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## **(1)Technical Specification of Optimizer**

- Overall size :457 mm(D) x 915mm(W) x 1980mm(H) for Each Body
- The storages should be fixed or movable bolted to undercarriage which should roll onto the channels which should be firmly embedded to the ground.
- Configurations should have following type of blocks – 1. Single Static (SS) 2. Single Last (SL) 3.
- Twin Mobile(TM) - 2 body back to back Main Body: (a) Construction should be Rigid Knock Down construction made out of 0.8 thick cold rolled closed annealed.
- Steel conforming to IS: 513 Grade D. Each body block (SS/SL/TM) building should consist of 1 Main unit & 1Add-on unit.
- Each unit must have 5 loading levels formed by 4 nos. adjustable shelves. Overall Height should be 2080 mm from ground (1980 body + 65 undercarriage + 35 channel system).
- The finish of The bodies including shelves should be given antirust surface treatment & should be powder coated with epoxy polyester powder.
- There should be 4 adjustable shelves per body giving 5 loading levels.
- The Undercarriage should be a welded frame made of High Resistance sheet 3.15 mm thk conforming to IS:10748 suitably fabricated to take the loads based on configuration.
- The mechanism can be Push Pull type or Drive Type.

## (2) Technical Specification of CCTV Camera

<b>1</b>	<b>IP Dome Camera</b>	
	Image sensor	1/3" progressive scan CMOS
	Min. illumination	0.01 lux@F1.2, AGC ON
		0.02 0 lux with IR
	Shutter time	1/25s (30s) ~ 1/100,000s
	Lens	4mm@F2.0, angle of view: 73.1° (2.8mm, 6mm, 12mm optional)
	Lens mount	M12
	Angle adjustment	Pan: 0° ~ 355°, tilt: 0° ~ 65°
	Digital noise reduction	3D DNR
	Wide dynamic range	Digital WDR
	Day & night	ICR
	Video compression	H.264 / MJPEG
	H.264 codec profile	Main profile
	Bit rate	32 Kbps ~ 16 Mbps
	Dual stream	Yes
	Max. image resolution	1280 × 960
	Frame rate	50Hz: 25fps (1280 × 960), 25fps (1280 x 720), 25fps (704 x 576), 25fps (640 x 480)
		60Hz: 30fps (1280 × 960), 30fps (1280 x 720), 30fps (704 x 576), 30fps (640 x 480)
	Image settings	Saturation, brightness, contrast adjustable through client software or web browser
	BLC	Yes, zone configurable
	Network storage	NAS ( iSCSI optional)
	Alarm trigger	Motion detection, tampering alarm
	Protocols	TCP/IP, ICMP, HTTP, HTTPS, FTP, DHCP, DNS, DDNS, RTP, RTSP, RTCP, PPPoE, NTP,
		UPnP, SMTP, SNMP, IGMP, 802.1X, QoS, IPv6, Bonjour (SIP optional)
	System compatibility	ONVIF, PSIA, CGI
	General functionalities	User authentication, watermark
	Communication interface	1 RJ45 10M / 100M ethernet port
	Operating conditions	-30°C ~ 60°C (-22°F ~ 140°F) humidity 95% or less (non-condensing)
	Power supply	12 VDC ± 10%, PoE (802.3af)
	Power consumption	Max. 5W (max. 7W with ICR on)
	Impact protection	IEC60068-275Eh, 50J; EN50102, up to IK10
	Ingress protection	IP66
	IR range	-I: approx. 20 to 30 meters
	Dimensions	Φ 111 × 82 mm
	Weight	500g (1.1 lbs)
<b>2</b>	<b>IP Bullet Outdoor Camera</b>	
	Image Sensor	1/3" 1.3 Megapixel progressive scan Mos Sensor
	Effective Pixels	1280(H) × 960(V)
	Scanning System	Progressive
	Electronic Shutter Speed	Auto / Manual, 1/3(4)~1/10000 s
	Min. Illumination	0. 01 lx / F1.2 (Color), 0.005 lx / F1.2(B/W);0 lx / F1.2(IR on)
	S/N Ratio	More than 50 dB
	Video Output	N/A
	Max. IR LEDs Length	30 m
	Day/Night	Auto(IR) / Color / B/W
	Backlight Compensation	BLC / HLC / DWDR
	White Balance	Auto/Manual

	Gain Control	Auto/Manual
	Noise Reduction	3D
	Privacy Masking	Up to 4 areas
	Focal Length	3.6 mm
	Max Aperture	F1.8
	Focus Control	Manual
	Angle of View	H: 70°
	Lens Type	Fixed lens
	Mount Type	Board-in Type
	Compression	H.264 / MJPEG
	Resolution	1.3 M(1280 × 960) / 720P(1280 × 720) / D1(704× 576/704 × 480) / CIF(352 × 288/352 × 240)
	Frame Rate	Main Stream 1.3 M/720P(1 ~ 25/30fps) Sub Stream D1/CIF(1 ~ 25/30fps)
	Bit Rate	H.264: 32K ~ 8192 Kbps
	Ethernet	RJ-45 (10/100Base-T)
	Protocol	IPv4/IPv6, HTTP, HTTPS, SSL, TCP/IP, UDP, UPnP, ICMP, IGMP, SNMP, RTSP, RTP, SMTP, NTP, DHCP, DNS, PPPOE, DDNS, FTP, IP Filter, QoS, Bonjour
	Max. User Access	20 users
	Smart Phone	iPhone, iPad, Android™, Windows® Phone
	Power Supply	DC12 V, PoE (802.3af)
	Power Consumption	Max 5 W
	Working Environment	-20°C ~ +60°C, Less than 95% RH
	Ingress Protection	IP66
	Vandal Resistance	N/A
	Dimensions	70 mm × 66 mm × 160 mm
	Weight	0.5 kg
<b>3</b>	<b>16 Ch. Networking Video Recorder</b>	
	IP video input	16-ch
	Two-way audio input	1-ch, RCA (2.0 Vp-p, 1kΩ)
	Incoming bandwidth	80Mbps
	Decoding resolution	5MP / 3MP / 1080p / UXGA / 720p / VGA / 4CIF / DCIF / 2CIF / CIF / QCIF
	HDMI / VGA output	1-ch, resolution: 1920×1080P/60Hz, 1600×1200/60Hz, 1280×1024/60Hz, 1280 × 720 /60Hz, 1024 × 768 /60Hz
	CVBS	1-ch, BNC (1.0 Vp-p, 75 Ω) Resolution: 704 × 576 (PAL); 704 × 480 (NTSC) (optional)
	Audio output	1-ch, RCA (Linear, 1kΩ)
	Playback resolution	5MP / 3MP / 1080P / UXGA / 720P / VGA / 4CIF / DCIF / 2CIF / CIF / QCIF
	Synchronous playback	4-ch 720P / 2-ch 1080P / 1-ch 5MP 8-ch 4CIF / 4-ch 720P/ 2-ch 1080P / 1-ch 5MP
	SATA	2 SATA interfaces
	Capacity	Up to 4TB for each disk
	Network interface	1 RJ-45 10 / 100 / 1000 Mbps self-adaptive Ethernet interface
	PoE interface	4 independent 10 / 100 Mbps PoE Ethernet interfaces 8 independent 10 / 100 Mbps PoE Ethernet interfaces
	Serial interface	1 RS-485 half-duplex interface
	USB interface	2 × USB 2.0
	Alarm in / out	4 / 1 (optional)
	Power supply	100 ~ 240 VAC, 47 ~ 63 Hz, 3A
	Consumption	≤ 15 W (without hard disk)
	Working temperature	-10 °C ~ +55 °C
	Working humidity	10% ~ 90%
	Chassis	19-inch rack-mounted 1U chassis
	Dimensions (W × D × H)	445 × 290 × 45mm
	Weight	≤ 2 Kg ( without hard disk)
<b>4</b>	<b>8 Ch. Networking Video Recorder</b>	
	System Main Processor	Dual-core embedded processor
	Operating System Video	Embedded Linux®
	IP Camera Input	8 channel

	Two-way Talk	1channel Input, 1channel Output, BNC
	Display	1 HDMI,1 VGA
	Interface	1 HDMI,1 VGA
	Resolution	1920 × 1080, 1280 × 1024, 1280 × 720, 1024 × 768
	Display Split	1/4            1/4/8/9
	OSD Recording	Camera title, Time, Video loss, Camera lock, Motion detection, Recording
	Compression	H.264 / MJPEG
	Resolution	5Mp(2560 × 1920) / 3Mp(2048 × 1536) / 1080P(1920 × 1080) / 720P(1280 × 720) / D1 (704 × 576 / 704 × 480) & etc.
	Record Rate	200 Mbps
	Bit Rate	48~ 8192 kbps
	Record Mode	Manual, Schedule {Regular(Continuous), MD, Alarm}, Stop
	Record Interval	1~120 min (default: 60 min), Pre-record: 1~30 sec, Post-record: 10~300 sec
	Trigger Events	Recording, PTZ, Tour, Alarm, Video Push, Email, FTP, Buzzer & Screen tips
	Video Detection	Motion Detection, MD Zones: 396(22 × 18), Video Loss & Camera Blank
	Alarm Input	4 channel
	Relay Output	2 channel
	Playback & Backup	1 /4        / 1/4/9
	Search Mode	Time/Date, Alarm, MD & Exact search (accurate to second), Smart search
	Playback Function	Play, Pause, Stop, Rewind, Fast play, Slow play, Next le, Previous le, Next camera, Previous camera, Full screen, Repeat, Shuf e, Backup selection, Digital zoom
	Backup Mode	USB Device / Network / Internal SATA burner
	Ethernet	1 RJ-45 port (10/100/1000 Mbps)
	PoE	4 ports (IEEE802.3at) / 8 ports (IEEE802.3at)
	Network Function	HTTP, TCP/IP, IPv4/IPv6, UPNP, RTSP, UDP, SMTP, NTP, DHCP, DNS, IP Filter, PPPOE, DDNS, FTP, Alarm Server, IP Search (Support Dahua IP camera, DVR,NVS and etc.)
	Max. User Access	128 users
	Smart Phone	iPhone, iPad, Android™, Windows® Phone
	Storage Internal HDD	2 SATA ports, up to 8 TB, Raid (Redundancy)
	USB	2 ports (1 Rear USB3.0,1 Front USB2.0)
	RS232	1 port, For PC communication & Keyboard
	RS485	1 port, For PTZ control
	Power Supply	DC12 V / 4 A PoE: DC48 V / 1.04 A / Single, AC 100 ~ 240 V, 50/60 Hz
	Power Consumption	NVR: 20 W(without HDD) / NVR: 60 W(without HDD)
		PoE: Max 25.5 W for single port
	Working Environment	-10°C ~+55°C / 10%~90%RH / 86~106 kpa
	Dimension (W×D× H)	375 mm(W) × 278 mm(D) × 52 mm(H)
	Weight	2.0 kg(without HDD) /2.5 kg(without HDD)
<b>Accessories</b>		
<b>5</b>	<b>4 TB HDD Drive</b>	<b>Make : WD/Segate</b>
<b>6</b>	<b>42" Inch LED TV</b>	<b>Make : Panasonic / Samsung/Sony/LG</b>
	Screen Size	42-Inch
	Aspect Ratio	16:09
	Panel Backlight	IPS/Direct-LED
	Backlight Screening	100Mhz
	Resolution	1366X768 Pixels
	Brightness	450cd/m2
	Affected Display Area	699X392mm
	Viewing Angle	178"X178"
	Operating Life	50000 Hrs. (Approx)
	Video In	RCA Pin Type X1 1.0V(p-p)75Ω
	Audio In	RCA Pin Type X2 (0.5Vrms)
	HDMI In	Type A Connector X2
	Component / RGB In	Y,PB/CB,PR/CRX1
	USB Input	USB 2.0 X1

	Audio Out	RCA Pin Type X2
	Power Requirement	AC 110~240V,50/60Hz
	Rated Power Consumption	58W
	Power Off Condition	0.35W
	Stand By Condition	0.35W
	Built in Speakers	20W (10W+10W) (10%THD)
	Dimensions (WxHxd) W Pedestal	734X502X184mm
	Dimensions (WxHxd) W/O Pedestal	734X436X69mm
	Carton Dimention (WxHxd)	954X502X113mm
	Weight	5.5 Kg
	Gross Weight	18Kg
	Cabinet Color	Glossy Black
	VESA Mount	200mmX200mm
	Operating Invironment	Operating Temperature : 0°C to 40°C Operating Humidity : 20% to 80%
	Storage Invironment	Operating Temperature : -20°C to 60°C Operating Humidity : 20% to 90% (Non-condensation)
	Safety Regulations	IS13252:2010
	AC Cord	Yes
	Operating Manual	Yes
	Remote	Yes
	Batteries	Yes
	Table Mount	Yes
	Wall Mount	Yes
	Media Player	Yes
	Auto Stand By	Yes
	Support Format	JPEG, Video: AVI,MKV,(.mkv), ASF(.asf,.wmv)/MP4 (.mp4,.m4v)/FLV (.flv)/3gpp(.3gpp, .3g2)/TS(.ts)/PS(.vob, .vro)
	Backlight Control	User Control
<b>7</b>	<b>6U Network Rack - Wall Mount</b>	
<b>8</b>	<b>4 Channel Port Switch</b>	<b>Make: Dlink/Cisco/TP-Link</b>
<b>9</b>	<b>8 Channel Port Switch</b>	<b>Make: Dlink/Cisco/TP-Link</b>
<b>10</b>	<b>12V 5Amp Power Supply</b>	
<b>11</b>	<b>CAT 6 cable</b>	<b>Make: D-Link/Dynamic/Scheileder/Polycab</b>
<b>12</b>	<b>PVC Pipe &amp; Conduit for Cable</b>	

### **(3) Technical Specification of GPS Tracker with Fuel Monitor**

The specification of GPS Tracker with Fuel Monitor will be discussed and finalized in the Pre-Bid Meeting as per schedule.