

Product Overview of Sungjin C&C

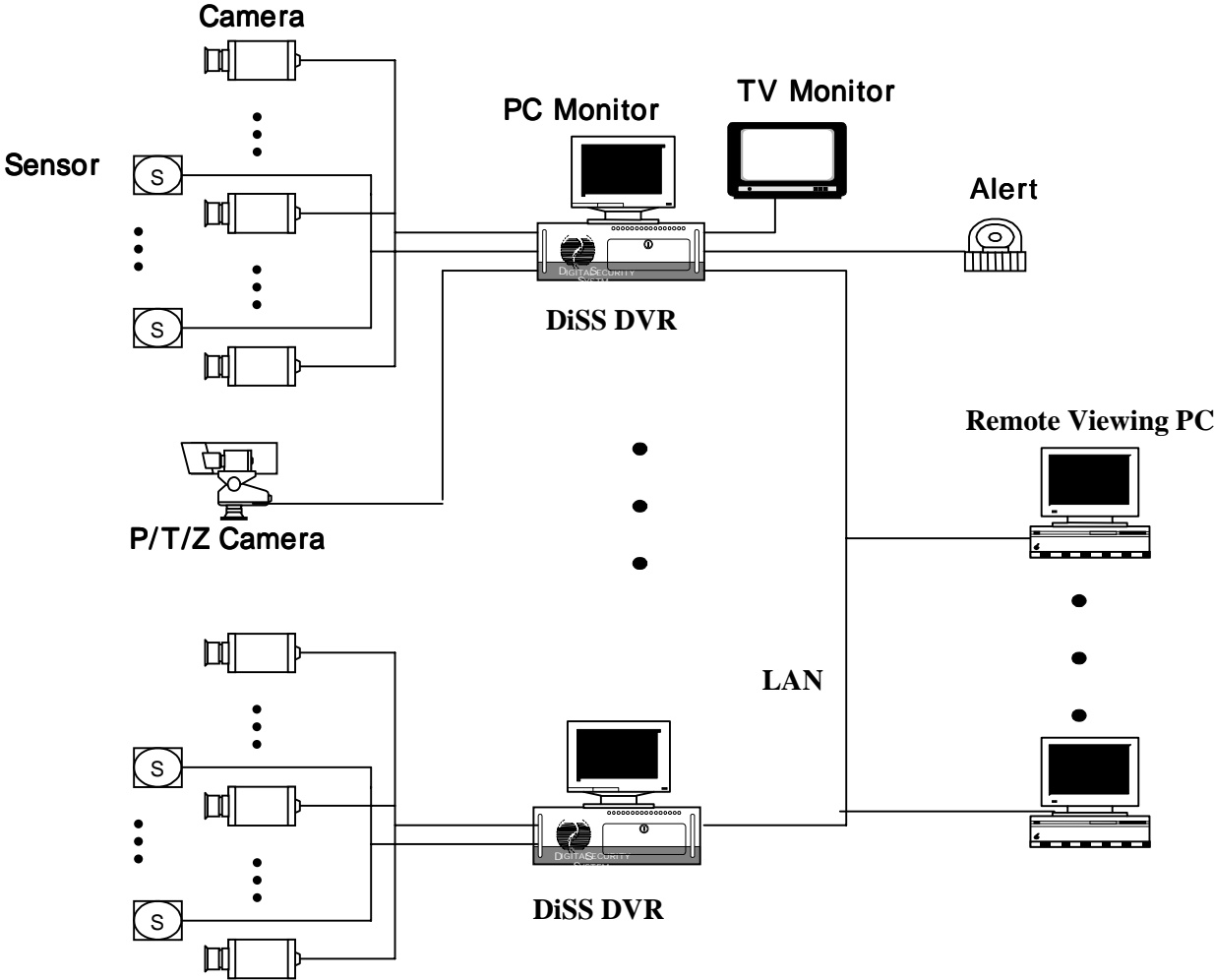
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1. Basic System Configuration



2. The DVR brands of Sungjin C&C

- **DiSS** : The Main Brand of Sungjin C&C
- Definition of Sub-brands by Category
 - **CasinoMaster**
World-Highest Realtime PC-based DVR for Full-DVD-Quality Recording
 - **NetMaster**
High Performance Multichannel PC-based DVR with High-end Networking
 - **Compact DVR(TBD)**
Cost Competitive Easy-to-use Multichannel Embedded DVR with VCR-like button and IR-remote control
 - **MobileVDO**
Robust Vehicle-dedicated Multichannel Mobile DVR



World first(1999) DVR-dedicated “**Enhanced MPEG**” encoder chip that supports multichannel 30fps@640x240 and motion detection

3.1 DiSS Product Line – Embedded DVR

CompactDVR (EM-2008)

- 8ch video input, Embedded LINUX
- 30fps recording, Built-in Quad & FDD, Remote Controller
- App.10GB / 24hours at continuous recording mode



Major Features		Option	
•Recording Speed	: 30fps@360x240 / 720X240	** HDD	- Max. 1 HDD (Built-in)
•Real time Monitoring	: 4ch as Standard	Real-time Monitoring	- 4ch : 120fps/NTSC (Quad Switching)
•Pixel Resolution	: 360 x 240,720 x 240	TV Output	- NTSC, PAL
•HDD Size	: 80GB as factory default	Language	- Korean, English, Japanese, Simplified Traditional Chinese
•Sensor & Alarm	: 4 Sensors / 2 Alarms	Back up Supported	- Still-image to FDD (JPG,BMP) - Live-images via LAN (DSF)
•Monitor Out put	: PC Monitor or TV Monitor		
•Camera Control	: P/T/Z,Focus		
•Remote Connection (LAN, Internet)	: Max. 8ch video transmission to a remote viewing S/W		
•Network	: Live view & Playback		
•Motion Detection	: Sensitivity Setting		
•Monitor Output	: Analog composite		
Option(** Mark) : Price Changeable according to Option			

3.2 DiSS Product Line – PC-based DVR

NetMaster NM-2004/2008

- Compact, Desk-top Size
- 4ch for NM-2004, 8ch for NM-2008
- Built-in CD-RW/DVD-RAM, Removable HDD**
- Max.60fps recording, Max.16 Ch video transmission
- App. 20GB / 24hours at continuous recording mode



Major Features		Option	
•Recording Speed	: Max.60fps@320x240 Max.20fps@640x480	** HDD	-Max. 2 HDDs (Built-in/Removable)
•Real time Monitoring	: Max.60fps / 4ch/8ch	Live Monitoring	- 60(NTSC)/50(PAL) fps
•Pixel Resolution	: 320 x 240, 640 x 280/480/ch	TV Output	- Unavailable
•HDD Size	: 40GB for 4ch / 80GB for 8ch	Language	- Korean, English, Japanese, Simplified Traditional Chinese
•Sensor & Alarm	: 4 Sensors / 2 Alarms**	** Back up Supported	- Network, CD-RW/DVD-RAM, Removable HDD**
•# of max.connection	: 16ch video transmissions (Triplex ; monitor-playback- file copy at the same time)		
•Remote control	: PTZ, preset, aux, alarm, event view, Screen display		
•System protection	: Watch-dog, HDD protection, system file auto-recovery		
Option(** Mark) : Price Changeable according to Option			

3.3 DiSS Product Line – PC-based DVR

NetMaster NM-3016

- 2U SLIM size
- 16ch video input, ****Built-in CD-RW**
- Max.120fps recording, Max.32 Ch video transmission
- App. 40GB / 24hours at continuous recording mode



Major Features		Option	
•Recording Speed	: Max.120fps@320x240	** HDD	- Max.3 HDDs (Built-in)
•Real time Monitoring	: Max.120fps / 16ch	Live Monitoring	- 120(NTSC)/100(PAL) fps
•Pixel Resolution	: 320 x 240, 640 x 240/480/ch	TV Output	- Unavailable
•HDD Size	: 80GB as factory default	Language	- Korean, English, Japanese, Simplified Traditional Chinese
•Sensor & Alarm	: 4 Sensors / 2 Alarms **	** Back up Supported	- External RAID(SCSI) - Built-in CD-RW,or DVD-RAM
•# of max.connection	: 32ch video transmissions (Triplex ; monitor-playback-file copy at the same time)		
•Remote control	: PTZ, preset, aux, alarm, event view, Screen display		
•System protection	: Watch-dog, HDD protection, system file auto-recovery		
Option(** Mark) : Price Changeable according to Option			

3.4 DiSS Product Line – PC-based DVR

NetMaster NM-5008DX(V)

- 8ch video input, Built-in Mouse Tray
- 4ch voice recording (NM-5008DXV)
- Max.120fps recording, Max.32Ch video transmission
- App. 40GB / 24hours at continuous recording mode



Major Features		Option	
•Recording Speed	: Max.120fps@320x240	** HDD	- Max. 4 HDDs (Built-in)
•Real time Monitoring	: 240fps / 8ch	Real-time Monitoring	- 240(NTSC)/200(PAL) fps - Real-time quad display
•Pixel Resolution	: 320 x 240,640 x 240/480/ch	TV Output	- NTSC, PAL
•HDD Size	: 80GB as factory default	Language	- Korean, English, Japanese, Simplified Traditional Chinese
•Sensor & Alarm	: 16 Sensors / 8 Alarms	** Back up Supported	- External RAID, DVD-RAM(SCSI) - External CD-RW(SCSI)
•# of max.channel	: 32ch video transmissions (Triplex ; monitor-playback- file copy at the same time)		
•Remote control	: PTZ, preset, aux, alarm, event view, Screen display		
•System protection	: Watch-dog, HDD protection, system file auto-recovery		
Option(** Mark) : Price Changeable according to Option			

3.5 DiSS Product Line – PC-based DVR

NetMaster NM-5016DX(V)

- 16ch video input, Built-in Mouse Tray
- 4ch voice recording (NM-5016DXV)
- 120fps recording, Max.32Ch video transmission
- App. 40GB / 24hours at continuous recording mode



Major Features		Option	
•Recording Speed	: Max.120fps@320x240	** HDD	- Max. 4 HDDs(Built-in)
•Real time Monitoring	: 480fps / 16ch	Real-time Monitoring	- 480(NTSC)/400(PAL) fps Real-time quad display
•Pixel Resolution	: 320 x 240,640 x 240/480/ch	TV Output	- NTSC, PAL
•HDD Size	: 80GB as factory default	Language	- Korean, English, Japanese, Simplified Traditional Chinese
•Sensor & Alarm	: 16 Sensors / 8 Alarms	** Back up Supported	- External RAID, DVD-RAM(SCSI) - External CD-RW(SCSI)
•# of max.connection	: 32ch video transmissions (Triplex ; monitor-playback- file copy at the same time)		
•Remote control	: PTZ, preset, aux, alarm, event view, Screen display		
•System protection	: Watch-dog, HDD protection, system file auto-recovery		
Option(** Mark) : Price Changeable according to Option			

3.6 DiSS Product Line – PC-based DVR

NetMaster NM-5008SX(V)

- 8ch video input, Built-in Mouse Tray
- 4ch voice recording (NM-5008SXV)
- Max.240fps recording, Max.16Ch video transmission
- App. 80GB / 24hours at continuous recording mode



Major Features		Option	
•Recording Speed	: Max.240fps@320x240	** HDD	- Max. 4 HDDs(Built-in)
•Real time Monitoring	: 240fps / 8ch	Real-time Monitoring	- 240(NTSC)/200(PAL) fps Real-time quad display
•Pixel Resolution	: 320 x 240,640 x 240/480/ch	TV Output	- NTSC, PAL
•HDD Size	: 120GB as factory default	Language	- Korean, English, Japanese, Simplified Traditional Chinese
•Sensor & Alarm	: 16 Sensors / 8 Alarms	** Back up Supported	- External RAID, DVD-RAM(SCSI) - External CD-RW(SCSI)
•# of max.connection	: 16ch video transmissions (Triplex ; monitor-playback- file copy at the same time)		
•Remote control	: PTZ, preset, aux, alarm, event view, Screen display		
•System protection	: Watch-dog, HDD protection, system file auto-recovery		
Option(** Mark) : Price Changeable according to Option			

3.7 DiSS Product Line – PC-based DVR

NetMaster NM-5016SX

- 16ch video input, Built-in Mouse Tray
- 4ch voice recording (NM-5016SXV)
- Max.240fps recording, Max.16Ch video transmission
- App. 80GB / 24hours at continuous recording mode



Major Features		Option	
•Recording Speed	: Max.240fps@320x240	** HDD	- Max. 4 HDDs(Built-in)
•Real time Monitoring	: 240fps / 16ch	Real-time Monitoring	- 480(NTSC)/400(PAL) fps Real-time quad display
•Pixel Resolution	: 320 x 240,640 x 240/480/ch	TV Output	- NTSC, PAL
•HDD Size	: 120GB as factory default	Language	- Korean, English, Japanese, Simplified Traditional Chinese
•Sensor & Alarm	: 16 Sensors / 8 Alarms	** Back up Supported	- External RAID, DVD-RAM(SCSI) - External CD-RW(SCSI)
•# of max.connection	: 16ch video transmissions (Triplex ; monitor-playback- file copy at the same time)		
•Remote control	: PTZ, preset, aux, alarm, event view, Screen display		
•System protection	: Watch-dog, HDD protection, system file auto-recovery		
Option(** Mark) : Price Changeable according to Option			

3.8 DiSS Product Line – PC-based DVR

NetMaster NM-7016SX(V)

- 16ch video input, Function keys
- ****Built-in CD-RW / DVD-RAM**
- 4ch voice recording (NM-7016SXV)
- 240fps recording, Max.16Ch video transmission
- **App. 80GB / 24hours at continuous recording mode**



Major Features		Option	
•Recording Speed	: Max.240fps@320x240	** HDD	- Max. 4 HDDs (Built-in)
•Real time Monitoring	: 480fps / 16ch	Real-time Monitoring	- 480(NTSC)/400(PAL) fps Real-time quad display
•Pixel Resolution	: 320 x 240,640 x 240/480/ch	TV Output	- NTSC, PAL
•HDD Size	: 120GB as factory default	Language	- Korean, English, Japanese, Simplified Traditional Chinese
•Sensor & Alarm	: 16 Sensors / 8 Alarms	** Back up Supported	- External RAID(SCSI) - Built-in CD-RW,or DVD-RAM
•# of max.connection	: 16ch video transmissions (Triplex ; monitor-playback- file copy at the same time)		
•Remote control	: PTZ,preset,aux,alarm,event view, Screen display		
•System protection	: Watch-dog, HDD protection, system file auto-recovery		
Option(** Mark) : Price Changeable according to Option			

3.9 DiSS Product Line – Real-time DVR

CasinoMaster (CM-8008)

- 8ch video input, 8ch voice input
- Enhanced MPEG-2, DVD Pic.Quality
- CBR (12.5Kbyte / Picture)
- 240fps recording, Max.8 Ch video transmission
- App. 260GB / 24hours at continuous recording mode



Major Features		Option	
•Recording Speed	: 240fps@640x480	** HDD	- Max. 4 HDDs (Built-in)
•Real time Monitoring	: 240fps / 8ch	Real-time Monitoring	- 240(NTSC)/200(PAL) fps
•Video Compression	: Enhanced MPEG-2	TV Output	- NTSC, PAL
•Pixel Resolution	: Interfaced 640x480 per ch.	Language	- Korean, English, Japanese, Simplified Traditional Chinese
•HDD Size	: 120GB as factory default	** Back up Supported	- External RAID, DVD-RAM(SCSI) - External CD-RW(SCSI)
•# of max.connection	: 8ch video transmissions (Triplex ; monitor-playback-file copy at the same time)		
•Remote control	: PTZ, preset, aux, alarm, event view, Screen display		
•System protection	: Watch-dog, HDD protection, system file auto-recovery		
Option(** Mark) : Price Changeable according to Option			

3.10 DiSS Product Line – Real-time DVR

CasinoMaster (CM-8016)

- 16ch video input
- Enhanced MPEG-2, DVD Pic.Quality
- CBR (12.5Kbyte / Picture)
- 480fps recording, Max.8 Ch video transmission
- App. 520GB / 24hours at continuous recording mode



Major Features		Option	
•Recording Speed	: 480fps@640x480	** HDD	- Max. 4 HDDs (Built-in)
•Real time Monitoring	: 480fps / 16ch	Real-time Monitoring	- 480(NTSC)/400(PAL) fps
•Video Compression	: Enhanced MPEG-2	TV Output	- NTSC, PAL
•Pixel Resolution	: Interfaced 640x480 per ch.	Language	- Korean, English, Japanese, Simplified Traditional Chinese
•HDD Size	: 120GB as factory default	** Back up Supported	- External RAID, DVD-RAM(SCSI) - External CD-RW(SCSI)
•# of max.connection	: 8ch video transmissions (Triplex ; monitor-playback-file copy at the same time)		
•Remote control	: PTZ, preset, aux, alarm, event view, Screen display		
•System protection	: Watch-dog, HDD protection, system file auto-recovery		
Option(** Mark) : Price Changeable according to Option			

3.11 DiSS Product Line – Mobile DVR

MobileVDO (TM-308)

- 8Ch Video input & 2Ch Audio Input
- 30fps recording, Max.40GB portable HDD
- App. 10GB / 24hours at continuous recording mode



Major Features		Option	
<ul style="list-style-type: none"> •Recording Speed •Playback Speed •Monitor Output •Pixel Resolution •HDD Size •No. of Sensor •Operation control •Dimension 	: 30fps@320x240 : 30fps / 8ch video, 2ch audio : PC Monitor : 320x240, 640x240 : Default 20GB Portable HDD : 1 Sensor input : UIU(User interface unit) : 11.8x10.6x4.1(WDH, inch) 300x270x105(WDH, mm)	** HDD	- 20GB, 40GB • Portable 1 HDD only
		Monitoring	- 30(NTSC)/25(PAL) fps
		PC Output	- NTSC, PAL
		Language	- Korean, English, Japanese, Simplified Traditional Chinese
		Back up Supported	Backup from MobileVDO viewer station to an external storage
Option(** Mark) : Price Changeable according to Option			

3.12 DiSS Product Line – Web-Transmitter

CS-100N

- 1ch video input(CS-100N)
- Real-time transmission speed
- Enhanced MPEG Algorithm, 10Base-T(RJ-45)
- pSOSytem v2.0 Real-time OS



Major Features		Option	
•CPU	: 32Bit Embedded Micro.	CamStore Server	- VOD (Video-on-demand)
•O/S	: pSOSytem v2.0 OS		- Recording & Retrieval
•Video Inputs	: 4BNC Composite Videoinput		- Remote Surveillance
•Image Resolution	: 160x120,320x240,352x288, 640x240		- Multi-Client Management
•Frame Rate	: 30fps @320x240	NoiseFilter	-CS100N : Built-in noise-filter chip inside
•Network Connection	15fps @640x240		
•Network Protocol	: Multi-to-multi, multi-ch.trans. TCP/IP,PPP,PPPoE,TFTP	Language	- Korean, English, Japanese, Simplified Traditional Chinese
•Dimension	: 54x238x156(HWD,mm)		
Option(** Mark) : Price Changeable according to Option			

3.13 DiSS Product Line – Remote Viewing Agent

NetAgent WorkStation 1000

- Remote viewing & controlling system
- 24 video channel, Audio Synchronization
- Triplex supported (Live view, Playback, Copy file)
- Multi-to-Multi connection



Major Features		Performance	
<ul style="list-style-type: none"> •CPU •Memory •Operating S/W •No. of max.channel •Multi-screen mode •Image search •Remote control 	<ul style="list-style-type: none"> : Pentium III 1Ghz : 128SDRAM, 40GB HDD : Windows 2000 Server : 24 video channel : 1,3,6,9,12,15,18,24 screen : Museum search supplied : Camera,Preset,Aux,Screen, Event,Joystick,Alarm,ID, Administrator's authorization 	Actual – Performance Test	- 6channels of real-time playback (30fps/per channel) in case of CasinoMaster connection
<ul style="list-style-type: none"> •Playback Operation 	<ul style="list-style-type: none"> : Seek, forward, pause, fast-forward, fast-rewind, forward step, speed adjustment 	Language	- Korean, English, Japanese, Simplified Traditional Chinese
Option(** Mark) : Price Changeable according to Option			

3.14 DiSS Product Line – Remote Viewing Agent

NetAgent WorkStation 2000

- Remote viewing & controlling system
- 24 video channel, Audio Synchronization
- Triplex supported (Live view, Playback, Copy file)
- Multi-to-Multi connection



Major Features		Performance	
<ul style="list-style-type: none"> •CPU •Memory •Operating S/W •No. of max.channel •Multi-screen mode •Image search •Remote control 	<ul style="list-style-type: none"> : Xeon 1.7Ghz Dual CPU : 512 RambusDRAM, 30GB : Windows 2000 Pro : 24 video channel : 1,3,6,9,12,15,18,24 screen : Museum search supplied : Camera,Preset,Aux,Screen, Event,Joystick,Alarm,ID, Administrator's authorization 	Actual – Performance Test	- 16channels of real-time playback (30fps/per channel) in case of CasinoMaster connection
<ul style="list-style-type: none"> •Playback Operation 	<ul style="list-style-type: none"> : Seek, forward, pause, fast-forward, fast-rewind, forward step, speed adjustment 	Language	- Korean, English, Japanese, Simplified Traditional Chinese
Option(** Mark) : Price Changeable according to Option			

3.15 DiSS Product Line – Remote Viewing S/Ws

Features	NetAgent	RemoteAgent	WebAgent
Platform	Windows	Windows	Microsoft Internet Explorer
Max Number of Channels	24	4	4
Transmission	Live Viewing Recorded Image File Copy	Live Viewing Recorded Image File Copy	Live Viewing Recorded Image
Zoom	Variable	Variable	x4 only
Remote Camera Control	PTZ, Focus, Iris Preset	PTZ, Focus	PTZ, Focus
Remote Monitoring	Yes	Yes	No
Automatic Connection when Alarm Input	Yes	Yes	No
Still Image Backup	Yes	Yes	No
Print Still Image	Yes	Yes	No
User Access Level	Yes	Yes	No

4. DiSS Product line-up of 2nd Half of 2002

Category	Sub-brand Name	Model No.	Specification				
			Video Voice	Recording (fps)	Display (fps)	OS	Control
Realtime DVR	CasinoMaster	CM-8016	16/0	480*	480	W2K	Int. Mouse
		CM-8008	8/8	240*	240		
PC-based DVR	NetMaster	NM-7016SX	16/4	Max 240	480	W2K	Ext. Mouse
		NM-5016SX	16/4	Max 240	480		
		NM-5008SX	8/4		240	W2K	Int. Mouse
		NM-5016DX	16/4	Max 120	480		
		NM-5008DX	8/4		240		
		NM-3016	16/0	Max 120	Max 120	XPE	Ext. Mouse
		NM-2008	8/0	Max 60	Max 60	XPE	
		NM-2004	4/0				
Embedded DVR	Compact DVR	EM-2008	8/0	30	120	Linux	Button, R/C
Mobile DVR	MobileVDO	TM-308	8/2	30	30	Linux	UIU

- Recording speed of CasinoMaster is for interlaced 640x480
- Abbreviations: fps = frames per second, Int. = Internal, Ext. = External
R/C = Remote Controller, UIU = User Interface Unit, XPE = Windows XP Embedded

5.1 Advantages of DiSS

■ How about Compression?

- *The State-of-Art Proprietary Enhanced MPEG Algorithm* for S/W compression
- *Worldwide The Only DVR-dedicated Enhanced MPEG-2 Chip* for H/W compression
- *No more* comparison with other compression algorithms such as Motion-JPEG, Wavelet or standard-based MPEG-1/2/4 or H.263
- *World Best Voice Compression Algorithm : G.723.1*
- The best bitrate of 6.3kbps compared to any others
- *Precise Synchronization of Video and Voice* on both local and remote playback
- *Scheduled Frame Rate Control per Hour* as well as scheduled recording modes to save storage

5.2 Advantages of DiSS

■ How about Image Quality?

- *World Best Image Quality with Clean & Crispy Image* by the compression & full-tuned video circuits

- *True Interlaced 640x480 Resolution* is supported for recording

- *Full-DVD-Quality Realtime Recording by Enhanced MPEG-2 Chip* - Up to 5.5Mbps per channel

→ *No more* comparison with other DVR at the same file size or bandwidth

5.3 Advantages of DiSS

■ How about Networking?

- *The Best Bandwidth* by the compression
- *The Best Flexibility* by Multi-to-Multi (N:M) connection
- *Worldwide The Only Triplex Transmission* of live viewing, recorded image & file copy at the same time without interrupting operation of each channel
- *Fully Synchronized Video and Voice Transmission*
- *Smooth Realtime Playback* without jerky motion by intelligent buffering
- *Centralized Backup Server Solution* with large RAID storage
 - ➔ Expandable to large-scale centralized surveillance system
- *Multi-level Access Control* by administrator for each users
- *Remote Configuration* to setup and upgrade DVRs remotely
(Coming soon)

5.4 Advantages of DiSS

■ How about Recording Reliability?

- *The Best Stability* for 365-day & 24-hour recording
 - *No more Bill Gates' Bug*, so that *No Periodic Rebooting Required* even on Windows platform
- *Stable XPE(Windows XP Embedded) or Windows 2000 Platforms*
- *Patent-Pended Hard Disk Auto-Recovery* after any abnormal shutdown by entire system file backup
 - *No more* crash during booting after power failure
- *E-mail Notification* for emergency events (**Coming soon**)
- *Recording Failure Alarm and Notification* when there is a HDD or any system failure (**Coming soon**)

5.5 Advantages of DiSS

■ How about Network Reliability?

- *Stable Multichannel & Multi-Site Network Transmission* with guaranteed number of connections *Since Aug. 1999*
 - *No more* jerky motion or fluctuation between channels while multichannel transmitting by intelligent buffering
 - *Well-proven* in US and other high-end market for 3 years
- *Time Synchronization* between multiple DVRs on the LAN
- *Multi-Site Automatic Event Notification* of various kinds of events generated on the DVRs
- *Automatic Periodic Remote Diagnosis* for multiple DVRs on the LAN
- *Automatic Connection Retrial* after disconnection by network trouble


5.6 Advantages of DiSS

■ How about Identity?

- NM-7000 series : Number-locked door and button control
- NM-5000 series : *Patent-Pended Motor-driven Mouse Tray* for easy-to-use operation and space saving
- NM-3000 series : Half-height slim size with internal CD-RW
- NM-2000 series : *Worldwide Smallest* PC-based DVR
- EM-2000 series : IR-remote and button control and *Worldwide The Only Floppy Disk* support

6. Reference Sites

USA	<ul style="list-style-type: none">• US Government arena through the USA Federal and State Agencies• US West, Lucent Technologies• LA EMI Studio / SONY Studio• United Postal Service• U.S. Parks Service• McDonald• Denver RTD• Motorola (Phoenix / Austin)• Long Beach Port• E-bay• Hewlett Packard
ASIA	<ul style="list-style-type: none">• Shanghai Post Office (China)• Bank of China (Beijing, China)• Anneng Building (Hong Kong)• SECOM (Japan)• Disneyland (Japan)• DNA Engineering, etc. (Singapore)• Beijing Universe (China)• Tunmun Hospital (Hong Kong)• Japan Rail Road (Japan)
Others	<ul style="list-style-type: none">• Eurohans (Spain)• Pitt Water RSL Club (Australia)• St. Johns Park Bowling Club (Australia)• Sir Stanford Hotel (Australia)



Thank You!
Please Ask Questions!