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Imaging Products Division

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3-Part Specification for
DX-TL5000U
Digital Video Recorder

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GENERAL NOTES TO SPECIFIER:

THIS SPECIFICATION SECTION HAS BEEN PREPARED TO ASSIST DESIGN PROFESSIONALS IN THE PREPARATION OF PROJECT OR OFFICE MASTER SPECIFICATIONS. IT FOLLOWS GUIDELINES ESTABLISHED BY THE CONSTRUCTION SPECIFICATIONS INSTITUTE, AND THEREFORE MAY BE USED WITH MOST MASTER SPECIFICATION SYSTEMS WITH MINOR EDITING.

EDIT CAREFULLY TO SUIT PROJECT REQUIREMENTS. MODIFY AS NECESSARY AND DELETE ITEMS THAT ARE NOT APPLICABLE. VERIFY THAT REFERENCED SECTION NUMBERS AND TITLES ARE CORRECT. (NUMBERS AND TITLES REFERENCED ARE BASED ON *MASTERFORMAT*, 2004 EDITION).

THIS SECTION ASSUMES THE PROJECT MANUAL WILL CONTAIN COMPLETE DIVISION 1 DOCUMENTS INCLUDING SECTIONS 01 25 13-PRODUCT SUBSTITUTION PROCEDURES, 01 33 00-SUBMITTAL PROCEDURES, 01 62 00-PRODUCT OPTIONS, 01 66 00-PRODUCT STORAGE AND HANDLING REQUIREMENTS, 01 74 00-CLEANING AND WASTE MANAGEMENT, 01 77 00-CLOSEOUT PROCEDURES, AND 01 78 00-CLOSEOUT SUBMITTALS. CLOSE COORDINATION WITH DIVISION 1 SECTIONS IS REQUIRED. IF THE PROJECT MANUAL DOES NOT CONTAIN THESE SECTIONS, ADDITIONAL INFORMATION SHOULD BE INCLUDED UNDER THE APPROPRIATE ARTICLES.

CLOSE COORDINATION IS ALSO REQUIRED BETWEEN THIS SECTION AND THE OVERALL VIDEO SURVEILLANCE SYSTEM SECTION.

THIS IS AN OPEN PROPRIETARY SPECIFICATION ALLOWING USERS THE OPTION OF APPROVING OTHER MANUFACTURERS THAT COMPLY WITH THE CRITERIA SPECIFIED HEREIN.

NOTES TO THE SPECIFIER ARE CONTAINED IN BOXES AND SHOULD BE DELETED FROM FINAL COPY.

OPTIONAL ITEMS REQUIRING SELECTION BY THE SPECIFIER ARE ENCLOSED WITHIN BRACKETS, E.G. [35] [40] [45]. MAKE APPROPRIATE SELECTIONS AND DELETE OTHERS.

ITEMS REQUIRING ADDITIONAL INFORMATION ARE UNDERLINED BLANK SPACES, E.G. _____ .

OPTIONAL PARAGRAPHS REQUIRING SELECTION OF ONE OF THE OPTIONS ARE SEPARATED BY "OR" WITHIN A BOX, E.G.

OR

BOLD FACE TYPE IDENTIFIES OPTIONAL PARAGRAPHS AND FEATURES THAT MAY BE INCLUDED OR DELETED DEPENDING ON PROJECT REQUIREMENTS. CONVERT THE BOLD FACE TYPE TO REGULAR TYPE WHEN INCLUDING THESE PARAGRAPHS OR FEATURES. WHEN DELETING A PARAGRAPH, BE CERTAIN THAT ALL SUBPARAGRAPHS ARE ALSO DELETED.

REVISE FOOTER TO SUIT PROJECT/OFFICE REQUIREMENTS.

ELECTRONIC VERSIONS OF THIS SPECIFICATION UTILIZE AUTOMATIC PARAGRAPH NUMBERING.

WHEN EDITING IS COMPLETE, DELETE ALL TEXT ON THIS PAGE, THEN REMOVE THE SECTION BREAK AT THE TOP OF THE NEXT PAGE TO REMOVE THIS PAGE FROM THE DOCUMENT.

SPECIFICATION BEGINS ON THE FOLLOWING PAGE.

SECTION 28 23 19

DIGITAL VIDEO RECORDER

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes: 16 Channel digital video recorder (DVR) and accessories for Project video surveillance system.

VERIFY THAT VIDEO SURVEILLANCE SYSTEM SECTION DOES NOT INCLUDE A DVR AND REFERS TO THIS SECTION FOR SUPPLY OF THE DVR.

- B. Products Supplied But Not Installed Under This Section: Digital video recorder and accessories.

- C. Related Sections:

INSERT SECTION NUMBER AND TITLE BELOW USED TO SPECIFY THE BASIC VIDEO SURVEILLANCE SYSTEM AND OTHER RELATED SECTIONS AS DESIRED.

- 1. _____ - _____.
- 2. _____ - _____.
- 3. _____ - _____.

INCLUDE APPROPRIATE LANGUAGE BELOW IF PRODUCTS SPECIFIED IN THIS SECTION ARE TO BE BID AS ALTERNATES. OTHERWISE DELETE FOLLOWING PARAGRAPH.

- D. Alternates:
 - 1. Reference Section 01 23 00—Alternates.

1.02 SUBMITTALS

- A. Reference Section 01 33 00—Submittal Procedures; submit following items:
 - 1. Product Data for DVR and accessories.
 - 2. Details of express replacement program.
 - 3. Owner’s Manual including Owner’s Manual(s) for specified accessories.
 - 4. Quality Assurance/Control Submittals:
 - a. Qualifications: Proof of manufacturer’s qualifications.
 - b. Manufacturer’s Installation Instructions—if not included in Owner’s Manual.

INSERT SECTION NUMBER AND TITLE BELOW USED TO SPECIFY THE BASIC VIDEO SURVEILLANCE SYSTEM.

- B. Closeout Submittals: Reference Section 01 78 00—Closeout Submittals and Section _____; submit following items:
 - 1. Operating and Maintenance Instructions: Owner’s Manual including Owner’s Manual(s) for accessories.
 - 2. Special Warranties.

1.03 QUALITY ASSURANCE

- A. Qualifications:
 - 1. Manufacturer Qualifications:
 - a. Minimum five years experience in producing digital video recorders.
 - b. ISO 9000 Certification.
- B. Regulatory Requirements: DVR shall comply with the following:
 - 1. FCC Part 15, Class A.
 - 2. **Industry Canada ICES 003.**
- C. Certifications: UL **and** cUL.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Reference Section 01 66 00–Product Storage and Handling Requirements.
- B. Follow instructions in manufacturer’s Owner’s Manual.

1.05 PROJECT/SITE CONDITIONS

- A. Environmental Requirements: Maintain the following conditions for 24 hours prior to installation and continuously following installation:
 - 1. Temperature: 40 to 105 degrees F (5 to 40 degrees C).
 - 2. Humidity: 30 to 80 percent.

1.06 WARRANTY

- A. Special Warranty: 60 months against manufacturing defects.
- B. Provide an express replacement program for defective DVRs subject to the following conditions:
 - 1. Original warranty period shall be in effect and warranty period must be verifiable.
 - 2. Upon verification of warranty coverage and proof of defect by manufacturer’s Technical Support Center, manufacturer shall ship a replacement unit within 24 hours via overnight delivery.

1.07 SYSTEM STARTUP

INSERT SECTION NUMBER AND TITLE BELOW, AND IN THE FOLLOWING TWO ARTICLES, (OWNER’S INSTRUCTIONS AND COMMISSIONING) USED TO SPECIFY THE BASIC VIDEO SURVEILLANCE SYSTEM.

- A. Refer to Section _____.

1.08 OWNER’S INSTRUCTIONS

- A. Refer to Section _____.
- B. Provide DVR training program on CD.

1.09 COMMISSIONING

- A. Refer to Section _____.

1.10 MAINTENANCE

- A. **Extra Components: Provide one spare DVR for Owner’s emergency use. Spare DVR shall be same model as specified herein.**

PART 2 - PRODUCTS

2.01 MANUFACTURER

- | | |
|---|--|
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|---|--|

INSERT NAME, ADDRESS AND PHONE NUMBERS OF MANUFACTURER’S REPRESENTATIVE BELOW.

1. Manufacturer’s Representative:

SELECT MODEL BASED ON SYSTEM REQUIREMENTS FOR HARD DRIVE DISK SPACE AND PREFERENCE FOR XGA VIDEO OUTPUT.

- B. Standard Model: [DX-TL5000U-500GB] [DX-TL5000U-750GB] [DX-TL5000U-1TB] [DX-TL5000U-1.6TB] [DX-TL5000U-2TB]

OR

- B. XGA Model: [DX-TL5000U-500GB XGA] [DX-TL5000U-750GB XGA] [DX-TL5000U-1TB XGA] [DX-TL5000U-1.6TB XGA] [DX-TL5000U-2TB XGA]

- C. Substitutions: Reference Section 01 25 13–Product Substitution Procedures.

2.02 DIGITAL VIDEO RECORDER

- A. General Description: 16-camera video multiplexer recorder using JPEG2000 compression and supporting 13 recording rates and 6 recording quality grades. DVR shall display in live mode 60 PPS per channel and display up to 960 on a 16 display pattern. DVR shall record up to 240 PPS with independent settings per channel.
1. Built in DVD/CD R/W +/-.
 2. Support the addition of up to 14 external USB HDD’s, 6 SCSI-2 HDD’s where each drive can be up to 2TB each and a USB Jump Drive.
 3. Cascade Capability: Connection of up to 16 DX-TL5000U with keyboard access via to display any video to a master monitor.
 4. Include setup wizard to simplify setup and programming.
- B. Front Panel:

CONTROLS:	INDICATOR LIGHTS:	JACKS AND OTHER:
Power Button	Power	Remote Controller Jack
PTZ Button	Access	Analogue Out Jacks
Split Screen Control	Communication	USB Port
Jog/Shuttle Ring	Alarm	LCD Display
Sequence Button	Timer	Disk Loading Slot
Setup Button	Lock	
Search Button	Motion Detector	

HDD Usage	Displays percentage of hard disk used
Menu Language	Selectable to English, French, or Spanish
Motion Detection Function	22h by 19 v detection area setting, 5 step detection sensitivity setting, recording start dot number setting
Clock Adjusting Function	Clock adjusting input (back)
Daylight Savings Time Adjustment	Automatic
Power Supply	AC100-240V 56/60 Hz
Operational Conditions	Temperature: 5-40 degrees C Humidity: 30-80 percent Altitude: 2000 m maximum

E. Operations:

1. Local Control: Via GUI from front panel buttons, mouse, keyboard, or wired remote control unit.
2. Remote Operation: Via network software or web browser (limited).

F. Screen Modes:

1. Primary Monitor Output(composite or XGA): Provide access to menu screens, playback and live full screen, sequential full screen, quad, 9, 10, 13, or 16 multi screen displays.
2. Secondary Monitor Output (composite or XGA): Provide playback and live full screen, sequential full screen, quad, 9, 10, 13, or 16 multi screen displays.

G. Record and Playback Functions:

1. Triplex Operations: Simultaneously display live video, record, and playback of specific cameras on a single monitor screen in a multiple display patterns.
2. Record any and all camera inputs as full screen images.
3. Record up to 30 pictures per second (PPS) for one camera and up to 240 PPS total (Field mode), and up to 120 PPS total (Frame mode)
4. Variable record rates and variable record quality allowing user to program each camera independently.
5. User programmable up to 16-character title for each camera and capability to record time, date, and title with each image.
6. Playback Options: Pause, reverse play, forward play, and image by image advance in four forward or reverse speeds.

H. Password Requirements:

1. 3 user-defined password settings each allowing specific access levels to the unit functions, menu and covert cameras.
2. Lock all function, that locks all buttons except for Split/Sequence, Zoom and camera buttons.
3. Password lock to protect HDD recorded information.

I. Archiving:

1. Capability to archive to external HDD or DVD.

J. Search Options: Time and date, alarm number, bookmark, and motion search.

K. Copy:

1. Capability to copy images to a HDD connected to USB ports or NAS port.

2. Capability for simultaneous copy, record, and playback.
 3. Capability to apply a digital signature to all images, sequence of images recorded on the DVR.
- L. Scheduling Requirements:
1. User definable schedule to switch to day, night, weekends, and holidays. Schedule shall support 2 user definable patterns.
 2. Capability to allow user definable pattern settings for camera, record rate, record quality, alarm record rate and quality, archiving, skip, and motion activation.
- M. Alarm Functions:
1. Provide Alarm and Alarm Plus Normal activity-recording options.
 - a. Alarm shall record images from those cameras in an alarm activity condition.
 - b. Alarm Plus Normal shall prioritize ~~the~~ recording of those cameras in an alarm activity condition, while recording images of none alarm cameras.
 2. Capability to send a message on alarm or camera failure.
 3. Emergency Alarm input, forcing alarm recording for all cameras.
 4. Alarm log list for alarm activities when recorded as alarm on the hard disk, providing time date, camera, and type of event.
 5. Provide an alarm log searchable by time and date, camera type, and index, with a quick search function playing back 5 seconds of the recorded information.(when Alarms are recorded as Alarm).
 6. Capability to protect alarm and activity recording on separate partitioning of the disk. Partition shall be configurable in GB and have ability to overwrite itself.
 7. Capability to notify up to 5 e-mail addresses or 5 IP addresses of an alarm occurrence.
 8. Alarm Trigger Events:
 - a. DVR temperature.
 - b. Fan malfunction.
 - c. When an alarm is triggered.
 - d. Re-booting of DVR,
 - e. Record mode is activated
 - f. HD data storage has reached a specified percent of capacity.
 9. Independent or global alarm recording per alarm trigger.
 10. Alarm contact (Mode Out 1-4) shall have individual programmable polarity that can trigger telemetry preset.
 11. Capability to record multiple cameras per alarm trigger.
 12. Support monitor A or B display of last camera in alarm with a default of a 2 second dwell per alarmed camera and return to pre-alarm display capability.
 13. Capability to display an alarm condition on the main cascade monitor from any DVR when in cascaded mode.
 14. Programmable activity detection per camera with a grid that can be set individually supporting up to 5 sensitivity levels and a triggering threshold setting from 1 to 400. Each setting shall support a test mode for testing set settings.
- N. Covert Cameras: Support covert cameras via any camera connected.
- O. Digital Signature: Apply to recordings and to internal and external hard disk with out affecting performance, allowing the authenticity of the digital multiplexed recorded image to be verified.
- P. Audio Requirements:

1. 4 channels of audio recording, minimum frame rate of 0.5 PPS.
2. Playback of audio/video in sync when played back from DVR or PC

Q. Telemetry:

1. Provide control of single and multi-speed telemetry cameras.
2. Provide PTZ camera support for each channel via RS-422/485/232 including Pelco D, Sensormatic Manchester, Panasonic, JVC, GE, and Samsung PTZ protocol cameras. Also support of Pelco COAX via channel 1 only.
3. Provide local control for each PTZ camera via DVR front panel buttons, optional keyboard and optional with a wired remote.
4. Provide remote control of PTZ cameras via application software when connected via LAN or WAN.

R. Network Functions:

1. Capability to connect to a 10/100Base-T Ethernet network.
2. Supports web browser and network (DX-PC55U) application software for LAN or WAN communications.
3. Audio in live mode will be supported by the network software only (DX-PC55U).
4. Include network software and license free to end user.
5. Network software shall support duplex operation enabling live and playback at the same time.
6. Support saving needed data to host PC. Data shall be camera selectable.
7. Support viewing covert cameras over the network by authorized personnel.
8. Provide access to the units event list and its associated video when alarms are recorded as alarms.
9. Support storing of digital images to a PC HDD, DVD/CD and USB Memory drive.
10. Playback images copied from DVR to DVD/CD or USB Memory drives.
11. Support up to 5 remote operators to view live or prerecorded images across a network.
12. Support user selectable picture quality settings.
13. Option to set password to prevent unauthorized user viewing of live, recorded images, moving PTZ cameras, controlling the unit, changing the menu system, configuring the network settings and viewing covert cameras.
14. Support Windows 2000 and XP.
15. Support multiple DVR connections and display them in one screen.

2.03 ACCESSORIES

SELECT FOLLOWING ACCESSORIES BASED ON SYSTEM REQUIREMENTS. DELETE THOSE NOT REQUIRED.

A. Security Controller Keyboard:

1. Joy stick control of PTZ of dome cameras.
2. Jog shuttle dial for fast forward/rewind/playback/frame by frame of images.
3. LCD display for DVR status.
4. Split screen buttons.
5. Monitor A/B selection.
6. Triplex playback control.
7. Up to 256 camera accessibility via cascade connection of DVR.
8. Power cord and AC adaptor.

B. HDD Extension Unit:

1. USB 2.0 [500] [800] GB.

- C. Rack Mount Kit for DVR.**
- D. Rack Mount Kit for HDD Extension Unit.**
- E. Wired Remote Control Unit.**

PART 3 - EXECUTION

3.01 INSTALLATION

INSERT SECTION NUMBER AND TITLE IN THE FOLLOWING TWO PARAGRAPHS USED TO SPECIFY THE BASIC VIDEO SURVEILLANCE SYSTEM. VERIFY THAT VIDEO SURVEILLANCE SECTION INCLUDES STATEMENTS REQUIRING THE FOLLOWING:

INSPECTION OF ALL EQUIPMENT FOR COSMETIC DEFECTS AND DAMAGE PRIOR TO INSTALLATION.

INSPECTION OF DVR INSTALLATION FOR PROPER AND STABLE AC VOLTAGE, GOOD VENTILATION, AND CLEAN ENVIRONMENT.

DVR SHALL PASS ALL POWER-UP SELF TEST, SHALL RECOGNIZE AND DISPLAY ALL CAMERAS CONNECTED TO IT'S INPUTS, AND DEMONSTRATE THAT IT BE PROGRAMMED TO SUPPORT ITS VARIOUS FUNCTIONS. BE ABLE TO RECORD TO ITS INTERNAL AND EXTERNAL MEDIA, BE ABLE TO PLAYBACK RECORDED VIDEO AND SUPPORT AND CORRECTLY PERFORM ACTIVATED FEATURES AND FUNCTIONS.

- A. Refer to Section ___ ___ ___ for DVR installation with other components of the video surveillance system. Install and setup in accordance with DVR Owner's Manual.

3.02 FIELD QUALITY CONTROL

- A. Site Tests: Refer to Section ___ ___ ___ for site testing of the video surveillance system.

END OF SECTION¹

¹ This specification was prepared specifically for Mitsubishi Digital Electronics America, Inc. by ASC Specification Consultants. Comments or suggestions for improvement should be addressed to: Mitsubishi Digital Electronics America, Inc. at the address noted in Article 2.01.

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