Hanwha Vision is a global leading supplier of solutions for IP and analog video surveillance. Building on the company's history of innovation, Hanwha Vision is dedicated to providing systems solutions with the highest levels of performance, reliability and cost-effectiveness. Hanwha Vision is committed to the continued development of innovative systems products for professional security applications.

For additional information, visit http://www.hanwhavision.com/

1. **PRODUCTS**
	1. **EQUIPMENT**
		1. Manufacturer : Hanwha Vision(http://www.hanwhavision.com/)
		2. Model : SPA-C110W
		3. Alternates : None
	2. **GENERAL DESCRIPTION**
		1. The speaker receives and outputs an audio signal from a network module.
		2. The speaker shall be powered by the switch utilizing the network cable.
		3. The product shall be fully supported by an open and published API(SUNAPI), which shall provide the necessary information for the integration of functionality into third-party applications.
		4. Network module
			1. The speaker supports network connection through a LAN cable.
			2. The speaker has a built-in web server based on a Linux system. It provides a service that connects this to a web browser through a network connection.
			3. The speaker shall allow for audio to be transported over:
				1. AOE(Audio over Ethernet)
			4. The speaker shall provide 2 control modes
				1. Controller mode
				2. Speaker mode
			5. The speaker shall support unicast audio streaming up to 20 zone control.
			6. The speaker shall support multicast audio streaming up to 256 zone control.
			7. The speaker shall support up to 255 groups.
			8. The speaker shall support SIP for integration with VoIP, peer-to-peer or integrated into SIP/PBX.
			9. The speaker shall support the following audio file format:
				1. WAV
				2. MP3
			10. The speaker shall support BGM play service.
				1. File upload up to 1GB via internal memory
				2. Contact to internet streaming service
			11. The speaker shall support TTS service.
				1. Korean, English(US, UK), German, French, Spanish, Russian
			12. The speaker shall support broadcast via microphone.
				1. SPA-M1000
		5. Network Speaker
			1. The speaker shall support 2Way 8" LF Drive & 2" HF Driver. Passive type.
			2. The speaker shall provide the following sound pressure level:
				1. 96dB @PoE
				2. 100dB @PoE+
			3. The speaker shall provide a frequency range between 120Hz to 20kHz
			4. The speaker shall provide 90dB sensitivity at 1Watt.
			5. The speaker shall provide the following coverage pattern:
				1. 90°(1kHz)
				2. 60°(4kHz)
		6. Interoperability – The speaker shall be SUNAPI(HTTP API) compliant.
		7. The speaker shall possess the following further characteristics:
			1. Micro SD/SDHC memory card for BGM file upload
				1. SANDISK / up to 32GB
			2. Dry Contact
				1. 1 Input / 1 Output (N/O)
			3. Network protocol
				1. Security

User password protection

The device shall not provide a manufacturer default password. A default password change shall be required to access the speaker.

A minimal level of password complexity shall be required by the speaker.

The speaker shall not have a manufacturer’s back-door password.

The manufacturer shall provide a tool that provides the ability to make password changes to multiple speakers at the same time.

The speaker shall provide different levels of Password protection group: admin, setup, user, guest (sha-2, Digest authentication, User access log)

* + - * 1. Protocols : IPv4, HTTP, SIP, mDNS, DNS, NTP, TCP, UDP, DHCP, ARP, ICMP
	1. **DETAILED SPECIFICATIONS**
		1. Line Output
			1. Output level: +6dBV ± 3dB
			2. Frequency response: 20Hz ~ 20kHz
			3. THD+ N Ratio (AES17 LPF): Less than 0.1%
			4. S/N ratio (20kHz LPF, A-WTD) : > 91dB
		2. Amplifier
			1. Built in 10W Class D
		3. Power Amplifier
			1. Output power(8Ω 1kHz Sine wave): 3.7W(PoE), 10W (PoE+)
		4. Network
			1. Ethernet: 10/100 Base-T
			2. Protocol
				1. Security

Password protection : admin,setup,user,guest (sha-2, Digest authentication, User access log)

* + - * 1. Supported Protocols:

 IPv4, HTTP, SIP, mDNS, DNS, NTP, TCP, UDP, DHCP, ARP, ICMP

* + 1. Memory
			1. Internal memory: 1GB
			2. External memory: SDHC upto 32GB (SANDISK)
		2. Contact
			1. Contact Input. Dry contact: One channel
			2. Contact Output. Dry contact (NO): One channel
		3. Embedded MIC
			1. To check the audio output signal level
			2. Frequency Range: 50Hz ~16kHz
		4. Audio
			1. Audio file format:
				1. WAV, MP3

Sampling rate : 16 kHz ~48 kHz

Bitrate : 64kbps ~ 320kbps

* + 1. Speaker
			1. Speaker Component: 2Way 8" LF Drive & 2" HF Driver. Passive type
			2. Max. Sound Pressure Level (PoE : 3.7 Watt): 96dB
			3. Max. Sound Pressure Level (PoE+ : 10 Watt): 100dB
			4. Frequency Range (-10dB): 120Hz~20kHz
			5. Sensitivity (1Watt): 90dB
			6. Coverage Pattern: (HxV) 90°(1kHz) / 60° (4kHz)
		2. System integration
			1. API (Application Programming Interface): SUNAPI
			2. Multi-source Dynamic PA control:
				1. Multi-source up to 48 (Multicast) (Audio 24CH + Mic 24CH)
				2. Up to 256 Zone Control (Multicast)
				3. Up to 20 Zone Control (Unicast)
				4. Up to 255 Groups
			3. VoIP:
				1. Tested with SIP Client

Grand steam

Yealink

Cisco

VicroSIP

* + - * 1. Tested with PBX suppliers

Asterisk

Grand stream

* + - * 1. Supported SIP features: DTMF (RFC2833)
				2. Supported codecs: PCMU, PCMA, speex/8000, speex/16000
			1. TTS:
				1. Domestic Version : Korean
				2. Export Version : English(US, UK), German, French, Spanish, Russian
			2. Audio Monitoring:
				1. Speaker test by graphic level meter (Built in test tool)
			3. Event & Preset:
				1. Virtual Contact, Dry contact
			4. Functional Monitoring:
				1. Connection verification, Built-in system logging
		1. Power
			1. PoE (IEEE 802.3 af type 1 Class 3)
			2. PoE+(IEEE 802.3 at type 2 Class 4)
		2. General
			1. Color: White
			2. Dimensions : Φ269\*156.5(H) mm
			3. Weight : 2.7 kg
			4. Temperature
				1. Operating : -20 ~ +50℃ (-4°F ~ +122°F)
			5. Humidity
				1. Operating : 10~85% RH (Non-Condensing)
		3. Certificate
			1. EMC
				1. FCC Part 15 Subpart B
				2. ICES-003
			2. Safety
				1. URL 2043
				2. UL 62368-1
				3. CAN/CSA C22.2 No.2 62368-1

END OF SECTION