**A&E SPECIFICATIONS**

**FD2002F2-EI - Network fixed dome, 2.8 mm fixed lens, 2MP, H.265/MJPEG, IP66, IR**

**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**

**2.1 GENERAL**

A. This product shall be manufactured by a firm whose quality system is in compliance with the

ISO-9001

B. All equipment and materials used shall be standard components that are regularly manufactured and used in the manufacturer’s system

C. All systems and components shall have been thoroughly tested and proven in actual use. D. All systems and components shall be provided with comprehensive repair and spare parts

replacement. The manufacturer on warranty and non-warranty items shall guarantee the

spare parts and the repair.

E. All systems and components must be in compliance with FCC, CE, UL, IC, RCM, REACH, RoHS, WEEE and KC requirements.

F. All materials furnished under this item shall be compliant with 802.3 Ethernet standards

**2.2 2 MEGAPIXEL ULTRA-LOW LIGHT NETWORK DOME CAMERA**

A. The network camera shall offer three video streams output and record and supports HD resolution up to 2 MP (1920 × 1080) and frame rate up to 30fps in progressive scan CMOS format.

B. The network camera shall be capable of true day & night (ICR) low light surveillance with sensitivity down to 0.005 Lux (color) @ (F1.2, AGC ON), 0 Lux with IR on.

C. The camera shall incorporate Wide Dynamic Range, 120dB.

D. The camera shall offer video compression of H.265, H.265+, H.264, H.264+ and MJPEG. E. The network camera shall include embedded Linux OS and support IE and client software

for network preview, and be capable of performing firmware upgrades through a network

using a software-based device utility or through the web interface.

F. The network camera shall be equipped with built-in password protection which is not dependent on a server.

G. The network camera shall support standard IT protocols including: TCP/IP, UDP, ICMP, HTTP, HTTPS, FTP, DHCP, DNS, DDNS, RTP, RTSP, RTCP, PPPoE, NTP, UPnPTM, SMTP, SNMP, IGMP, 802.1X, QoS, IPv6

H. The camera shall provide the ability to take snapshot and record video clips from the web interface and store on the local computer.

I. The camera shall support event detections. With arming schedule and linkage methods set, detected event can trigger email sending, surveillance center notification, FTP/memory card/NAS uploading and channel recording.

J. The camera’s web interface shall permit settings to be exported to and imported from a

configuration file via the web interface, API and camera manufacturer’s client software.

K. The camera shall conform to ONVIF (PROFILE S, PROFILE G), and ISAPI standards for integration with 3rd party video management systems (VMS). The camera may also support custom firmware for specific integration with a 3rd party VMS.

L. The camera shall be compatible with a Video Management Software (VMS) package and Mobile Phone Application from the same manufacturer which is provided free of charge. The VMS shall not be a restricted use version of the manufacturer’s full featured version.

**2.4 CAMERA**

|  |  |
| --- | --- |
| A. Image Sensor | 1/2.8" Progressive Scan CMOS |
| B. Min. Illumination | Color: 0.005 Lux @ (F1.2, AGC ON), 0 Lux with IR on |
| C. Shutter Time | 1/3 s to 1/100,000 s, support slow shutter |
| D. Lens | 2.8 mm, horizontal field of view: 108°  4 mm, horizontal field of view: 86.4°  6 mm, horizontal field of view: 52°  8 mm, horizontal field of view: 41°  12 mm, horizontal field of view: 25° |
| E. Lens Mount | M12 |
| F. Iris | F1.6 |
| G. Max. Image Resolution | 1920 × 1080 |
| H. 3-Axis Adjustment | Pan: 0° to 355° , tilt: 0° to 75°, rotate: 0° to 355° |
| I. Day & Night | Support IR cut with auto switch. Day, Night, Auto, Schedule, Triggered by alarm input (with –S model supported) are selectable in Day/night Switch; two groups of parameters can be set respectively for day and night |
| J. WDR | Wide dynamic range can be used when there is a high contrast of the bright area and the dark area of the scene,  120dB |
| K. Smart Supplement Light | On/off. When the function turned on, supplement light can be adjusted automatically or manually. |
| L. Backlight Compensation  (BLC) | BLC area is the area that senses intensive light; OFF, Up, Down, Left, Right and Center are selectable |
| M. Digital Noise Reduction  (DNR) | Support 3D DNR. Off, Normal Mode and Expert Mode are selectable. For normal mode, noise reduction level is adjustable; for expert mode, space DNR level and time DNR level are configurable |
| N. Region of Interest (ROI) | Defined ROI regions can be assigned with more encoding resource to increase their image quality. Support 1 fixed region for mainstream and sub stream separately. |
| O. Image Adjustment | Saturation, brightness, contrast, sharpness |
| P. Rotation | On/off |
| Q. Mirror | Left/right, up/down, center |
| R. White Balance | MWB, AWB1, locked WB, fluorescent lamp, incandescent lamp, warm light lamp, natural light |

**2.5 VIDEO&AUDIO SPECIFICATIONS**

|  |  |
| --- | --- |
| A. Video Compression | Main stream: H.265/H.264  Sub stream: H.265/H.264/MJPEG Third stream: H.265/H.264 |
| B. Three Streams | Main stream:  50Hz: 25fps (1920 × 1080, 1280 × 960, 1280 × 720)  60Hz: 30fps (1920 × 1080, 1280 × 960, 1280 × 720) Sub stream:  50Hz: 25fps (640 × 480, 640 × 360, 320 × 240)  60Hz: 30fps (640 × 480, 640 × 360, 320 × 240) Third stream: |

|  |  |
| --- | --- |
|  | 50Hz: 25fps (1920 × 1080, 1280 × 720, 640 × 360, 352 ×  288)  60Hz: 30fps (1920 × 1080, 1280 × 720, 640 × 360, 352 ×  240) |
| C. H.264 profiles | Main profile/high profile |
| D. H.264+ | Support |
| E. H.265 profiles | Main profile |
| F. H.265+ | Support |
| G. Video Bit Rate | 32 Kbps to 16 Mbps |
| H. Environment Noise Filtering  (-S) | Support |
| I. Sampling Rate (-S) | 8kHz/16kHz/32kHz/44.1kHZ/48kHz |
| J. Audio Compression (-S) | G.711/G.722.1/G.726/MP2L2/PCM |
| K. Audio Bit Rate (-S) | 64Kbps(G.711)/16Kbps(G.722.1)/16Kbps(G.726)/32-192Kbp s(MP2L2) |
| L. Audio (-S) | 1 audio input (line in), 1 audio output interface, mono sound |
| M. Alarm (-S) | 1 alarm input, 1 alarm output |
| N. Rate Control | Constant, variable |
| O. Users  a. Unicast b. Multicast | Up to 6 simultaneous users  Unlimited H.264 |
| P. Security Access | Password protected |
| Q. Software Interface | Web browser view and remote client |

**2.6 NETWORK**

|  |  |
| --- | --- |
| A. Alarm Trigger | Motion detection, video tampering, network disconnected, IP  address conflict, illegal login, HDD full, HDD error |
| B. General Function | One-key Reset , Anti-Flicker, Heartbeat, Mirror, Password  Protection, Privacy Mask, Watermark, IP Address Filter |
| C. Protocols | TCP/IP, UDP, ICMP, HTTP, HTTPS, FTP, DHCP, DNS, DDNS, RTP, RTSP, RTCP, PPPoE, NTP, UPnPTM, SMTP, SNMP, IGMP, 802.1X, QoS, IPv6 |
| D. Security | User authentication, watermark, IP address filtering, |
| E. System Compatibility | ONVIF(PROFILE S,PROFILE G), ISAPI |
| F. Communication Interface | 1 RJ45 10M/100M self-adaptive Ethernet port |
| G. Network and Local Storage | Built-in microSD/SDHC/SDXC card slot, up to 128 GB, support NAS (NFS,SMB/CIFS), ANR (Auto Network Replenishment) |

**2.7 SMART ITEM**

|  |  |
| --- | --- |
| A. Motion Detection | Normal mode and expert mode are available. In expert mode,  sensitivity and proportion of motion detection can be set for 8 regions and day or night |
| B. Video Tampering | An alarm will be triggered when the lens is covered. |
| C. Exception | Alarms will be triggered when certain exception events (HDD full, HDD error, network disconnected, IP address conflict, illegal login) happen. |

|  |  |
| --- | --- |
| D. Face Detection | Human face appears in the image can be detected and  trigger linkage method |
| E. Intrusion Detection | 1 region of rectangular area can be set with different threshold, sensitivity and percentage |
| F. Line Crossing Detection | 1 line can be set with different sensitivity to detect line crossing behavior |
| G. Unattended Baggage | Objects left over in the pre-defined region such as the baggage, purse, dangerous materials |
| H. Object Removal | Objects removed from the pre-defined region, such as the exhibits on display |
| I. Dual-VCA | VCA information can be written in streams, and back-end devices can search for video clips contain specified type of events |

**2.8 WEB BROWSER REQUIREMENTS**

|  |  |
| --- | --- |
| A. Operating System | PC (Intel® Core® 2 Duo microprocessor, 2.6 GHz) with  Microsoft® Windows® XP, Windows Vista®, or Windows®  7/8/10 |
| B. Web User Interface | DirectX for Windows XP, Windows Vista, Windows 7/8/10 |
| C. RAM | 2 GB |
| D. Ethernet Card | 100 Mbps |
| E. Web Browser | Internet Explorer® 7.0 or later; Firefox, Chrome |
| F. Screen Resolution | 1024 x 768 pixels or higher, 16- or 32-bit pixel color resolution |

**2.9 PHYSICAL**

|  |  |
| --- | --- |
| A. Operating Conditions | -30 °C to +60 °C (-22 °F to +140 °F) |
| B. Humidity, all models | 95% or less (non-condensing) |
| C. Power Supply | 12 VDC ± 25%, 5 W PoE(802.3af, class 3), 6.5 W |
| D. IR Range | Up to 30 m |
| E. Dimensions | Camera: Φ 111 × 82.4 mm (Φ 4.4" × 3.2")  Package: 134 × 134 × 108 mm (5.27" × 5.27" × 4.25") |
| F. Weight | Camera: 500 g (1.1 lb.) |

**2.10 CERTIFICATIONS AND RATINGS**

A. Regulatory

a. IEC/EN 61000 b. IEC/EN 55022 c. IEC/EN 55024

d. IEC/EN 60950-1

e. FCC Part 15,Class B

f. UL/cUL 60950-1 g. RoHS

h. Reach i. WEEE

j. CAN ICES-3(B)/NMB-3(B)

k. AS/NZS CISPR 22 l. KC

B. Ratings

a. Ingress Protection b. Vandal-Resistant

IP67

IK10

**2.11 MODELS**

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