



# OMOM<sup>®</sup> RC

Robotic Capsule Endoscopy System

Product Brochure



One Step Further to  
**AUTOMATION**



## Diagnostic Gastroscopy, Reimagined with Robotic Capsule.

**The Challenge:** Conventional gastroscopy remains the widely accepted “gold standard” method for detecting and treating gastric pathology. However, patients with relative contraindications, such as severe cardiac or respiratory dysfunction, may not tolerate the stress of conventional examination. Patient’s discomfort and the need for sedation also limit its use for screening purposes. In addition, most gastroscopy procedures do not need a biopsy or further intervention. The COVID pandemic has placed an unprecedented challenge on endoscopy units worldwide.

**The Alternative:** Is there an alternative to diagnostic gastroscopy? Magnetic-controlled Capsule Endoscopy (MCE) seems a good option. There is growing clinical evidence that capsule endoscopy, controlled by an external magnetic field, can be successfully utilized in diagnostic gastroscopy. MCE has similar pathology detection accuracy with conventional gastroscopy but is preferred by most patients. However, existing MCE technologies rely on a human operator to control capsule movement. Therefore, there is a learning curve, and it would take an operator about 20 minutes to manually navigate the capsule in an MCE procedure.

**The Solution:** The new generation of OMOM® RC, the fully automated MCE, does not require a human operator to control the capsule movement. Innovative JINSHAN robotic technology and proprietary controlling algorithms allow the OMOM® RC movement unit to automatically navigate the capsule and provide a complete stomach examination when the AUTO mode is enabled. A prospective study by two tertiary centres shows that OMOM® RC has a similar diagnostic performance with conventional gastroscopy in 114 patients.

**OMOM® RC, the real robot that frees your hands.**

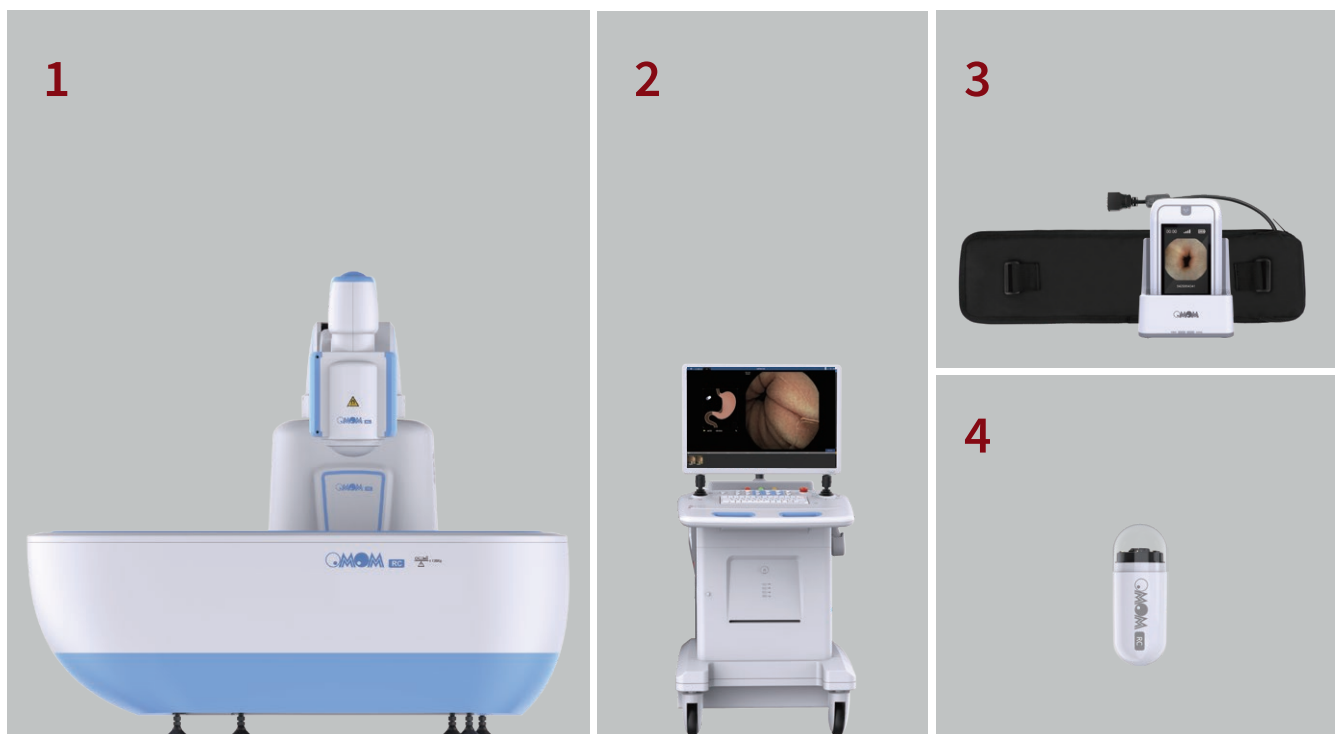
[1] Xiao Y-F et al. *Fully automated magnetically controlled capsule endoscopy for examination of the stomach and small bowel: a prospective, feasibility, two-centre study.*

[2] *Lancet Gastroenterol Hepatol.* 2021; 6: 914-921. doi: 10.1016/S2468-1253(21)00274-0

# Introducing OMOM® RC

## The Components

OMOM® RC offers a safe, noninvasive, and fully automated diagnostic gastroscopy, allowing not only gastroscopy but a thorough check of the small bowel, in just one sitting, due to its extended capsule battery life. The system consists of a *Robotic Movement Unit*, a *Control Console* (with reporting software), a *Recording Unit* and the disposable *Robotic Capsule*.



### 1. Robotic Movement Unit

The *Robotic Movement System* is integrated with the examination bed. Upper and lower magnetic fields are located in the robotic arm and examination bed, functioning together to control capsule motion. During the examination, there is no need for the patient to change position.

### 2. Control Console

The *Control Console* serves as the control center. When connected with the Robotic Movement Unit, healthcare professionals can start the gastric examination automatically by simply pressing the AUTO button on the *Control Console* after the patient is ready. Manual mode is also available in case doctors want to control the capsule manually. The *Control Console* is installed with *VUE Smart* software for reporting.

### 3. Recording Unit

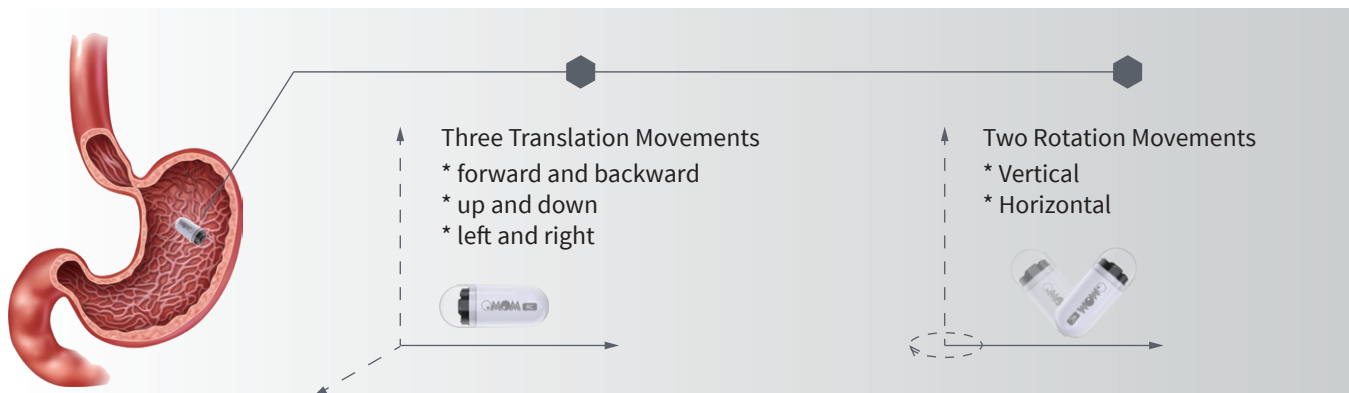
Recorder with antenna will receive images captured by capsule with radiofrequency technology.

### 4. Robotic Capsule

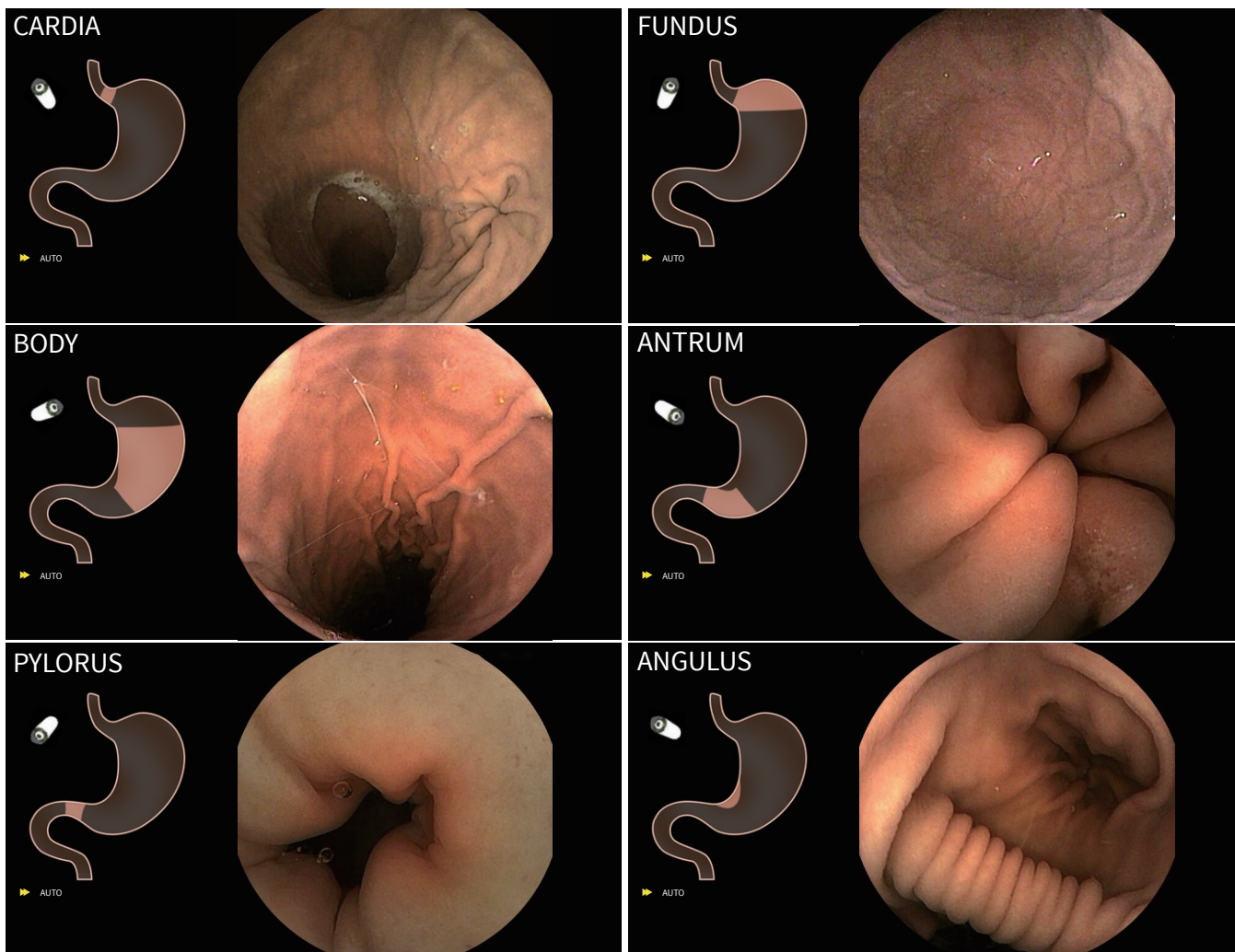
*Robotic Capsule* contains ingenious magnetic module, allowing to be navigated easily and accurately. After completing the gastric examination, the capsule could continue its journey to the small bowel by peristalsis when equipped with an extended battery.

## How Automatic Control Achieved?

Proprietary algorithms have been developed to detect the anatomical gastric landmarks. Those algorithms have been pre-programmed into the control system to automatically guide the *Robotic Movement Unit* to navigate the capsule. The capsule is moved in translational and rotational direction to capture the gastric images until the full gastric coverage is achieved when the *Robotic Movement Unit* stop.



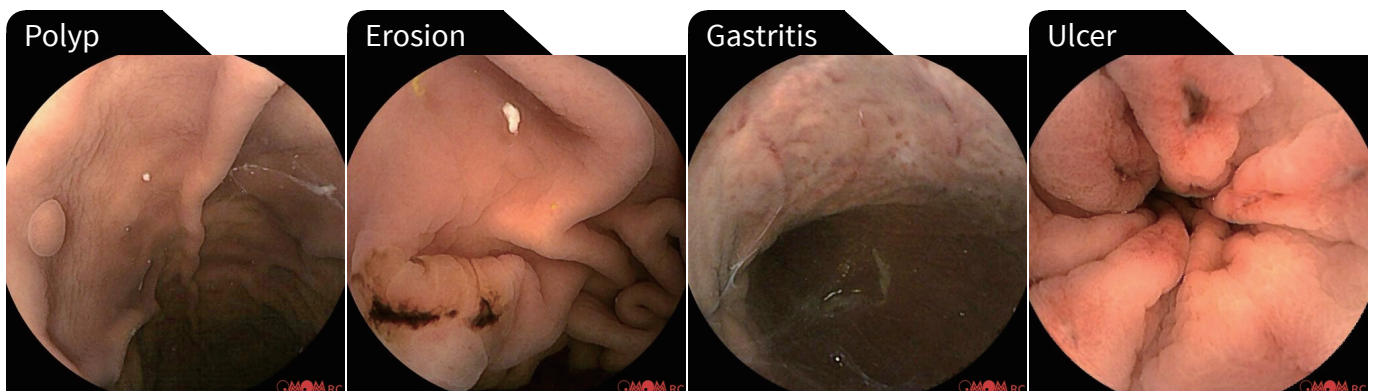
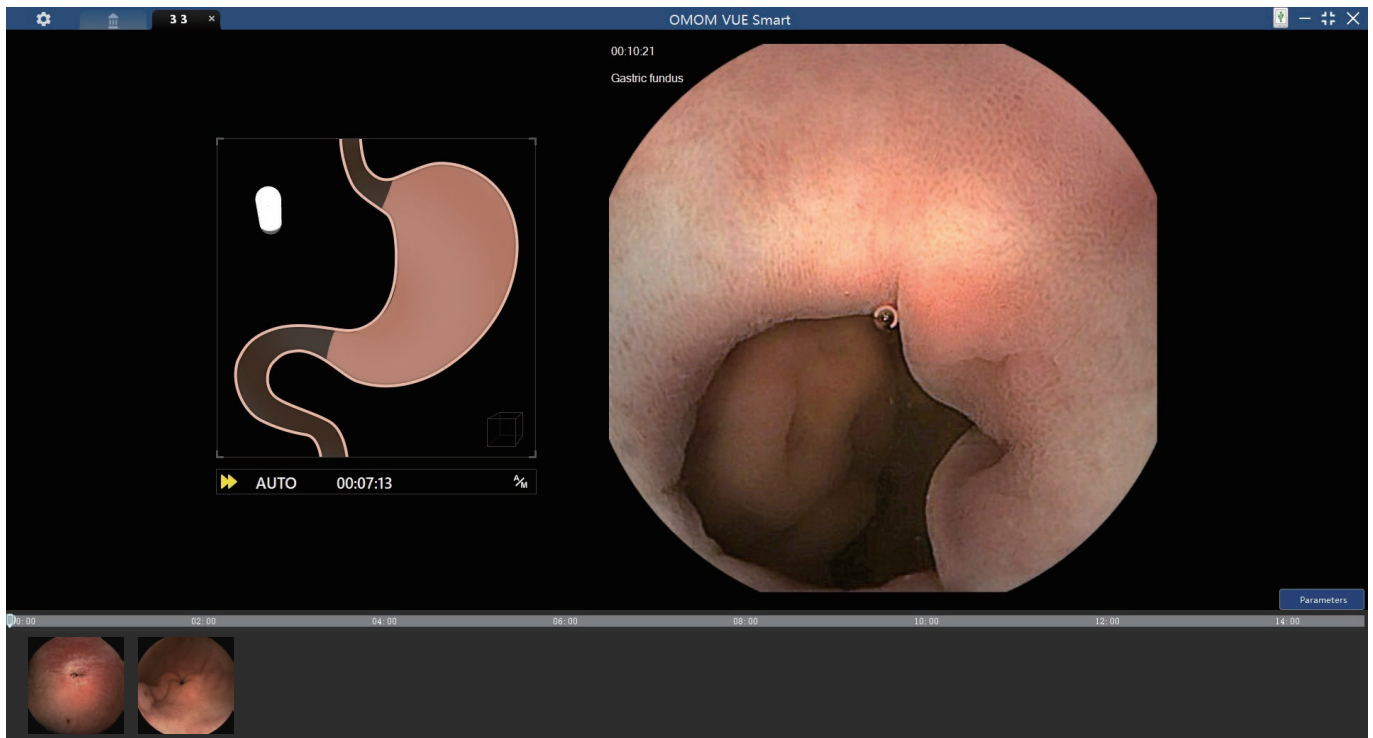
All six gastric anatomical landmarks, cardia, fundus, body, angulus, antrum and pylorus, are covered. It takes about 12 minutes to complete the gastric examination.



# Industry-leading Features

## VUE Smart Assisted Diagnosis

During a gastric examination, eight types of focal lesions (gastritis, polyps, tumors, ulcers, erosions, xanthomas, telangiectasia and diverticulum) can be detected and tagged with real-time display. In addition, intelligent abnormality detection assists in quick and accurate diagnosis.



## Optional Application

OMOM® RC is also equipped with optional module featuring *Remote Control* and *Cloud Reporting*.






*Remote Control*  
5G module is optional for *Robotic Movement Unit* to realize remote control.






*Cloud Case Reading.*  
Cloud data center will be offered to provide the case report as value-added service.

# Procedure Steps




## Step 1 : Preparation

-  Patient drinks 1 liter of water.
-  Wear antenna belt with recorder.
-  Ingest the capsule and lay flat on the examination bed.

## Step 2 : Inspection

-  Doctor presses 'AUTO' button on the console for automatic gastric examination.
-  Real-time monitoring with pathological descriptions.
-  *Robotic Movement Unit* stops automatically when completing visualization of stomach.

## Step 3 : Report

-  Data download.
-  *VUE Smart* assisted reading.
-  Generate the report.

# Specifications

## Robotic Movement Unit



Weight: 570kg  
Dimension: 210\*160\*185cm  
Installation Space: 3.5 m\*2.0 m\*2.5m  
Magnet Rotation Scope: 0-360°  
Upper Magnet Field Intensity ≤ 400mT  
Lower Magnet Field Intensity ≤ 100mT  
Intensity Scope: 0-350mm

## Control Console



Weight: 80kg  
Dimension: 75\*60\*135cm  
Screen Size: 24 inch  
System: win10  
RAM: 16 GB

## Robotic Capsule



Dimension: 30\*11.5mm  
Weight: 5g  
Battery Life:  
-Model RC12: 4 hours (for gastric only);  
-Model RC22: 12 hours (for gastric+small bowel)  
View Angle: 172°  
Definition: 512\*512 pix  
Depth-of-field: 0-50mm  
Frame: 2-10 fps

## Recording Unit



Recorder Dimension: 131\*80\*36mm  
Working Capacity: 14 hours  
Electricity: 9000mAh  
Storage: 8 GB



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