RSS_NumericSensor.Name="PCH(00000029)" root/cimv2:RSS_NumericSensor.Name="+1.5V(0000002c)" root/cimv2:RSS_NumericSensor.Name="VCore(0000002f)" root/cimv2:RSS_NumericSensor.Name="CPU Temperature(00000032)" root/cimv2:RSS_NumericSensor.Name="CPU Fan(00000035)" root/cimv2:RSS_NumericSensor.Name="System Temperature(00000038)" root/cimv2:RSS_NumericSensor.Name="System Fan(0000003b)" root/cimv2:RSS_NumericSensor.Name="Ambient Temperature(0000003e)" root/cimv2:RSS_NumericSensor.Name="Power Supply Fan(00000041)"
Toshiba TCx® 300 4810-xx1	root/cimv2:RSS_NumericSensor.Name="+12V(0000001e)" root/cimv2:RSS_NumericSensor.Name="+5V(00000021)" root/cimv2:RSS_NumericSensor.Name="VCC3(00000024)" root/cimv2:RSS_NumericSensor.Name="+1.05V(00000027)" root/cimv2:RSS_NumericSensor.Name="+1.2V(0000002a)" root/cimv2:RSS_NumericSensor.Name="VCore(0000002d)" root/cimv2:RSS_NumericSensor.Name="CPU Temperature(00000030)" root/cimv2:RSS_NumericSensor.Name="CPU Fan(00000033)" root/cimv2:RSS_NumericSensor.Name="System Temperature(00000036)" root/cimv2:RSS_NumericSensor.Name="System Fan(00000039)" root/cimv2:RSS_NumericSensor.Name="Enclosure Ambient Temperature(0000003c)" root/cimv2:RSS_NumericSensor.Name="Power Supply Fan(0000003f)"
Toshiba TCx® 700 4900-xx6	root/cimv2:RSS_NumericSensor.Name="+12V(00000020)" root/cimv2:RSS_NumericSensor.Name="+5V(00000023)" root/cimv2:RSS_NumericSensor.Name="VCC3(00000026)" root/cimv2:RSS_NumericSensor.Name="PCH(00000029)" root/cimv2:RSS_NumericSensor.Name="+1.5V(0000002c)" root/cimv2:RSS_NumericSensor.Name="VCore(0000002f)" root/cimv2:RSS_NumericSensor.Name="CPU Temperature(00000032)"

	root/cimv2:RSS_NumericSensor.Name="CPU Fan(00000035)" root/cimv2:RSS_NumericSensor.Name="System Temperature(00000038)" root/cimv2:RSS_NumericSensor.Name="System Fan(0000003b)" root/cimv2:RSS_NumericSensor.Name="Ambient Temperature(0000003e)" root/cimv2:RSS_NumericSensor.Name="Power Supply Fan(00000041)"
Toshiba TCx® 700 4900-xx7	root/cimv2:RSS_NumericSensor.Name="+12V(0000001e)" root/cimv2:RSS_NumericSensor.Name="+5V(00000021)" root/cimv2:RSS_NumericSensor.Name="VCC3(00000024)" root/cimv2:RSS_NumericSensor.Name="+1.05V(00000027)" root/cimv2:RSS_NumericSensor.Name="+1.2V(0000002a)" root/cimv2:RSS_NumericSensor.Name="VCore(0000002d)" root/cimv2:RSS_NumericSensor.Name="CPU Temperature(00000030)" root/cimv2:RSS_NumericSensor.Name="CPU Fan(00000033)" root/cimv2:RSS_NumericSensor.Name="System Temperature(00000036)" root/cimv2:RSS_NumericSensor.Name="System Fan(00000039)" root/cimv2:RSS_NumericSensor.Name="Enclosure Ambient Temperature(0000003c)" root/cimv2:RSS_NumericSensor.Name="Power Supply Fan(0000003f)"
Toshiba TCx® 800 6200-1xx/Exx	root/cimv2:RSS_NumericSensor.Name="+12V(00000015)" root/cimv2:RSS_NumericSensor.Name="CPU VCORE Volt(00000018)" root/cimv2:RSS_NumericSensor.Name="CPU IO Volt(0000001b)" root/cimv2:RSS_NumericSensor.Name="DDR4 VPP(0000001e)" root/cimv2:RSS_NumericSensor.Name="+5V(00000021)" root/cimv2:RSS_NumericSensor.Name="DDR4 VDDQ(00000024)" root/cimv2:RSS_NumericSensor.Name="PCH IO Volt(00000027)" root/cimv2:RSS_NumericSensor.Name="CPU Temperature(0000002a)" root/cimv2:RSS_NumericSensor.Name="CPU FAN(0000002d)" root/cimv2:RSS_NumericSensor.Name="System Ambient Temperature(00000030)" root/cimv2:RSS_NumericSensor.Name="SSD Temperature(00000033)"
Toshiba TCx® 810 6201-2xx/Exx	root/cimv2:RSS_NumericSensor.Name="+12V(00000032)" root/cimv2:RSS_NumericSensor.Name="+5V(00000033)" root/cimv2:RSS_NumericSensor.Name="PCH Volt(00000034)" root/cimv2:RSS_NumericSensor.Name="Memory Volt(00000035)" root/cimv2:RSS_NumericSensor.Name="VCore Volt(00000036)" root/cimv2:RSS_NumericSensor.Name="CPU Fan(00000037)" root/cimv2:RSS_NumericSensor.Name="CPU Temperature(00000038)" root/cimv2:RSS_NumericSensor.Name="System Temperature(00000039)" root/cimv2:RSS_NumericSensor.Name="Enclosure Ambient Temperature(00000040)"
Toshiba TCx® 810E 4828- T2x/E2x	root/cimv2:RSS_NumericSensor.Name="+5V(0000001a)" root/cimv2:RSS_NumericSensor.Name="Memory Voltage(0000001d)" root/cimv2:RSS_NumericSensor.Name="PCH Voltage(00000020)" root/cimv2:RSS_NumericSensor.Name="VCore Voltage(00000017)" root/cimv2:RSS_NumericSensor.Name="+12V(00000023)" root/cimv2:RSS_NumericSensor.Name="CPU Temperature(00000026)" root/cimv2:RSS_NumericSensor.Name="SSD Temperature(00000029)" root/cimv2:RSS_NumericSensor.Name="Enclosure Ambient Temperature(0000002c)"

Toshiba TCx® 900 4901- 91x/E1x/C1x	root\cimv2:RSS_NumericSensor.Name="CPU_VCORE(0000001b)" root\cimv2:RSS_NumericSensor.Name="+5V(0000001e)" root\cimv2:RSS_NumericSensor.Name="1P05_SB(00000021)" root\cimv2:RSS_NumericSensor.Name="Memory 1P2V(00000024)" root\cimv2:RSS_NumericSensor.Name="+12V_S2(00000027)" root\cimv2:RSS_NumericSensor.Name="VCC3(0000002a)" root\cimv2:RSS_NumericSensor.Name="CPU Temperature(0000002d)" root\cimv2:RSS_NumericSensor.Name="CPU FAN(00000030)" root\cimv2:RSS_NumericSensor.Name="Solid State Disk 2 Temperature(00000033)" root\cimv2:RSS_NumericSensor.Name="Solid State Disk 1 Temperature(00000036)" root\cimv2:RSS_NumericSensor.Name="CPU VR Temperature(00000039)" root\cimv2:RSS_NumericSensor.Name="System Ambient Temperature(0000003c)"

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