LogMaster-100

Single-Channel Stand Alone Voice Logger

User's Manual
First Edition

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1. Introduction

The Logmaster-100 is a state-of-the-art 1-channel voice logger built upon a Linux based embedded hardware platform. It is capable of recording phone calls and storing them internally without the need for a host computer. Compared to other network based voice loggers that must upload data to a host computer in real-time due to lack of internal storage, the Logmaster-100 provides much more reliable operation.

The record data stored inside the Logmaster-100 can be searched and reviewed from a remote PC via the network, using just a web browser such as Internet Explorer. System configuration and management are also done in the same manner, requiring no proprietary software.

In addition to web based remote access, the record data can also be accessed via the built-in keypad/LCD interface. This feature makes the logger ideal for locations where network connection is either unavailable or undesirable (due to cost, security or other reasons).

Instead of storing the record data into the internal memory, the logger can be configured to store them into a USB drive plugged into the unit. The USB drive can then be taken with the user if privacy is needed. This feature also makes the logger's storage space easily expandable.

Optionally the record data can also be uploaded to a server for centralized data management. The upload can be automated to take place immediately after each call, or at specific times of the day on a regular basis. This feature allows a large number of Logmaster-100 units to be integrated into and managed upon one centralized system.

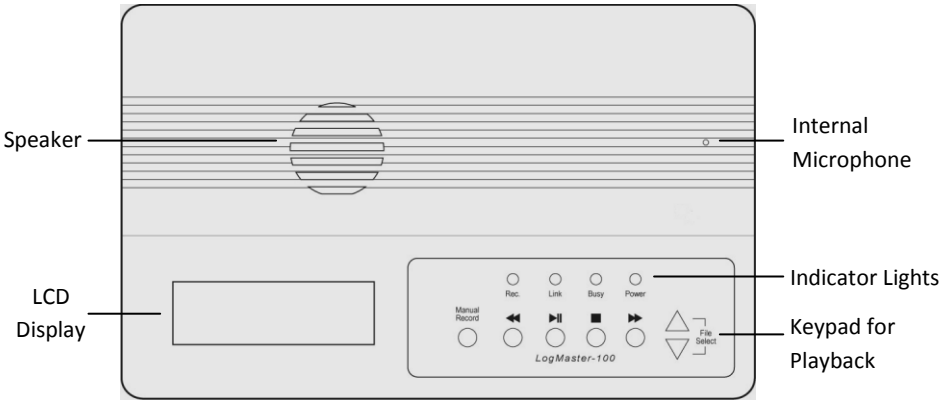
Package Contents

QUANTITY	ITEM DESCRIPTION
1	LOGMASTER-100
1	RJ-11 Telephone Cord
1	RJ-11 Y-splitter Connector
1	RJ-45 Network Cable
1	Power Adapter
1	Keypad Lock Key
2	RJ-9 Adapter Frame
1	Installation CD

If any item is missing or broken upon opening of the package, please contact your dealer immediately.

Panel Descriptions

Top Panel

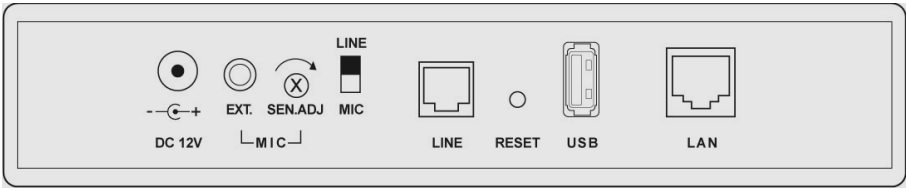


Light	Color	Status	Indicating
Power	Green	- Solid - Off	- Power On - Power Off
Busy	Red	- Solid - Flashing - Off	- System is not ready - Writing data – do not turn off power - Not writing data, safe to turn off
Link	Green	- Solid - Flashing - Off	- Ethernet link established - Ethernet data activity - Ethernet link not established
Record	Red	- On - Off	- Channel is recording - Channel is not recording

Keypad for Playback

Manual Record	If start mode is set to Manual, recording will start when the button is pressed down, and stop when the button is popped up.
	Rewind. During playback, keep pressing this key will increase the rewind speed.
	Play / Pause.
	Stop.
	Fast Forward. During playback, keep pressing this key will increase the forward speed
	File Up (previous).
	File Down (next).

Rear Panel



LAN: RJ-45 Ethernet jack

USB: USB ports for connecting an external USB drive

RESET:: Use this button to reset all settings (including user name and password) to factory default. It is mostly used to recover the system when the user name and/or password are lost. With the power turned on, press the button for at least 7 seconds.

LINE: RJ-11 phone jack

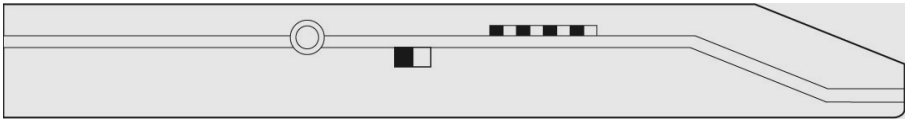
LINE/MIC: Recording source selection: LINE (telephone) or MIC (microphone)

SEN.ADJ: Microphone sensitive adjustment

EXT: 1/8" external microphone jack

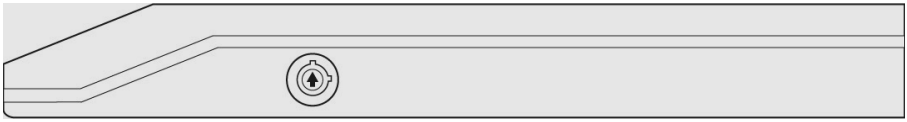
DC 12V: Power jack

Left Side



Volume: Volume dial for the internal speaker
Monitor: ON/OFF switch for real-time monitoring
Earphone: 1/8" mono phone jack for an optional earphone for private listening

Right Side

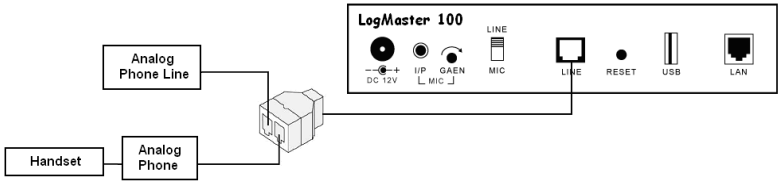


Keypad Lock: When locked, the keypad is nonfunctional.

2. Installation

Analog Phone Connection

Connect analog telephone lines as shown in the following diagram.



Analog phone lines use standard signaling and allow the detection of the handset status (lifted up or hung up). The handset status can be used to automate the recording process – start recording when the handset is lifted up, stop recording when the handset is hung up. This is called the Local Phone Start Mode which is the preferred start mode for analog phone lines.

When an analog phone system is in place there are two ways to connect the logger: the trunk side (where lines come into the phone system) and the station side (where lines go out to the stations). Both have pros and cons as described below.

Trunk Side Recording

Pros
- One logger channel can record multiple stations.

Cons
- Unable to record station to station calls.
- Files will be associated with the trunk line instead of the station, making it hard to identify and retrieve files for a particular station.

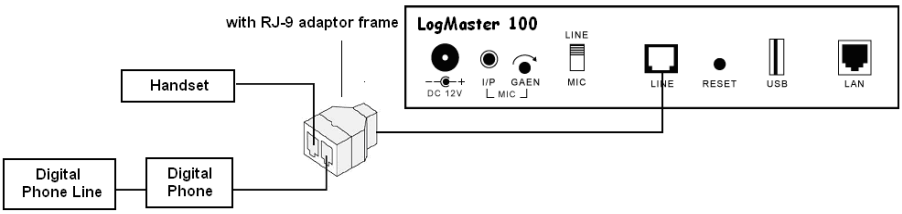
Station Side Recording

Pros
- Able to record station to station calls.
- Easy to identify and retrieve files for a particular station.

Cons
- One logger channel required for each station.

Digital Phone Connection

Connect digital telephone lines as shown in the following diagram.



Disconnect the handset from the phone and reconnect it according to the diagram above, with RJ9 adaptor frames installed on the Y connector.

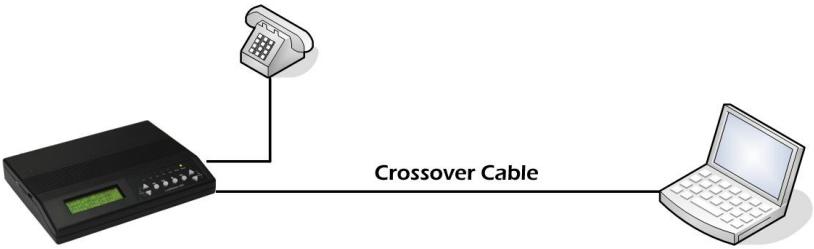
Handset status cannot be detected on digital phone lines since they do not use standard telephone signaling. Therefore the VOX Start Mode must be used instead of the Local Phone Start Mode. The VOX Start Mode detects loudness level on the line and uses it to automate the recording process: start recording when the sound is loud (someone talking), stop recording when the sound is weak (no talking) for a certain period of time. Sometimes, when there are long periods of silence in the conversation, the call may be recorded into multiple files.

Host Connection

The logger can be connected to a host computer either directly or via network.

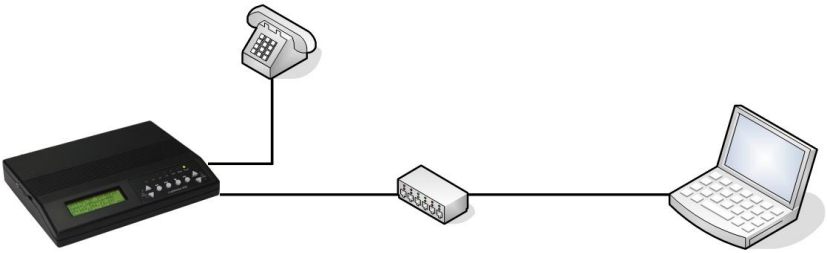
Direct connection

Direct connection requires a LAN cable (provided with the product) as illustrated below. If multiple loggers are to be connected to the same host computer, a separate Ethernet port is required for each logger.



Network connection

Network connection connects the logger with the host computer via a hub or a router as illustrated below. This allows multiple loggers to be connected to the same host computer via the same Ethernet port. The network connection is illustrated below.



Configuring the IP Address

In order for the logger and the PC to communicate with each other, their IP addresses must be in the same subnet. If the logger's default subnet address (specified in the Default Parameters section in this manual) is not the same as the PC's, then one of them (usually the logger's) needs to be changed.

The first step is to find out the subnet address of the PC, open the Command Prompt in Windows Accessories. Type "ipconfig" and press the Enter key. The IP address of the PC will be displayed. The subnet address usually consists of the first three octets. For example, if the IP address is "192.168.1.5" then the subnet address is "192.168.1". In this case the logger could use an address like "192.168.1.88" if it's not already used by another device.

Note that the logger's new IP address must not conflict with (i.e. not to be exactly the same as) any other devices on the same LAN. If you are not sure what IP address to use, please consult with your IT personnel.

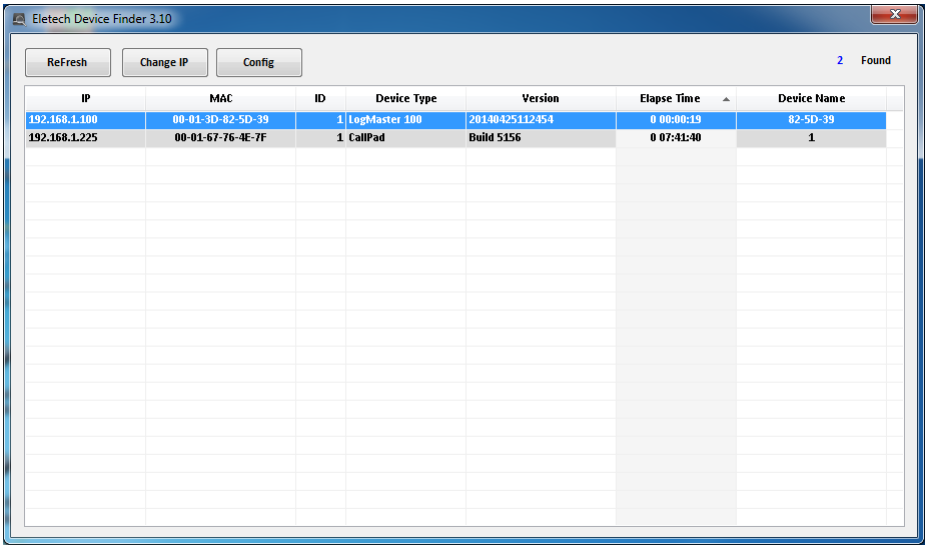
When installing multiple loggers, do not connect all new loggers to the network at once. Always add one logger at a time in order to avoid address conflict, since all loggers come with the same default IP address.

It is recommended to put a label with the IP address info on the logger for identification purposes. This is especially helpful when multiple loggers are installed on the same network.

The ETM program found on the installation CD can be used to change the logger's IP address. To install the ETM program, just double click "setup.exe" on the installation CD and follow the instructions on the screen. Afterwards a short cut to ETM will be created on the desktop.

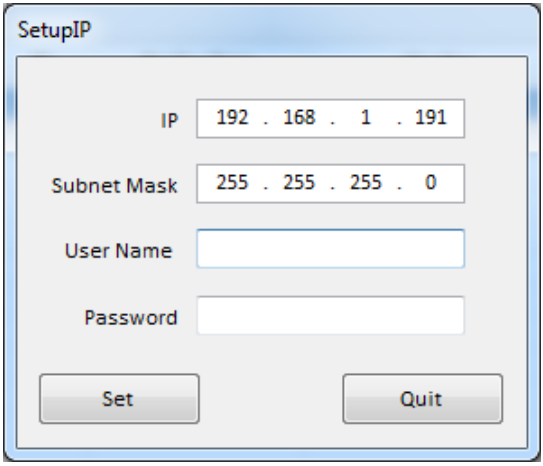
After the ETM program has been installed, follow these steps to configure the IP address:

Run the ETM program. A window similar to the following will appear. Note that the display may include loggers already installed, but the new one can be easily identified by its default IP address of 192.168.1.100.



Note that it may be necessary to disable the (Windows' built-in and/or any other installed) firewall in order for ETM to find the new logger. Windows' built-in firewall can be disabled by opening the Security Center in the Control Panel. To disable other installed firewall, please refer to its manual. The firewall should be re-enabled after changing the IP address.

Click and highlight the target device, then click the "Config IP" button. The following window will appear. Change the IP address, enter the username and the password, then click OK. The factory default username is "vlansd" and the factory default password is "1234". Do not use the IP address shown in the screen shot – it's just an example.



Note that the IP address will fail to change if incorrect username or password was entered.

Factory Default Settings

The following are the default settings of a logger which is either brand new or has just been manually reset by pressing the reset button. For your own record, you may write the configured values on the space to the right.

IP Address: 192.168.1.100 _____

Subnet Mask: 255.255.255.0 _____

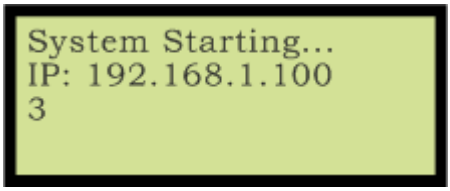
User Name: vlansd _____

Password: 1234 _____

3. Local Data Access

The Logmaster-100 operates in the same way as the VLAN-100sd except that it has an additional keypad/LCD for local data access.

Upon power up, a screen similar to the following will appear for about 5 seconds.



Then the following main screen will appear.

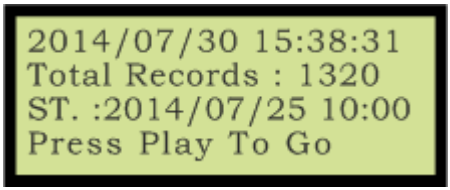
Main Screen

Line 1 shows the current time (Year/Month/Day Hour/Minute/Second).

Line 2 shows the total number of records stored in this unit.

Line 3 prompts you to press the Stop key to set the search time before starting the search. After the Stop key is pressed the search screen shows.

Search Screen



ST. stands for Search Time. The logger searches and lists the file with a creation date/time closest to the Search Time, plus up to 100 files created before and after it. The list is sorted in the order of creation date/time, and could contain up to 201 files (target file + 100 before + 100 after).

To change the Search Time, first use the Rewind/Forward key to select the item to change (item will be blinking when selected). Then use the File Up/Down key to change the item value.

Line 4 prompts you to press the Play key to start the search (the Search Time should have been set properly).

If you start the search without setting up the Search Time first, then the search will be done using the current time as the Search Time. In this case the results would include up to 100 files created before but not after the Search Time.

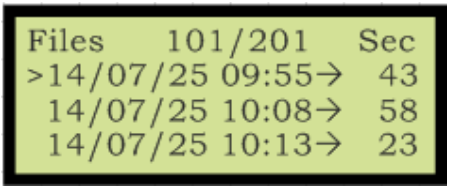
To abort searching and return to the main screen, press the Stop key.

To start searching, press the Play key.

If no data is found the following screen shows. Press the Stop key to return to the search screen.

If some data are found, the result screen shows.

Result Screen



Files 101/201 indicates there are a total of 201 files in the result list and the cursor (>) is pointing to file #101 (the one with a creation date/time closest to the Search Time).

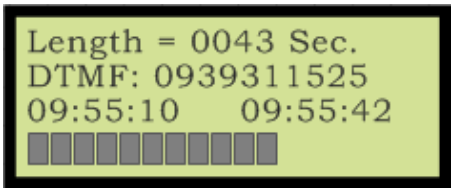
The files are listed in the order of creation date/time. For example, the target file in the screen above was recorded on Jul. 5 of 2014 at 09:55 AM with a length of 43 seconds. The → between 55 and 43 indicates that it's an outbound call, and inbound calls are indicated with ←.

If the target file is not what you are looking for, you can move about the result list with the File Up/Down keys to select the right one.

To return to the search screen, press the Stop key.

To play the selected file, press the Play key. The play screen shows.

Play Screen



Line 1 shows the length of the call (43 seconds).

Line 2 shows the caller ID if the call is inbound, or dialed digits if the call is outbound.

Line 3 shows the starting time on the left (05:55:10), the current playing time (09:55:42) on the right.

Line 4 shows the playback progress bar.

During the playback, the control keys (Play/Pause, Stop, Fast Forward, Rewind) may be used. The File Up/Down keys can also be used to jump to the previous/next file.

After the playback ends, you may either press the Stop key to return to the result screen, or the File Up/Down key to play the previous/next file. If you press the File Up/Down key, the system will automatically play the previous/next 10 files.

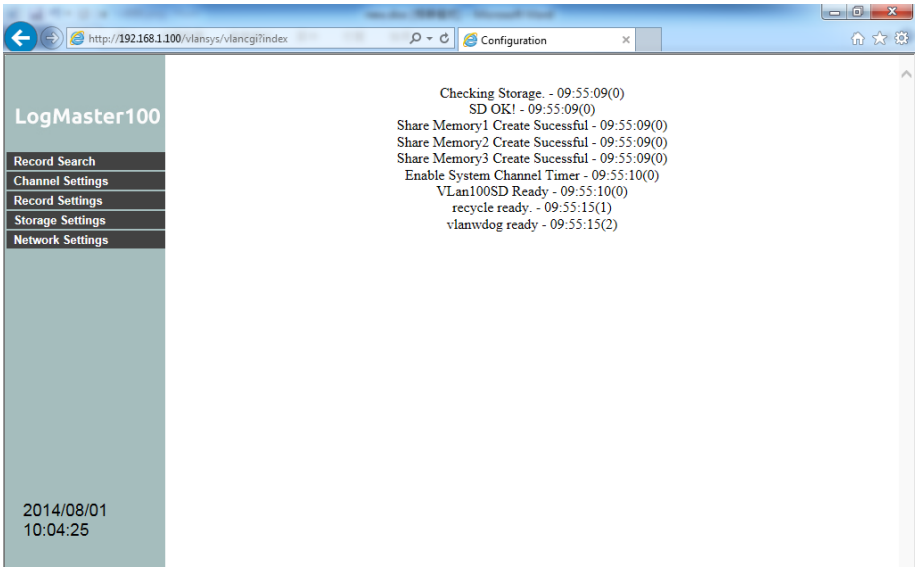
4. Web Access

Device Login

In order to have LogMaster web pages displayed properly, you will need to add the logger's IP address into the compatibility view list in your Internet Explorer 8 or higher. Please refer to Appendix A for details.

Open the web browser and go to the logger's IP address which you should have configured previously. Enter the user name (default = vlansd) and the password (default = 1234). Then click OK.

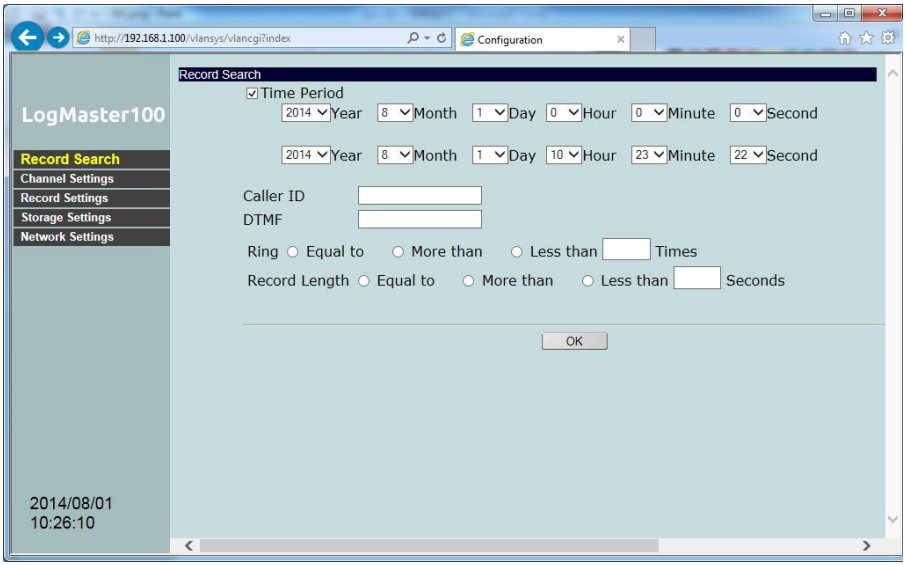
A screen similar to the following will appear. It displays various messages as the system undergoes initialization which ends when "Logmaster-100 Ready" is shown.



The system will then automatically go to the Record Search screen.

Notice what displayed on the lower left corner are the device's current date and time which, if incorrect, should be adjusted (see the Network Settings section).

Record Search



Search keys are described below. If more than one search keys are enabled, then a record must match all search keys in order to be found.

Time Period
Check the checkbox to limit search within the specified date/time period.

Channel
Select one or more channels by checking the checkboxes.

Agent Name
Name of the agent on the call. See Record Settings for more info.

Phone Number
Phone number of the agent on the call. See Record Settings for more info.

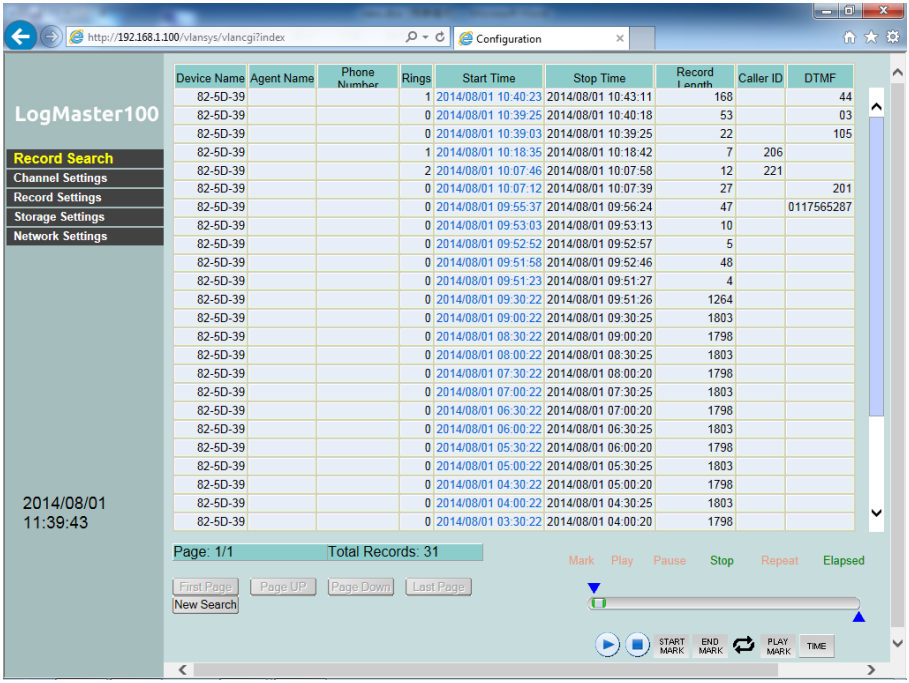
Caller ID
The caller ID string of an inbound call. The string may be partial.

DTMF
The touch tone(s) detected during the call, such as the phone number of an outbound call. The string may be partial. Note that touch tone detection may be disabled if desired – see Record Settings for more info.

Rings
The number of rings before the call is answered – equal to, more than or less than. This key is useful only when the Start Method is set to Local Phone.

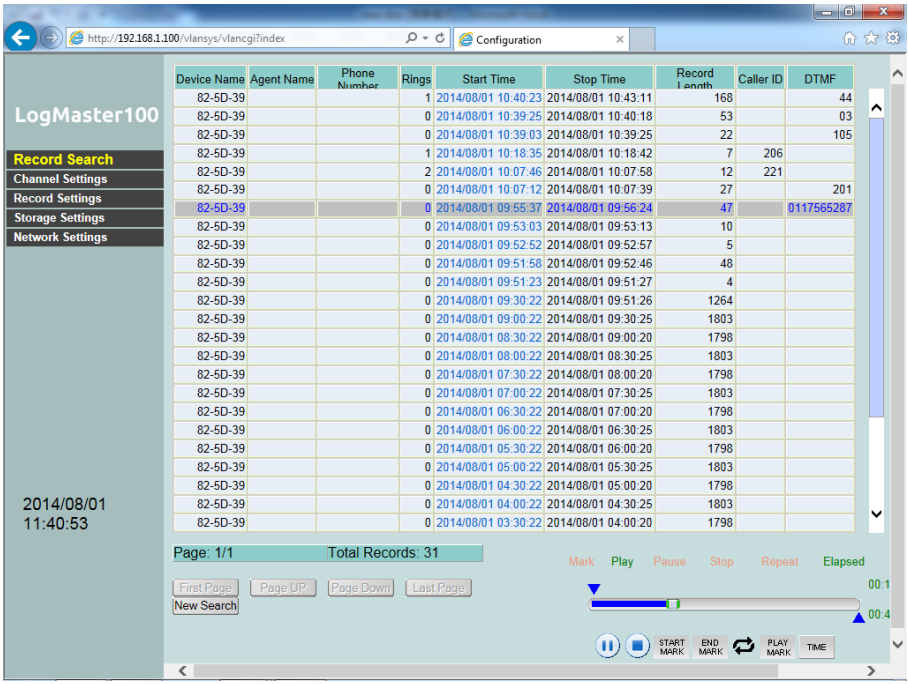
Record Length
The length of the record in seconds – equal to, more than or less than.

Click OK to start searching. If no records are found then a "No Data Found" dialog box will appear. Otherwise, a screen similar to the following will appear.

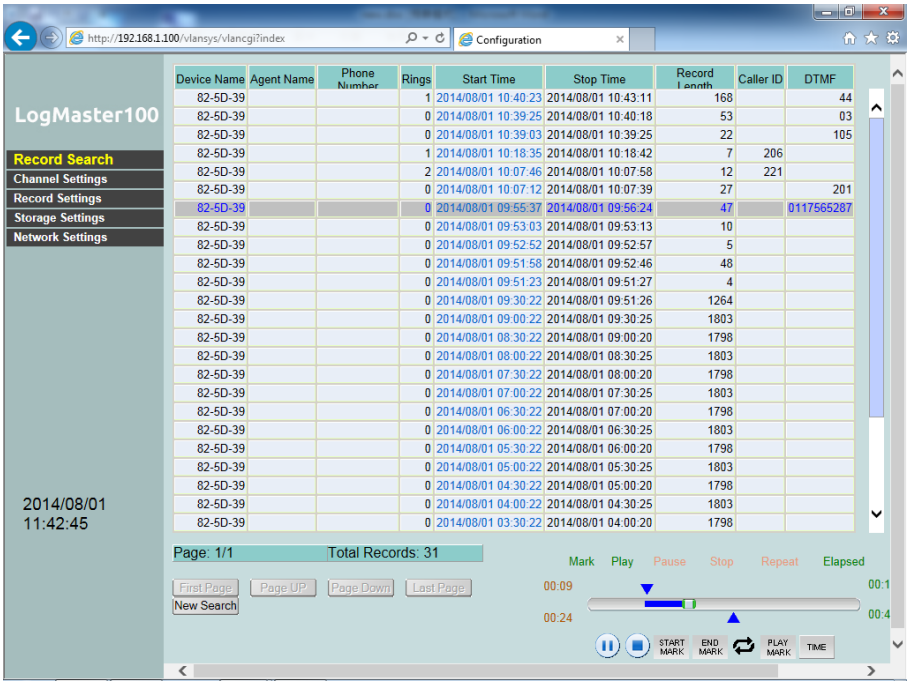


The results are listed in pages in reverse chronological order (newest first). Each page contains up to 50 records by default. If there are more than 50 records, the last page will be displayed. To go to another page, click **Page Up**, **Page Down**, **First Page** or **Last Page**. To start a new search, click the **New Search** button. The system will find only up to 1000 most recent records.

To play a record, simply double click it on any part of the record except the Start Time field. As the record is being played, the pointer on the progress bar indicates the current playback position. Also, the PLAY button turns into the PAUSE button.



Sometimes it is desired to play a particular section in a record. To do this you will need to play the record and mark the section by clicking the Start Mark and the End Mark respectively at the proper point. You may also drag these marks to the desired places directly. Then click the Play Mark button to play the section once, or the two-arrow button to play it repeatedly.



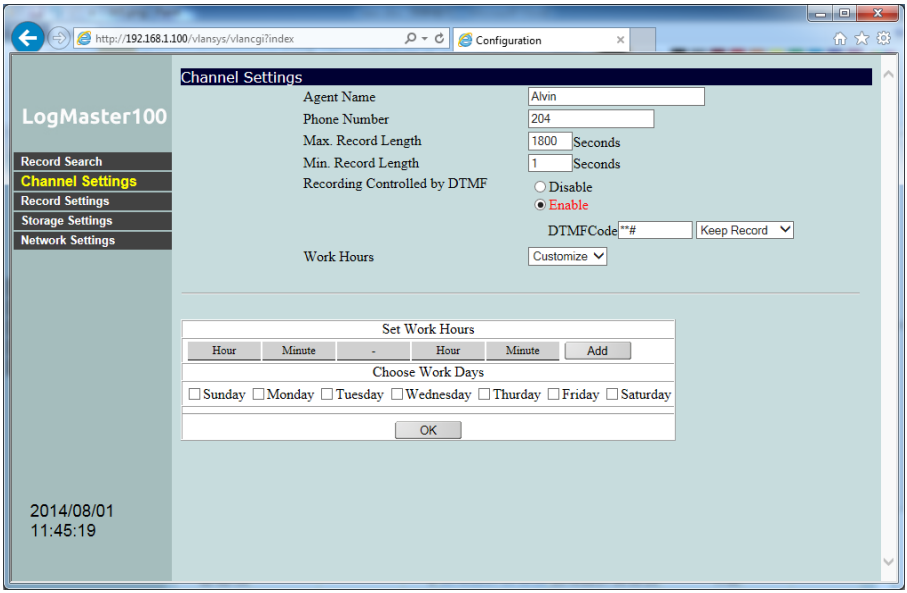
To toggle between relative and absolute time during playback, click the Time button.

Record Copying

This function copies the selected record from the logger to the PC for whatever purposes it may serve. To copy a record, move the cursor over the record's Start Time field. After the cursor changes to a "hand", right-click and select "save as". In the dialog box that follows, then select the drive and the folder to save.

Although this function allows one to backup individual records to the PC, it is not meant to be an archiving function. In many cases the system's internal memory is big enough to store several months' worth of records, and the need for archiving may be eliminated. But if needed, records can be sent to a remote server via the network for centralized archiving and management. Please refer to Storage Settings for more info.

Channel Settings



Channel
Select the channel to be configured. Each channel must be configured separately.

Agent Name (optional)
Enter the name of the agent to be associated with this channel.

Phone Number (optional)
Enter the phone/station number to be associated with this channel.

Max. Record Length
Enter the maximum length per record. If the length of the call exceeds this value, it will be broken into multiple records. The default value is 1800 seconds (30 minutes), and the maximum value is 3600 seconds.

Min. Record Length
Calls shorter than this length will not be recorded. The default value is 1 second.

Recording Controlled by DTMF
If this function is disabled then every record will be saved. If this function is enabled then each record can be selectively saved or discarded by pressing a string of touch tones during or at the end of the call. It is recommended that the touch tone string contains at least three touch tones to prevent accidental, unintentional operation.

The touch tone string can be used to either save or discard the record. If most records are to be discarded then choose "Keep Record" - a record will be saved if and only if the touch tone string is pressed. If most records are to be saved then choose "Delete Record" - a record will be discarded if and only if the touch tone string is pressed.

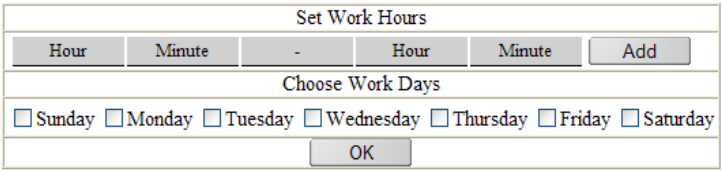
Work Hours

Always
Channel will always be enabled.

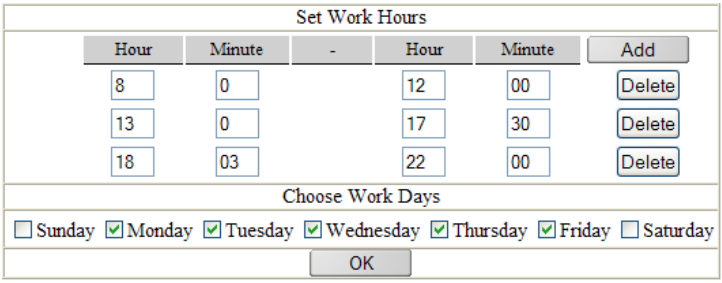
Never
Channel will always be disabled.

Customize
Specify up to four time periods expressed in the 24-hour time format (HH:MM:SS).

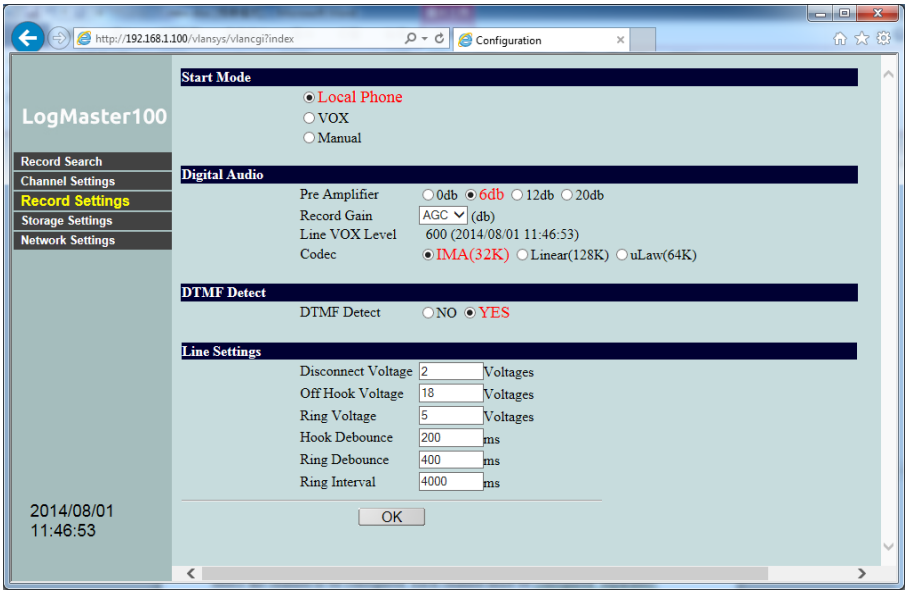
Select "Customize" to access the following dialog menu.



Select the work days and click "Add". Enter the time period in the appropriate fields. Up to 4 different work periods can be added. To delete an entry, click its "Delete" button.



Record Settings

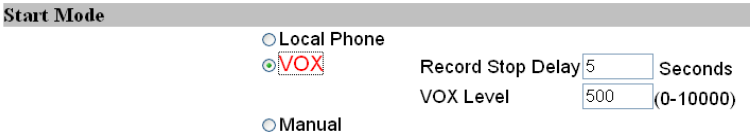


Channel
Select the channel to be configured. Each channel must be configured separately.

Start Mode
Specifies how recording should be triggered. The choices are:

Local Phone
This mode detects the handset status. Recording starts when the handset is lifted up (off hook) and stops when the handset is hung up (on hook). This mode can be used only when the logger is connected with analog phone lines.

VOX
This mode starts/stops recording based on the presence/absence of sound. Recording starts when the sound exceeds the threshold level (called the VOX level), and stops when the sound drops below the threshold level for longer than a certain period (called the Record Stop Delay). Under this mode a phone call will be recorded into several records if there are silent periods longer than the Stop Delay during the call.



VOX Level

The default value is 500. If the level is set too low, the system becomes too sensitive and may generate bogus recordings. If the level is set too high, the system is more likely to stop recording prematurely. Start with the default value and make adjustments if necessary.

Stop Delay

If the Stop Delay is too short, phone calls are more likely to be broken into multiple records. If the Stop Delay is too long, consecutive phone calls are more likely to be saved as one record if they occur within a short interval. Typically a value between 3 and 5 seconds works the best.

AGC Control

The AGC (Automatic Gain Control) is recommended to be enabled (default).

Record Gain

This value is meaningful only if the AGC Control is disabled. A higher value means a stronger boost.

Line VOX Level

Displays the current voice level on the line in realtime. By analyzing this level at different times one can know how to set the Record Gain better.

Codec

The type of analog to digital conversion the system uses. The default is IMA.

IMA (32K): lowest quality & storage space (4KB per second)
uLaw (64K): medium quality (8KB per second)
Linear (128K): highest quality & storage space (16KB per second)

DTMF Detect

If enabled, the system will decode and store all touch tones occurred in the call, such as the caller ID in an inbound call and the dialed number in an outbound call.

Line Settings

These settings are for factory use only. Please do not make any changes.

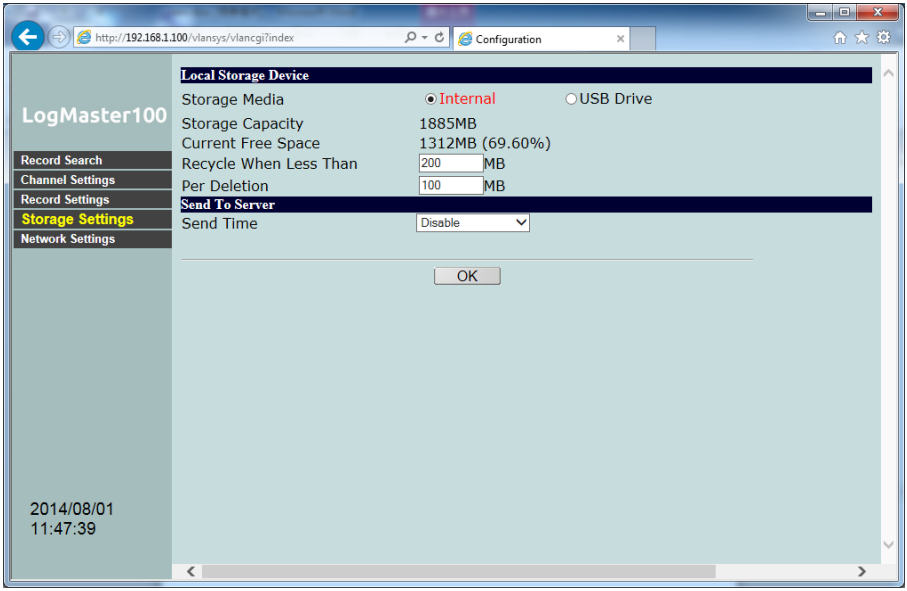
Click OK to save changes. When prompted, allow the system to reboot so that changes can become effective.

Storage Settings

The logger has a fairly large amount of internal memory for data storage. It can also be configured to use an external USB drive instead. Using an external USB drive may be quite beneficial in some cases. For example, agents of different shifts may each use a different USB drive, keeping the recorded data separate and private.

No matter how much memory there is, it will eventually be filled up with data if nothing ever gets deleted. To prevent this from happening the system automatically recycles the memory by deleting a certain amount of the oldest data when the memory is almost full. On the Storage Settings page you can set the recycle threshold and the deletion size.

It is possible to set up a storage server and configure the logger to send records to it over the network automatically on a regular basis. Such a storage server can be connected with multiple loggers for centralized data management and archiving.



Storage Media – Internal
Records will be stored in the internal flash memory.

Storage Media - USB Drive
Records will be stored in the USB drive plugged into the unit. The USB drive can be taken away by the user if privacy is needed.

To switch the storage from internal memory to USB drive, first insert the USB drive then change the Storage Media setting accordingly. The system will restart by itself and go through the initialization process. This process could take 3 to 5 minutes if the USB drive has never been used on the system before. Afterwards the system will go to the Record Search menu and resume normal operation.

To replace the USB drive with another one, always turn off the power before making the change or the system will not work properly.

To switch the storage from USB drive back to internal memory, simply change the Storage Media setting accordingly. The USB drive may be either removed or left plugged in.

Storage Capacity
The storage capacity of the selected storage media.

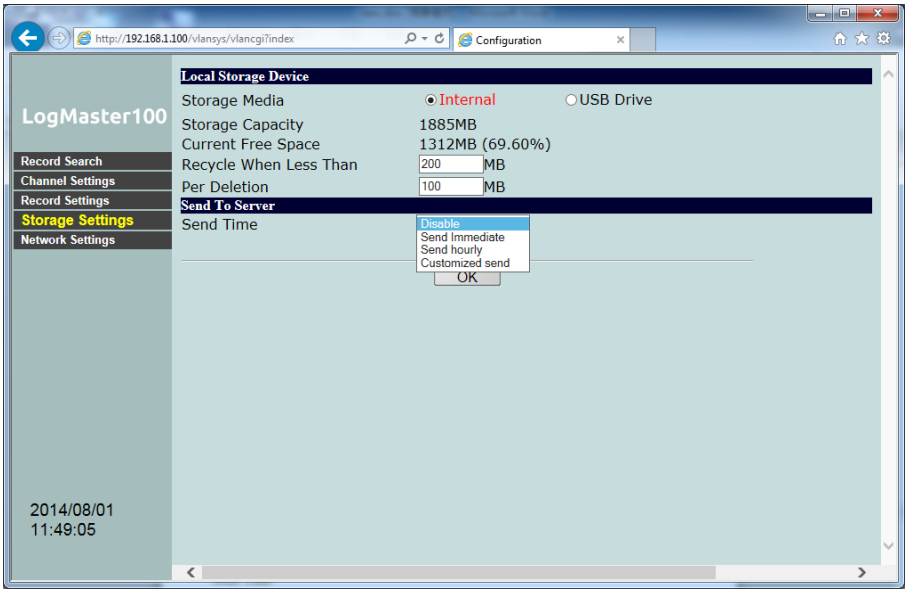
Current Free Space
Amount of current free space.

Recycle When Less Than
Storage recycling starts when the free space drops below this threshold level. The system deletes the oldest records in order to make room for new records. Default value is 200 MB.

Per Deletion
The amount of data to to be deleted per recycling. A smaller value causes the recycling to occur more frequently, but it also allows the system to keep more old data. Default value is 100 MB.

Send To Server

In addition to storing records locally, the system can also be configured to send record files to a remote server (running the VLAN server program) for centralized data storage and management. When Send Time is enabled, a screen similar to the following will appear.



Send Time

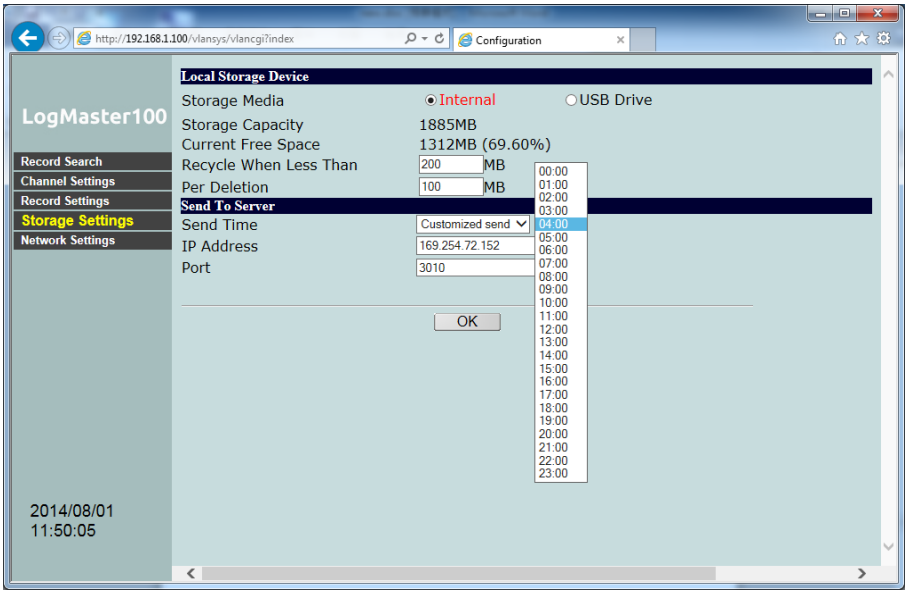
Disable
Don't send.

Send Immediately
Send immediately after a call is recorded. Enter the IP address and the port number of the server.

Send Hourly
Send at the hour (24 times a day). Enter the IP address and the port number of the remote server.

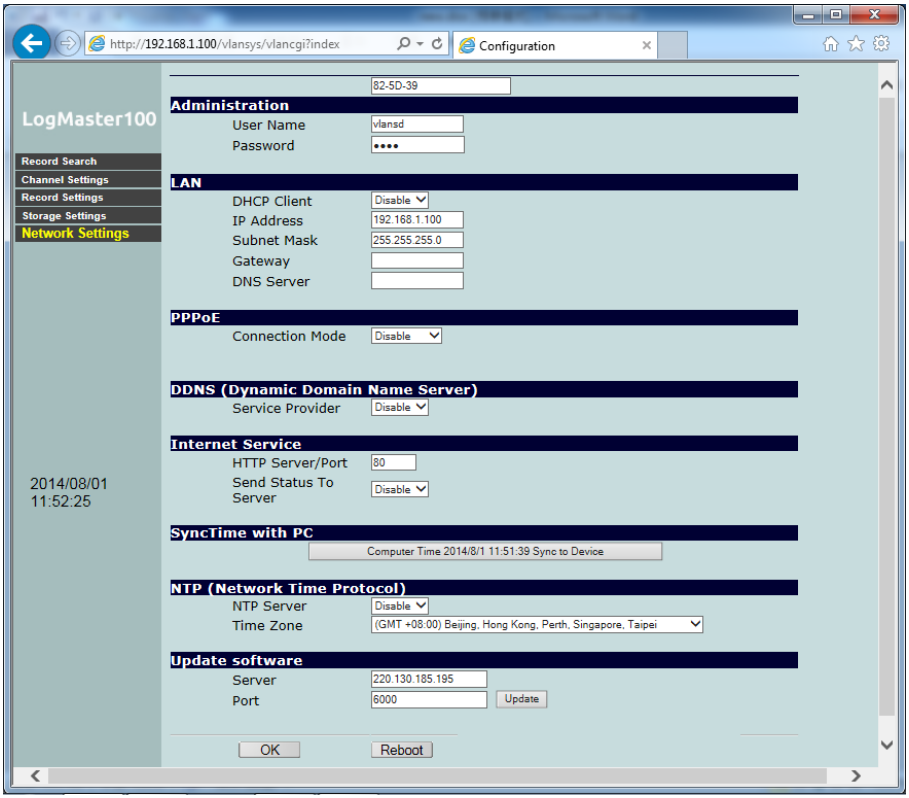
Customized Send
Send at a specific time of day, once a day.

If Customized Send is selected then the following screen will appear.



To avoid network congestion, select a time when the expected network traffic is the lightest.

Network Settings



Device Name
Enter a unique name for your own reference. This name can be used to identify the unit in a system with multiple loggers.

User Name
Changing the user name from default is recommended.

Password
Changing the password from default is recommended.

If you should lose the user name and/or the password, you can reset them to the default values by pressing the Reset button on the back panel for more than 7 seconds with power turned on. Please note that all other system settings will also be reset to factory default.

DHCP Client
Enable DHCP Client if you want the router to assign an IP address for the logger. It is not recommended to enable this option.

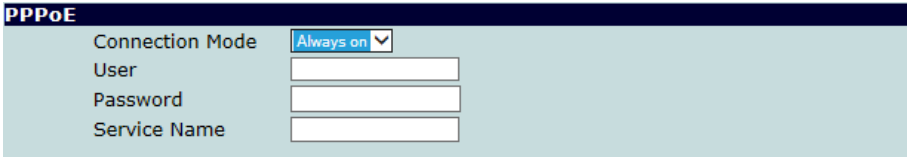
IP Address
The factory default value is "192.168.1.100". The IP address should have been configured properly during installation, but changes can be made here if necessary.

Subnet Mask
The default subnet mask is "255.255.255.0" which works well in most cases.

Gateway
The gateway address should be set to the same as the router's. This setting is not needed if the logger is connected to the PC directly.

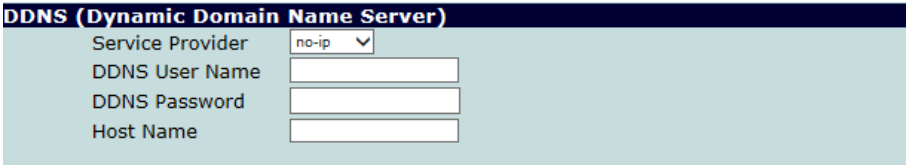
DNS Server
Assign a known DNS server in your network (for NTP name server). If you don't know, enter "168.95.1.1". This setting is not needed if the logger is connected to the PC directly.

PPPoE
The default setting is Disabled. If you are using PPPoE, you may choose Always On or Manual.



Enter user name, password and service name as provided by your ISP.

DDNS (Dynamic Domain Name Server)
The default setting is Disabled. The other setting is no-ip which is the only DDNS currently supported by the logger.



Enter user name, password and host name as provided by the DDNS provider.

HTTP Server/Port
Port number for HTTP. The default value (80) works in most cases.

Send Status To Server
If enabled, the logger will send the current recording status to a remote server which is usually the same server that the logger is configured to send records to. You must enter the server's IP address and port number (default is 3500).

SyncTime with PC
Click the button to synchronize the logger's clock with the PC's. This is not necessary if NTP Server is enabled (see below).

NTP (Network Time Protocol)

NTP is a protocol used to synchronize clocks over the Internet. If NTP Server is enabled, the logger will automatically synchronize its clock with a NTP server once every 4 hours. Be sure to configure the DNS server if the NTP server you enter is a domain name instead of an IP address.

Note that NTP servers do not recognize Daylight Saving Time, so the clock has to be manually adjusted. The best way to do it is to select the time zone that's one hour behind when DST starts, and change it back when DST ends.

NTP Server
Enable and select a NTP server from the list, or you can enter the IP address of a NTP server not on the list. To get an updated list of NTP servers, visit http://www.pool.ntp.org/en/.

Time Zone
Select the time zone for your location.

Update Software

When requested by your dealer you should click the Update button and update the firmware of the device.

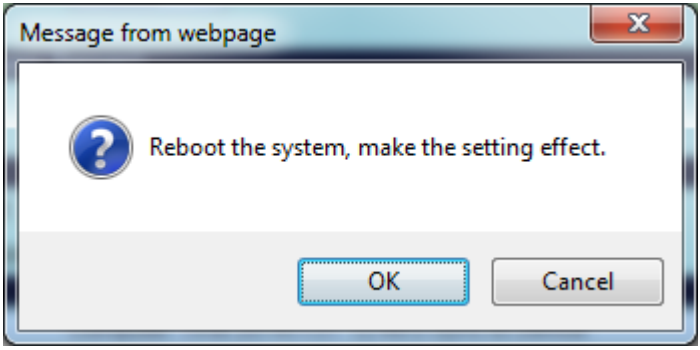
Server

The IP address of the server where the update is available. The default value is 220.130.185.195 which should not be changed unless requested by your dealer.

Port

The port number used by the server for update. The default value is 4030 which should not be changed unless told otherwise by your dealer.

After changes are made in Network Settings, the system will prompt the user to restart.



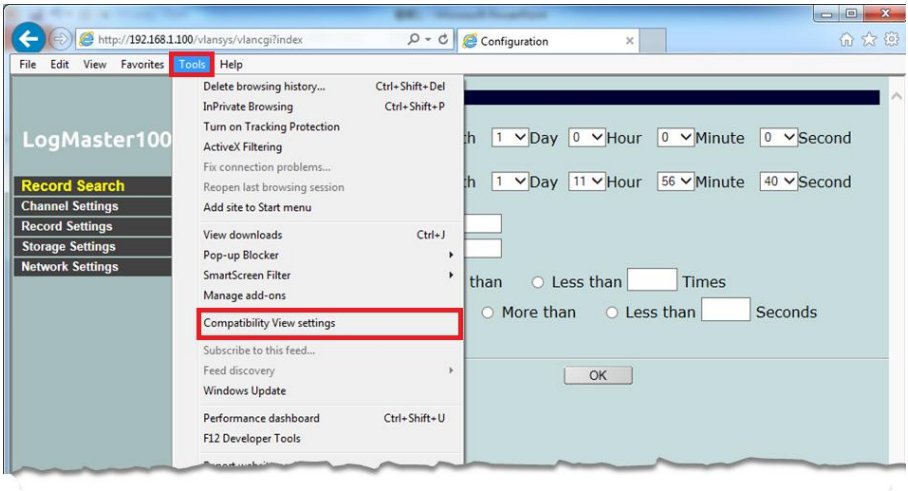
Click OK to restart the system so that the changes can take effect. The system will reboot and, after the countdown on the screen is finished, resume normal operation.

Appendix A: IE Compatibility View

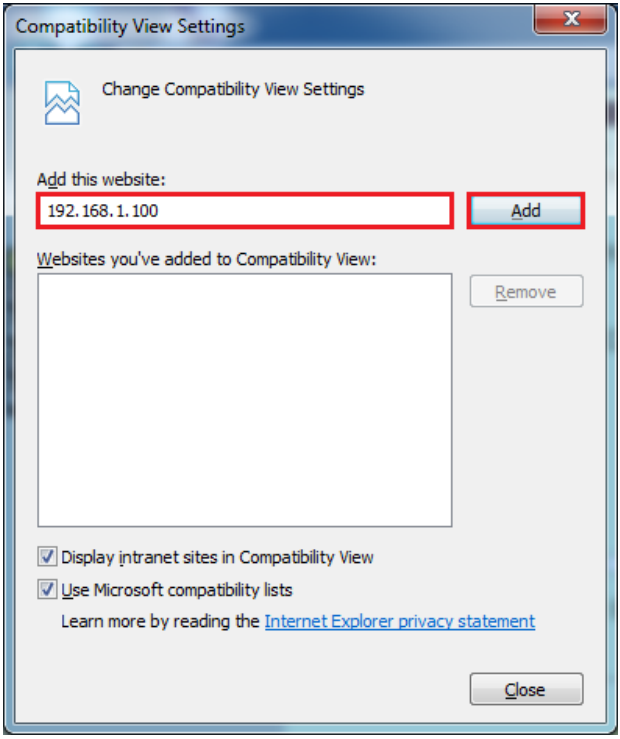
In order to display LogMaster web page properly, you will need to add its IP address into compatibility view list in your Internet Explorer 8 or higher.

Set and use Compatibility View on the Menu bar

1. In Internet Explorer, click **Compatibility View settings** on the **Tools** menu. If you do not see the **Tools** menu, press ALT.



2. In the **Compatibility View Settings** windows, type the address of the webpage, and then click **Add**.



3. Click **Close** to exit and then close and reopen your Internet Explorer so that the changes take effect.