

2023 Hanwha Vision S-Cert Team

11/13/2023

Camera Vulnerability Report (CVE-2023-5747)

■ OVERVIEW

- Bashis, a Security Researcher at IPVM discovered a vulnerability in the Hanwha SolidEDGE camera and reported it to the Hanwha S-CERT on September 7th, 2023.
- The vulnerability when upgrading the WAVE server in Hanwha SolidEDGE PNV-A6081R-E series cameras. It is possible to run arbitrary commands due to a lack of integrity checks of the uploaded software.

■ AFFECTED PRODUCTS AND FIRMWARE/SOFTWARE

- The vulnerability **CVE-2023-5747** affects only the Hanwha SolidEDGE camera models PNV-A6081R-E1T & PNV-A6081R-E2T.
- Refer to the below table for the affected product, affected camera firmware/wave software version, and corrected camera firmware/wave software version.

Model	Affected Version		Corrected Version	
PNV-A6081R-E1T	Firmware	2.21.02 version	Firmware	2.21.03 and later versions
PNV-A6081R-E2T	Software	5.1.0.36830 version	Software	5.1.1.37647 and later versions

■ RISK ANALYSIS

Review Opinion	Severity
<p>When installing or updating the WAVE server software running on the Hanwha SolidEDGE camera, the integrity of the update archive was not validated. The risk arises if the WAVE software archive is modified and obtained from an unauthorized source. This modified software could then inject malicious commands to run unauthorized software or tasks. It is important to note that there have not been any reported cases of this occurring outside of IPVM's testing.</p> <p>Note that these risks are mitigated when downloading firmware and software directly from the official firmware distribution from Hanwha websites.</p> <p>In addition, uploading any software file to a SolidEDGE camera, whether official or modified requires that the user is authenticated to the camera.</p> <p>A malicious user who does not have valid credentials to log in to the camera will not be able to install malicious software to the camera.</p>	<p>Middle</p>

■ Solution and Required Action

- **Since Hanwha takes cybersecurity matters seriously, we have updated the SolidEDGE camera firmware to check for a valid digital signature before installing or updating the WAVE software to prevent forgery or alteration, which could include malicious command injection.** Once the updated firmware version indicated above has been installed, all future installations or updates performed via the web interface will check the integrity of the update before installation, mitigating this vulnerability. The digital signature has been added to WAVE server software v.5.1.1.37647 and later.
- Please update the affected models with the latest firmware and software as soon as possible. It is recommended to use the Wisenet Device Manager tool to download & update device firmware. Firmware can also be downloaded from Hanwha Vision websites.
- Required actions to be performed:
 1. Install camera firmware v.2.21.03 or later, released on 11/10/2023.
 2. Install WAVE server software v.5.1.1.37647 or later, released on 11/10/2023.
- If you have any questions, please feel free to reach out the Hanwha S-CERT team at secure.cctv@hanwha.com or your local Technical Support Team.