TECHNICAL SPECIFICATIONS   **SECURITY SYSTEM**
DIVISION – 28 ELECTRONIC SAFETY AND SECURITY
LEVEL 1__28 20 00 ELECTRONIC SURVEILLANCE
LEVEL 2__28 23 00 VIDEO SURVEILLANCE
LEVEL 3__28 23 29 VIDEO SURVEILLANCE REMOTE DEVICES AND SENSORS

PART 2 – PRODUCTS

2.01   GENERAL
A. All equipment and materials used shall be standard components that are regularly manufactured and used in the manufacturer's system.

B. All systems and components shall have been thoroughly tested and proven in actual use.

C. All systems and components shall be provided with an explicit manufacturer warranty.

2.02   SRD-450 CIF H.264 DIGITAL VIDEO RECORDER
A. The digital video recorder (DVR) shall support 4 channels and provide recording rates of 120 images per second (ips) on NTSC systems and 100 ips on PAL systems at CIF resolution. The DVR shall display high-resolution images at a maximum of 704 x 480 pixels on NTSC systems and 704 x 576 on PAL systems.

B. The DVR shall provide CIF resolution real-time recording capability, with 4CIF recording available.

C. The DVR shall offer SATA HDD support with one internal HDD.

D. The DVR shall provide smart phone support (iPhone).

E. All operation and configuration menus shall be provided in several languages English, French, Spanish, German, Italian, Turkish, Russian, Korean and Japanese.

2.03   DISPLAY
A. Video
    1. Inputs   4 composite video 0.5–1 Vp-p, 75 ohm
    2. Resolution   704x480 NTSC
                        704x576 PAL
B. Live
    1. Frame rate   120fps NTSC
                        100fps PAL
    2. Resolution   704x480 NTSC
                        704x576 PAL
    3. Multi Screen display 1/4/Sequence

2.04   PERFORMANCE
A. Operating System   Embedded Linux
B. Recording
    1. Compression   H.264
    2. Record Rate NTSC   Up to 30fps @ 704x480
                        Up to 60fps @ 704x240
                        Up to 120fps @ 352x240
    3. Record Rate PAL   Up to 25fps @ 704x576
                        Up to 50fps @ 704x288
                        Up to 100fps @ 352x288

4. Mode NTSC	Manual, Schedule (Continuous/Event), Event (Pre/Post), Time lapse (1/2/3/7/15/30 fps)
5. Mode PAL	Manual, Schedule (Continuous/Event), Event(Pre/Post), Time lapse (1/2/3/7/13/25 fps)
6. Overwrite modes	Continuous
7. Pre-alarm	Up to 5 sec.(1, 2, 3, 4, 5 sec)
8. Post-Alarm	Up to 180 sec (5,10,15, 20, 30, 60, 120, 180 sec)

C. Search & Playback
1. Search mode	Date/time, Event
2. Playback function	Fast Forward/Backward (x2, x4, x8,16, x32, x64), Step Forward/Backward (x2, x4, x8, 16, x32, x64)

D. Network
1. Transmission speed	CIF 120/100fps
2. Bandwidth	Up to 8Mbps, Unlimited (8M), 2, 1.5, 1 Mbps 800, 600, 500, 400, 300, 200, 100, 50 kbps
3. Bandwidth control	Selectable
4. Stream	H.264 (4CIF, 2CIF, CIF Selectable)
5. Remote users	Up to 4 (4 Live or 4 Search)
6. Protocol support	TCP/IP, DHCP, DDNS, NTP, HTTP, RTSP
7. Monitoring	Webviewer

E. Smart phone
1. Phone	i-Phone
2. Protocol support	RTSP, HTTP
3. Transmission speed	Wi-Fi: CIF Max 14fps (Single Channel) CIF Max 3.5fps (Quad Channel) 3G: CIF Max 14fps(Single Channel)/ CIF Max 3.6fps(Quad Channel)

F. Remote users   1, Live

G. Storage
1. Internal HDD	Up to 1 SATA HDDs
2. External HDD/DVD	Not supported
3. DVD Writer (Back-up)	Not supported
4. USB (Back-up)	USB Stick Memory Only(up to 20GB)
5. File Format (Back-up)	AVI

H. Security
1. Password Protection	8 Users (1 Admin, 7 Managers and Users, English only, with special character)
2. Data Authentication	Watermark

2.05   INTERFACE

A. Monitors
1. VGA	1 VGA (1024x768)
2. HDMI	Not supported
3. Main Composite	1 BNC (1 Vp-p, 75 ohm)
4. Spot Composite	Not supported
5. Loop Outputs	Not supported

B. Audio
1. Inputs/Output	4CH line in/1CH line out
2. Compression	ADPCM
3. Sampling rate	64KHz

C. Alarm
1. Inputs/Outputs	4CH, Pulled up to 5V via 10K Ohm/1CH, Relay
2. Remote notification	Notification via e-mail(With 1CH Snapshot JPEG image attached)

D. Connections
1. Ethernet	1 RJ45 10/100 Base-T
2. Serial interface	Not supported
3. USB	USB 2.0, 2 ports
5. e-SATA	Not supported

E. Application Support   Mouse (Not Included), Remote Controller (Included)
              Upgrade - USB Stick memory
F. Protocol support   Not supported

2.06 GENERAL
 A. Electrical
   1. Input Voltage/Current DC12V Adaptor, 3.3A, 100~240VAC, 50~60Hz
   2. Power consumption 18.2W
 B. Environmental
   1. Operating Temperature +0°C to +40°C (+32°F to +104°F)
   2. Operating Humidity 20% to 85% RH
 C. Mechanical
   1. Dimension   290 x 60 x 224.3mm
   2. Weight w/ hard disks Approx. 1.84 kg
   3. Rack mount kit   Not supported
 D. Language
   1. NTSC   English, French, Spanish, Korean, Japanese
   2. PAL   English, French, Spanish, German, Italian, Turkish, Russian

2.07 CERTIFICATIONS
 A. UL Listed
 B. UL Listed to Canadian safety standards
 C. CE mark
 D. FCC mark

2.08 WARRANTY
 A. 3 years, parts and labor.