i-STS

SNMP MIB
User Manual

Version 2.3.1

CONTENTS

INTRODUCTION

This MIB documentation aims to provide all necessary definitions to provide basic control and monitoring capabilities of the Static Transfer Switch via SNMP version 1.0.

There are three sections to the MIB:

1. Basic System Information
2. Trap Information
3. Control and Operational Variables

CONVENTIONS

The *i*-STS Manufacturing Private Enterprise Number is 32796. Therefore, the prefix for all OIDs is:
43.6.1.4.1.32796

For all table variables, 0 is the first index, and is referenced by adding an '[index]' to the end of the OID. ie, for the trap receiver IP:
43.6.1.4.1.32796.2.1.1.3.0

Some variables may be represented as a base 10 multiple of the actual value, so as to avoid floating point values. The multiplier will be indicated where appropriate.
Note also that all variables are read only unless otherwise specified.

MIB DEFINITION

BASIC SYSTEM INFORMATION

Variable	OID	Type	Description
Product Name	1.1.0	String	Name and variant of the Static Switch
Product Version	1.2.0	String	Version number of the Static Switch
Product Date	1.3.0	String	Date stamp for the product version

TRAP INFORMATION

The Trap table stores details for up to two receivers. 0 is the index of the first entry into the table. Entries are writeable.

Variable	OID	Type	Description
Trap Receiver Id	2.1.1.1.0	Integer	Index into the Trap Table
Receiver Enabled	2.1.1.2.0	Integer	Boolean indicator of whether receiver enabled
Receiver IP	2.1.1.3.0	Dotted Notation IP	IP Address of Trap receiver
Trap Community	2.1.1.4.0	String	Trap Community Id

CONTROL AND OPERATIONAL VARIABLES

These can be further split into several sections

OPERATIONAL VARIABLES

Variable	OID	Type	Description
Active Supply/ Transfer Command	3.1.1.0	Integer	The currently active supply. The possible values 1 or 2 are writeable. A Value of 3 activates the inhibit A Value of 4 releases the inhibit A Value of 5 Alarm Cancel (Reset & Release all other Inhibits)
Preferred Supply	3.1.2.0	Integer	The preferred supply. The possible values 1 or 2 are writeable.
Frequency Supply 1	3.1.3.0	Integer	10 x the frequency of supply 1. Ie 501 indicates 50.1 Hz.
Frequency Supply 2	3.1.4.0	Integer	10 x the frequency of supply 2.
Synchronisation	3.1.5.0	Integer	Synchronisation between the two supplies
Neutral Current	3.1.6.0	Integer	10 x the Neutral current. This may not be available on some models.

INPUT VARIABLES

This is a table of either one or three entries, depending on the model of the Static Transfer Switch. It represents the phases. 0 is the index of either the main entries, or Red phase.

Variable	OID	Type	Description
Input Variables	3.2.1.0	Integer	The index into the Input Variables table
S1	3.2.2.0	Integer	The voltage of Supply 1
S2	3.2.3.0	Integer	The voltage of Supply 2

OUTPUT VARIABLES

This is a table of either one or three entries, depending on the model of the Static Transfer Switch. It represents the phases. 0 is the index of either the main entries, or Red phase.

Variable	OID	Type	Description
Output Variables	3.3.1.0	Integer	The index into the Output Variables table
S3	3.3.2.0	Integer	The voltage of the output
Current	3.3.3.0	Integer	10 x the current delivered
kVA	3.3.4.0	Integer	10 x the calculated kVA
kW	3.3.5.0	Integer	10 x the calculated kW
PF	3.3.6.0	Integer	10 x Power Factor
CF	3.3.7.0	Integer	10 x Crest Factor
THDI	3.3.8.0	Integer	10 x the percentage of Total Harmonic Distortion of the current
THDV	3.3.9.0	Integer	10 x the percentage of Total Harmonic Distortion of the Voltage.

EVENT LOG

This is a table of event entries. There is a variable amount of entries up to a maximum of 100. When receiving next index of 0xFF, it indicates end of table.

Variable	OID	Type	Description
Event Log	3.4.1.0-100	Integer	The index into the Event Log
Event Item	3.4.2.0-100	Integer	The value returned also is now the number of seconds since 1 Jan 1970 00:00:00. This is the well-known Unix timestamp that practically all 32 bit timestamps are based off. There are many software libraries that can convert that to text of any format, so the returned number needs to be formatted using your SNMP Management Software. As an example, see the following URL: http://www.onlineconversion.com/unix_time.htm
EVENT_TIME	Timestamp		43.6.1.4.1.32796.3.4.2
EVENT_NUM	Integer		43.6.1.4.1.32796.3.4.3
EVENT_VAL	Integer		43.6.1.4.1.32796.3.4.4

EVENT_NUM can be one of:

Boot	0	Transfer	25
Initialise	1	Low Power Mode	26
Watchdog	2	Current	27
Stack	3	Manual Bypass	28
Blank Index	4	Preference	29
EEPROM	5	Varf	30
ROM	6	Total Harmonic Distortion Current	31
Battery	7	Total Harmonic Distortion Voltage	32
Communications	8	Ambient	33
Calibration	9	Magnetics	34
Supply 1 Average	10	Heat-sink	35
Supply 1 Transient	11	Fan	36
Supply 1	12	Thermal	37
Frequency	13	Debug	38
Sync	14	Remote Power	39
Supply 2 Average	15	Remote Transfer Request	40
Supply 2 Transient	16	Local Transfer Request	41
Supply 2	17	Blank	42
On	18	Breaker Open	43
Off	19	Breaker Closed	44
Force	20	Tripped	45
Supply 3	21	Thyristor Short circuit	46
Overload	22	Thyristor Open circuit	47
Load	23	Alarm Cancel	48
Fail	24	Power Supply	49
Transfer	25	Back Feed	50

EVENT_VAL can be one of:
0, 1, 2, 3, 4, 5, 6, 7, 8, 9
10 Nothing
11 OK
12 HI
13 LOW
14 FLT
15 CLR
16 LOS
17 ON
18 OFF
19 TMR
20 1
21 2

ALARMS

This is a single bitmapped integer.

Variable	OID	Type	Description
Event Log	3.5.1.0	Integer	Bitmapped alarm

Bit Id	Alarm
0x01	Supply 1 Bad
0x02	Supply 2 Bad
0x04	Not on Preferred
0x08	Synchronisation Loss
0x10	Load Fault
0x20	High Temperature
0x40	Forced Supply

UTILISATION

This is a set of variables indicating the unit's general statistics.

Variable	OID	Type	Description
Hours 1	3.6.1.0	Integer	Hours on supply 1. Rounded to nearest hour.
Hours 2	3.6.2.0	Integer	Hours on supply 2. Rounded to nearest hour.
Hours Preferred	3.6.3.0	Integer	Hours on the preferred supply. Rounded to nearest hour.
Hours Operation	3.6.4.0	Integer	Hours the unit has been in operation. Rounded to nearest hour.
Hours no Output	3.6.5.0	Integer	Hours the unit has not been able to supply output. Rounded to nearest hour.
Number Forced Transfers	3.6.6.0	Integer	The number of times the unit has been forced onto a supply.
Number Sync Losses	3.6.7.0	Integer	The number of times the unit has lost synchronisation between supplies.
Last Load Fault	3.6.8.0	Time Stamp	Timestamp of the last load fault. This is in seconds since 1st of January 2002?
Number Supply Outages	3.6.9.0	Integer	Number of supply outages that have occurred during units operation.
Last Supply Outage	3.6.10.0	Time Stamp	Timestamp of the last supply outage. This is in seconds since 1st of January 2002?

TYPICAL WALK OUTPUT

Name/OID	Value	Type
sysDescr.0	PICDEM.net running Microchip SNMP Agent	OctetString
sysObjectID.0	.1.3.6.1.4.1.32796	OID
sysUpTime.0	6 minutes 43 seconds	TimeTicks
sysContact.0	techsupport@microchip.com	OctetString
sysName.0	PICDEM.net	OctetString
sysLocation.0	Near Your Desk	OctetString
sysServices.0	7	Integer
.1.3.6.1.4.1.32796.1.1.0	Microchip SNMP Agent	OctetString
.1.3.6.1.4.1.32796.1.2.0	v1.0	OctetString
.1.3.6.1.4.1.32796.1.3.0	May 2003	OctetString
.1.3.6.1.4.1.32796.2.1.1.1.0	0	Integer
.1.3.6.1.4.1.32796.2.1.1.1.1	1	Integer
.1.3.6.1.4.1.32796.2.1.1.2.0	0	Integer
.1.3.6.1.4.1.32796.2.1.1.2.1	0	Integer
.1.3.6.1.4.1.32796.2.1.1.3.0	0.0.0.0	IpAddress
.1.3.6.1.4.1.32796.2.1.1.3.1	0.0.0.0	IpAddress
.1.3.6.1.4.1.32796.2.1.1.4.0		OctetString
.1.3.6.1.4.1.32796.2.1.1.4.1		OctetString
.1.3.6.1.4.1.32796.3.1.1.0	1	Integer
.1.3.6.1.4.1.32796.3.1.2.0	0	Integer
.1.3.6.1.4.1.32796.3.1.3.0	500	Integer
.1.3.6.1.4.1.32796.3.1.4.0	500	Integer
.1.3.6.1.4.1.32796.3.1.5.0	123	Integer
.1.3.6.1.4.1.32796.3.1.6.0	0	Integer
.1.3.6.1.4.1.32796.3.2.1.0	0	Integer
.1.3.6.1.4.1.32796.3.2.2.0	234	Integer
.1.3.6.1.4.1.32796.3.2.3.0	234	Integer
.1.3.6.1.4.1.32796.3.3.1.0	0	Integer
.1.3.6.1.4.1.32796.3.3.2.0	233	Integer
.1.3.6.1.4.1.32796.3.3.3.0	3	Integer
.1.3.6.1.4.1.32796.3.3.4.0	1	Integer
.1.3.6.1.4.1.32796.3.3.5.0	0	Integer
.1.3.6.1.4.1.32796.3.3.6.0	0	Integer
.1.3.6.1.4.1.32796.3.3.7.0	0	Integer
.1.3.6.1.4.1.32796.3.3.8.0	9999	Integer
.1.3.6.1.4.1.32796.3.3.9.0	10791	Integer
.1.3.6.1.4.1.32796.3.4.1.0	0	Integer
.1.3.6.1.4.1.32796.3.4.1.1	1	Integer
.1.3.6.1.4.1.32796.3.4.1.2	2	Integer
.1.3.6.1.4.1.32796.3.4.1.3	3	Integer
.1.3.6.1.4.1.32796.3.4.1.4	4	Integer
.1.3.6.1.4.1.32796.3.4.1.5	5	Integer
.1.3.6.1.4.1.32796.3.4.1.6	6	Integer
.1.3.6.1.4.1.32796.3.4.1.7	7	Integer
.1.3.6.1.4.1.32796.3.4.1.8	8	Integer
.1.3.6.1.4.1.32796.3.4.1.9	9	Integer
.1.3.6.1.4.1.32796.3.4.1.10	10	Integer
.1.3.6.1.4.1.32796.3.4.1.11	11	Integer
.1.3.6.1.4.1.32796.3.4.1.12	12	Integer
.1.3.6.1.4.1.32796.3.4.1.13	13	Integer
.1.3.6.1.4.1.32796.3.4.1.14	14	Integer
.1.3.6.1.4.1.32796.3.4.1.15	15	Integer

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