MEMORY HiCORDERS

MR6000 Memory HiCorder Anti-virus FAQ

Q1. **Is the MEMORY HiCORDER MR6000 vulnerable to computer viruses?**

A1. Yes, the Memory HiCorder MR6000 runs on the Windows 10 operating system. Similar to a PC, if the MR6000 is connected to a computer network that is infected with a computer virus, or is inserted with a portable storage media device that contains a computer virus, there is concern that the recorder will also be infected with the virus.

Q2. **If the MR6000 has been infected with a virus, what are the countermeasures?**

A2. If your MR6000 has been infected with a virus, use one of the following methods to clean your recorder.
1. Load anti-virus software into a USB stick and insert it into the MR6000 to check for the virus. Hioki has been able to verify the proper operation of the anti-virus software, Trend Micro Portable Security 2, with the MR6000.
2. When the MR6000 is shipped, its System Protection Function is turned on by default. If the MR6000 has been used under this condition, you can power off and then restart the MR6000, at which time its Windows 10 operating system will return to factory default condition and the virus will be removed.

Q3. **Won't "Windows Defender", the standard antivirus program for Windows 10, be effective in preventing a virus from contaminating the MR6000?**

A3. There is a possibility that Windows Defender may affect the measurement functions of the MR6000, so this antivirus software will not be effective. In order to prevent impact to the MR6000's measurement functionality, please do not change the Windows Defender settings in the MR6000.

Q4. **Is it okay to install anti-virus software directly into the MR6000?**

A4. No, please do not install anti-virus software directly into the recorder. The MR6000's operation will be affected by the anti-virus software, which may prevent the recorder from measuring correctly.

Q5: **What is the MR6000's "System Protection Function"?**

A5: If the MR6000's "System Protection Function" is turned on, when the recorder is powered on, its Windows operating system is copied to a temporary area called memory overlay, and file writing and deleting are conducted within this area. The original system file is protected at this time because file writing and deleting is prohibited. When the MR6000 is then powered off, the system file that was copied to the temporary area is deleted, whereby upon the next restart the protected system file will again be copied to the area. This function allows the file system of the MR6000 to be recovered when there are unexpected issues such as the following:

1. *Damage is sustained to the system file due to a power interruption*
   When there is a power interruption while the system file is being overwritten and the file becomes damaged, the original system file can be used to automatically recover the system when the power returns.
2. *The MR6000 does not operate correctly because the system file was accidentally deleted*
   The system file can be recovered by proceeding as follows:
      1) Power off the MR6000. If the MR6000 does not shut down with the operating keys, press and hold down the power button on the MR6000 for approximately 5 seconds until the recorder shuts off.
      2) Restart the MR6000.
3. *The MR6000 was infected with a PC virus*
   Power down and restart the MR6000. This will remove the virus and return the instrument to default condition. If the System Protection Function is turned OFF, the original system file will not be protected and any damages will need to be repaired at the Hioki factory. If the MR6000 has been infected with a PC virus, use an anti-virus software loaded onto a USB stick to remove the virus.

Q6: **I understand that if the MR6000 is continuously used for more than 1 month, it is recommended that I turn the System Protection Function off. What is the reason for that?**

A6: Because the Windows system is copied to the temporary memory overlay while the System Protection Function is on and used for file writing, the memory capacity of that overlay area will decrease overtime if the MR6000 is in operation for more than 1 month, leading to insufficient memory.