Instruction manual MTL industrial network solutions April 2018 INM MTL RugiCAM-IP Rev 5

CROUSE-HINDS

MTL RugiCAM-IP Intrinsically Safe network camera

and LED lighting unit





DECLARATION OF CONFORMITY

A printed version of the Declaration of Conformity has been provided separately within the original shipment of goods. However, you can find a copy of the latest version at -

http://www.mtl-inst.com/certificates

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MTL RugiCAM-IP Intrinsically Safe Network camera and LED lighting unit

1 INTRODUCTION

1.1 Description

The RugiCAM-IP is an Intrinsically Safe IP Network Camera capable of producing high quality colour video images at up to 1920x1080p at 30fps.

The H.264 compression technique ensures optimal bandwidth usage of the Ethernet network and compatibility with all major video streaming players.

Optional LED lighting units are available to further enhance the cameras low light capability where needed. These are available as either White LED or Infra-Red (IR) LED types to suit the application, the IR type also having an ambient light sensor that can automatically switch the camera to IR night mode (monochrome) whilst also turning on all connected IR LED units.

The IP66 rated units are constructed from high quality anodised aluminium, powder coated steel or stainless steel to suit different applications and environments and contains a fully encapsulated camera (or LED) module. The resulting compact and cost effective solution is suited to many HD video monitoring and surveillance applications in and around the Hazardous Area.

The connections are made by multi-pin M12 plug and sockets on the rear of the unit. This allows easy installation and maintenance in the event of a damaged cable assembly.

2 FEATURES

- Resolution 1920x1080p, 1280x720, D1
- 1/2.8" SONY CMOS Sensor with Mega-Pixel 4mm f1.6 IR Lens
- H.264 Server with Adjustable Frame Rate- Controls Network Bandwidth Usage (30fps max)
- Micro-SD Card slot (internal) 32GB max for local recording on trigger events
- 10/100 IS Ethernet Interface supports up to 100m Cat5e/Cat6 Connection
- Wi-Fi (optional) supporting 802.11 b/g/n standards at up to 150Mbps
- 12VDC IS Power Supply Input or PoEx[™] (Power over IS Ethernet)
- Plug & Socket Connections- shortens installation time
- Rugged IP66 rated Anodised Aluminium, Powder Coated Steel or Stainless Steel Enclosure suitable for harsh environments
- Compact dimensions (Camera W:87xH:79xD:165mm / LED W:87xH:79xD:105mm)
- Operating Temperature:-20°C to +60°C
- Intrinsically Safe 'Ex ia' Group I Mining M1 and Group IIB ATEX and IECEx Certified for Gas and Dust.
- Zone 1/ Zone 21 Mounting (Zone 0 / Zone 20 with a suitable Ex ia Power Supply)

NOTE

The unit is certified to operate safely at-40°C while the standard designed operating/storage range is-20°C to +60°C, the unit will function at-40°C. Some aspects of performance are not guaranteed by design at temperature below-20°C (e.g. Wi-Fi range), additionally possible issues with condensation or frosting of the glass window should be considered at low temperatures, both of these depend on the actual installation and environment and may not affect all applications.

3 CONNECTIONS CAMERA & LED UNITS

3.1 Camera Unit Connectors

12Vdc Power / RS485 X1 4 Pole M12 Connector (M)	Wire Colour	Description
1	Brown	RS485- A
2	White	RS485- B
3	Blue	+12Vdc
4	Black	0V

LED Interface X2 4 Pole M12 Connector (F)	Wire Colour	Description
1	Brown	LED IN
2	White	LED OUT
3	Blue	-
4	Black	0V

WiFi Antenna X4 TNC Connector	Description
2.4GHz Antenna	-

Ethernet LAN X5 8 Pole M12 Connector	Wire Colour	Description	RJ45 Connector
		_	
1	ORG-WHI	Ix+	1
2	ORG	Tx-	2
3	GRN-WHT	Rx+	3
4	GRN	Rx-	6
5	BRN-WH	PoEx-	7
6	BRN	PoEx-	8
7	BLU-WHT	PoEx+	5
8	BLU	PoEx+	4
shield	screen	GND	shield

3.2 LED Unit Connectors

12Vdc Power X1 4 Pole M12 Connector (M)	Wire Colour	Description
1	Brown	-
2	White	-
3	Blue	+12Vdc
4	Black	0V
4	Black	0V

LED Interface (To Camera) X2 4 Pole M12 Connector (M)	Wire Colour	Description
1	Brown	LED OUT
2	White	LED IN
3	Blue	-
4	Black	0V

LED Interface (To Other LEDs) X3 4 Pole M12 Connector (F)	Wire Colour	Description
1	Brown	-
2	White	LED IN
3	Blue	-
4	Black	0V

NOTE

The cable core colours as shown in the diagrams above are for reference if using an MTL supplied cable assembly. Alternatively some cables may have black cores numbered 1-4 corresponding to the M12 connector pin #.





Camera Unit

LED Unit

4 INSTALLATION

4.1 Camera Unit

The RugiCAM-IP is an Intrinsically Safe IP Network Camera capable of producing high quality colour video images at up to 1920x1080p at 30fps.

The H.264 compression technique ensure optimal bandwidth usage of the Ethernet network and compatibility with all major video streaming players.

Optional LED lighting units are available to further enhance the cameras low light capability where needed. These are available as either White LED or Infra-Red (IR) LED types to suit the application, the IR type also having an ambient light sensor that can automatically switch the camera to IR night mode (monochrome) whilst also turning on all connected IR LED units.

The IP66 rated units are constructed from high quality anodised aluminium, powder coated steel or stainless steel to suit different applications and environments and contains a fully encapsulated camera (or LED) module. The resulting compact and cost effective solution is suited to many HD video monitoring and surveillance applications in and around the Hazardous Area.

The connections are made by multi-pin M12 plug and sockets on the rear of the unit. This allows easy installation and maintenance in the event of a damaged cable assembly.



WARNING!

This equipment must be installed, operated and maintained only be trained competent personnel and in accordance with all appropriate international, national and local standard codes of practice and site regulation for intrinsically safe apparatus and in accordance with the instructions contained here.

NOTE

Refer to the certificate for 'Special Conditions of Safe use'. Copied below:-The following conditions relate to safe installation and/or use of the equipment.

1. Versions of the enclosure can be manufactured from aluminium (part number includes AA – Anodised Aluminium). In rare cases, ignition sources due to impact and friction sparks could occur with this type of enclosure. This shall be considered during installation, particularly if the equipment is installed in a Zone 0 or Group I (mining) location. If in doubt, use a stainless steel (SS) or coated/painted steel (CS) enclosure.

2. If the enclosure is coated or painted then it must be installed in such a manner that the danger of ignition of flammable dust due to propagating brush discharges is avoided.

4.2 LED Unit

- White led (colour temperature 6500k) unit. led angle 170degrees.
- IR led (wavelength 850nm) unit. led angle 120degrees
- Each led unit requires an is power supply on connector x1
- LEDconnector x2 connects to camera connector x2 (day/night control by led unit 1 sensor)

- Additional led units can be daisy-chained- led connector x3 connects to x2 on next led unit
- The first LED units integral photo-resistive sensor allows the camera to automatically switch to night mode (removes IR cut filter and sets monochrome b/w mode) at low light levels, camera then switches on all connected LED units. This depends on configuration to be set (section 5.4.5) using photo-resistive sensor mode.

LED Unit

(when used standalone - without camera)

- With just a 12v supply connected LED unit lights up (~300mA). Application could just switch the supply ON/OFF to control the light.
- If a link is fitted between pin IN to OUT then the light ON/OFF is controlled by its internal light sensor
- If control pin IN is driven high (2V- 5V) this turns the light OFF, driving low (0V) or open circuit this pin turns the light ON

5 CONNECTING THE RUGICAM-IP TO A PC

5.1 Internet Explorer

- 1. Connect IS power to the camera from a suitable IS power supply such as MTL 9492-PS-PLUS.
- 2. Connect the RugiCAM-IP to a PC with Ethernet cable via an IS isolator, such as MTL 9468-ET and power on the camera.

NOTES
Other Browsers are supported, they require an add on. For Chrome this can be found at www.ietab.net.
Some older computers need a crossover cable if the NIC doesn't have automatic cable switching

3. On Windows 7, go to Control Panel/Network and Sharing Center; Click "Local Area Connection" and then click "Properties". On Windows XP, go to Control Panel/Network and Internet/Network Connections. Right click on the corresponding Network adapter and then click "Properties".

	ing	
Connect using:		
Realtek P	Cle FE Family Controller	
This connection	uses the following items:	Configure
Client fo	r Microsoft Networks	
VMware	Bridge Protocol	
Close Pa	cket Scheduler	Manualia
File and	Printer Sharing for Microsoft Protocol Version 6 (TCP /IP)	Networks
	Protocol Version & (TCP/IP)	(4)
V + Link-La	ver Topology Discovery Map	per I/O Driver
V - Link-La	ver Topology Discovery Res	ponder
	1 Elizabetal	Properties
Install	1.0.00 \$10,200	riobeines
l <u>o</u> stal		1
Install Description	Control Destance (Astronaut Des	and The date &
Install Description Transmission (wide area netw across diverse	Control Protocol/Internet Pro work protocol that provides of interconnected networks.	tocol. The default communication

4. In Local Area Connection Properties, Click Internet Protocol Version 4 (TCP/ IPv4) Properties.

- 5. Specify IP address and DNS server as in the screenshot below.
- 6. If necessary, wait for around 45 seconds for the IP Camera to boot up.

f your network supports	
network administrator	255 . 255 . 255 . 0
158 . 0 . 100 255 . 255 . 0	192.168.0.1
168 . 0 . 1	
	100 100 0 1
	192,168,0,1
Adyanced	
	158 . 0 . 100 155 . 255 . 0 168 . 0 . 1 168 . 0 . 1 Adyanced

- 7. Open Internet Explorer, browse for the IP address of the Camera (http://192.168.0.168/).
- 8. You should see a login Window where you can enter the username and Password.

User Name:	admin
Password:	admin

9. If you run this camera at the first time, you may not be able to see the live video before you install ActiveX. Please refer to Appendix A to install the ActiveX control.

NOTE
The default IP address is static IP 192.168.0.168. You can change the static IP address or set network setting to DHCP in Web Interface.

5.2 Connecting RugiCAM-IP to a Network

The IP Camera can also be connected to a network.

To connect the IP Camera to a network via a Router. Make sure the client PC with correct OS is also connected to the same network.

Connect the external Power to the IP Camera.

The router will assign an IP address to the IP Camera.

The IP Camera will show up on the PC as a UPnP device. UPnP device can be found in File Explorer>Network (left Pane)>Other Devices.

5.3 Accessing the Video Preview

To access the video preview, please follow the steps below:

1. Type the IP address into Internet Explorer (IE), and you will get asked for a username and password.

	Windows Security	
iexplore		
The server 192	.168.0.111 at IPNC requires a username and password.	
Warning: This sent in an inse connection).	server is requesting that your username and password be cure manner (basic authentication without a secure	
	admin	
	[]	
1.1	[
	Remember my credentials	
	OK Cance	ł

- 2. In order to complete the installation of the Control successfully through the browser, the version of IE must be upgraded to 6.0 or above.
- 3. Enter user Name: admin
- 4. Enter password: admin

n Defnition Surveillan	ce Canera				English Chinese
Real Time Video					200m -
1264(1920x1080)			121 100		00
1264(640x352)		BENER TO	The second second		0
d Bit Streams		100	17100		0 . 0
Image Setting		3-4	WAS		000
Video Setting	and the second second		-		
Video Analytics		m 11	5	1 - 1	
Audio Setting					Foous (-)
Time Setting					Focus titep
Network Setting					2
Alarm Setting			_		- OK
RsPort Setting				2016/01/14 12:07:06	
System Maintenance	Recording Despected			2010/01/14 13:07:00	
Recording Management					
About Product					

5. Click "OK". You will the get to the video preview as show below

6 IE INTERFACE OVERVIEW

The Window displays real-time video images, as shown in the picture above. The Client interface includes:

• Live video Preview.

• Navigation interface. As shown on the left side of the webpage above, shown in detail in the diagram below.



• Recording and Snapshot:

NOTE	
When using the Recording function, please run IE as Administrator.	

Recording:

Click the 'Recording' icon as shown below to start recording, the video will be saved to your PC; Click the 'Recording' icon again, the video recording will stop.

A window will pop up to show the path of the saved video.

NOTE	
You may have to search for the file location of the saved video, as it may be different to that stated, if permission for the location is denied by PC.	

• Snapshot:

Click the 'Snapshot' icon as shown below, you will capture an image.

6.1 Image Setting



6.1.1 Basic Adjustment

6.1.1.1 Brightness

Scroll bar to control brightness. (value ranges from 1 to 255)

Basic Adjustment		
Brightness		128
Contrast		128
Saturation		128
Sharpness		128

6.1.1.2	Contrast Scroll bar to control contrast. (value ranges from 1 to 255)
6.1.1.3	Saturation Scroll bar to control saturation. (value ranges from 1 to 255)
6.1.1.4	Sharpness Scroll bar to control sharpness. (value ranges from 1 to 255)

6.1.2 Exposure Control

• Auto Exposure: Click 'Auto Exposure' button to enable auto exposure

Min Frame Rate	15	~
Max Gain	10	~
Max Digital Gain	8191	~
Auto Iris	Open 🖲 Close	
Flicker Contro	60hz	~

- Min Frame Rates are 30, 25, 15, 8, 1
- Max Gain Range is 1 to 10
- Max Digital Gains are 8191, 4096, 2048, 1024
- Auto Iris is Enable or Disable
- Flicker Control is 50 or 60 Hertz
- Manual Exposure enable button

Exposure Control
⊖ Auto Exposure
Manual Exposure
Exposure 1/ 30303 秒 Time(1/n s)
Gain(1-1000) 1

- Input Manual Exposure Time in nSec
- Input Exposure Gain 1 to 1000

6.1.3 Day-Night Mode Shift:

• Day-Night Mode Shift: Click 'Manual' or the 'Dynamic' button to enable the required exposure method

Day Night Shift		
O Manual		
 Dynamic 		
D-N shift value (1-45)		20
N-D shift value (1-45)		40
O Depend on photose	nsitive sensor	
Submit		

Manual:

The day/night mode can be set manually.

- Day
- Night
- Dynamic:

The day/night mode can auto switch depending on the brightness.

- Min Brightness (1- 45): when the brightness is lower than min, night mode will open.
- Max Brightness (1- 45): when the brightness is higher than max, day mode will open.

• Depend on photosensitive sensor

Click button to enable the 'Depend on photosensitive sensor' setting.

- High When Day: There is a photosensitive chip located on the IR LED board, in low light conditions a signal will be sent to the CPU and the CPU will set the camera to night mode.
- High When Night:

There is a photosensitive chip located on the IR LED board, in nightime light conditions a signal will be sent to the CPU and the CPU will set the camera to night mode.

6.2 Video Setting



6.2.1 Video Combo

• Main Stream

Main Strea	m	
Resolution	720p:1280x720	~
Frame Rate	30	~
Image Quality	Medium Low	~
Rate Control	VBR	~
Max Bit Rate	5M	~
Sub Stream	n	
🗌 Enable S	ub Stream	
Save		

• Enable the Sub Stream



- Resolution: 1080p: 1920x1080, 720p: 1280x720, D1: 704x576
- Frame Rate: 1 30
 - **Image Quality:** Very Low, Low, Medium Low, Medium, Medium High and High

Rate Control: VBR (Variable Bit Rate) or CBR (Constant bit rate). This option will alter how video is streamed from the camera. VBR setting means constant video quality at variable bandwidth. CBR setting means variable video quality at a constant bandwidth.

• **Maximum Bit-rate:** 2M, 3M, 4M or 5M

After enabling the Sub stream, go to Real Time Video and click the stream name to refresh it, you will get two stream names.

All Bit Stream will get you 2 live videos.

• Sub Stream

Resolution	D1:704x576	•
Frame Rate	30	-
Image Quality	High	•
Rate Control	VBR.	-
Max Bit Rate	2M	-

• Resolution: D1: 704x576, VGA: 640x480, QVGA: 320x192

• Frame Rate: 1 to 30

•

Image Quality: Very Low, Low, Medium Low, Medium, Medium High and High

Rate Control: V/PP (Variable Pit Pa

VBR (Variable Bit Rate) or CBR (Constant bit rate). This option will alter how video is streamed from the camera. VBR setting means constant video quality at variable bandwidth. CBR setting means variable video quality at a constant bandwidth.

• **Maximum Bit-rate:** 512K, 1M, 2M

6.2.2 Video Flip

Click buttons to make appropriate selection.

Image Flip			
● Off	 Horizontal 	⊖ Vertical	⊖ Both
• Off			

- Horizontal
- Vertical
- Both

6.2.3 Text Overlay

Overlay Sett	2016/07/	44 13 14 62		
Enable	Content	Position	Offset X	Offset Y
Main Stream	IPNC	Lower Right (🗸	0	0
Sub Stream	IPNC	Lower Left Cr 🗸	0	0
Time Overlay	4			
Enable Date F	ormat	Time Format	Position	
	//MM/D 🗸	24Hrs 🗸	Lower Right (🗸	
Save				

Click check box to make the appropriate selection.

- Main Stream overlay:
- Enable
- Text

•

Position:

Use the pull-down list to choose Position.

- Lower-left corner
- Lower-right corner
- Upper-left corner
- Upper-right corner
- Offset X

Enter the appropriate offset setting.

Offset Y

Enter the appropriate offset setting.

Click check box to make the appropriate selection.

- Sub Stream overlay:
 - Enable
 - Text
- Position:
 - Lower-left corner
 - Lower-right corner
 - Upper-left corner
 - Upper-right corner
- Offset X

Enter the appropriate offset setting.

Offset Y

Enter the appropriate offset setting.

• Time overlay:

Click the Enable check box.

- Date Format:
 - Use the pull-down list to choose Date Format.
 - YYYY/MM/DD
 - MM/DD/YYYY
 - DD/MM/YYYY
- Time Format:

Use the pull-down list to choose Time Format.

- 12 Hrs
- 24 Hrs
- Position:
 - Use the pull-down list to choose Position.
 - Lower-left corner
 - Lower-right corner
 - Upper-left corner
 - Upper-right corner

6.2.4 Block Mask

	Apply	Reset			
Block Ma	isk				
Enable	x	Y	Width	Height	Operate
	0	0	0	0	Edit
	0	0	0	0	Edit
	0	0	0	0	Edit
-		0	0	0	Edit

There are two ways to select the area mask. Quick select and Value input select Up to 4 area masks can be set on the video.

- Quick select:
 - 1 Click "Enable" check box and click "Edit" on the right.
 - 2 Drag mouse on the video to select the area mask.
 - 3 Click "Apply".

• Value input select:

- 1 Click "Enable" check box.
- 2 Input the values of X, Y, Width and Height, then click "Edit".
- 3 Click "Apply".

• Clean area mask:

- 1 Click "Edit" of the area mask you want to remove.
- 2 Click "Reset".
- 3 Click "Apply".

6.2.5 Encoding Parameter

Select a Profile, click check box to select and save the selected profile.

H264 Arithmetic S	etting	
O BaseLine Profile	⊖ Main Profile	High Profile
Save		

BaseLine Profile:

Baseline encodes are the most basic form of encoding. While decoding is much easier, it may also require much higher bit-rates to maintain the same level of quality.

• Main Profile:

The middle ground. Most modern / current devices will support this profile.

• High Profile:

For best quality and file size at the expense of CPU time in both decode and encode.

6.3 Video Analytics



6.3.1 Motion Detection

	Journ Delection
T	
at the second	
	2016/01/14 12:17:4
Select	2016/01/14 13:17:4
Select /	2016/01/14 13:17:4

- Click on the video interface or click "Select All" to select region of interest.
- Click "Clear All" to clear the region of interest.

• Sensitivity:

Use the pull-down list to choose Sensitivity options.

- Low
- Medium
- High



6.4 Time Setting

Time Setting	
Time Setting	

Time Zone	GMT-08 Pacific Time (US & Canada), Tijuana		~
Time Setting			
O Synchronize	with comp	puter time	
Local	Time	02/Nov/2017 10:55:32	
O Synchronize	with NTP	server	
NTP S	erver IP	pool.ntp.org	

• Time Zone:

Use the pull-down list to choose required Time Zone.

• Time Setting:

- Click buttons to make the appropriate selection.
 - Synchronize with computer time.
 - Synchronize with SNTP server.

6.5 Network Setting



6.5.1 LAN Setting

192.168.0.133
255.255.255.0
192.168.0.1
192.168.0.1

6.5.2 WIFI Access

Enable WIFI	● On ○ Off
SSID	2WIRE635
Password	12345

- Enable DHCP: If you disable DHCP you must set an IP address
- Subnet mask
- **Default Gateway:** Router IP Address
- DNS Server: IP address

- Enable WIFI: Enable or Disable WiFi interface
- SSID: WiFi access point

٠

 Password: WiFi Access Point SSID Password

6.5.3 WIFI Setting

Enable DHCP	● On ○ Off
P Address	192.168.101.168
Netmask	255.255.255.0
Gateway	192.168.0.1
ONS Server	192.168.101.1

- Enable DHCP: Enable or Disable DHCP
 - IP address: If you disable DHCP you must set an IP address.
 - **Netmask:** Subnet mask
- Gateway: Default Gateway / Router IP Address
 - DNS Server: DNS Server IP Address

6.5.4 Streaming Media

Streaming Media

OYes ⊛No	Address:	192.168.0.168	If accessing the IP camera remotely, Please enter the external IP address
Streaming Media Port	554		
Web Port	80		
Save			

- Specify Address: ON/OFF
- Service Address: IP address

6.5.5 FTP Setting

TP Server	192.168.130.97	
FTP Port	21	
FTP Account	steve	
FTP Password	password	
FTP Directory	FTP	

- FTP Server: IP Address of the FTP Server
- FTP Port: TCP Port used on the FTP Server (Default 21)
- FTP Account: Account on the FTP Server
- FTP Password: Password for the Account on the FTP Server
- FTP Directory: Directory the Account uses on the FTP Server

Specify the settings for an FT server, to allow for videos and stills to be sent from the camera to the server.

6.6 Alarm Setting



6.6.1 Alarm Input

Alarm Input

Enable Alarm Function

Mask Alarm	Disabled	O Enabled	
Sava			

- Enable Alarm: check tick box to Enable Alarm Function
- Motion Detection: Disabled / Enabled
- Mask Alarm: Disabled / Enabled

6.6.2 Alarm Action

	OOFF	ON		
Server		0.0.0.0		
Port		0		
larm Video	OOFF	ON ON		
ecording				
Warning	Please plug in	the SD card when sav	ring the alarm video	
Steam S	election Ma	ain Strear 🔽	Video Length	10s 🔽
	Location 🔘		ihared Folder OUS	8 Drive
Storage				
Storage		() ON		
Storage Marm Snapsho Quantity	of Image Th	ON	Image interval (0-60s)	4s

- UDP report: OFF/ON
- Alarm Video Recording: OFF/ON
- Stream Selection:

Use the pull-down list to select

- Main Stream
- Sub Stream
- Video Length:

Use the pull-down list to select

- 5s
- 10s
- 30s

Storage Location:

SD Card/FTP/Shared Folder/ USB Drive

• Alarm snapshot:

OFF/ON

• Quantity of Image:

Use the pull-down list to select

- One
- Two
- Three

6.6.3 Alarm video

This tab only shows you the files on the SD card not on the FTP site

Alarm Video

FileName	File Date	File Time	Size	Operate
20171219	2017/12/19	23:59:26	40K	
20171220	2017/12/20	11:49:56	72K	
~main_20171219000914.avi	2017/12/19	00:09:15	5K	Delete
~main_20171219113624.avi	2017/12/19	11:36:46	2118K	Delete
~main_20171219113716.avi	2017/12/19	11:37:25	5162K	Delete
~main_20171219133736.avi	2017/12/19	13:37:59	2851K	Delete

6.6.4 Alarm snapshot

This tab only shows you the files on the SD card not on the FTP site

Alarm Snapshot

FileName	File Date	File Time	Size	Operate
20171219	2017/12/19	23:02:38	8K	
20171220	2017/12/20	11:01:05	8K	

6.7 System Maintenance

System Maintenance
Device Upgrade
Restart Device
Restore To Factory Setting
Event Log
Edit User
System Event

6.7.1 Device Upgrade

System File Upgrade		
	Browse	Upgrade

6.7.2 Restart Device

Click "Restart" button to restart camera

6.7.3 Restore to Factory Settings

Click "Submit" button to reset the camera

6.7.4 Event Log

You can check the system log in this section

6.7.5 Edit User

User Account		
Create User		
User Name	Authority	Operation Option
admin	Administrator	Edit Delete

• Add new user:

Click "Add new user", you will get following window.

Add/Edit User		
User		
Authority	~	
Password		
	Create/Edit	Cancel

• User:

Enter the new user name

• Authority:

Use the pull-down list to select options

- Admin
- Operator
- Viewer

• Password:

Enter the password of new user

- Edit User: Click "Edit" to edit user
- Delete User: Click "Delete" to delete user

6.8 Recording Management

Recording
Management
Recording Schedule
Videos
Snapshots
SD Management

6.8.1 Recording Schedule

Video Recording Plan OFF ON
Stream Selection Main Stream
SD card
Snapshot Plan OFF ON
Image Interval 0 Min 0 Sec
Storage Location
Schedule Repeat
Recording Schedule
Monday
3 6 9 12 15 18 21 24
Tuesday
3 6 9 12 15 18 21 24
Wednesday
3 6 9 12 15 18 21 24
Thursday
3 6 9 12 15 18 21 24
Friday
3 6 9 12 15 18 21 24
Saturday
3 6 9 12 15 18 21 24
Sunday
3 6 9 12 15 18 21 24
Save

• SD Storage:

OFF / ON

Use the pull-down list to select options

- Image
- Video
- Snapshot Plan: OFF / ON

6.8.2 Alarm Videos

Alarm Video

FileName	File Date	File Time	Size	Operate
main_20171219160719.avi	2017/12/19	16:07:31	5094K	Delete
main_20171219160808.avi	2017/12/19	16:08:25	4509K	Delete
main_20171219160828.avi	2017/12/19	16:08:44	5028K	Delete
main_20171219160848.avi	2017/12/19	16:09:01	5071K	Delete
main_20171219160903.avi	2017/12/19	16:09:16	5056K	Delete

5 file and 14940560 KBytes free

6.8.3 Alarm Snapshot

Alarm Snapshot

FileName	File Date	File Time	Size	Operate
20171219160446667.jpg	2017/12/19	16:04:48	830K	Delete
20171219160452001.jpg	2017/12/19	16:04:52	839K	Delete
20171219160546902.jpg	2017/12/19	16:05:48	863K	Delete
20171219160552471.jpg	2017/12/19	16:05:54	864K	Delete
20171219160557036.jpg	2017/12/19	16:05:58	858K	Delete
20171219160602029.jpg	2017/12/19	16:06:03	859K	Delete
20171219160605131.jpg	2017/12/19	16:06:07	859K	Delete

6.8.4 SD Management

SD Card Management

Mount SD Umount SD Format SD

FileName	File Date	File Time	Size	Operate
alarm	2017/12/18	13:00:33	8K	
schedule	2017/12/18	15:33:10	8K	

After plugging in the SD card, you can manage or format the SD card in this interface.



6.9.1 Camera Information

RugiCAM-IP Information

Camera Name	IPCAM
Camera Module	LI-M38-IMX136-W
Hardware Versior	1M38_V11
Software Version	1.2.065 build 111017(EATON)
Sensor	IMX136_2_3MP
Save	

- Camera Name
- Camera Module
- Hardware Version
- Software Version
- Sensor

7 MECHANICAL DETAILS

All values are approximate.

Camera Unit

Width	Height	Depth	Weight
87mm	79mm	165mm	AA* = 1.5Kg CS* = 3.5Kg

LED Lighting Unit

Width	Height	Depth	Weight
87mm	79mm	105mm	AA* = 1.5Kg
			CS* = 3.5Kg

*Enclosure Material

AA = Anodised Aluminium

CS = Coated / Painted Steel

8 ENVIRONMENTAL

Operating Temperature	-20°C+60°C
StorageTemperature	-20°C+60°C
Humidity	095% RH, non-condensing
Ingress Protection	IP66

NOTE
The MTL RugiCAM-IP Camera unit and LED Lighting unit are certified for use in an ambient
temperature of -40°C to +60°C, the reduced operating range specified in the above table
(Environmental) is guaranteed by design; operation over the full certified range should only be
undertaken after careful consideration and in agreement with the manufacturer.

9 WASTE REMOVAL INFORMATION



The electronic equipment within must not be treated as general waste. By ensuring that this product is disposed of correctly you will be helping to prevent potentially negative consequences for the environment and human health, which could otherwise be caused by incorrect waste handling of this product.

For more detailed information about take-back and equipment recycling please contact your local Eaton MTL representative.

10 MAINTENANCE

No routine maintenance is required other than cleaning the glass window.

Any damage that may affect the safe operation of the unit, e.g. – damage to the enclosure, glass window, connectors or cables should be corrected by replacing the unit / part / cable with manufacturer approved spares. There are no user serviceable parts inside and to maintain dust/water seals the unit should not be disassembled by the end user other than to access the SD card if required.

All screws must be fitted to ensure the integrity of the sealing O-rings.

NOTE

The complete Camera/LED sub-assembly is encapsulated

11 CERTIFICATION

Ex ia I Ma, Category M1 Ex ia IIBT4 Ga Ex ia IIICT135°C Da

CML 15ATEX2016X IECEx CML 15.0008X

See certificates for further information.

11.1 Marking Details



Part No.	Description
9456-ET-xx*	IP Camera
9459-ET-xx*	IP WiFi Camera
9457-IR-xx*	IR LED Unit
9457-WH-xx*	White LED Unit
9457-GR-xx*	Green LED Unit
9457-RD-xx*	Red LED Unit

* xx in the above part numbers relates to the enclosure material

AA = Anodised Aluminium

CS = Coated / Painted steel

12 ORDERING INFORMATION

Camera and LED Units

Part No.	Description
9456-ET-AA	IP-CAMERA – ALUMINIUM ENCLOSURE
9459-ET-AA	IP-CAMERA (WITH WIFI) – ALUMINIUM ENCLOSURE
9457-IR-AA	IR LED UNIT – ALUMINIUM ENCLOSURE
9457-WH-AA	WHITE LED UNIT – ALUMINIUM ENCLOSURE
9457-GR-AA	GREEN LED UNIT – ALUMINIUM ENCLOSURE*
9457-RD-AA	RED LED UNIT – ALUMINIUM ENCLOSURE*

* Subject to MOQ

Part No.	Description
9456-ET-CS	IP-CAMERA – STEEL ENCLOSURE
9459-ET-CS	IP-CAMERA (WITH WIFI) – STEEL ENCLOSURE
9457-IR-CS	IR LED UNIT – STEEL ENCLOSURE
9457-WH-CS	WHITE LED UNIT – STEEL ENCLOSURE
9457-GR-CS	GREEN LED UNIT – STEEL ENCLOSURE*
9457-RD-CS	RED LED UNIT – STEEL ENCLOSURE*

* Subject to MOQ

Accessories

Part No.	Description
9409-ET5	Camera Ethernet Cat6a Cable 5m (M12 connector 8-pole RJ45)
9409-PWR5	Camera/LED Power Cable 5m (M12 connector 4-pole Free end)
9409-LED06	LED-Camera Link Cable 0.6m (M12 connector 4-pole M12 connector 4-pole)

NOTE
The Red and Green LED units are intended for use in other applications –
e.g.: Stop/Go Indication for zones and areas etc.

13 APPENDIX A -

Install Active-X add-on to the IE Interface

Open IE, Go to Internet Options **<u>Security</u>** Trusted sites.

Click Sites, uncheck Require server verification (https:) for all sites in this zone and add the IP address of camera to Websites.

For example: http://192.168.0.*



Click Custom level, enable Download unsigned ActiveX controls and Initialize and script ActiveX controls not marked as safe for scripting.

Settings - musted sites zone	General Security Privacy Content Connections Programs Advance
Download signed ActiveX controls Deable Deable Prantic Pr	Select a zone to view or change security setting.

General	Security	Privacy	Content	Connections	Programs	Advar	nced
Setting	js —						-
4	Play a Play s Play s Show Show Security Allow	nimations ounds in v image dov pictures active cor active cor	in webpag webpages wnload plac atent from atent to run	es* :eholders CDs to run on M n in files on My	√y Compute Computer*	r*	
<	Allow Block u Check Check Check Check Do no Empty	software unsecured for publis for serve for signa t save end Tempora	to run or in i images wi iher's certif r certificat tures on do crypted pa ry Internet	stall even if the th other mixed ficate revocation e revocation* ownloaded prog ges to disk t Files folder wh	e signature i content in grams nen browser	is inv is clc ♥ >	
< *Ta	Allow Block u Check Check Check Check Do no Empty kes effect a	software unsecured for publis for serve for signa t save end Tempora	to run or in l images wi her's certif r certificat tures on do crypted pa ry Internel restart you	stall even if the th other mixed ficate revocatio e revocation* wwnloaded prog ges to disk t Files folder wh ur computer	e signature i content in grams nen browser	is inv; ∙is dc ∀ >	
र *Ta	Allow Block u Check Check Check Do no Empty kes effect a	software unsecured for publis for serve for signat t save end Tempora after you	to run or in l images wi her's certificat tures on do crypted pa ry Internel restart you	stall even if the th other mixed ficate revocatio e revocation* ownloaded prog ges to disk t Files folder wh ar computer Restore	e signature i content in grams nen browser advanced s	is inv; is dc >	
< *Ta Reset1	Allow	software unsecured for publis for serve for signal t save end Tempora after you plorer set	to run or in i images wi her's certificat tures on do crypted pa- ry Internel restart you tings	stall even if the th other mixed ficate revocatio e revocation* wwnloaded prog ges to disk t Files folder wh ir computer Restore	e signature i content in grams nen browser advanced s	is inv: ∶is clc ∀ ≥	
< *Ta Reset I Reset cond	Allow Allow Allow Block Check Check Check Check Do no Empty kes effect	software unsecured for publis for serve for signal t save end Tempora after you plorer set t Explorer	to run or in l images wi her's certif r certificat tures on do crypted pa ry Internei restart you tings 's settings	Istal even if the th other mixed facter revocatio e revocation * ownloaded prog ges to disk t Files folder wh ar computer Restore to their default	e signature i content in grams nen browser advanced s Res	is inv is dc ∀ > settings et	

under Advanced tab, tick the setting "Allow software to run or install even if the signature is invalid"

On IE interface (after login), reload the page

Internet Explorer blocked this website from installing an ActiveX control. What's the risk?

If you get a message above, click Install.

After installation of the ActiveX control, you will see the live video

14 APPENDIX B-

How to use WIFI

1. For the first time you use the WIFI function, you need to enter IE interface with network cable and go to Network Setting > WIFI Access to enable the WIFI. Then enter the WIFI SSID and password.

Enable WIFI	● On ○ Off	
SSID	2WIRE635	
Password	12345	

Click Save, the camera will reboot.

2. After the camera boots up, you can get the IP address from the serial log screen (the WIFI IP address is behind the IP address from network cable) or the UPnP device.

	NOTE
Please make sure the came WIFI) are in the same netw	era module and your PC (which access the camera via ork (wifi router)

3. You can also set the static IP of WIFI.

Go to WIFI Settings.

Select Static IP, enter the static IP address and click submit.

The IP camera will reboot in next step. After the camera boots up, the static IP address can be used to open the IE interface.

WIFI Setting	I
Enable DHCP	● on ○ off
IP Address	192.168.101.168
Netmask	255.255.255.0
Gateway	192.168.0.1
DNS Server	192.168.101.1
Save	

Select IP Address, enter the IP address, and click save.

The IP camera will reboot . After the camera boots up, the static IP address can be used to open the IE interface.

15 APPENDIX C-

Streaming video via RTSP on VLC

- Open VLC media player.
- Click the Media tab.
- Open Network Stream.



In the next window, enter the URL rtsp://<IP_address>:554/0 for main stream or rtsp://<IP_address>:554/1 for sub stream, then click Play, you will get the video.

🗉 File	🕀 Disc	♥ Network	Sapture Dev	vice
Network	Protocol			
Please	e enter a net	work URL:		
rtsp:/	/192.168.0.1	68:554/0		Ŷ
nms rtsp:	://mms.exam //server.exam	ples.com/stream. ple.org:8080/test	asx .sdp	
http: http: Show m	//ms.exam //server.exam //www.yourts	ples.com/stream, ple.org:8080/test ube.com/watch?v	asx .sdp #gg64x	

16 APPENDIX D - MILESTONE XPROTECT SURVEILLANCE SOFTWARE

Milestone XProtect is a surveillance software program. You can try it free for 30 days and need to purchase a license if you wish to keep using it.

This guide just briefly illustrates the procedure to run a RugiCAM-IP camera with Milestone XProtect. If you want more information, please refer to the user guide of Milestone XProtect, which will come with the software you download with the link below.

16.1 Download Milestone Protect

Please use the following link to download Milestone XProtect

https://www.milestonesys.com/our-products/xprotect-softwaresuite/xprotect-enterprise/

There are different versions in the download list, and we use the Milestone XProtect Enterprise in this user guide.

Install Milestone XProtect

16.2 Run Milestone XProtect

After installation, you will get two icons on your desktop

(Milestone XProtect Management Application and Milestone XProtect Smart Client).

Run Management Application

Open Milestone XProtect Management Application.

16.3 Add Hardware Device

When you get the interface, click Add Hardware Device.



Then you will get the following window:

Add hardware Con	figure video mrage	Adjust median demotion	112
Use the scale to prace your veloces that commence and their disensity. The exceed software/air, iddy, and/other commence to your besiden.	gually of recorded inter, when include thand where you want to	Exalite restline Methodox for Centresis, addati frederine senellede ja odd sel og offen method defection settlings	Challe saves for your system.
Lawrence	Westing Care	Your Information	
Your system is having to high mode. The big period active to Westmonter Patroney 24, 2018	No internation about here up of	then our relation has	tais to learn more on each of the low"
To purchase a loanse, prease contact your Miestone reserver	For othernation actual Measure	e Care. Inter Atoliate	
multimeet.	Sounds The Westman Constant	96 ()	
	<image/> <image/> <image/> <text><text><text><text><text></text></text></text></text></text>	<image/> <image/> <image/> <text><text><text><text><text><text><text></text></text></text></text></text></text></text>	<image/> <image/> <image/> <image/> <image/> <image/> <text><text><text><text><text><text></text></text></text></text></text></text>

Select and click Scan for Hardware.





Select Scan local network and click next.

i Hardware				13	22
Where do yo	ou want XProtect to	scan for hardware device	s?		
If you want to us	e cameras or other device	es outside your local network, you	can add additional IP addresses	s or IP ranges to i	be scanned.
🗹 Scan local ne	twork				
Add the IP at	ddresses or IP ranges to be	e scanned			

Select all manufacturers (default), then click Next.

d Hardware	-	(4)	22
Scan only for hardwa Scanning for hardware devi you want to add.	are from certain manufacturers ces may take several minutes. You can red	suce the time by only selecting the manufacturer(s) of the time by only selecting the manufacture $\left(s\right)$	f the devices
All manufacturers	•		
XProtect will use the camer and password for the came	a manufacturer's default user credentials v ra you should add them to this list: <u>User n</u>	when scanning for cameras. If you have changed the ame and password,	user name
		Previous Next	Cancel

NOTE
If the auto-scan cannot get the device, please click Rescan to scan it again, or you can also use other ways in last window to get the device.

Select LI-M38 Camera and deselect the USB Driver and click next.

2 device(s) found.		_		-	Scan agair
USB Driver 4 channels	0.0.0.1	80			
V ipnc LI-M38-IMX136-W	192.168.0.168	80			

The following screen appears:

Add Hardware	×
Your devices are ready to use	
You have now successfully added 1 device(s) to your system.	
	ж

click OK.

The following screen appears:

Services Alburnet Entergenet Affit Management Age Services - Witards - Options - Help	uno - El Seclar			- 81
Services Service Sectors started Association Signature Commission Service Commission Service Commission Comm	Hardware Device Summ	nary:		
Constant and Dutput	Hardware Davids House	Tining -	tion limber Margham annual same for faire	fin a
Tiers .	The bear years topsa		Danes Dane Dane Agency with the second	the second se
2 LAU	Hardware Davies 1		1 5 5 WENELDER 6 80 and 1	NUL MATTER
Image: Strategy and the				

From the left panel click on **Hardware Device 1** and then select **camera 1**. The folowing screen appears:



Select Open to select Camera properties and the following screen appears:

	General camera settirica
Indeo Judio Lecording Properties Lecording and Archiving Paths vers Notification Jutput Action Detection	Enabled: [9] Preview: [9] Camera name: Camera 1 Camera shottout number: Camera Settings Preview
irring making isheye Lens	

16.4 Manage the functions

Motion Detction can be selected as shown below:

amera Properties		
Seneral Video Audio Recording Properties Recording and Archiving Paths Event Notification Dutput Privacy Masking Visheye Lens	Noton Detection P Enable	Detection regions
	Level Manual sensitivity Seminivy Motor: Keyframe only Detection interval: 240 millisece	2000 nds
	Detection resolution: Fast (12%)	• OK Cencel

Sensitivity and Motion can be used to adjust the level.

When the green bar is over the line, the video from the camera will be recorded.

You can also check **Show grid** to set the detection regions.

lideo udio	Motion Detection	Detection regions
ecordingProperties		Exclude Al
vent Notification	25 A	Include Al
Autor Contesting		SAN / X
nivacy Masking isheye Lens		
	Level.	233
	Motor:	2000
	2 Keyframe only	
	Detection interval 240 milliseconds	
	Detection resolution Fast (12%)	

Set Privacy Masking

The blocks you select will be a black area in video you get from camera. After you set the properties, click **OK** to save it.



16.5 Open Milestone XProtect Smart Client



This allows you to view all cameras and view recorded video.



NOTE
If you want to know more about the functions and settings, please refer to the user guide of Milestone XProtect.

17 APPENDIX E - ONVIF DEVICE MANAGEMENT SOFTWARE

17.1 The Onvif (Open Network Video Interface)

Device Management Software v2.2.250 can be used to setup and monitor RugiCam-IP including the streaming of live video from it as can be seen below. The application can be obtained from the sourceforge site, address https://sourceforge.net/projects/ onvifdm/.

Go to the website indicated above and press the download button which will then download odm-v2.2.250.msi (this is the version at time of writing), size of file 20.9MB when completed and the security check verifies the software install on the target computer.

When the application runs it will scan the subnet the computer is connected to for any equipment responding to the ONVIF protocol and displays the results in the left



hand column as shown above.

The second column from the left is split into two sections the top one deals with the setting of the camera while the bottom section is concerned with the live video feeds.

17.2 Network Setting

Selecting Network Settings from the top half of column two reveals all the network parameters as shown below.



18 APPENDIX F - RUGICAM-IP ROUTING NOTES

(Software Revision v1.2.065 build 130218(EATON) or later)

18.1 One Network Connection Only

The RugiCAM-IP has two network connections, the copper LAN and the WIFI LAN. Only one of these connections can be used at any time (power limitation constraints for Intrinsically Safe operation).

18.2 Copper Network Connection

When the RugiCAM-IP is powered, and there is a linked physical copper LAN connection, then the WIFI circuit is disabled. The camera is now only accessible via the copper LAN. Below is an example of the copper LAN Settings:

LAN Settin	g	
Enable DHCP	⊖ on ● off	
IP address	192.168.130.172	IP address of the copper LAN connection
Netmask	255.255.255.0	Subnet mask for the copper LAN connection
Gateway	192.168.130.1	Default Gateway, the Camera uses this device for IPs not on the local subnet
DNS Server	192.168.130.1	Resolves names to IPs
	1	

18.3 No Copper LAN Connection At Power Up Wifi Connection Available

When the RugiCAM-IP is powered and there is no linked physical copper LAN connection, then the copper connection is disabled and the WIFI connection will connect to the configured access point. The camera is now only accessible via the WIFI connection.

Below is an example of the WIFI LAN Settings:

Enable DHCP	O On ◉ Off
IP Address	192.168.100.172
Netmask	255.255.255.0
Gateway	192.168.100.1
DNS Server	192,168,100,1

IP address of the WIFI LAN connection

Subnet mask for the WIFI LAN connection

Default Gateway, the Camera uses this device for IPs not on the local subnet

Resolves names to IPs

18.4 If Wifi Switched Off Copper Network Connection Available

If the Enable WIFI is set to Off (default), as shown below, then the camera only enables the copper connection.

WIFI Acces	ss Setting	
Enable WIFI	Oon ℗Off	
SSID	OldBtHub02	
Password	Password	

If you are only using the copper connection, it is recommended to set the Enable WIFI to Off (default).

18.5 Subnet Address Different For LAN And Wifi

Since only one of the LAN connections can be used at any time, it is recommended that the unused connection be setup to a different subnet address, as illustrated in Notes 2 and 3.

18.6 Default Gateway Operation

To setup a device on a network with a fixed IP address requires a number of parameters, one of these parameters is the default gateway.

The default gateway is a network node that serves as a gateway (router) to another network (subnet), often involving not only a change of addressing, but also a different networking technology.

When the RugiCAM-IP wants to communicate with another device on a different network (subnet), it uses the Default Gateway device to route the IP messages onto another Router or one of the Routers local LAN connections.

18.7 Changing From Copper LAN To Wifi (Or Vice Versa)

When changing from copper LAN to Wi-Fi LAN the unit power should be cycled for the new connection to be established.

19 GLOSSARY OF TERMS

Alert	An alert can be in the form of an e-mail or an ftp upload of an image, that occurs when a sensor is triggered, or motion is detected.	
AVI	Audio Video Interleaved. A Windows multimedia video format from Microsoft.	
CBR	Standard Bit Rate Encoding. This aims for a constant or unvarying bandwidth level but the video quality can vary.	
CIF	Common Interface Format. A standard video resolution format used in video conferencing. CIF resolution is 352x288 and bit rate is 36.5 Mbps (at 30fps).	
DHCP	Dynamic Host Configuration Protocol. A system by which each piece of equipment on a network is allocated an address IP dynamically.	
Ethernet	The most widely used local area network (LAN) access method, defined by the IEEE as the 802.3 standard.	
FTP	File Transfer Protocol. A standard protocol designed for transferring files over a TC IP net-work.	
IP	Internet Protocol. The network layer protocol in the TCP/IP communications protocol suite (the "IP" in TCP/IP). IP contains a network address and allows messages to b routed to a different network or subnet.	
LED	Light Emitting Diode. A semiconductor device that emits light when a voltage is applied.	
Motion detection	Camera function that causes an alert to be triggered when movement is detected the field of view.	
Protocol	Standards governing the transmission and reception of data.	
Resolution	Screen resolution is expressed as a matrix of dots. For example, the VGA resolution of 640x480 means 640 dots (pixels) across each of the 480 lines.	
RJ-45	Registered Jack 45. RJ-45 type connections are used in Ethernet devices.	
SNTP	Simple Network Time Protocol. A protocol that allows devices to update internal clocks using a standard source available on a network.	
Static IP address	A static IP address that is assigned manually and never changes.	
TCP/IP	Transmission Control Protocol/Internet Protocol. A communications protocol developed under contract from the U.S.	
VBR	Variable Bit Rate Encoding. This allows the bit rate to vary but maintains a constant video quality level.	
VGA	Video Graphic Array. The video display standard for the PC.	

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