GUIDE SPECIFICATION

MasterFormat 2014: Section 28 23 29

MasterFormat 2016: Section 28 2x xx

Hanwha Techwin is a leading supplier of advanced video surveillance solutions for IP-video, analog and hybrid systems. 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-efficiency. Hanwha Techwin is committed to the continued development of innovative systems products for professional security applications.

For additional information, visit www.hanwha-security.com/

16 BAY iSCSI EXTERNAL STORAGE

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 23 19 Electronic Surveillance
28 23 00 Video Surveillance
28 23 19 Digital Video Recorders and Analog Recording Devices

MasterFormat 2016:

28 05 00 Common Work Results
28 05 xx Storage Appliances for Electronic Safety and Security
28 05 xx.xx Network Video Recorders

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 Video Surveillance Remote Devices and Sensors
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 Cyber Requirements for Electronic Safety and Security
28 05 xx Safety and Security Network Communications Equipment
28 2x xx IP Cameras
28 2x 00 Video Management System

16 BAY iSCSI EXTERNAL STORAGE

PART 1 GENERAL

1.01 SUMMARY

A. Section includes a 16 bay iSCSI external storage.

B. Product – A 16 bay iSCSI external storage with maximum recording bandwidth of 800Mbps.

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. ARP – Address Resolution Protocol
2. DHCP - Dynamic Host Configuration Protocol
3. DNR – Digital Noise Reduction
4. DDNS – Dynamic Domain Name Server
5. fps - frames per second
6. GUI – Graphical User Interface
7. HDD – Hard Disk Drive
8. HTTP - Hypertext Transfer Protocol
9. ICMP – Internet Control Message Protocol
10. IGMP - Internet Group Management Protocol
11. IP - Internet Protocol
12. iSCSI – Internet Small Computer System Interface
13. JBOD – Just a Bunch of Disks
14. JPEG - Joint Photographic Experts Group
15. MJPEG - Motion JPEG
16. MP - Megapixel
17. MPEG - Moving Pictures Experts Group
18. NAS – Network Attached Storage
19. NTP - Network Time Protocol
20. POS – Point of Sale
21. PPPoE – Pont to Point Protocol over Ethernet
22. RAID – Redundant Array of Independent Disks (Drives)
23. RTP - Real-Time Transport Protocol
24. RTCP – Real-Time Control Protocol

25. RTSP - Real-Time Streaming Protocol
26. SMTP - Simple Mail Transfer Protocol
27. SNMP – Simple Network Management Protocol
28. SSL – Secure Sockets Layer
29. TCP - Transmission Control Protocol
30. UDP - User Datagram Protocol
31. UPnP – Universal Plug and Play
32. VMS - Video Management System
33. PoS – Point of Sales
34. VA – Video Analytics
35. PnP – Plug and Play
36. ARB – Auto Recovery Backup
37. NVR – Network Video Recorder
38. RAID – Redundant Array of Independent Disks

B. Reference Standards
   1. Network - IEEE
      a. 802.3 Ethernet Standards
   2. Emissions
      a. FCC-47 CFR Part 15 Subpart B Class A
      b. EN 55022:2010, Class A
   3. Immunity
      a. EN 50130-4:2011
      b. EN 61000-3-2:2006+A2:2010
      c. EN 61000-3-3:2008
   4. Safety
      a. UL listed
      b. CE EN 50581:2012 (hazardous substances)

C. Definitions
   1. JBOD - a collection of hard disks that have *not* been configured to act as a redundant array of independent disks (RAID) array.
   2. GOV (Group of Video object planes) - A set of video frames for H.264 and H.265 compression, indicating a collection of frames from the initial I-Frame (key frame) to the next I-Frame. GOV consists of 2 kinds of frames: I-Frame and P-Frame.
   3. WiseStream – Smart Codec that controls quantization parameter in H.265 and H.264 to efficiently manage bitrate of the video stream and reduce the storage required.
   4. Dynamic GOV – Dynamic assignment of GOV length based on the complexity of the scene to efficiently manage bitrate of the video stream and reduce the storage required.
   5. Dynamic fps - Dynamic assignment of frames per second based on the complexity of the scene to efficiently manage bitrate of the video stream and reduce the storage required.
   6. ARB (Auto Recovery Backup) – Automatic backup mechanism that enables WiseNet cameras to store videos on to SD card during failures and stream it to the storage device after recovery.

7. Failover – A feature that automatically switches to a redundant or standby device upon failure or unexpected shutdown of an active device.

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 product in the manufacturer's original, unopened, undamaged container with identification labels intact.

B. Store the product in a temperature environment specified in section 2.04 Detailed Specification, protected from mechanical and environmental conditions as designated by the manufacturer.

1.06 WARRANTY, LICENSING AND SUPPORT

A. Manufacturer shall provide a limited 3 year warranty for the product to be free of defects in material and workmanship.

END OF SECTION

PART 2 PRODUCTS

2.01 EQUIPMENT

A. Manufacturer: Hanwha Techwin
http://www.hanwha-security.com/

B. Model SRB-160S

C. Alternates: None

2.02 GENERAL DESCRIPTION

A. The 16 bay iSCSI storage device shall provide high performance recording with recording bandwidth up to 800Mbps and 16 internal hard disks that are hot-swappable. The capacity of each hard disk shall be up to 8TB and the storage shall provide options for RAID configuration. The following RAID levels shall be available.
   1. RAID 0
   2. RAID 10
   3. RAID 5
   4. RAID 5 + Hotstandby
   5. RAID 6

B. The storage device shall provide easy configuration (one-touch setup) of RAID volume.

C. The storage device shall have eight iSCSI volumes allowing connection of up to eight NVRs.

D. The manufacturer shall be responsible for rigorous testing of the storage device's reliability. The manufacturer shall provide a list of compatible hard disks that have been tested to guarantee reliable recording. The list shall be available in the manufacturer's home page.

E. The storage device shall support network failover and load balancing for redundancy.

F. The storage device shall provide remote management software allowing users to configure network and storage or check status of disks.

G. The storage device shall allow connection to web and firmware update via remote software.

H. The storage device shall have 4 Gigabit Ethernet ports.

I. 3U chassis with front key-lock shall be available for the storage device for data protection.

J. There shall be SMPS for high availability.

2.03 STORAGE SOFTWARE

A. The storage device shall have a built in server which provides access for authorized users to network setup, storage setup, disk information, web connection, and firmware update.

B. The monitoring software shall provide storage setups:
   1. RAID management: search, configure, and delete RAID
   2. Volume management: search, create, and delete
   3. iSCSI target: search, create, and delete

C. Network setup shall include the following.
   1. Search all network interfaces that are connected to the storage device.
   2. Edit network interface of the storage device.
   3. Connect or disconnect NVRs

4. Set SMTP

D. System setup shall include the following.
   1. Check device information
   2. Password settings
   3. Language settings
   4. Enable HTTPS mode
   5. Factory Reset
   6. Date and time including time synchronization
   7. Log management
   8. Firmware update

E. Acceptable browsers: Microsoft Internet Explorer 10 or higher, Mozilla Firefox 43 or higher, Google Chrome 57 or higher, Mac Safari 9 or higher

2.04 DETAILED SPECIFICATIONS

A. Performance
   1. Operating System: Linux

B. Recording

1.	Bandwidth	Max. 800Mbps
2.	Internal HDD	16 (Max. 128TB, RAID-0 Mode), Hot-Swappable
3.	RAID	RAID 0 / 10 / 5 / 6, RAID 5 + Hotstandby
4.	iSCSI Volume	Max. 8 (Up to 8 NVRs can be connected.)

C. Network

1.	Interface	RJ-45 (Gigabit Ethernet) x 4ea
2.	Protocol Support	iSCSI (IP-SAN), DHCP, HTTP, TCP/IP, UDP/IP, SNMP v1/v2c/v3, SMTP, DNS, NTP, HTTPS
3.	IP Version	IPv4
4.	Security	Password protection, logs
5.	Language	English, Korean
6.	Supported OS	Window 7, 8, 8.1 (32/64bit), Mac OS X (10.8 or above)
7.	Supported browsers	MS IE, Google Chrome, Mac Safari, Firefox

D. Functions
   1. Response Manager
      a. Network Setup
      b. Storage Initialization
      c. Storage One-Touch Setup
      d. Storage Information
      e. Access to webpage
      f. Firmware Upgrade
   2. Redundancy
      a. Network failover
      b. Load balancing

3. System Control
    a. One-touch setup: Create RAID-5 Volume, iSCSI Setup

E. Indicator and Interface
1. Front
    a. Indicator
        1.) LED Error, Actions
        2.) LCD Panel System Status, Disk Status, RAID Status
        3.) Inner LED Sound, Power
    b. Switch
        1.) Front button One-touch setup, LCD setup
        2.) Inner button Sound, Power
2. Key-lock Yes
3. Ethernet 4ea, RJ-45 (1 Gbps)
4. USB 2ea (Rear)
5. Serial RS-232C (reversed)
6. Power Cord 2ea AC Inlet

F. Environmental
1. Operating Temperature / Humidity: +0°C ~ +40°C (+32 °F ~ +104°F)
2. Humidity 20% ~ 85% RH

G. Electrical
1. Power 100 ~ 240 VAC ±10%; 50/60 Hz, 8.5 ~ 4A (Dual SMPS)
2. Power Consumption Max. 300W (1,024 BTU with HDD 16ea)

H. Mechanical
1. Color / Material Black / Metal
2. Dimension (WxHxD) 441.5 x 132.6 x 595mm (17.38" x 5.22" x 23.43") (3U)
3. Weight Approx. 15.2Kg (33.51 lb, HDD not included)
4. Standard Approvals FCC, CE, UL

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 with the camera(s).

B. Network configuration shall be tested and qualified by the Contractor prior to camera installation.

C. All equipment shall be tested and configured in accordance with instructions provided by the manufacturer prior to installation

D. 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).

E. All equipment requiring users to log on using a password shall be configured with user/site-specific password/passwords. No system/product default passwords shall be allowed.

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. 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