



COMMITTED TO BECOMING A WELL-KNOWN
INDUSTRY IOT SOLUTION PROVIDER



Professional Manufacturer of

- Intelligent OHL Transmission Line Surveillance Camera

The following are the hardware parameters of the four products

COMMITTED TO BECOMING A WELL-KNOWN
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Intelligent OHL Transmission Line Surveillance Camera



ST2303B/S V2.0



ST2303B/S V4.0



ST2303B/S V6.0P



ST2303B/S V6.0P-F



ST2303B/S V10



ST2303B/S V11

Function Extension Components





Function	Wire temperature measurement	Micro-meteorology	Tower tilt	Audible and Visual Alarms
Model	ST6100	ST6140	S6310	S6150
Scope	Temperature measurement range -40~+290C	Can collect wind speed, wind direction, temperature, humidity, rainfall and air pressure	Angle measurement range: 30° of dual-axis	Alarm sound can be heard from 200m away, the voice content can be distinguished, and the light can be seen.
Power supply method	Inductive extraction power	Solar energy + battery	Solar + battery or directly connected to the host, centralized power supply	DC 12V power supply directly connected to the host, centralized power supply
Communication method	433MHz wireless communication	Full network wireless communication, support RS485 and 433MHz wireless communication	Full network wireless communication, support RS485 and 433MHz wireless communication	Wired communication with the host
Protection level	IP67	IP67	IP67	IP67
Access method	It can collect information independently, or access the shared transmission channel of the host through wireless communication.	It can collect information independently, or access the shared transmission channel of the host through wireless communication.	It can collect information independently, or access the shared transmission channel of the host through wireless communication.	Wired connection with the visualization host
Application scenario	High load line, high temperature area, suitable for line temperature detection	Climate complex area, suitable for collection of micro-climate environment in the line channel	Important intersections, bad geological areas or towers in important areas are suitable for collecting tower inclination angle information	Remote shouting for frequent construction or dense human activity areas

ST2303B/S V2



Product Description:

By collecting video/image and other data, the device automatically monitors and identifies hidden dangers and provides timely warnings, realizing the function of visualized online monitoring of transmission lines.

Main Specifications:

Project	Technical parameter
Camera	V2 adopts industrial-grade high-definition gun camera, standard 16-megapixel general optical white vision lens, optional night vision camera (optional, see optional table for details)
Photo collection method	Automatically set the interval time/support manual capture of photos
Antenna	Built-in antenna
GPS	GPS
Communication	It supports the 2G, 3G, and 4G networks and the operator can be selected according to the on-site conditions.
Monitoring cycle	Customizable setting of shooting interval, front-end analysis of pictures taken by the device, immediate return to the platform after identifying the danger, and regular return when there is no hidden danger
Camera adjustment capability	Can be adjusted manually in all directions according to the line direction
MTBF	≥30000h
Check and debug	Can be inspected and debugged without disassembling the machine
Protection level	IP67
Equipment quality	≤5Kg (Including solar panels and brackets)



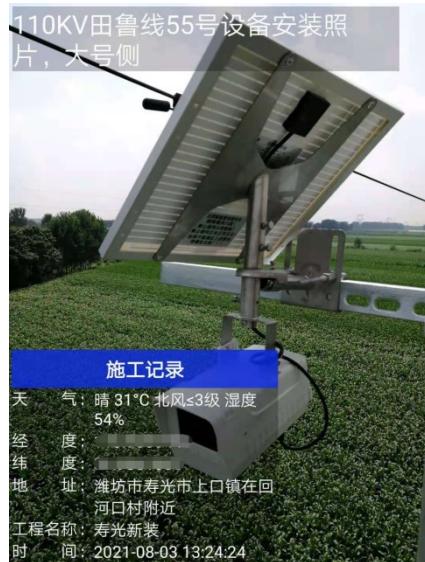
Power supply	Solar panel + battery; standard 6.4V10AH lithium iron + 12V14W photovoltaic panel(optional, see the option table for details)
The battery is fullycharged with continuous power supply	30days
Main frame material	Polycarbonate
Operating temperature	-40°C - +70°C
Relative humidity	5%~100%RH
Atmospheric pressure	55kPa~106kPa
Design service life of the whole machine	No less than 8 years
Sensor	Front end analysis (optional, see the option table for details)
	Sound and light warning (optional, see the option table for details)
	Sub-camera (optional, see the option table for details)

Option table:

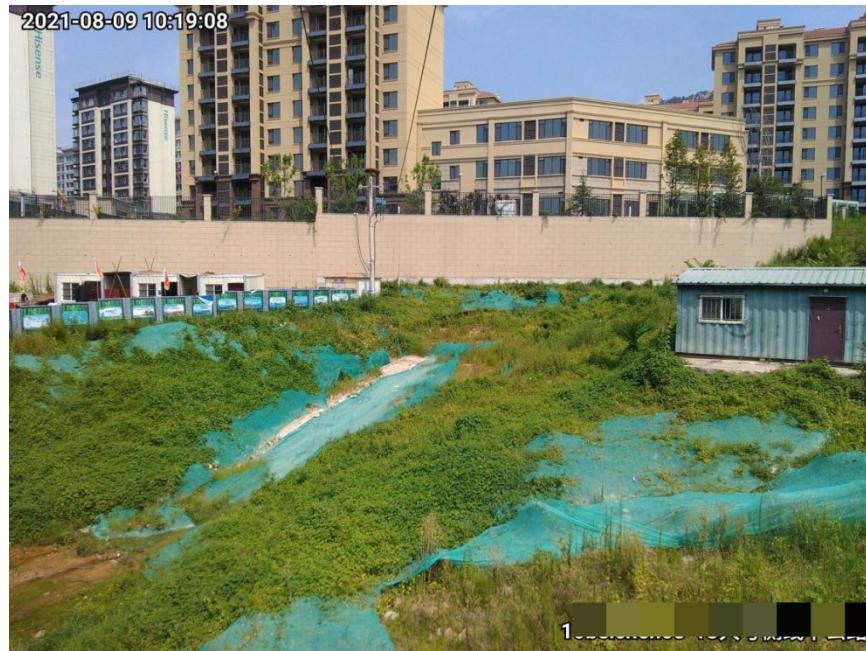
Project	Reference configuration
Channel lens	Day vision optional: 21 megapixel, 24 megapixel. Night vision optional: 2 megapixel low-light camera
Power Supply Module Specifications	6.4V15AH LiFe+12V14W Solar Panel 6.4V20AH LiFe+12V20W Solar Panel
Sound and light Alarm module	Meet the 200 meters away from the alarm sound can be heard and can clearly distinguish the voice content, can see the obvious light
Sub-camera	Camera pixels: 8 megapixels for general light standard. Optional 16-megapixel general illumination camera, 2-megapixel night vision camera

Effect show

Live Cases



Transmission line channel



Intelligent identification type:

Types of intelligent analysis

		Detection type					Situational understanding	
Application area	category	Identify the target	Expected target detection	Unexpected target detection	Change recognition	Spatial relationship identification (threat judgement)		
Hidden trouble	Construction mechanical damage	Tower	✓		✓	✓		
		crane	✓		✓	✓		
		Crane-boom	✓		✓	✓		
		Pump truck	✓		✓	✓		
		excavator	✓		✓	✓		
		Bulldozer	✓		✓	✓		
		Roller	✓		✓	✓		
		Forklift	✓		✓	✓		
		Pile driver	✓		✓	✓		
		Grader	✓		✓	✓		
		Catch the car	✓		✓	✓		
		Insulated bucket car		✓		✓		
	truck	truck		✓		✓		
		other types of cars		✓		✓		
Ontology recognition	Ground wire foreign body	Online foreign body	✓		✓			
		Offline foreign body-dust net		✓				
		Offline foreign body-greenhouse film	✓			✓		
		Offline foreign body-mulch	✓			✓		
		Offline foreign body-reflective film		✓				
	Wildfile	smoke	✓		✓	✓		
		Open flame	✓		✓	✓		
	personnel	Flashing	✓			✓		
		other	Scaffold		✓			
	Ontological defect	Missing insulator	✓		✓			
		Insulator burst	✓		✓			
		Dancing	✓		✓			
Voice recognition	Ontological state	Wind deviation	✓		✓			
		Tower vibration	✓		✓			
		Icing	✓		✓			
		construction machinery sound	✓					
		Bird sound	✓					
	Channel Hidden Sound	Thunder	✓					
		Explosion	✓					
	Speech Recognition	Speech to text conversion	✓					
Other collar Domain requirements	Car	Car, Van		✓				
		Bus		✓				
	Weather	Sunny	✓					
		Partly cloudy	✓					
		Snow day	✓					
		Rain	✓					
		Foggy day	✓					

ST2303B/S V4.0



Main Specifications:

Projects	Technical parameters
Camera	8 million general lens+2 million pixel low light night vision lens / 16 million pixel general lens+4x optical zoom+2 million pixel low night vision lens
Down-view camera (Optional)	Down-view camera with 2 megapixel,Optional wide-angle lens
Inspect distance	Range:3KM
Photo collection method	Photo collection method
Antenna	Adopt built-in antenna
Positioning function	Support GPS, Beidou positioning
Communication method	Adopt 2G/3G/4G wireless transmission and can choose carriers according to site conditions.
Operating principle	Customizable setting of shooting interval, front-end analysis of pictures taken by the device, immediate return to the platform after identifying the danger, and regular return when there is no hidden danger
MTBF	≥30000 Hours
Checking and commissioning	Can be checked and tuned without disassembling the machine
Protection level	IP67
Weight	8Kg (Host+built-in battery + solar panel + bracket)
Power supply method	Solar panel plus battery: 6.4V 20AH LiFe + 12V 20W PV panel
Work time after full charge in sunless conditions	30 days
Host case material	Polycarbonate



Operating temperature	-40°C - +70°C	
Relative humidity	5%~100%RH	
Atmospheric pressure	55kPa~106kPa	
Whole machine design life	Not less than 8 years	
Encryption	Expanded Encryption Chip (Optional, see option table for details)	
Camera adjustability	Omni-directional manual adjustment according to line direction	
Front analysis	Support Senter front-end analysis module	
Expandable features	Tower tilt	(Optional, see option table for details)
	Sub-machine	(Optional, see option table for details)
	Temperature measurement module	(Optional, see option table for details)
	Audible and visual alarms	(Optional, see option table for details)
	Micro Weather	(Optional, see option table for details)

Option table:

Projects	Reference Configuration					
Camera	Zoom magnification can choose 10x optical zoom					
Tower tilt	Inclination measurement range: biaxial -10°~+10° (optional -30°~+30°, -60°~+60° or -90°~+90°); Inclination measurement error: ≤±0.05°; Inclination measurement resolution: ±0.01°					
Sub-machine	Camera pixel: 8 megapixel for general light as standard. Optional 16-megapixel general light camera, 2-megapixel night vision camera					
Micro weather module (Three combinations available)						
	Wind speed	Wind direction	Temperature	Humidity	Atmospheric pressure	Rainfall
4 Elements	√	√	√	√		
5 Elements	√	√	√	√	√	
6 Elements	√	√	√	√	√	√
Technical parameter						
	Elements	Measurement Range		Measurement accuracy		Resolution
	Temperature	-30°C~+85°C		±0.5°C		0.1°C
	Humidity	0~100%		±4%RH		1%RH
	Atmospheric pressure	450hPa~1060hPa		±0.3hPa		0.1hPa



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	Wind speed	0~75m/s	$\pm(0.3+0.03V)$ m/s	0.1m/s
	Wind direction	0~360°	$\pm 3^\circ$	0.5°
	Rainfall	0~4mm/min	$\pm 0.4\text{mm}$ (when $\leq 10\text{mm}$) $\pm 4\%$ (when $> 10\text{mm}$)	0.2mm
Temperature measurement module	Temperature measurement range: -40°C ~ +290°C; temperature measurement error: $\leq 0.5^\circ\text{C}$; temperature measurement resolution: 0.1°C. (Only used for 110KV/220KV transmission lines)			
Audible and visual alarms	Alarms can be heard within 200 meters and can clearly distinguish the voice content, can see the obvious light			

Field case



Zoom effect



Down-view camera

(Optional) Tower base view



ST2303B/S V6.0P



Main Specification:

Projects	Technical parameters	
Camera	Channel lens	Channel lens uses 16 megapixel HD lens; Lens angle of view: diagonal/horizontal/vertical: 76° /64° /50° respectively
	Night vision lens	2 megapixel starlight-grade low-light lens Lens angle of view: diagonal/horizontal/vertical : 105° /88° /48° respectively
	PTZ Optical Zoom lens	Optical zoom: standard: 20-40x , 2 megapixel Horizontal field of view: 56.9-2.9 degrees (wide angle - telescopic) Close up distance: 100m-1500mm (wide angle - telescopic) Minimum illumination: 0.001Lux/F1.5 (color)/0.005Lux/F1.5 (black and white)
		Horizontal direction: 360° multi-turn infinite position Vertical direction: -90°～+90° With 256 preset positions Support wiper
	Down view lens(optional)	16 megapixel HD wide-angle camera
Visible distance	3KM	
After zoom visible distance	4KM	
Operating principle	Customizable setting of shooting interval, front-end analysis of pictures taken by the device, immediate return to the platform after identifying the danger, and regular return when there is no hidden danger	
MTBF	≥30000 Hours	
Checking and commissioning	Can be checked and tuned without disassembling the machine	
Protection level	IP67	
Weight	23Kg (Host+external battery + solar panel + bracket)	
Sunless operating time(Battery fully charged)	20 days	



Power supply method	Solar panel plus battery: 6.4V 37.5 AH LiFe + 12V 30W PV panel
Minimum illumination	$\leq 0.001\text{Lux}/f1.2$
Storage Capacity	SD card 128g/256g
Antenna	Adopt built-in antenna
Positioning function	Support GPS, Beidou positioning
Host case material	Aluminum alloy
Camera adjustability	Omni-directional manual adjustment according to line direction
Operating temperature	-40°C ~ +70°C
Atmospheric pressure	55kPa ~ 106kPa
Relative Humidity	5% ~ 100%RH
Expandable features	(Optional, see option table for details)
Service life of the whole machine	Not less than 8 years
Front analysis	Support Senter front-end analysis module

Option table:

Projects	Reference Configuration
Tower tilt	Inclination measurement range: biaxial -10° ~ +10° (optional -30° ~ +30°, -60° ~ +60° or -90° ~ +90°); Inclination measurement error: $\leq \pm 0.05^\circ$; Inclination measurement resolution: $\pm 0.01^\circ$
Encryption chips	Optional: CLP encryption chip; Nanrui encryption chip, NVR to meet the needs of the B interface and the national network encryption

Micro Weather module (Three combinations available)

	Wind speed	Wind direction	Temperature	Humidity	Atmospheric pressure	Rainfall
4 Elements	√	√	√	√		
5 Elements	√	√	√	√	√	
6 Elements	√	√	√	√	√	√

Technical Parameter

Micro weather	Name	Measurement Range	Error Range	Resolution
	Temperature	-30°C ~ +85°C	$\pm 0.5^\circ\text{C}$	0.1°C
	Humidity	0 ~ 100%	$\pm 4\%\text{RH}$	1%RH

	Wind speed	0~75m/s	$\pm(0.3+0.03V)$ m/s	0.1m/s
	Wind direction	0~360°	$\pm 3^\circ$	0.5°
	Rainfall	0~4mm/min	$\pm 0.4\text{mm}$ (when $\leq 10\text{mm}$) $\pm 4\%$ (when $> 10\text{mm}$)	0.2mm
	Atmospheric pressure	0~100%	$\pm 4\% \text{RH}$	0.1hPa
Audible and visual alarms	Alarms can be heard within 200 meters and can clearly distinguish the voice content, can see the obvious light.			

Field case



Wide-angle lens picture



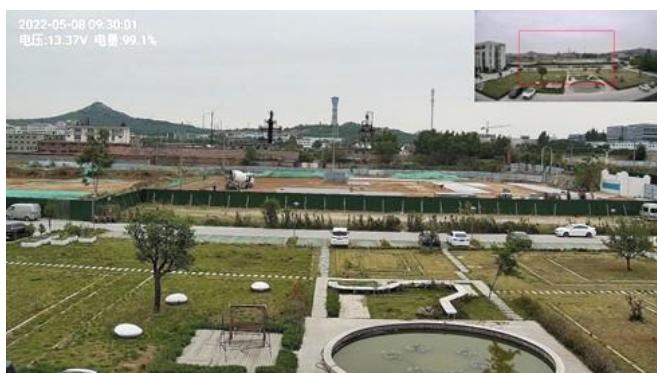
Channel angle of view



Night vision effect



Picture-in-picture effect display



Zoom effect



ST2303B/S V6.0P-F



Main Specifications

Projects		Technical parameters	
Camera	Thermal lens	Vanadium oxide uncooled detector with a resolution of not less than 256 x 192	
	Channel dual lens	Channel camera uses 16 megapixel HD lens Lens angle of view: diagonal/horizontal/vertical: 76 /64 /50° respectively	
	Night vision lens	2 megapixel starlight-grade low- light lens Lens angle of view: diagonal/horizontal/vertical : 105° /88° /48° respectively	
	PTZ Optical Zoom lens	Optical zoom: standard: 20-40x , 2 megapixel Horizontal field of view: 56.9-2.9 degrees (wide angle - telescopic) Close up distance: 100m-1500mm (wide angle - telescopic) Minimum illumination: 0.001Lux/F1.5 (color)/0.005Lux/F1.5 (black and white)	
		Horizontal direction: 360° multi-turn infinite position Vertical direction: -90°～+90° With 256 preset positions Support wiper	
Operating Principle		Customizable shooting interval, the front end of the device analyzes the shooting pictures, and immediately returns to the platform after identifying the danger, and regularly returns when there is no hidden danger	
MTBF		≥30000 Hours	
Checking and commissioning		Can be checked and tuned without disassembling the machine	
Protection level		IP67	
Weight		23Kg (Host+external battery + solar panel + bracket)	
Sunless operating time(Battery fully charged)		20 days	
Power supply method		Solar panel plus battery: 6.4V 37.5 AH LiFe + 12V 30W PV panel	



Minimum Illumination	≤0.001Lux/f1.2
Storage Capacity	SD card 128g/256g
Camera adjustability	Omni-directional manual adjustment according to line direction

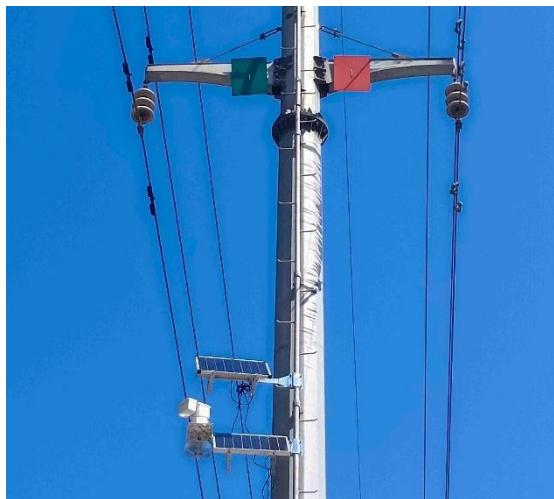
Positioning function	Support GPS, Beidou positioning
Host case material	Aluminum alloy
Encryption	Expanded Encryption Chip (Optional, see option table for details)
Operating temperature	55kPa~106kPa
Atmospheric pressure	-40°C~+70°C
Relative Humidity	5%~100%RH
Expandable Features	(Optional, see option table for details)
Service life of the whole machine	Not less than 8 years
Power consumption	Online state average static power consumption 0.04W, average acquisition power consumption 0.74W, peak power consumption 9.9W
Host case material	Aluminum alloy
Front Analysis	Support Senter front-end analysis module

Option table:

Projects	Reference Configuration					
Tower tilt	Inclination measurement range: biaxial -10°~+10° (optional -30° ~+30°, -60°~+60° or -90°~+90°); Inclination measurement error: ≤±0.05°; Inclination measurement resolution: ±0.01°					
Encryption Chips	Optional: CLP encryption chip; Nanrui encryption chip, NVR to meet the needs of the B interface and the national network encryption					
Micro Weather module (Three combinations available)						
	Wind speed	Wind direction	Temperature	Humidity	Atmospheric pressure	Rainfall
4 Elements	√	√	√	√		
5 Elements	√	√	√	√	√	
6 Elements	√	√	√	√	√	√
Technical Parameter						

	Name	Measurement Range	Error Range	Resolution
Micro Weather	Temperature	-30°C~+85°C	±0.5°C	0.1°C
	Humidity	0~100%	±4%RH	1%RH
	Atmospheric pressure	0~100%	±4%RH	0.1hPa
	Wind speed	0~75m/s	±(0.3+0.03V) m/s	0.1m/s
	Wind direction	0~360°	±3°	0.5°
	Rainfall	0~4mm/min	±0.4mm (when ≤10mm) ±4% (when >10mm)	0.2mm
Audible and visual alarms	Meet 200 meters away can hear the alarm sound and can clearly distinguish the voice content, can see the obvious light			
Sub-machine	Camera pixel: 8 megapixel for general light as standard. Optional 16-megapixel general light camera, 2-megapixel night vision camera			

Field case



Thermal imaging picture



Channel angle of view



Night vision effect



ST2303B/S V10.0



Product Description:

The A4 "Spiritual Eye" multi-eye camera has multi-eye lens in front, back and down directions, which can simultaneously meet the needs of monitoring the blind spot of the transmission line channel, tower base and near tower side view. "Spiritual eye" feature, including the rear-view lens multi-directional adjustable, down view lens adjustable up and down and other functions, are the first in the industry. "Spirit Eye" not only realizes the spirit of the lens, but also meets the demand for monitoring the hidden dangers around transmission line channels. Through the application of silent video and other functions, it brings extraordinary visualization experience and further realizes the full coverage of space-time dimension. And V10 meets the monitoring needs of different angles and dimensions, improves the intelligent level of transmission line visualization and monitoring, and protects the operation safety of transmission lines.

Main Specifications:

Projects	Technical parameters
Camera	<p>The front view lens adopts the integrated design of general light and night vision, the general light lens is equipped with a 16-megapixel 10x zoom lens lens as standard; the night view lens is equipped with a 2-megapixel starlight-grade low-light camera as standard;</p> <p>The rear view lens is equipped with a 5-megapixel day/night integrated low-light wide-angle camera as standard</p> <p>Down view lens with 5.0 megapixel day and night low illumination wide angle camera as standard</p>
Angle adjustable	<p>Rear view lens horizontal -90° to +90°, vertical ±30°;</p> <p>Downward looking lens adjustable vertically -120° to 0°;</p>
Working mode	Monitor mode, silent video mode optional



Photo collection method		Automatic setting of interval time/support for manual photo acquisition
Antenna		Adopt built-in antenna
Positioning function		Support GPS, Beidou positioning
Communication method		Adopt 2G/3G/4G wireless transmission, and can choose carriers according to site conditions.
Supervision cycle		Front-end analysis of the default photo interval of 5 minutes a, the default timed return 1 hour 1, and the sampling time period can be set freely; front-end analysis of the device after taking photos, identification of hidden problems immediately back to the transmission, no hidden time back to the transmission
Silent Video		Front-end real-time video recording, while the video state default every 10 seconds front-end analysis, identification of hidden problems immediately back to the picture, no hidden back to the picture at regular intervals; support for historical video review
Camera adjustability		Omni-directional manual adjustment according to transmission line direction
MTBF		≥30,000hours
Inspection and commissioning		Can check and debug without disassembling the machine
Protection level		IP67
Equipment Quality		≤10Kg (including solar panel and stand))
Power supply method		Solar panel plus battery; Standard 6.4V 20AH LiFe+18V 30W PV solar panel, optional 12.8V 30AH lithium iron + 18V 60W solar panel
Single full battery for continuous power supply		30 days
Host case material		Die-cast aluminum
Operating temperature		-40°C - +70°C
Relative Humidity		5%~100%RH
Atmospheric pressure		55kPa~106kPa
Whole machine design life		Not less than 8 years
Expandable Features	Audible and visual alarms	Meet 200 meters away can hear the alarm sound and can clearly distinguish the voice content, can see a clear light
	Sub-camera	Support different function options such as wired sub, wireless sub camera

Comparison table:

Function items		Mainstream multi-eye all-in-one gun machine	A4 Spiritual Eye Multi-eye Gun Machine
Rear View Lens	Rear view day and night integration	Not supported, daytime supervision only	Support
	Multi-way adjustable rear view	Not supported, angle fixed	Support
	Dual side channel visibility	Corner towers are not supported	Support
Downward looking lens	Downward looking lens vertically adjustable	Not supported, angle fixed	Support
	Lower vision day and night integration	Not supported, daytime supervision only	Support
	Near tower side view blind area coverage	Not supported, angle fixed	Support
	Tower base monitoring	Support	Support
Front View Lens	All-weather surveillance	Support	Support
	Front view 10x optical zoom	Not supported	Support
	Front view wide angle picture-in-picture	Not supported	Support
Photo Surveillance		Support	Support
Live video view		Support	Support
Real-time video analysis		Not supported	Support
Historical Video Access		Not supported	Support
Front-end intelligent analysis		Support	Support
Anti-icing design		Not supported	Support
Multi-sub extension		Not supported	Support

Effect show

Channel effect



Night vision effect



Rear view effect



Tower base effect



Intelligent identification type:

Types of intelligent analysis

		Detection type		Situational understanding		
Application area	category	Identify the target	Expected target detection	Unexpected target detection	Change recognition	Spatial relationship identification (threat judgement)
Hidden trouble	Construction mechanical damage	Tower	✓		✓	✓
		crane	✓		✓	✓
		Crane-boom	✓		✓	✓
		Pump truck	✓		✓	✓
		excavator	✓		✓	✓
		Bulldozer	✓		✓	✓
		Roller	✓		✓	✓
		Forklift	✓		✓	✓
		Pile driver	✓		✓	✓
		Grader	✓		✓	✓
		Catch the car	✓		✓	✓
		Insulated bucket car		✓		✓
	truck	truck		✓		✓
		other types of cars		✓		✓
Ontology recognition	Ground wire foreign body	Online foreign body	✓		✓	
		Offline foreign body-dust net		✓		
		Offline foreign body-greenhouse film	✓			✓
		Offline foreign body-mulch	✓			✓
		Offline foreign body-reflective film		✓		
	Wildfile	smoke	✓		✓	✓
		Open flame	✓		✓	✓
	personnel	Flashing	✓			✓
		Scaffold		✓		
Voice recognition	Ontological defect	Missing insulator	✓		✓	
		Insulator burst	✓		✓	
		Dancing	✓		✓	
		Wind deviation	✓		✓	
		Tower vibration	✓		✓	
	Channel Hidden Sound	Icing	✓		✓	
		construction machinery sound	✓			
		Bird sound	✓			
		Thunder	✓			
		Explosion	✓			
Other collar Domain requirements	Speech Recognition	Speech to text conversion	✓			
		Car, Van		✓		
	Weather	Bus		✓		
		Sunny	✓			
		Partly cloudy	✓			
		Snow day	✓			
		Rain	✓			
		Foggy day	✓			

ST2303B/S V11.0



Main Specifications:

Projects		Technical parameters
Whole machine description	Complete machine configuration	
	PTZ Structure	Double barrel coaxial structure, the left barrel carries thermal imaging lens; the right barrel carries optical zoom camera camera + wide-angle camera + infrared fill light + intelligent wiper + defogging device;
	Base	General light + night vision dual-channel lens + down-view HD lens; base can be configured with Mac The base line includes: power supply, sound and light alarm, 485 interface, network port;
	Scalability	Expandable tower tilt module, AI intelligent analysis module, encryption module, audible and visual alarms module, Micro weather sensor (split type), 433 wireless sensor module
Cloud Terrace Unit	Wide angle lens	F3.1, Field of view: 132° (D) 112° (H) 61° (V), 2.0 megapixels
	Zoom camera	
	Sensors	1/2.8-inch starlight-grade CMOS
	Minimum illumination	Color: 0.001Lux @ B&W: 0.0005Lux @ IR 0Lux
	Lens	20x (HY26X), 2.0 megapixels; 40x (QC30X, HY33X, LY30X), 2 megapixels; 30x (LY31 self-research), 8 megapixels, etc.
	Image processing	Supports white balance, electronic shutter, frame accumulation, backlight compensation, glare suppression, 2D/3D digital noise reduction, electronic stabilization, wide dynamic, and anti-IR overexposure. Support electronic fogging, support video stabilization
	Thermal imaging lens	
	Sensor type	Uncooled focal plane array VOx detectors
	Resolution	640×512
	Wave length	12μm
	NETD thermal sensitivity	40mK (@25°C F1.0)
	Lens	Support 35mm/50mm
	Color palette	18 kinds of false color images, hot black / hot white two polarities



Image parameters	AGC automatic gain control, brightness, contrast
Electronic zoom	1.0 to 8.0× continuous zoom (step 0.1), support global eagle eye map
Bad spot correction	Support bad point correction function
Image Correction	Support manual calibration, background calibration, automatic calibration interval, Gamma calibration parameters Adjustable number
Strong light protection	Support against sun damage
Non-uniformity correction	Automatic/Manual

	Interface	Network port
	Cloud Platform Structure	
	PTZ	Support horizontal 360°, vertical -90° ~ +90° rotation, no monitoring blind spot
	Preset position	≥255 units
	Smart wiper	Support
	Glass heating	Support
Base unit	Day vision camera	Image sensor 1/3.1", 16 megapixels, dual channel support
	Night vision camera	Image sensor 1/2", 2.0 megapixels, dual channel support
	Angle adjustment	Manual vertical -90 ° ~ 90 ° adjustment, to meet the transmission line channel up and down the slope of the field of view range Adjustment monitoring needs
	Down-view lens	Image sensor 1/3.1", 16 megapixels
	External interface	Support DC12V interface, USB interface, SIM card interface, network port, RS485 interface, TF card interface, audio and visual alarm interface TF card interface, audible and visual alarm interface
Terminal basic functions Performance	Visible light function	
	PIP function	When configured with a wide-angle lens, it supports binocular PIP to control the whole picture and take into account the details.
	Operating principle	Customizable setting of shooting interval, front-end analysis of pictures taken by the device, immediate return to the platform after identifying the danger, and regular return when there is no hidden danger
	Video features	Support continuous real-time video and continuous terminal recording
	Automatic line patrol	The device can automatically patrol along the line direction
	Intelligent analytics	Should have the front-end intelligent analysis function, identify objects including cranes, tower cranes and other mechanical vehicles, smoke, fire points, wire foreign objects, etc.
	Point cloud ranging	Combine with UAV point cloud data to realize the channel camera to identify the outer break and measure the distance.
	PTZ control	Support PTZ control one-touch focus function
Thermal imaging function		



Dual light fusion	Support automatic superimposition of thermal imaging images on the zoom screen. Support framing and superimposing thermal imaging data to the zoom screen to enhance the reality effect.
Display mode	Should have white heat, black heat, pseudo-color (iron red / rainbow, etc.) a variety of display modes
Temperature tracking	The thermal imaging screen shows the maximum temperature , the minimum temperature , and the temperature at the center of the screen at three points.
Alarm limits	High and low temperature thresholds can be set according to actual needs.
Terminal Function	
Communication requirements	4G all-access, APN dedicated access network

Communication protocols	Support Q/GDW 1517.1-2014 "Power Grid Video Surveillance System and Interface" Enterprise Standard Interface B requirements, support access to the State Grid Corporation information intranet unified video surveillance Platform, support Senter protocol, access to Senter platform.
Status management	Monitoring, management and storage functions for the operating status of monitoring devices
Power management	Battery power management, the terminal according to the power to work mode switching, to protect the online rate
Storage function	Front-end picture/video storage, storage capacity: 64G, 128G two configurations
Wireless debugging	Should support short-range wireless transmission debugging mode, real time control and debugging of the device
Protection level	Waterproof and dustproof rating IP67
Shell material	Made of die-cast aluminum, sturdy and durable
Mounting bracket	Stainless steel, fasteners are hot-dip galvanized, adaptable to angle steel towers, cement poles, steel pipes Different types of poles (towers)
Power supply system	Solar panels Standard: 2X90W. From 90W to 360W depending on battery capacity configuration.
	Battery Standard: 100AH lithium iron phosphate, according to the local temperature to choose the battery, lithium iron phosphate Battery, etc., capacity can be selected 50AH,100AH,200AH,300AH
	Sunless operating time(Battery fully charged) 20 days

Option table:

Projects	Reference Configuration
Tower tilt	Inclination measurement range: biaxial -10°~+10° (optional -30° ~+30°, -60°~+60° or -90°~+90°); Inclination measurement error: ≤±0.05°; Inclination measurement resolution: ±0.01°



Encryption chips	Optional: CLP encryption chip; Nanrui encryption chip, NVR to meet the needs of the B interface and the national network encryption
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Micro Weather module (Three combinations available)

	Wind speed	Wind direction	Temperature	Humidity	Atmospheric pressure	Rainfall
4 Elements	√	√	√	√		
5 Elements	√	√	√	√	√	
6 Elements	√	√	√	√	√	√

Technical Parameter

Micro Weather	Name	Measurement Range	Error Range	Resolution
	Temperature	-30°C ~ +85°C	±0.5°C	0.1°C
	Humidity	0 ~ 100%	±4%RH	1%RH
	Wind speed	0 ~ 75m/s	±(0.3+0.03V) m/s	0.1m/s
	Wind direction	0 ~ 360°	±3°	0.5°
	Rainfall	0 ~ 4mm/min	±0.4mm (when ≤10mm) ±4% (when >10mm)	0.2mm
	Atmospheric pressure	0 ~ 100%	±4%RH	0.1hPa
Audible and visual alarms	Alarms can be heard within 200 meters and can clearly distinguish the voice content, can see the obvious light.			



Intelligent Transmission Line Surveillance Solution



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Headquartered at No.18 Liu yishan Road, New&Hi-Tech Area Zibo City, Shandong Province China ,255088, Senter electronics has subsidiaries and R&D centers in Jinan and Qingdao.

For over 26 years, Senter has adhered to a development strategy of professionalization and industrialization; focused on technology innovation and constantly increase investment in new product development and always followed the customer demand. In the field of communications, electric power industries, we have formed our own core technology and have a wide variety of independent intellectual property products, and have gradually became a pacemaker of niche market of industry such as communication and electric power technology.



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