



Rail Surface Defects Inspection System

Inspection System ECT-1000

Efficient surveying, recording, and evaluation of rail Surface Defects.

Solution For Rail Defect Management



shalom엔지니어링주식회사
SHALOM ENGINEERING CO., LTD.



ECT-1000 Optimized for Surface Defect Inspection

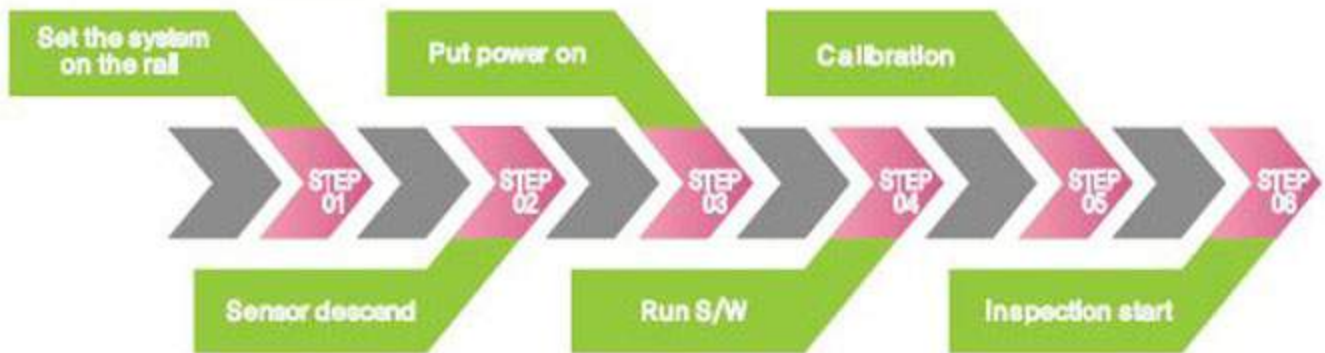
The ECT(Eddy-Current Testing) inspection system is a multi-channel plus point sensor which is less affected by noise and lift-off. Therefore, we have the detection the all sides of the rail head to detect surface defects in the rail, with an increased accuracy of defect information as a result of adopting an algorithm for estimating the defect's depth, the width and the length. It is inspection system that allow the user to easily evaluate the condition of the rail through mapping.





ECT System

Operation Process

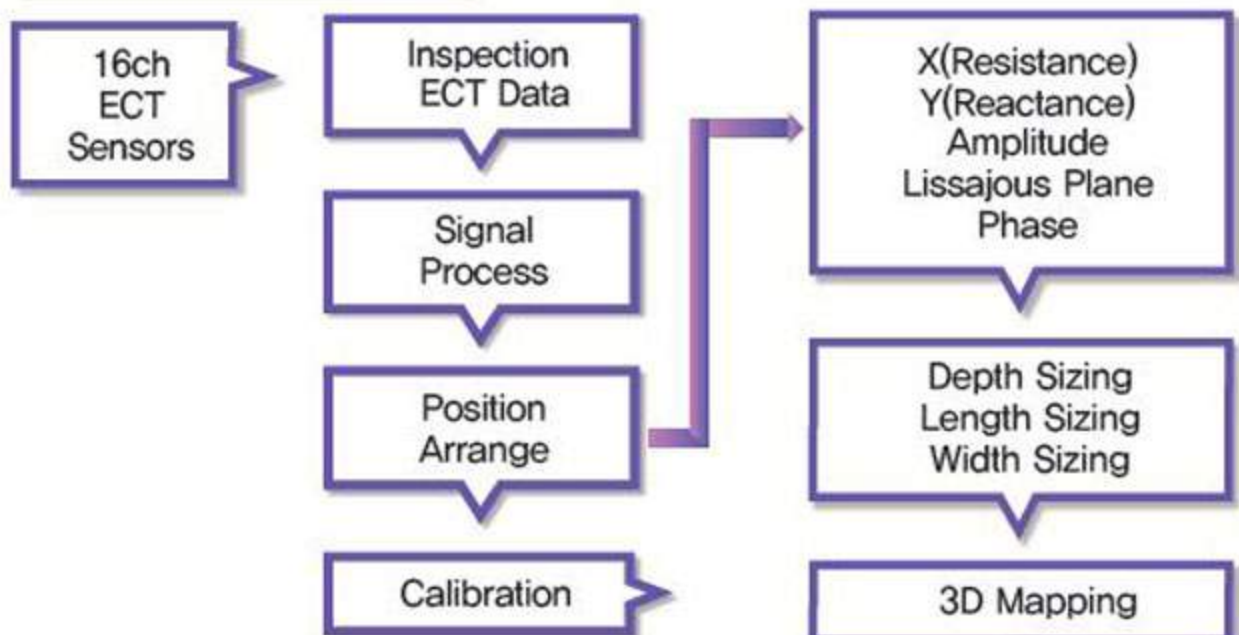


탐 상 정보 설정	
작업일시	2013년 01월 25일 01시 30분 00 초
차량번호	
노선 선택	경부선
시작위치 (km)	
방향 선택	상 선
탐상주파수	좌 측
계량 단위	UTC60
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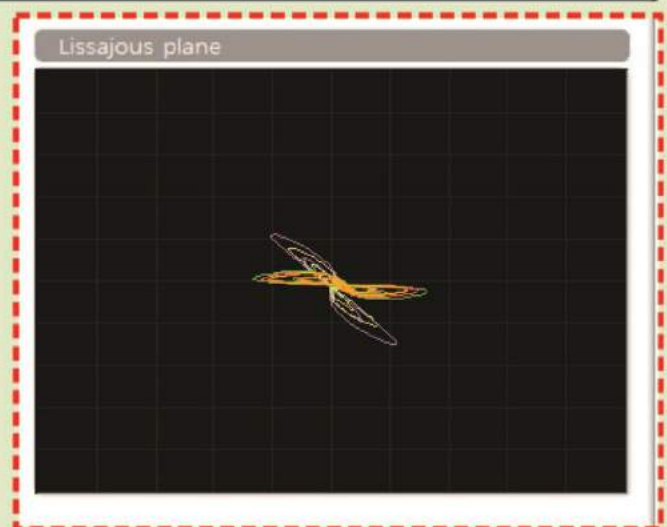
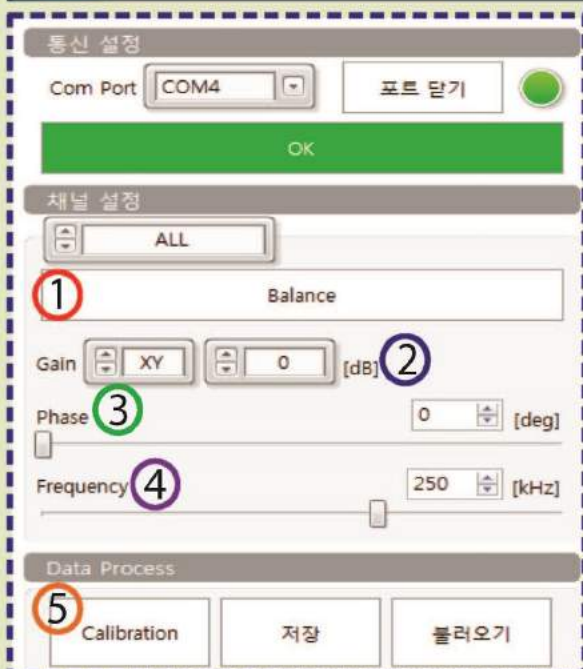
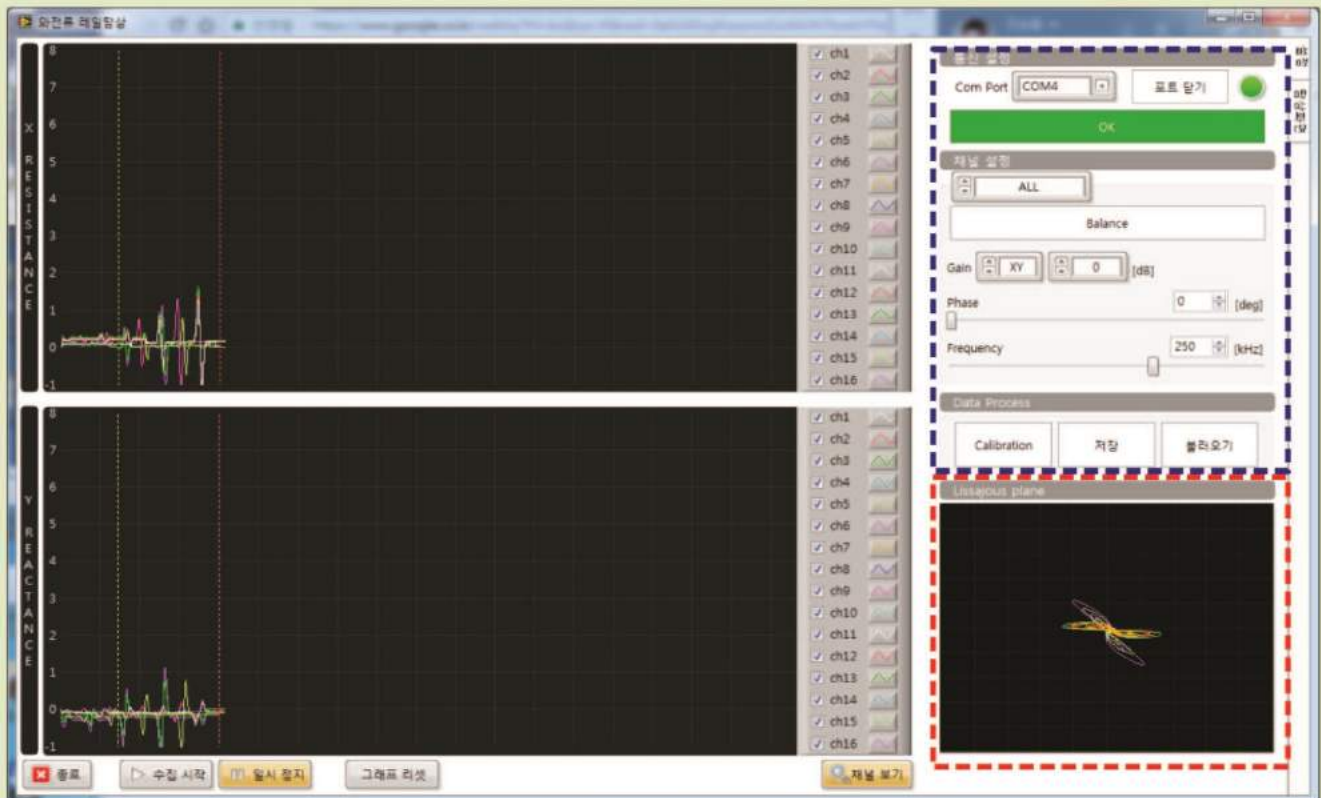
Set Inspection information

- Date
- Operator Name
- Choose Inspection line
- Starting location
- Choose Left / Right Rail
- Choose Rail type

Acquisition Process

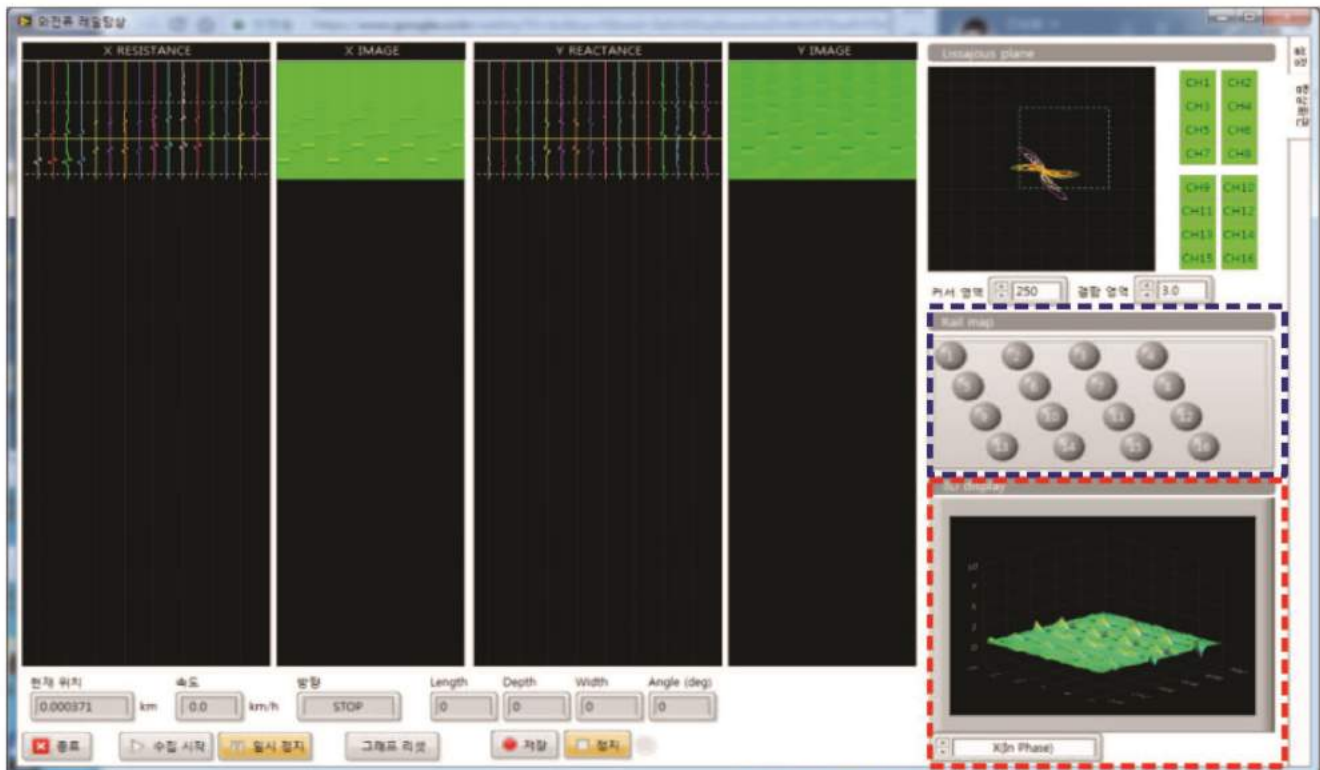


Setup View

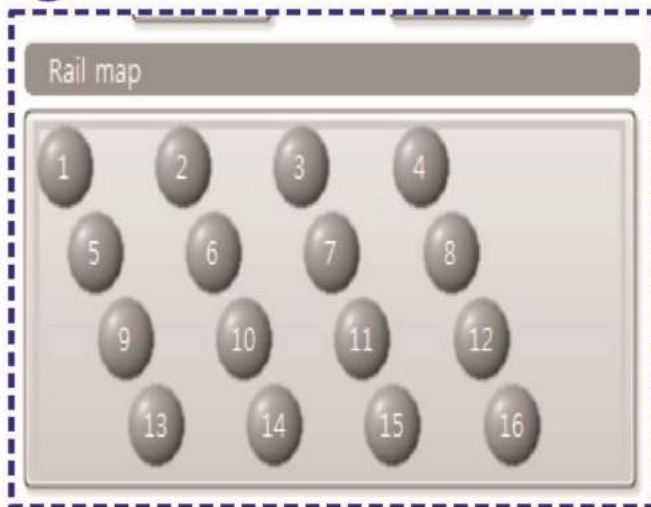


- ① Balance : Offset value remove of 16ch sensors
- ② Gain : Amplification value setting of output signal
- ③ Phase : Setting of reference phase
- ④ Frequency : Setting of reference frequency for skin depth
- ⑤ Calibration : Adjusting the reference point for accurate measurement of the test object

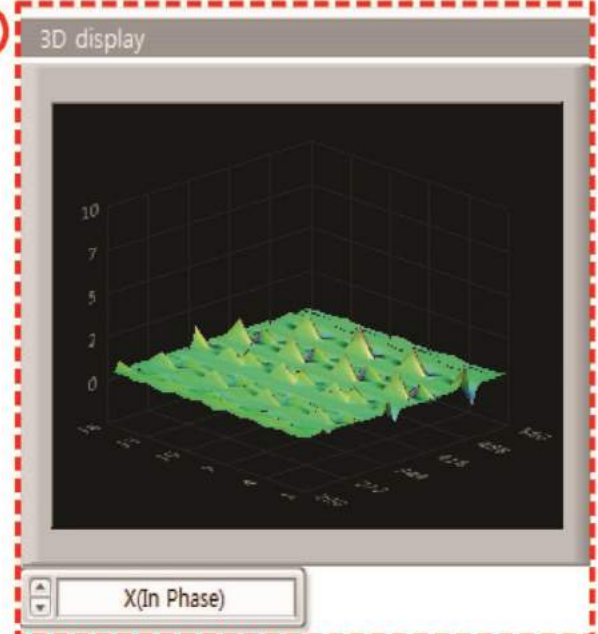
Inspection View



①



②

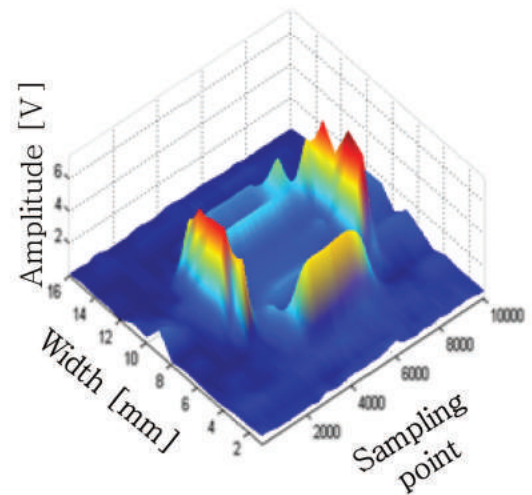
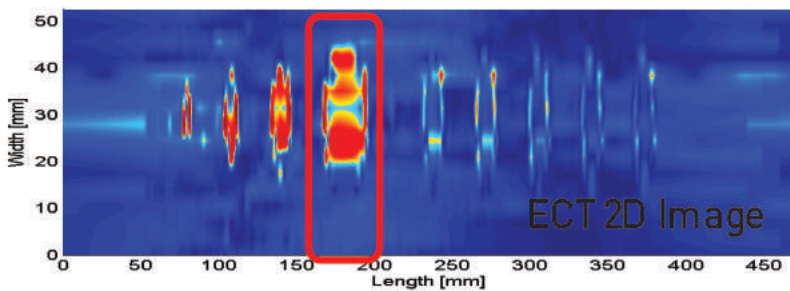
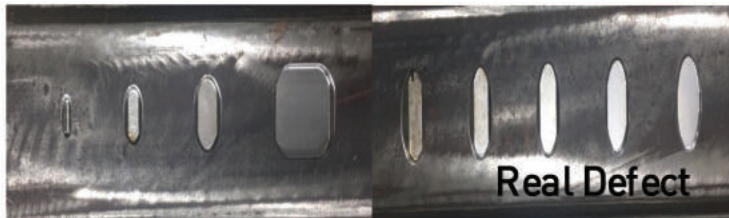


- ① Sensor alarm : When the sensor passing the defect during the rail inspection, the sensor number alarm that detected the defect in the rail map is operating.
- ② 3D mapping : When a defect is detected, the user can set the gate position and confirm the defect information(position and shape etc..) as a 3D image.

Experimental

Artificial Defects

Squats



ECT 3D Image

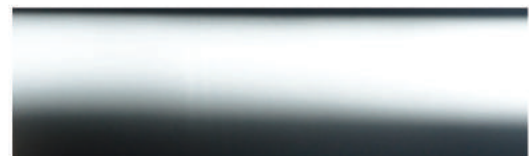
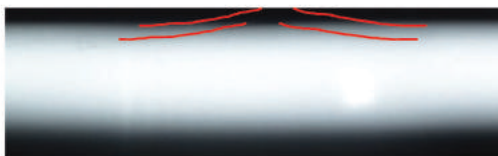
Real Defects

Head Check

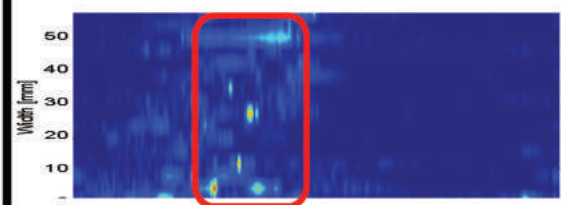
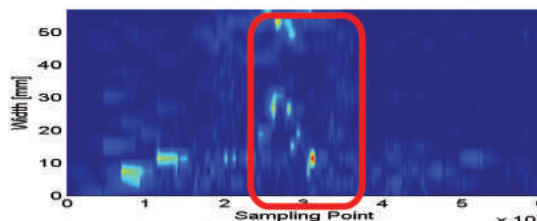
Real Defect



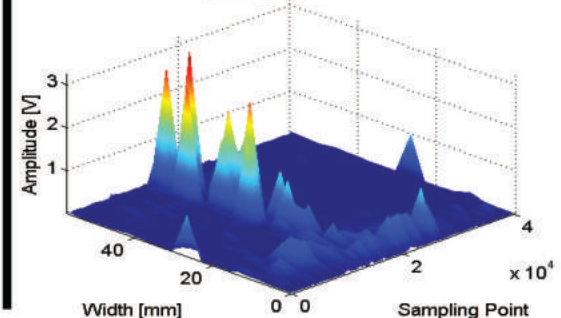
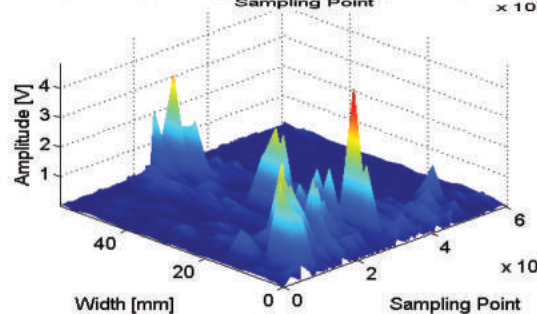
Radiographic Inspection



ECT 2D Image



ECT 3D Image

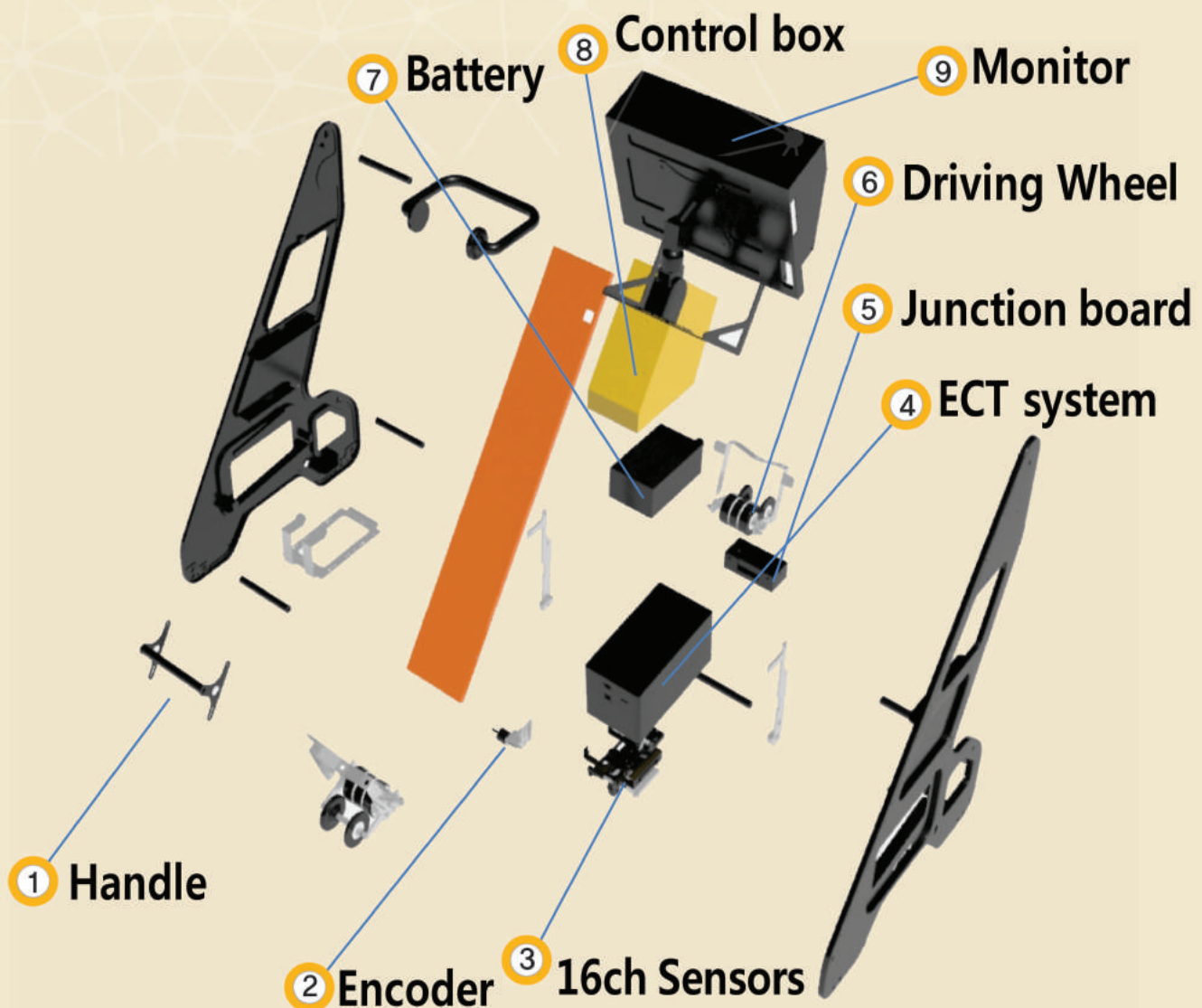


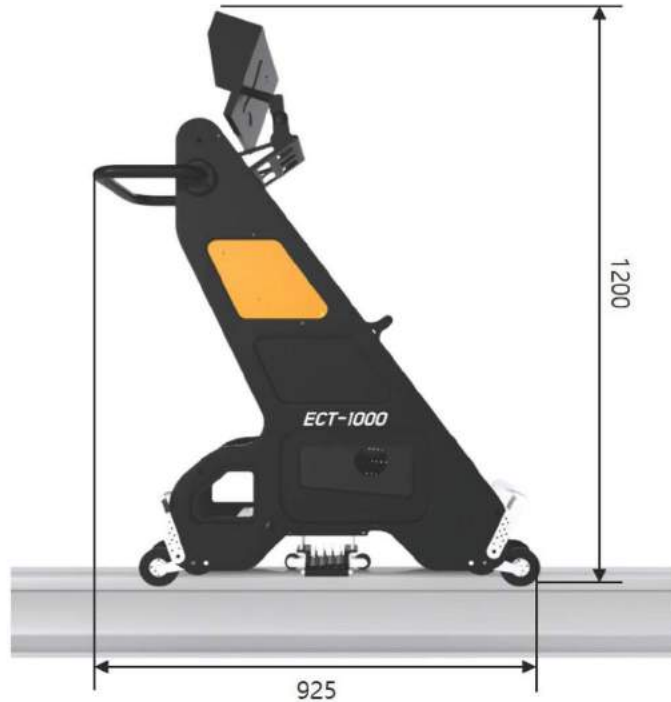
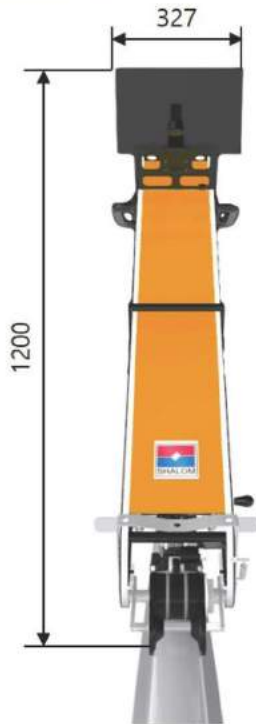


Feature Include

- Easy to inspect rail surface defects
- Excellent Accuracy of Defect Detection
- Possible to confirm shape and position of real-time defects
- Possible to calculations depth, Length and width of defects
- 3D mapping to information of defect

ECT-1000 Components





ECT-1000 Specifications

Housing	
Overall dimensions(W x H x D)	848mm x 327mm x 1200mm
Weight	19.8kg(without battery and water)
Data Storage	
Storage devices	SSD(Solid State Drive)
Storage size	256GB
I/O Ports	
USB ports	2 USB ports , compliant with USB 3.0 & 2.0
Audio alarm	Yes
Video output	Video out(HDMI)
Sensors	
Channel	64ch(32ch x 2)
Operation	
Water Tank	11L
Operation Time	4~5hours
Audio alarm	Yes
Power output line	DC 12V
Display	
Display size	25.6cm(10.1 in.)
Resolution	1280 pixels x 800 pixels