TOSHIBA

TOSHIBA Windows POS Terminal

ST-B20

Event Log Monitoring Function External Interface Specification

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TOSHIBA TEC CORPORATION

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Event Log Monitoring Function External Interface Specification

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1. General

Purpose
Just in case the POS terminal's display cannot show anything due to a faulty condition of the POS terminal, this Event Log Monitoring Program displays error log information of the fatal error last occurred using the 7SEG display (7SEG).

1.1 Introduction

This program is an application program which runs on Windows operating systems and has the following features:
- Monitors event logs.
- Performs an event log search using event IDs or keywords specified and displays a result on 7SEG.

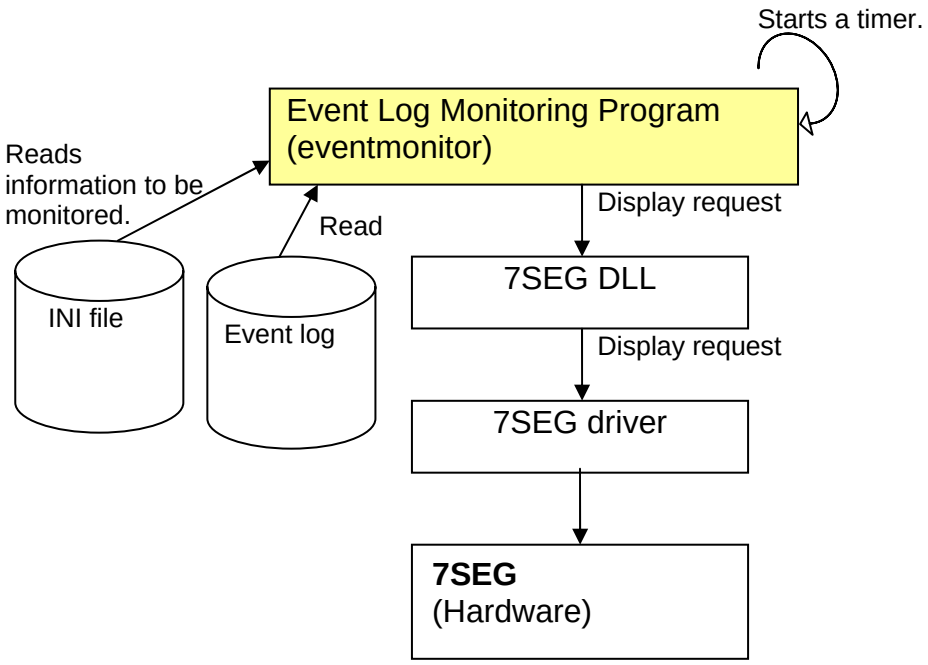
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1.2 Scope

This program supports performance on the following hardware and operating systems.

Hardware:	ST-B20
Operating System:	Windows7 Professional WindowsVista Business SP1 WindowsXP Professional WEPOS (Windows Embedded for Point of Service) POSReady 2009 (Windows Embedded POSReady 2009) Windows2000 Professional SP3

1.3 Structure



* Successful installation of the TEC7SEG driver (DRVSENSOR.SYS) is a prerequisite.

The eventmonitor program was developed using the MFC application template as an SDI document.
Main SDI frame window: CMainFrame

1.4 Features

1.4.1 Startup Process

Displays an error message if the monitoring information (INI file) has not been set.
Registers and iconizes an event log monitoring timer and starts the timer with the icon.
Reads information to be searched (event ID, keyword) from a file to be monitored (INI file).

1.4.2 Event Log Monitoring Timer Process Function

Periodically starts the event log monitoring function using the timer.
At an initial startup, searches the target event logs for the retrospective time specified.
At the second and later startups, the event log search is performed from the last monitoring end time to the time when the latest event log occurred.
This process searches event logs from the target search information using the event IDs or keywords specified and displays a search result on 7SEG if there is any hit.
The priority of the information to be displayed is given to the target information found earlier when the event logs are searched from the latest.

Target event logs
- System event log

1.4.3 7SEG Display Function

When the target event logs to be monitored are found, the information is displayed on 7SEG using the specified symbols.

* For the 7SEG specified symbols, refer to the 7SEG Display Driver External Interface Specification.

2. Functions

2.1 File Name

EventMonitor.EXE

2.2 Function List

Function Name		Description of Function
CMainFrame		Main SDI frame window
emGetPrivateProfile		Read INI file process (Called by CMainFrame::CmainFrame)
emTimer		Timer process (Called by CMainFrame::OnTimer)
	emGetEventlog	Get event log process
	emSeaEventLog	Search event log process
	emSeaEventID	Search event log ID process
	emSeaEventKey	Search event log keyword process
	em7seg	Display 7SEG process

2.3 Definition Information

2.3.1 Definition information

Definition	Value	Remarks
Maximum number of IDs to be searched	100	
Maximum number of keywords to be searched	100	
Retrospective time at an initial startup	Defined in the INI file	Specified in minutes. (Default: 60 min.)
Search intervals	5 sec.	
Target event ID to be searched	Defined in the INI file.	
Event keywords to be searched	Defined in the INI file.	
7SEG codes to be displayed	Defined in the INI file.	For details, refer to the following sections of the 7SEG Library External Interface Specification: 2.2.3 Disp7SEG 2.2.4 Disp7SEGBit

2.3.2 INI file Structure

(1) File name
EventMonitor.ini

(2) File structure

```
[Common]
EventIDnum=3  ←Number of event IDs to be searched (Even when there are 10 target event IDs, only 3
                IDs can be found.)
KeyWordNum=4  ←Number of keywords to be searched
BeforeTime=60  ←Retrospective time at an initial startup (min.)

[SearchEventID]
EventID1=xxxx,xx  ←Event ID to be searched, Value to be displayed on 7SEG
EventID2=xxxx,xx
EventID3=xxxx,xx
   :
   :
EventID100=xxxx,xx  ←Max. 100

[SearchEventWord]
KeyWord1=xxxx,xx  ← Keyword to be searched, Value to be displayed on 7SEG
KeyWord2=xxxx,xx
KeyWord3=xxxx,xx
KeyWord4=xxxx,xx
  :
  :
KeyWord100=xxxx,xx  ←Max. 100 Keyword string, 7SEG display codes
```

(3) Contents of INI file

Section definition part

- Common --- Common information
- SearchEventID --- Event ID search definition section
  Section to define IDs to be searched by event IDs and 7SEG codes to be displayed
  Max. 100 items can be defined.
- SearchEventWord --- Keyword search definition section
  Displays keywords to be searched in an event log message.
  7SEG code definition section
  Max. 100 items can be defined

Key information definition part

- EventIDnum --- Defined number of event IDs to be searched
- KeyWordNum --- Defined number of keywords to be searched
- BeforeTime --- Retrospective time at startup (min.) which defines a time to go back during which a retrospective search is to be performed
- EventIDx --- Definition of event ID search information (x: Number of information 1 to 100)
  Max. 100 items
  Defines event IDs to be searched and 7SEG codes to be displayed.
  If more event IDs are defined than the defined number of event IDs to be searched, the defined number of event IDs to be searched is effective.
  If the defined number of event IDs to be searched is larger than the number of target items to be searched, the number of target items to be searched is effective.
  If the number of target items to be searched is not defined, the defined number of event IDs to be searched is 0.
- KeyWordx --- Definition of event log keyword search information (x: Number of information 1 to 100)
  Max. 100 items
  Defines event log keywords to be searched and 7SEG codes to be displayed.
  If more keywords are defined than the defined number of keywords to be searched, the defined number of keywords to be searched is effective.
  If the defined number of keywords to be searched is larger than the number of target items to be searched, the number of target items to be searched is effective.
  If the number of target items to be searched is not defined, the defined number of event log keywords to be searched is 0.
  Keyword search: partial match (which searches items that contain the defined keywords. For example, when “hard disk” is a keyword, “hard disk drive” is found.)
  Line feed is not acceptable.

2.4 Internal Design

2.4.1 Main Process

File name		Function name	CMainFrame
ID			Main process
CallingSequence			
CMainFrame::CMainFrame()			
Overview of process			
Event log monitoring main process			
Overview of process			
Name		Description	
Parameter		I/O	Description
Return value			
Description of process			
: Read INI file process (emGetPrivateProfile) : Return			

2.4.2 Read INI file Process

File name		Function name	emGetPrivateProfile
ID			Read INI file process
CallingSequence			
void emGetPrivateProfile()			
Overview of process			
Read INI file process			
Reference include			
Name		Description	
Parameter		I/O	Description
Return value			
Description of process			
Gets the current directory. (GetCurrentDirectory) Edits the INI file path. Gets the retrospective time. (GetPrivateProfileString) Gets the number of targets to be searched by the event log keywords. (GetPrivateProfileString) Gets the target information searched by the event log keywords. (GetPrivateProfileString) Gets the target information searched by the event log IDs. (emGetInitProfile) Gets the target information searched by the event log keys. (emGetInitProfile)			

2.4.3 Timer Process

File name		Function name	emTimer
ID			Timer process
CallingSequence			
Overview of process			
Event log monitoring timer process			
Reference include			
Name		Description	
Parameter		I/O	Description
Return value			
Description of process			

・Decrements the monitoring timer value.
・If the timer value is 0, performs the following:
・Gets the current time (time).
・(If) the oldest time is the default or initial startup time,
  ・calculates the oldest time for the search from the current time and retrospective time.
・(endif)

・Opens event logs. (OpenEventLog)
・Searches target event logs. (emSeaEventLog)
・Closes the event logs. (CloseEventLog)

・(If) there are information to be displayed on 7SEG,
  ・displays the specified symbols on 7SEG.
・(endif)
・Saves the current time as an oldest time.

2.4.4 Event Log Search Process

File name		Function name	emSeaEventLog
ID			Event log search process
CallingSequence			
BOOL emSeaEventLog(HANDLE hEventLog, DWORD *dw7SegCode)			
Overview of process			
Event log search process			
Reference include			
Name		Description	
HANDLE		hEventLog	
DWORD		dw7SegCode	
Parameter		I/O	Description
HANDLE	hEventLog	I	Event log handle
DWORD*	dw7SegCode	O	7SEG code
Return value			
BOOL	TRUE=Success FALSE=Fail		
Description of process			

・Gets the latest event log. (emGetEventlog)
・While (Repeats the process while the event log time is later than the oldest time.)
  ・Event log ID search process (emSeaEventID)
  ・(If) there is new information to be displayed on 7SEG,
    ・break
  ・(endif)
  ・Gets a message. (GetArgs)
  ・Event log keyword search process (emSeaEventKey)
  ・(If) there is new information to be displayed on 7SEG,
    ・break
  ・(endif)
  ・Reads the second oldest event log. (emGetEventlog)
・(end)

2.4.5 Event Log ID Search Process

File name		Function name	emSeaEventID
ID			Event log ID search process
CallingSequence			
DWORD emSeaEventID(EVENTLOGRECORD *pBuf)			
Overview of process			
Event log ID search process			
Reference include			
Name		Description	
Parameter		I/O	Description
EVENTLOGRECORD *pBuf		I	
Return value			
DWORD	DWORD 7SEG display code		
Description of process			

・(for) Repeats the process for the defined number of target event IDs to be searched
  ・(If) event log information is a target ID,
    ・returns the 7SEG display code of the search ID as a return value.
  ・(endif)
・(end)

2.4.6 Event Log Keyword Search Process

File name		Function name	emSeaEventKey
ID			Event log keyword search process
CallingSequence			
DWORD emSeaEventKey(EVENTLOGRECORD *pBuf)			
Overview of process			
Event log keyword search process			
Reference include			
Name		Description	
Parameter		I/O	Description
EVENTLOGRECORD *pBuf		I	Event log information structure
Return value			
DWORD 7SEG display code			
Description of process			

・Gets event log information. (GetArgs)
・Edits an event log message. (emEditMessage)
・(for) Repeats the process for the defined number of target event keywords.
  ・(If) event log information is a target keyword,
    ・returns the 7SEG display code of the search keyword as a return value.
  ・(endif)
・(end)

2.4.7 7SEG Display Process

File name		Function name	Em7Seg
ID			7SEG display process
CallingSequence			
ret = em7Seg(DWORD dw7SegCode);			
Overview of process			
Reference include			
Name		Description	
Parameter		I/O	Description
DWORD	em7Seg	II	7SEG display code
Return value			
BOOL	TRUE=Success FALSE=Fail		
Description of process			

・Opens the 7SEG device. (Open7SEG)
→Error check
・Displays information on the 7SEG device. (Disp7SEGBit)
→Error check
・Closes the 7SEG device. (Close7SEG)
→Error check

2.4.8 Get Event Log Process

File name		Function name	emGetEventlog
ID			Get event log process

CallingSequence
BOOL emGetEventlog(HANDLE hEventLog, EVENTLOGRECORD **pBuf)

Overview of process
Get event log process

Reference include	
Name	Description

Parameter	I/O	Description
EVENTLOGRECORD *pBuf	I	

Return value	
BOOL	TRUE=Success FALSE=Fail

Description of process

・Gets the event log size. (ReadEventLog)
[EVENTLOG_BACKWARDS_READ | EVENTLOG_SEQUENTIAL_REED] read flag
→Error check
・Assures the necessary event log size.
・Gets the event log. (ReadEventLog)
→Error check

3. Remarks

3.1 Registry

Not used

Key	Format	Data	Default
No registry setting information			