This document addresses some of the frequently asked questions about WaveReader software, DVMRe digital video recorders, and networking.

The following are commonly used units of measurement.

- Image Record Rate is specified in pictures per second (PPS).

- Image File Size is specified in Megabytes (MB) or Kilobytes (KB).

- Network bandwidth is generally specified in Megabits per second (Mbps) or Kilobits per second (Kbps). Because WaveReader software allows you to limit bandwidth in increments of Kilobytes per second (KBps), KBps are also included in this document. (1 byte = 8 bits)

Note: The bandwidth consumption figures used in the FAQs are conservative, and represent "worst-case scenarios".

GENERAL BANDWIDTH

Q1. What is the maximum bandwidth a DVMRe can consume?

A1. Theoretically, if the unit transmits images at 30 PPS at the highest NTSC resolution, the unit would utilize a maximum of 8.45 Mbps (1.1 MBps). In reality, the DVMRe only transmits at the maximum transfer rate allowed by the PC requesting the pictures. Tests indicate maximum transfer rates for the following systems:

- 1GHz, Pentium 4 PC: 15 - 20 PPS or 4.2 Mbps (525 KBps)

- 400Mhz PC: 5 - 10 PPS or 1.5 - 2.0 Mbps (188 - 250 KBps)

Q2. Does bandwidth consumption vary between Live and Playback modes?

A2. No.

Q3. Does the bandwidth consumption vary depending on the number of cameras viewed?

A3. No, but the refresh rate per individual camera decreases as you increase the number of simultaneously viewed cameras.

Q4. How long will a 25 KB video file take to refresh?

A4. If the available bandwidth is 200 Kbps (25 KBps), then a 25 KB file takes 1 second to transmit. If the available bandwidth is 8 Kbps (1 KBps) then a 25 KB file takes 25 seconds to transmit.

Q5. Can you adapt the WaveReader software to accommodate slower connections such as Cable and ISDN lines?

A5. Yes. If necessary, network administrators can set the WaveReader software on the PC to wait longer for data from the DVMRe.

On WaveReader workstations, to extend the wait time for data from the DVMRe perform the following.

1) On the WaveReader PC, navigate to the directory that contains the WaveReader.exe file (for a typical installation, C:\Program Files\WaveReader).

2) Use a text-editing program such as Notepad to open BWVAL.DAT.

3) On a separate line, type "connectiontimeout = <*n*>" where *n* is equal to any number from 6 to 60, and represents the maximum number of seconds the PC waits for data.

> **Note:** 20 seconds is typically sufficient. In some cases, the socket used by the PC might not allow delays over 20 seconds.

> **Note:** The text is not case-sensitive. Do not include double quotes around the text.

LIMITING BANDWIDTH

Q1. Is it possible to "throttle down" or limit the DVMRe bandwidth usage on the network?

A1. Most LAN (Local Area Network) and WAN (Wide Area Network) systems allow the administrator to limit the throughput of certain devices—such as switches and routers—on the network. Refer to the manufacturer's instructions for the device. Administrators can also use software on the WaveReader workstations to limit the allowable bandwidth. To do so, perform the following.

   1) On the WaveReader PC, navigate to the directory that contains the WaveReader.exe file (for a typical installation, it is located at C:\Program Files\WaveReader).

   2) Use a text-editing program such as Notepad to open BWVAL.DAT.

   3) On a new line, type "bandwidthlimit = <*n*>" where *n* is equal to any number from 1 to 500, and represents the number of allowable KBps.

   Note: For example, if *n* = 1 then the allowable throughput rate is 1 KBps (8 Kbps). At that rate, it takes 25 seconds to transmit a 25 KB picture.

   Note: The text is not case-sensitive. Do not include double quotes around the text.

Q2. In what increments is it possible to throttle down the bandwidth usage?

A2. Increments of 1 KBps (8 Kbps).

Q3. What is the minimum usable bandwidth setting?

A3. The minimum allowable bandwidth setting is 1 KBps (8 Kbps). Whether this setting is usable depends on the network and the desired quality for the resulting video. For example, if the network has only 1 KBps (8 Kbps) of bandwidth available for the DVMRe, the administrator must throttle the bandwidth down to that level even though the resulting video performance might not be satisfactory.

Q4. Can administrators set individual WaveReader workstations to different bandwidth levels on the same network?

A4. Yes.

ADDRESS BOOK

Q1. Is it possible to create a master address book for use by all WaveReader workstations?

A1. Yes.

   1) On the WaveReader PC, navigate to the directory that contains the WaveReader.exe file (for a typical installation, C:\Program Files\WaveReader).

   2) Use a text-editing program such as Notepad to open BWVAL.DAT.

   3) Find the line "REM SECURITY_DB_PATH_AND_FILENAME = D:\<FOLDERNAME>\WRSecurity.mdb"

   a) Delete "REM " from the beginning of the line.

   b) Replace "D:\<FOLDERNAME>" with the path on the network to the master address book.

   c) Copy a WRSecurity.mdb file to the "master" location on the network.

   Note: After the path is changed, WaveReader ignores the default files on the workstations.

   Note: Only users with administrative rights can modify the address book.

MULTIPLE CONNECTIONS/USERS

Q1. How many people can connect simultaneously to a single DVMRe, and are connections prioritized?

A1. DVMRe software version 4.05 or later allows 20 simultaneous Ethernet connections, of which one can be a "Normal" connection, and 19 can be "Live" connections. A Normal connection allows video playback and live viewing, and a Live connection allows only live viewing. The software allows three password-protected levels of connection priority; level 1 is the lowest and level 3 is the highest. A user with higher-level priority can terminate the connection of the lower-level priority user for access to Normal or Live connections.

Q2. Do multiple users reduce the image update rate at each viewing location?

A2. Yes.

Q3. Does each user have independent control over what they view at their workstation?

A3. Yes.

FILE BACKUP

Q1. Can the network administrator remove or copy the video files from the DVMRe onto a larger "storage server" as part of a regular back up routine? If so, would this eliminate the necessity of archiving onto a separate DAT or AIT drive?

A1. No. The hard drive(s) installed in the DVMRe are in a proprietary format (not typical to Windows-based PCs), that allows only WaveReader software to view and retrieve the digital images. The network will not recognize the hard drives on the system. The administrator must manually initiate downloads of stored information; they can copy (but not remove) images from the DVMRe to a storage server disk drive using any of three storage options available in WaveReader:

- Individual images as .bmp files

- Individual images as .jpg files

- Video clips in their native (proprietary) format