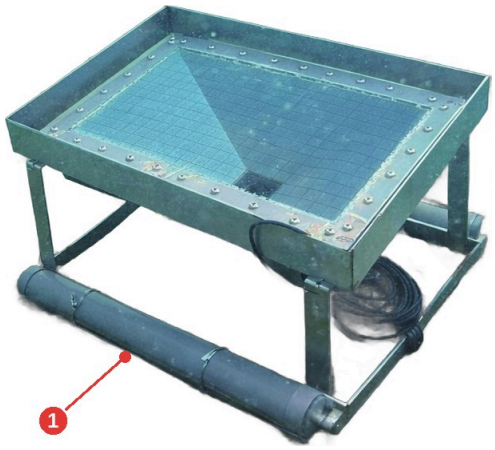
User Manual

MIC AI Underwater Imaging System

AI Underwater Imaging System for Shrimp, Soft-Shelled Turtle & Fish



① Weight pipe (approx. 5 kg, optional)



Control box

Package contents: 1 × underwater camera + 1 × control box

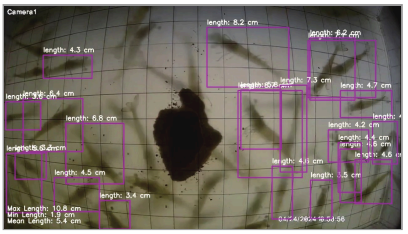
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Features & Specifications

MIC AI Underwater Imaging System

Thank you for purchasing the MIC AI underwater imaging system. It combines high-resolution underwater imaging with AI deep learning to measure the body length of shrimp, soft-shelled turtles or fish, and to evaluate their activity in the pond.



Features:

- ✓ Patented AI underwater imaging: body length, pcs/kg size, activity and residual feed rate.
- ✓ Three detection types: shrimp, soft-shelled turtle and fish.
- ✓ HD camera at the bottom of a clear imaging chamber with a reference grid; no interfering medium.
- ✓ 24-hour recording; watch, play back and cut clips on your phone with the HiSharp app.
- ✓ MIC AI app in English, Chinese, Japanese, Vietnamese, Thai and Spanish, with history, line chart, export and sharing.
- ✓ IP68 waterproof, reinforced anti-corrosion glass, LED illumination with low-light support.

!!Caution!!

Do not open the underwater housing or loosen the bolts of the sealed frame. Unauthorized opening or modification voids the warranty.

Standard Package Includes:

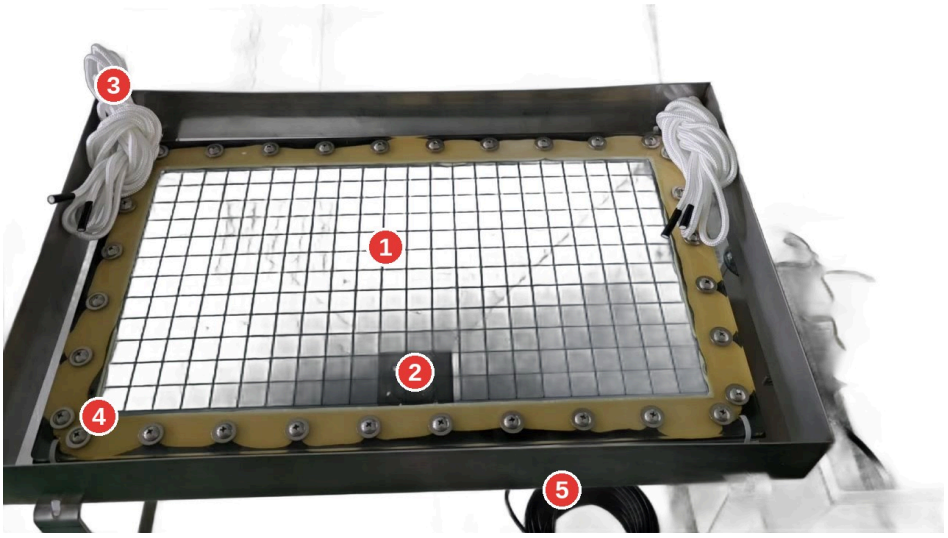
1 × underwater camera (underwater imaging unit with 15 m camera cable) and **1 × control box** (recorder, 4G router, power adapters, power breaker), plus the QR code label (inside the camera box) and this user manual.
Optional accessory: weight pipe under the stand (approx. 5 kg, sold separately)

Specifications

Application	Indoor / Outdoor aquaculture ponds	
AI	**Features**	Body length, activity, residual feed rate
	Analysis	Species & behaviour recognition (shrimp, soft-shelled turtle, fish)
Underwater unit	**Waterproof rating**	IP68
	Cable length	15 m
	Material	Reinforced glass, anti-corrosion
	Illumination	LED, low-light support
	Weight	Approx. 14 kg
	Dimensions	560 (L) × 360 (W) × 310 (H) mm
Control box	**Network**	LAN cable to the 4G router (no Wi-Fi)
	Video output	HDMI / VGA to a TV or monitor
	Compression	H.265 High Profile
Viewing	Smartphone / tablet (iPhone / iPad / Android)	
Power	**AC 110–220 V / DC 12 V**	

Underwater Unit Parts

Parts Description



No.	Part	Description
1	**Glass window with grid**	The measurement area. The grid is the size reference for the AI. Keep it clean.
2	**HD camera**	Mounted at the bottom of the unit; films the animals in the imaging chamber.
3	**Lifting ropes (2)**	Lower, fix and lift the unit (for example for cleaning).
4	**Sealed frame**	Gasket and stainless bolts keep water out. **Do not loosen the bolts.**
5	**Camera cable (15 m)**	Carries video and power to the control box.

IMPORTANT – Installation

- Hold the unit by the two ropes and lower it slowly into the pond with the **glass window facing up**, until it rests level. Do not drop it or hang it by the cable.
- Tie the ropes to a post or the pond edge so the unit cannot move and can be lifted out for cleaning.
- Run the cable to the control box without sharp bends, and away from walkways and vehicles.

For Accurate AI Results

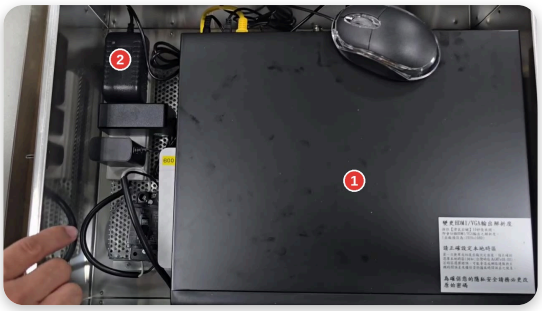
- Keep the unit fixed: after calibration, do not move it without repeating the calibration.
- Keep the glass window and grid clean. Algae, mud, bubbles and suspended solids reduce accuracy.
- Avoid strong glare, reflections or aeration currents over the unit.

Control Box

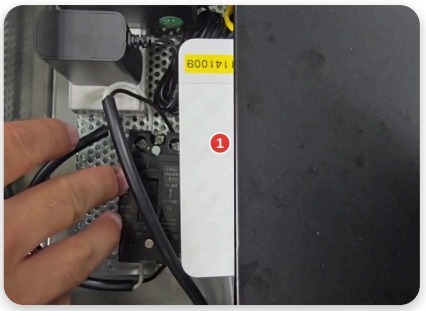
The control box stays on the bank, in a dry and stable place. It records the camera 24 hours a day and sends the video to the HiSharp app through the 4G router.



Control box: 1 Recorder

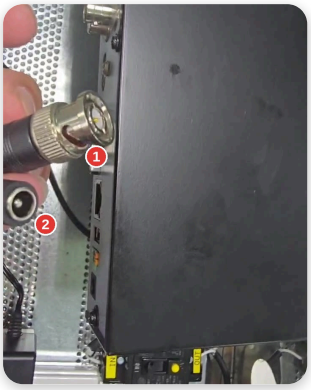


1 Recorder 2 Power adapters

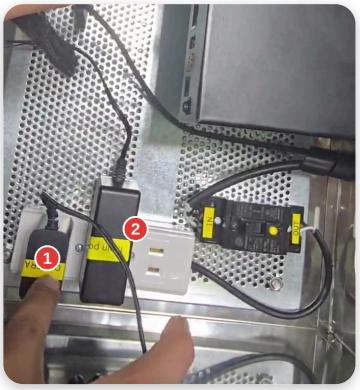


1 4G router

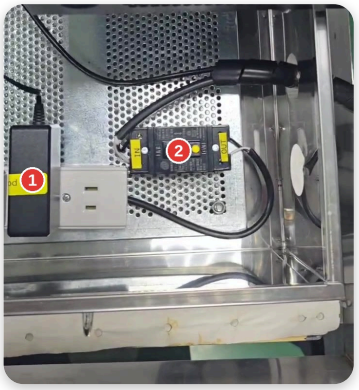
Part	Description
Stainless steel cabinet	Protects the equipment from rain and dust. Keep the door closed.
Recorder (black unit)	Records the camera 24 hours a day. No daily operation is needed: you watch and cut the video in HiSharp.
4G router (white unit)	Connects the box to the internet with a 4G SIM card. The recorder connects to it by LAN cable.
Power adapter “CAMERA”	12 V power for the underwater camera.
Power adapter “main power”	Power for the recorder.
Power breaker	Black switch with yellow labels: switches the box’s mains power on and off.



1 BNC video 2 DC power



1 “CAMERA” 2 “main power”



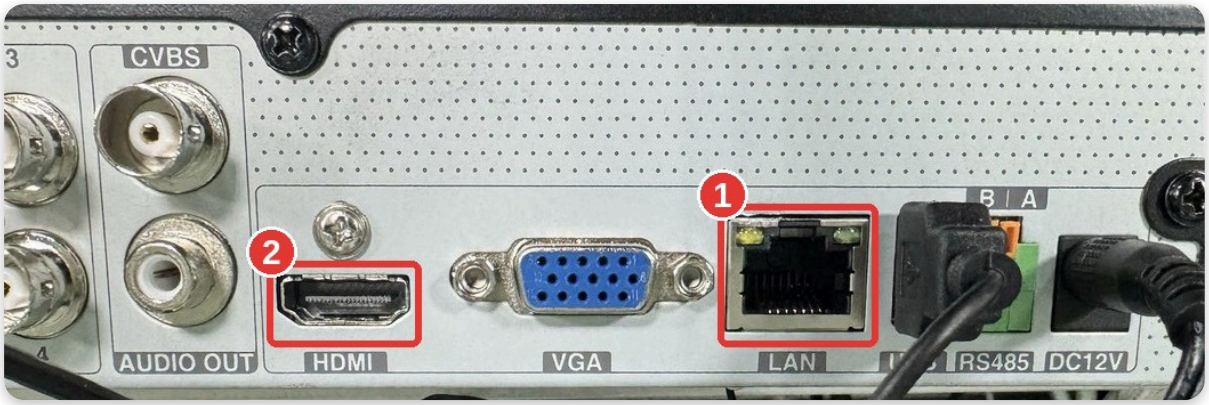
1 Main power 2 Breaker

Safety

- Use only the supplied adapters and cables. **Switch off the power breaker** before connecting or changing any cable.
- Only the underwater unit and its cable go into the water. Protect the control box from rain, splashing water, heat and vibration.
- Switch off and unplug the power during lightning storms or long periods of non-use.

Connections & Installation

Recorder Rear Panel



Port	Use
1 LAN	**Required.** LAN cable from here to the **4G router** (or the site router). This is the only way the box goes online. When connected, the LAN port lights come on.
2 HDMI	Optional, only if needed: connect a TV or monitor to watch the camera on a large screen (VGA for an older monitor).
DC12V	Recorder power from the "main power" adapter (already connected).

IMPORTANT – The LAN cable must stay connected

The control box goes online **only through the LAN cable to the router**; it has **no Wi-Fi**. Keep the LAN cable plugged in and the router switched on at all times. If the cable is unplugged or the router is off, the camera is offline and **HiSharp cannot connect** (no live view, playback or clips).

Installation Steps

1. **Choose the place.** The control box needs a mains socket within reach of the 15 m cable, safe from flooding and vehicles.
2. **Place the underwater unit** in the pond and tie the ropes (P3).
3. **Connect the video plug.** With the breaker off, push the camera cable's **BNC plug** onto the recorder's video input and turn it clockwise until it locks.
4. **Connect the power plug.** Connect the camera cable's **DC plug** to the adapter marked **"CAMERA"**.
5. **Connect the network.** Plug a LAN cable into the recorder's **LAN** port and into the **4G router**. Leave it plugged in permanently.
6. **Switch on.** Plug in the box and switch on the power breaker. Wait **3–5 minutes** for the recorder and router to start.
7. **Check the picture** in the HiSharp app (P6–P7). When the image is clear, close the control box door.

HiSharp – Add the Camera

1. Accounts and Passwords

Where	User name / password	When you need it
HiSharp – camera	Password: **123456** (factory) User name, if asked: **admin**	When you add the camera by scanning the QR code.
HiSharp – app account	Not needed	"Not logged in" is normal.
MIC AI app	Supplied by MIC	To upload clips and see AI results (P9).

2. Install HiSharp

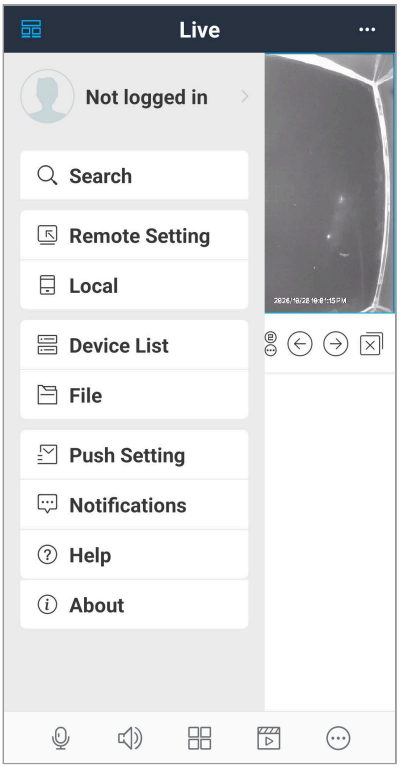
Scan the QR code for your phone, or search **Hi Sharp** (Android) / **HiSharp-Ex** (iOS). When the app asks, **allow Camera** and **allow Photos / Storage**.

3. Add the Camera

1. Open HiSharp. On the **Live** screen, tap the menu icon (top left).
2. Tap **Device List**, then **+**, and choose **scan QR code**.
3. Scan the **QR code label inside the AI underwater camera box** (10–20 cm away). The device ID is filled in.
4. Enter a **device name** you recognise (e.g. the pond name) and the password **123456**.
5. Tap save. The camera appears in the Device List; tap it to see live video.

Android – Google Play

iPhone – App Store



Side menu

Device password

The factory password is **123456**. If it is changed (Remote Setting › Device Info › Change Device Password), every phone must use the new password. Write it in the customer handover record. Take a photo of the QR label in case it is damaged later.

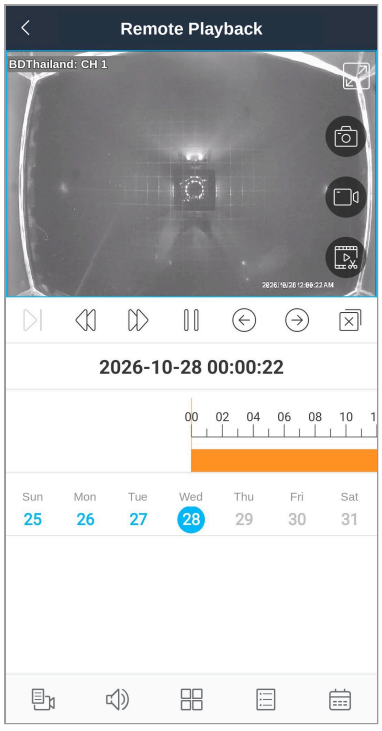
HiSharp – Live View & Playback

1. Live View

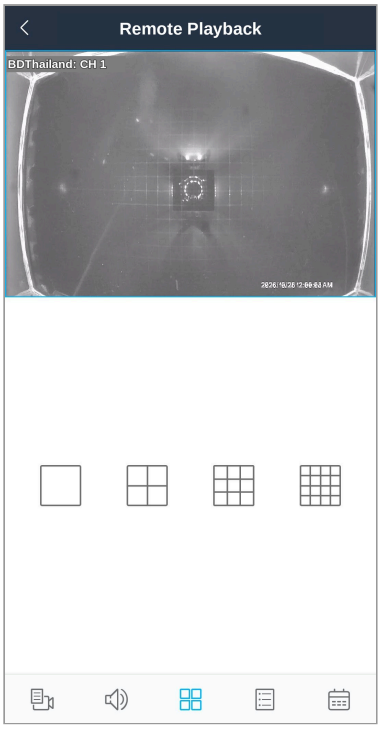
- Tap the camera in the Device List. The device name and channel are shown at the top left, the date and time at the bottom right.
- Use live view to check the conditions: animals in the chamber, clear water, grid visible.
- The layout button shows 1, 4, 9 or 16 windows when several cameras are added.

2. Remote Playback

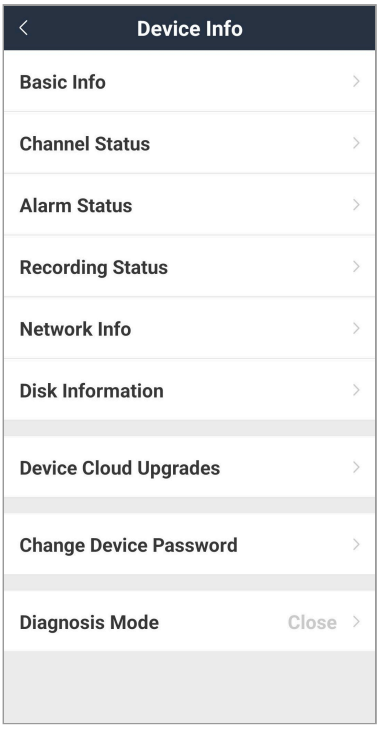
1. In live view, tap the **playback (film)** button in the bottom bar. The title changes to **Remote Playback**.
2. **Choose the date** in the week bar: **blue dates** have recordings, grey dates have none. Tap the calendar button for other weeks.
3. **Choose the time** by dragging the timeline. The **orange bar** shows recorded time; a gap means nothing was recorded.
4. Controls: ⟪ slow / ⟫ fast, ‖ pause, ← → previous / next window, ✕ close. Right of the video: snapshot, record, and the **clip button** (P8).



Remote Playback



Window layout



Device Info

3. Check the Camera Status

Menu › **Remote Setting** › camera › **Device Info**: **Recording Status** shows whether the camera is recording, **Disk Information** shows storage, **Channel Status** shows whether the camera is connected. Leave Device Cloud Upgrades and Diagnosis Mode as they are.

HiSharp – Cut a Clip

The MIC AI app analyses **short clips**. Cut the clip in HiSharp, save it to the phone, then upload it to the MIC AI app (P10).

IMPORTANT – Do not cut clips from live view

Always cut the clip from **Remote Playback**. A clip cut from **live view** does not have enough resolution: the AI cannot analyse it and the MIC AI app shows an **error message**.

1. Choose a Good Moment

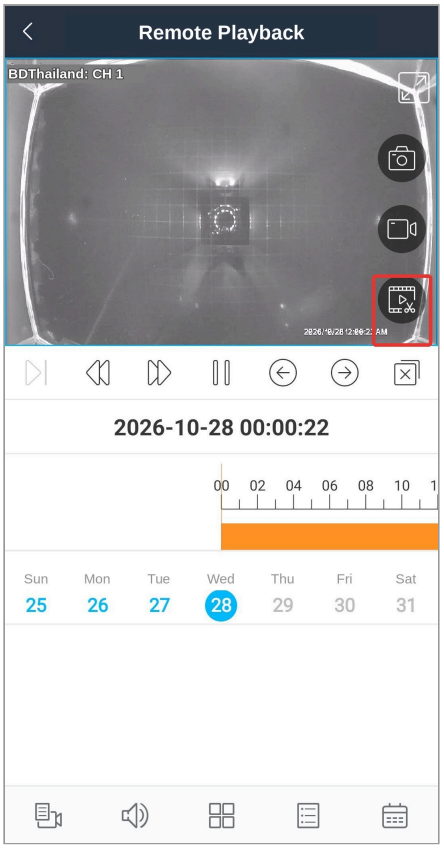
- Several animals in the chamber, moving normally, not piled on top of each other.
- Clear water, little glare, few bubbles, grid visible.
- For growth tracking, use the **same time of day** each time (e.g. every morning before feeding).

2. Cut the Clip

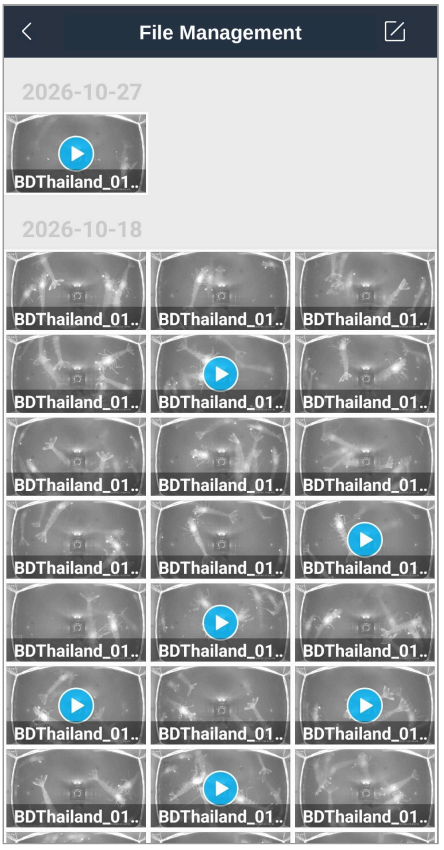
1. In **Remote Playback**, go to the moment you chose.
2. Tap the **clip button** (film with scissors, marked in red) right of the video.
3. Let it play for about **30 seconds**. Do not leave the screen or lock the phone.
4. Tap the clip button again to stop. The clip is saved in the app.

3. Save the Clip to the Phone

1. Menu › **File**. Clips are grouped by date, newest first; ▶ marks a video.
2. Tap a clip to check that the animals are clearly visible.
3. Tap the edit icon (✎, top right), select the clip and **save / share it to the phone's gallery**, so the MIC AI app can upload it.
4. Delete old clips after analysis to free space.



Press here to cut



File Management

MIC App – Login & Setup

The MIC AI app (AI Shrimp Monitoring System) opens in the phone's web browser (Chrome, Safari). No installation is needed.

1. Log in

- Open **https://www.mic-meter.com:8501/** or scan the QR code.
- Log in with the account supplied by MIC. Your name is shown as **User**.
- **Language:** English, Chinese, Japanese, Vietnamese, Thai or Spanish.
- **Download HISHARP** downloads HiSharp; **Logout** logs out.

MIC AI app

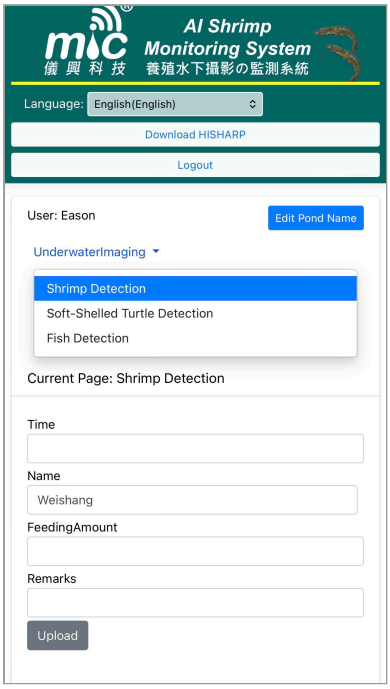
2. Choose the Detection Type

Tap **UnderwaterImaging ▾** and choose **Shrimp Detection**, **Soft-Shelled Turtle Detection** or **Fish Detection**. **Current Page** shows which one is open; each type has its own history.

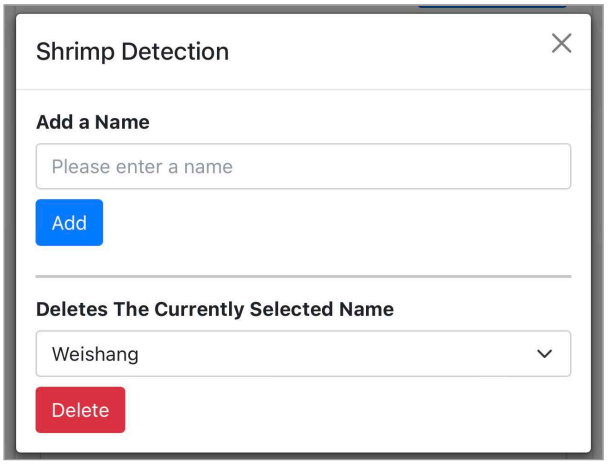
3. Set Up Pond Names (first time)

1. Tap **Edit Pond Name** (top right).
2. Under **Add a Name**, type the pond name (e.g. *Weishang*, *Pond A*) and tap **Add**.
3. To remove a name, choose it under **Deletes The Currently Selected Name** and tap **Delete**. Close with ✕.

Use one name per pond and keep using it: the history, search and chart are grouped by this name.



Home / detection type



Edit Pond Name

MIC App – Upload & Result

1. Upload the Clip

Field	What to enter
Time	Filled in automatically; shown in the history and chart.
Name	Choose the pond name (P9).
FeedingAmount	Feed amount, if you record it; otherwise leave empty.
Remarks	Useful notes, e.g. culture day (69 days), weather, “after feeding”.

1. Tap **Upload** and choose the clip saved from HiSharp.
2. Wait until **Upload Progress** reaches 100 % and **Detecting Shrimps...** finishes. **Keep the page open** and the phone awake.

Error message instead of a result?
The clip was probably cut from **live view** (resolution too low). Cut a new clip from **Remote Playback** (P8) and upload it again.

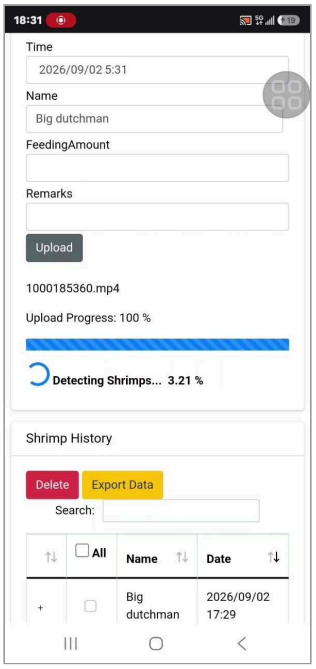
2. Read the Result (Detail page)

The processed video shows a detection box and length label on each animal. Below it:

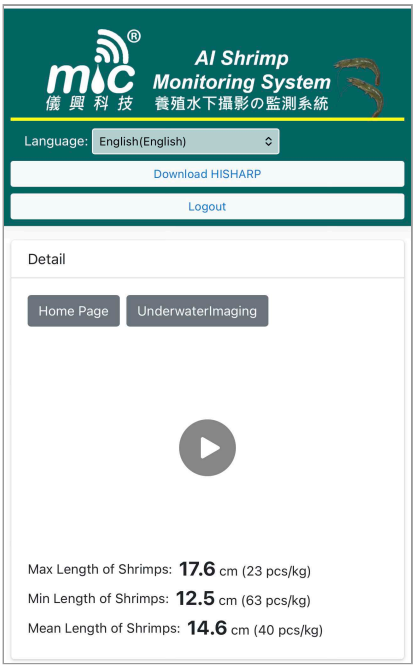
Result	Meaning
Max Length of Shrimps	Longest animal (cm) and its size.
Min Length of Shrimps	Shortest animal (cm) and its size.
Mean Length of Shrimps	Average length (cm) and size.
pcs/kg	Pieces per kilogram. Smaller number = bigger shrimp. **The unit differs by country**; follow the unit shown in the app.

Example: mean 14.6 cm ≈ 40 pcs/kg; longest 17.6 cm ≈ 23 pcs/kg; shortest 12.5 cm ≈ 63 pcs/kg.

If many animals have no box, or boxes are on background objects, cut a clearer clip and analyse again.



Upload progress



Detail page

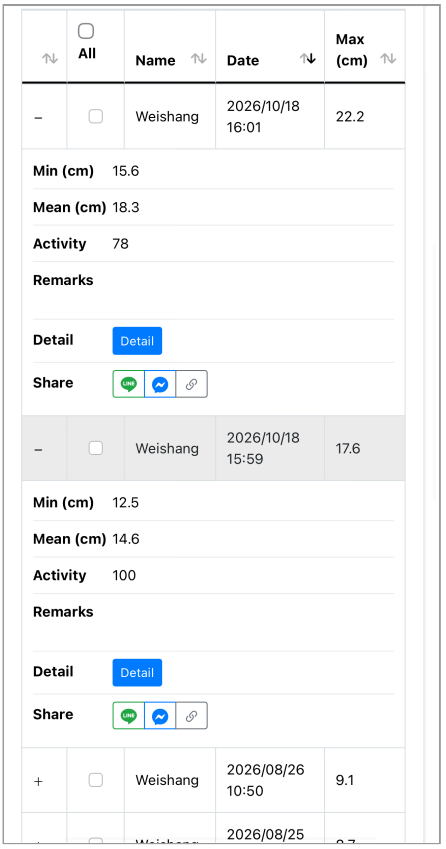
MIC App – History & Chart

1. Shrimp History

Each analysis is one row (Name, Date, Max cm), newest first. Tap ↑↓ to sort. Tap **+** to open a record:

Field	Meaning
Min / Mean (cm)	Minimum and average length.
Activity	AI activity score.
Remarks	Notes entered at upload.
Detail	Opens the processed video and result.
Share	LINE, Messenger, or copy the link.

Action	How
Search	Type a pond name to filter.
Export Data	Tick records (or **All**), tap Export Data.
Delete	Tick records, tap Delete. Cannot be undone.
Pages	10 per page; First / Previous / Next / Last.



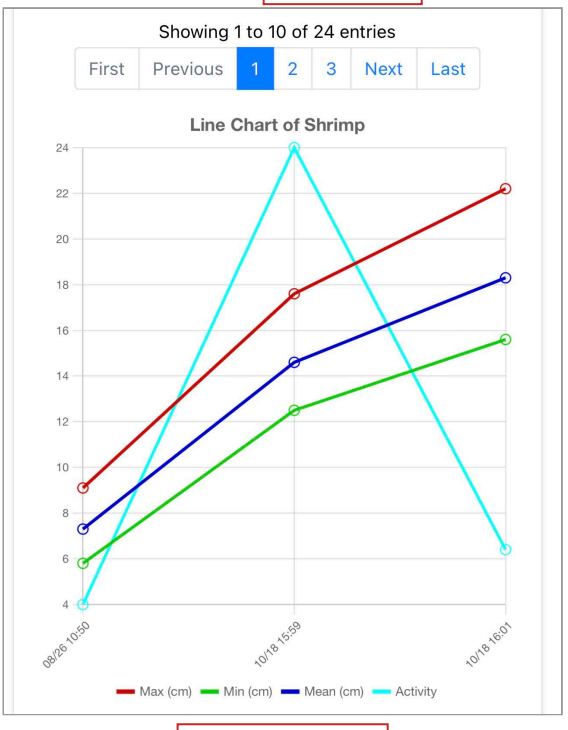
Shrimp History

2. Line Chart of Shrimp

The chart shows the ticked records over time:

Line	Shows
Max (cm) – red	Longest animal
Min (cm) – green	Shortest animal
Mean (cm) – blue	Average: the growth line
Activity – light blue	AI activity

Tap a name in the legend to hide or show a line. **Example:** pond Weishang's mean length rose from 7.3 cm (08/26) to 18.3 cm (10/18). Check a sudden jump against the original clip before drawing conclusions.



Line Chart of Shrimp

Troubleshooting:

30-second self-check: ① Power breaker ON? ② LAN cable plugged in at the recorder and router, LAN lights on? ③ 4G router powered with signal? ④ Phone has internet? ⑤ Clip cut from Remote Playback (not live view)?

Problem / message	Cause	Solution
Control box & network		
Recorder has no lights	No power.	Breaker ON; check socket and "main power" adapter (DC12V).
LAN port lights off	LAN cable unplugged; router off.	Push the cable in at both ends; switch on the router; try another cable.
LAN lights on, still offline	No 4G signal or SIM data used up.	Restart the router (off 10 s, wait 3–5 min); check the SIM plan.
HiSharp		
QR code will not scan	Label dirty or dark; no camera permission.	Clean the label, add light; allow Camera for HiSharp.
"Password error"	Wrong device password.	Enter 123456; if changed, use the handover record or contact MIC.
Camera "Offline"	Control box not online.	Check power, LAN cable and router; refresh the Device List.
Live view loading / black	Weak internet.	Move to a stronger signal; reopen HiSharp.
Picture dark / cloudy	Dirty window, murky water.	Clean the glass window; wait for clearer water.
No recording (grey dates)	Recording stopped; disk.	Choose a blue date; check Device Info › Recording Status / Disk. Contact MIC if stopped.
Clip not in the gallery	Not saved to the phone; no storage permission.	File › ✎ › save to phone; allow Photos / Storage.
MIC AI app		
Page does not open	Wrong address; no internet.	Use https://www.mic-meter.com:8501/ (with :8501).
Login failed	Wrong user name / password.	Check upper/lower case; contact MIC for a reset.
Name list empty	No pond names yet.	Edit Pond Name › Add (P9).
Upload stops below 100 %	Weak connection; page closed.	Keep the page open and phone awake; upload again.
Error message, no result	Clip cut from **live view**: resolution too low.	Cut a new clip from **Remote Playback** (P8) and upload again.
Few or no detection boxes	Murky water, glare, no animals.	Clean the window; choose a clearer moment.
Lengths look wrong	Unit moved; animals overlap.	Check the unit has not moved; analyse a clearer clip.
Record not in history / chart	Other name, type or page.	Check name and detection type; search; tick the record.

Still not solved? Send MIC: farm/pond and device name, a **screenshot of the error**, the page (P-number) where it happened, the clip, and a photo of the control box lights.

Maintenance:

When	Check
Daily	Live image is clear; date and time are correct; LAN cable still plugged in.
Weekly	Check the camera view for fouling, obstruction, loose ropes or glare.
Monthly	Remote Playback shows continuous recording (no gaps in the orange bar).
As needed	Clean the glass window; after moving the unit, recalibrate if required.

WARRANTY

This instrument is warranted for two years from the date of purchase (one limited warranty applies to cables). A Return Authorization letter must be issued before returning for any reason. This warranty does not apply to defects resulting from action of the user such as misuse, abuse, alteration, neglect, improper wiring, improper installation, maintenance or repair, unauthorized modification, opening of the underwater housing, or operation outside of specification. During the warranty period the manufacturer reserves the right to decide either to repair or replace the product. Products are to be returned with good packing to prevent any damage in shipment and insured against possible damage or loss.

The two years' warranty doesn't apply to:

- Accessories and consumables (not covered by warranty).
- Claims for improper use (including applications not foreseen in this manual), improper combination with incompatible accessories or equipment, or previous repair attempts by unskilled or unauthorized personnel.
- Damage caused by the user's improper use (impact, dropping, cutting or crushing the cable, loosening the sealed frame, lightning or power surge).
- Loss of internet service, 4G SIM card data plans and third-party apps or networks.

Contact

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Website	www.meterindco.com.tw