RfNet
Wireless • Innovation • Networking

WCRU-III Series

Ruggedized Camera Recording Unit



Overview

The WCRU-III is a ruggedised camera recording unit engineered to function within the confined spaces of a train, where it may be be subjected to significant temperature variations and harsh vibration conditions. Recognising this, the WCRU-III has achieved certification under the stringent Train Standards, fulfilling the essential criteria under operating temperature, vibration, impact and shock resistance requirements.

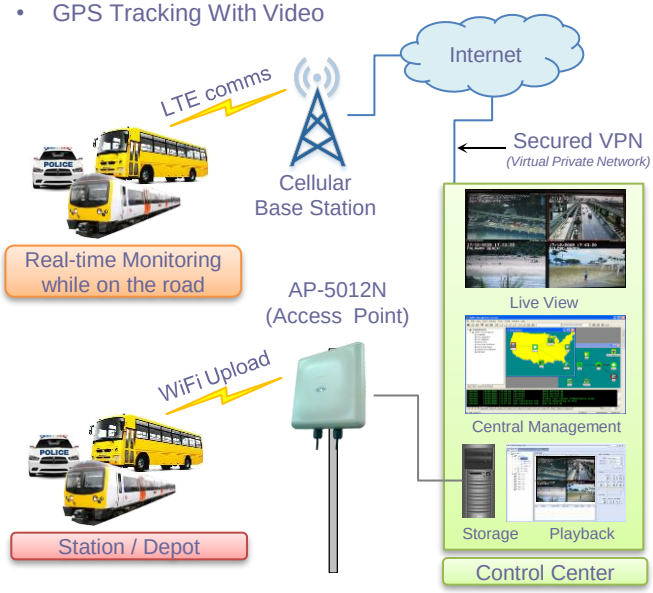
Key Features

- Supports up to 18 cameras*, 24x7 continuous recording.
- Recording format in JPEG, JPEG-XR images (1~3 fps) or H.264 video (1~30 fps).
- Supports local, network based and remote storage.
- Provides user authentication with password protection.
- Automatic files and disk space management to ensure continuous recording, even after restart.
- WLAN radio for communication between vehicles and from vehicles to base/station.
- WLAN Operating modes: Access Point, Bridge Client, and Repeater.
- Supports fast wireless data transfer and fast seamless roaming.
- Accelerometer *(optional)*.
- Built-in 2.4GHz and 5GHz up to 3x3 MiMo dual band Wireless LAN radio support up to 1.3Gbps data rate*.
- QoS and bandwidth management
  - > Able to limit the TCP/IP data bandwidth
  - > Supports IEEE 802.11e QoS
- Support for WPA/WPA2-Personal, WPA/WPA2-Enterprise, WEP, 802.1x Radius authentication
- Management
  - > Supports SNMP V3 (read and write)
  - > Supports firmware upgrade on the fly
  - > Supports auto scheduled firmware upgrade through Network Management Software
- Operating temperature range : -25°C to 70°C

** Model dependent*

Application (with optional features)

- CCTV Surveillance In-Train / Bus / Truck / Police Car / Boat
- In Vehicle WiFi Hotspot
- GPS Tracking With Video

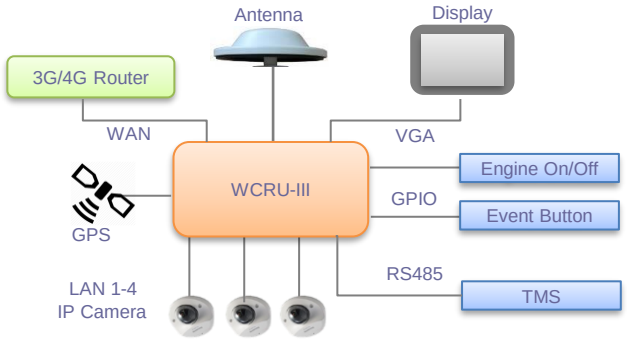


The WCRU's wireless connection takes place when the vehicle is in the depot or terminal. All recorded data can be automatically upload to a central storage server in the Control Centre through WiFi communication.

To remotely access the vehicle while it is on the move, wireless connectivity can be achieved using a cellular network connection (via a 3G/4G LTE router). This allows access to the onboard cameras for live viewing, checking other onboard equipment status, or accessing the recorded video in the WCRU. With an integrated GPS module *(optional)*, not only can the vehicle's position can be tracked, but the GPS data can also be time-stamped to the recorded video for future forensic investigation.

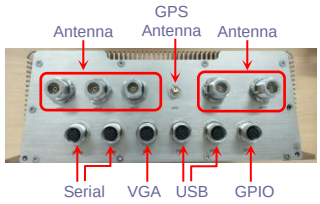
With RFNet's Remote Wireless Access Software (RWAS), secured live viewing / playback is achieved using secured VPN communication. The Network Management Software (NMS) monitors all equipment status and allows for remote configuration of WCRU parameters and firmware updates

Diagram

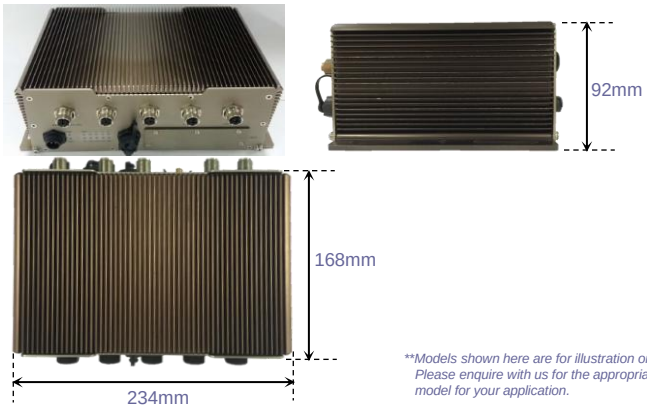


**Interfaces





Dimension



***Models shown here are for illustration only. Please enquire with us for the appropriate model for your application.*

Interface	
Power IN	2 Pin Industrial Connector
WAN Port	Industrial RJ45 or M12 Connector *(Model dependent)*
Up to 4 LAN Ports *(Model dependent)*	Industrial RJ45 Connector *(18C: Software Controllable Power On/Off)*
Serial Port	Supports RS-232, RS-485
USB (Host)	*Refer to Table*
HW RESET Button	Pinhole
RF Antenna Ports	WiFi: N(F) GPS: SMA (F)
Power LED	Power Up Status
Recording LED	Recording Status
Display Output	VGA (18C Optional)
Storage Type (Form Factor)	2.5" SSD / HDD
Input And Output Ports	8 x GPIO Port (4 Input And 4 Output)
MIC Input (MIC Not Included)	1 x Mic Input Port
Audio Output	1 x Audio Output Port

General	
Dimensions (mm)	234L x 168W x 92H *(exclude mounting)*
Weight	3.4 kg
Power Consumption	Typical : 17W Max : 19W
Compliance	CE, iDA, RoHS

Environmental and Reliability	
IP Rating	IP 54
Operating Temperature	-25°C to 70°C
Storage Temperature	-40°C to 80°C
Compliance	10%~90% Max, Non-condensing
EN 50155	EN 50121-3-2 EMC/EMI EN 61373 Shock Vibration EN 60068-1/2/30 Climatic
Regulatory	CE

Wireless LAN / Network		
Wireless LAN Standards	MIMO Radio	Data Rate
IEEE 802.11 a/b/g/n/ac	3x3	Up to 1.3 Gbps
IEEE 802.11 a/an/ac	2x2	Up to 867 Mbps
IEEE 802.11 b/g/n	2x2	Up to 300 Mbps
WLAN Operating Modes	Infrastructure, Repeater or Client	
Operating Frequencies	2.400 – 2.4835 GHz and / or 5.150 – 5.850 GHz	
Operating Channels	Supported operating channels depends on country of use	
Security	Government-grade Security Support, including WEP, TKIP / AES / WPA and WPA2	
Trusted Platform Module TPM	FIPS-140-2 Certified *(Optional)*	
Crypto-authentication	Ensures things and code are real, untampered and confidential	

Function	
Recording	JPEG or JPEG-XR (1~3 fps) H.264 (1~30 fps)
Image Security	AES Encipher For JPEG or JPEG-XR
Management	Web Configuration, SSH, SNMP V3, File-based Configuration
Web Configuration	• Recording Type • Frame Rate • Live View • WLAN Setting • Recording On / Off • Export Video through USB Port
VPN	Government-grade Security Support, including WEP, TKIP / AES / WPA and WPA2
FTP / FTPS	FIPS-140-2 Certified (Optional)

*Specification are subject to changes without prior notice due to engineering improvement. All brands and product names are trademarks or registered trademarks of their respective holders. *Wireless range and performance may vary with environment.*

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