



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

For additional information, visit <http://www.hanwha-security.com/>

22 INCH WIDE LED MONITOR

DIVISION 28 – ELECTRONIC SAFETY AND SECURITY

Notes to Specifier:

1. Where several alternative parameters or specifications exist, or where, the specifier has the option of inserting text, such choices are presented in **<bold text>**.
2. Explanatory notes and comments are presented in **colored** text.

Important: See further notes on the following page.

Important Note to Security Systems Specifiers

CSI MasterFormat 2016 incorporates numerous significant changes affecting electronic safety and security. This document is written to provide flexibility in using either format, although adoption of MasterFormat 2016 is encouraged. The following is a guide to the MasterFormat numbers relevant to the product referenced in this specification.

Primary Specification Area:**MasterFormat 2014:**

28 20 00	Electronic Surveillance
28 23 00	Video Surveillance
28 23 29	Video Surveillance Remote Devices and Sensors

MasterFormat 2016:

28 20 00	Video Surveillance
28 2x xx	Surveillance Cameras
28 2x xx	IP Cameras

Related Requirements:**MasterFormat 2014:**

27 20 00	Data Communications
28 23 13	Video Surveillance Control and Management Systems
28 23 16	Video Surveillance Monitoring and Supervisory Interfaces
28 23 19	Digital Video Recorders and Analog Recording Devices
28 23 23	Video Surveillance Systems Infrastructure

MasterFormat 2016

27 15 01.xx	Video Surveillance Communications Conductors and Cables
27 20 00	Data Communications
28 05 xx.xx	PoE Power Sources for Electronic Safety and Security
28 05 xx	Storage Appliances for Electronic Safety and Security
28 05 xx.xx	Network Video Recorders
28 05 xx	Cyber Requirements for Electronic Safety and Security
28 05 xx	Safety and Security Network Communications Equipment
28 2x 00	Video Management System

22 INCH WIDE LED MONITOR

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes a 22 inch wide LED monitor.
- B. Product - A 22 inch wide LED monitor manufactured for video surveillance with fast response time and panel life of 30,000 hours.
- C. Related Requirements

Refer to MasterFormat notes at the beginning of this document to select requirements specific to the MasterFormat version being used in the specification.

1.02 REFERENCES

- A. Abbreviations
 - 1. FHD – Full High Definition
 - 2. LED – Light Emitting Diode
 - 3. DHCP - Dynamic Host Configuration Protocol

1.03 SUBMITTALS

- A. Product Data
 - 1. Manufacturer's printed or electronic data sheets
 - 2. Manufacturer's installation and operation manuals
 - 3. Warranty documentation

1.04 QUALIFICATIONS

- A. Manufacturer shall have a minimum of five years' experience in producing IP video equipment.
- B. Installers shall be trained and authorized by the Manufacturer to install, integrate, test, and commission the system.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Deliver the monitor in the manufacturer's original, unopened, undamaged container with identification labels intact.
- B. Store the monitor in a temperature environment specified in section 2.03 Detailed Specification, protected from mechanical and environmental conditions as designated by the manufacturer.

1.06 WARRANTY, LICENSING AND SUPPORT

- A. Manufacturer shall provide at least a limited 3 year warranty for the product to be free of defects in material and workmanship.
- B. Manufacturer shall provide embedded camera video analytics free of license charges.

END OF SECTION

PART 2 PRODUCTS**2.01 EQUIPMENT**

- A. Manufacturer: Hanwha Techwin
<http://www.hanwha-security.com/>
- B. Model SMT-2233
- C. Alternates: None

2.02 GENERAL DESCRIPTION

- A. The monitor shall provide FHD resolution display with high contrast ratio of 1,000:1.
- B. The monitor shall have panel life of 30,000 hours which is equivalent to running more than 3 years without shutdown.
- C. The monitor shall have a fast response time of 5ms.
- D. The monitor shall support video input from HDMI, VGA, and BNC.
- E. The monitor shall have built-in speakers.

2.03 DETAILED SPECIFICATIONS

- A. Display
- | | |
|------------------------|---------------|
| 1. Type | LED |
| 2. Screen Size | 22" |
| 3. Max. Resolution | 1,920 x 1,080 |
| 4. Brightness | 250cd/m2 |
| 5. Contrast Ratio | 1,000 : 1 |
| 6. Aspect Ratio | 16 : 9 |
| 7. Viewing Angle (H/V) | 170° / 160° |
| 8. Display Color | 16.7million |
| 9. Response Time | 5ms |
| 10. Video System | NTSC / PAL |
| 11. Panel Life | 30,000 hours |
| 12. Filter Type | 3D combfilter |
- B. Interface
- | | |
|---------------------|---------------------------|
| 1. Video Connector | BNC type (2 in / 2 out) |
| 2. VGA | |
| a. Connector | 1 Analog RGB 15-pin D-sub |
| b. Input Signal | 0.7Vpp ±5% |
| c. Available Format | 720 400@70Hz |

640 480@60Hz/72Hz/75Hz (VGA)
 800 600@56Hz/60Hz/72Hz/75Hz (SVGA)
 1,024 x 768@60Hz/70Hz/75Hz (XGA)
 1,152 x 864@75Hz
 1,280 x 960@60Hz
 1,280 x 1,024@60Hz/75Hz (SXGA)
 1,280 x 720@60Hz
 1,600 x 1,200@60Hz/70Hz
 1,920 x 1,080@50Hz/60Hz

3. HDMI

a. Connector 1 HDMI input (Type A connector)

4. Available Format

640 x 480p@60Hz, 720 x 480i@60Hz, 720 x 480p@60Hz
 720 x 576i@50Hz, 720 x 576p@50Hz,
 1,280 x 720p@50Hz/60Hz
 1,920 x 1,080i@50Hz/60Hz, 1,920 x 1,080p@50Hz/60Hz

5. Audio

a. Connector 2 RCA type (2 stereo inputs)
 b. Output Signal Speakers : 2 x 1W

6. Application Support Remote controller Display

C. On Screen Display

1. Functions VESATM DPM compatible

2. Language

a. English, Spanish, French, German, Italian, Portuguese, Russian, Swedish,
 Turkish, Thai, Chinese, Japanese, Korean, Dutch, Danish, Arabic

D. General

1. Electrical

a. Input Voltage 100 ~ 240V AC (50/60Hz)
 b. Power Consumption Max. 24W

2. Environmental

a. Operating Temperature 0 ~ +40°C (+32°F ~ +104°F)
 b. Operating Humidity 20% ~ 90% (Non-condensing)

3. Mechanical

a. Dimensions with Stand (WxHxD) 515.0 x 391.8 x 217.4mm (20.28" x 15.43" x 8.56")
 b. Dimensions without Stand (WxHxD) 515.0 x 316.0 x 59.9mm (20.28" x 12.44" x 2.36")

GUIDE SPECIFICATION

MasterFormat 2014: Section 28 23 29

MasterFormat 2016: Section 28 2x xx

c. Weight	5.18Kg (11.42 lb)
d. Protection Glass	Yes
e. Cabinet Color	Black
f. Rack Mounts	Optional
4. VESA Mounts Interface	100 x 100mm (3.94" x 3.94")

END OF SECTION

PART 3 EXECUTION

3.01 INSTALLERS

- A. Contractor personnel shall comply with all applicable state and local licensing requirements.

3.02 PREPARATION

- A. The network design and configuration shall be verified for compatibility and performance.
- B. Network configuration shall be tested and qualified by the Contractor prior to installation.
- C. All firmware found in products shall be the latest and most up-to-date provided by the manufacturer, or of a version as specified by the provider of the Video Management Application (VMA) or Network Video Recorder (NVR).

3.03 INSTALLATION

- A. The Contractor shall carefully follow instructions in documentation provided by the manufacturer to insure all steps have been taken to provide a reliable, easy-to-operate system.
- B. All equipment shall be tested and configured in accordance with instructions provided by the manufacturer prior to installation.
- C. Before permanent installation of the system, the Contractor shall test the system in conditions simulating the final installed environment.

3.04 STORAGE

- A. The hardware shall be stored in an environment where temperature and humidity are in the range specified by the Manufacturer.

END OF SECTION