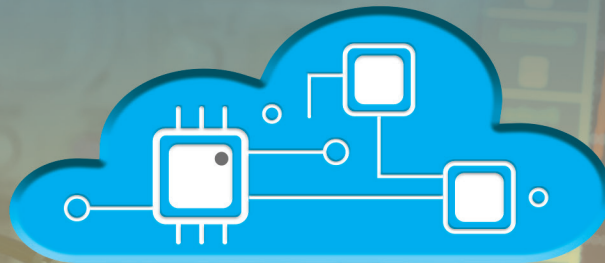


LAB ON THE CLOUD

Quick start guide



LAB on the
CLOUD



renesas.com/labonthecloud

LAB ON THE CLOUD – 24/7 ONLINE TEST LAB

- Lab on the Cloud is a unique platform where users can remotely evaluate solutions online.
- Renesas evaluation kits and solutions are accessible 24/7, even for designers in remote locations.
- Solution boards, oscilloscopes, power sources and power meters are connected over the cloud and can be monitored through live video streaming direct from the lab.
- The lab is fully autonomous. Users can test these boards, control the equipment through an intuitive web graphical user interface (GUI).
- Supported mass market applications include cloud-based solutions, low power Bluetooth™, motor drives, electric vehicle systems, advanced face, object, and voice recognition, and voice authentication systems.

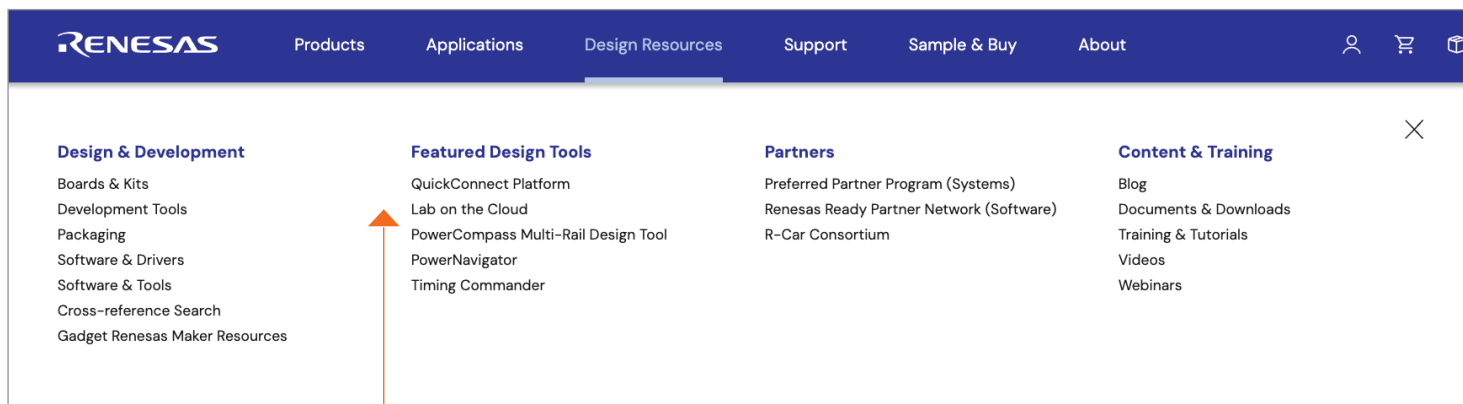
LAB ON THE CLOUD ADVANTAGES

- Optimizes the design process
- Shortens time to market
- Reduces design risk
- Boosts designers' confidence
- Free tool with no subscription required to access Renesas boards
- Intuitive Web GUI
- Access to documents and videos through the library
- Request samples via Lab on the Cloud
- Directly ask queries from board designers using the discussion forum

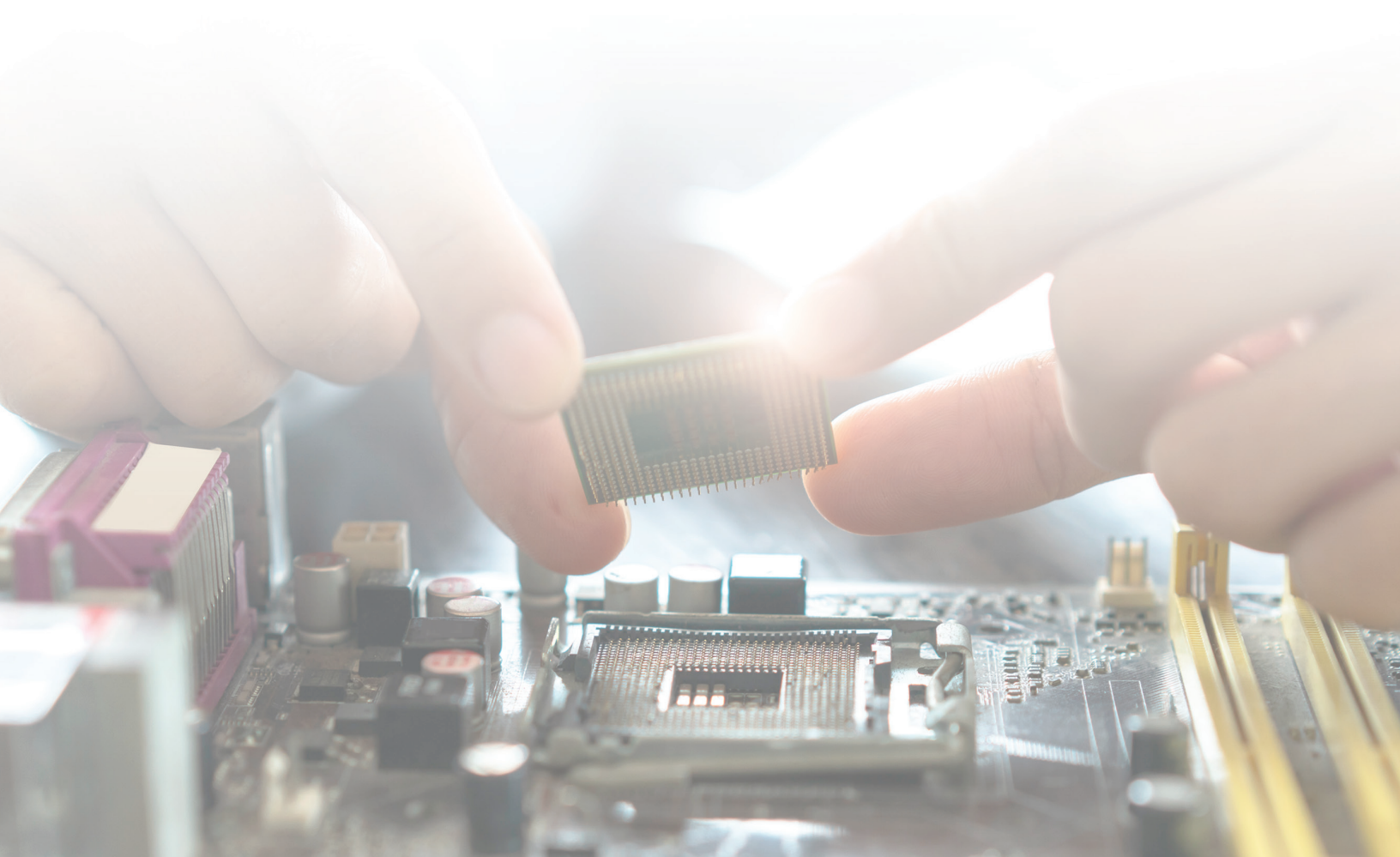


GETTING STARTED

Lab on the Cloud is a Renesas design tool found under Design Resources



Click on Lab on the Cloud link to reach to the Lab on the cloud landing page.



LANDING PAGE

Description about Lab On the Cloud

RENEASAS

ProductsApplicationsDesign ResourcesSupportSample & BuyAbout

Design Resources / Featured Design Tools / Lab on the Cloud


Lab on the Cloud

VideosQuick Start GuideFind a Lab

Cloud-based Remote Testing to Perform Real-time Hardware Evaluations Anytime, Anywhere

Lab on the Cloud (LoC) is a cloud-based remote testing platform that allows you to perform real-time hardware evaluations anytime, anywhere. By removing the limitations of physical lab access and expensive test setups, LoC enables faster and more efficient semiconductor validation. With over 60 labs tailored for a variety of applications, including motor control, electric vehicles, air quality monitoring, and AI recognition technologies you can evaluate both system and component-level performance with ease.

Lab on the Cloud: Save time and jump start your design online



Can also view labs by application and product category

Lab on the Cloud

OverviewQuick Start GuideFind a Lab

Find a Lab

Explore our vast array of labs. Search by keyword or filter by application or product category to get started.

Refine

77 Labs Found

Application Category

Artificial Intelligence (AI)9

Automotive6

Communications Infrastructure7

Consumer Electronics10

FPGA Designs1

Industrial44

Security1

Product Category

Infotainment Systems

Low-Cost TFT Instrument Cluster with Telematics

This demo is a ready-to-use reference design for advanced instrument clusters with an optional connectivity board. Compact...

Design Resource: AIC-V2

Vehicle Control Systems

Telematics Gateway

The Telematics Gateway combines the Vehicle Control Unit and Wireless Communication Unit reference designs to demonstrate...

Design Resource: AS260-VCU-V1

Vehicle Control Systems

Telematics Gateway

The Telematics Gateway combines the Vehicle Control Unit and Wireless Communication Unit reference designs to demonstrate...

Design Resource: AS049-I-REIN-WCU-V1

Motor Drives & Robotics

HVPAK DC Motor Driver Pmod

This board, featuring a highly integrated HVPAK programmable mixed-signal matrix IC and a power monitor for protection...

Design Resource: AS025-HVPAK

List of Labs to choose from


Click on the Lab to go to the Lab page

Click to view the board associated with the lab

Lab on the Cloud

OverviewQuick Start GuideFind a Lab

Click to view the Quick Start Guide



Discover step-by-step instructions and insightful tips that will seamlessly guide you through Lab on the Cloud.

Download

LOGIN & ACCESS

Low-Cost TFT Instrument Cluster with Telematics

Enter communication mail ID

PLEASE ENTER YOUR EMAIL *

hello@reallygreatsite.com

☐ By clicking the 'Trial Access Lab' button below, you're agreeing to Renesas' [Privacy Policy](#) and [Terms of Use](#) as the Lab on the Cloud tool will store certain sensitive user data about your session.

Trial Access Lab **Sign Up**

Click to access Trial lab (Limited Features)

Click to login/sign up (Full access of Features)

Log In

Email address *

Password *

Success!

Log In

[Forgot password?](#)

[Need Help Logging In?](#)

User Account Benefits

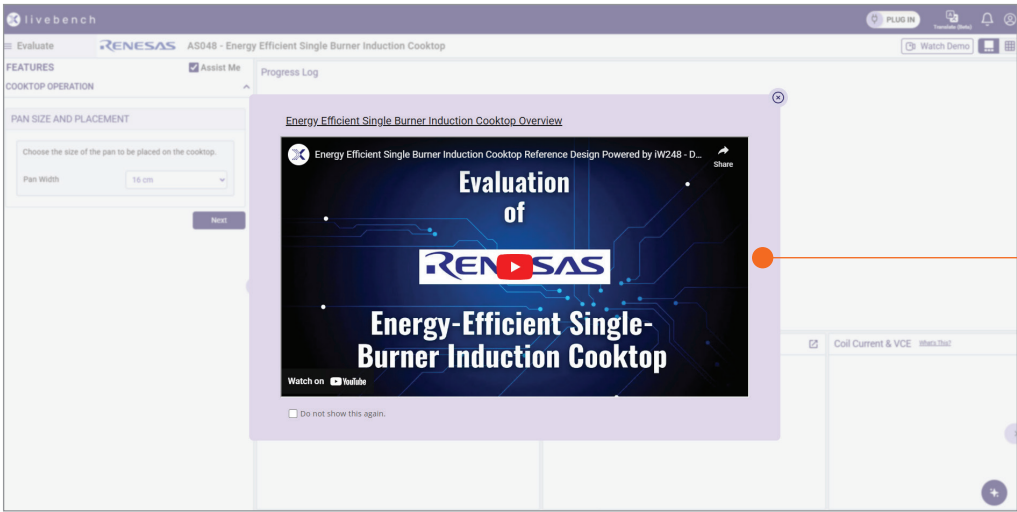
Register to unlock additional resources and functionality:

- Buy Renesas products and tools
- Submit sample requests
- Get online technical support from the Renesas Engineering Community
- Access secured content
- Get document update notifications
- Pre-fill form fields

Register Now

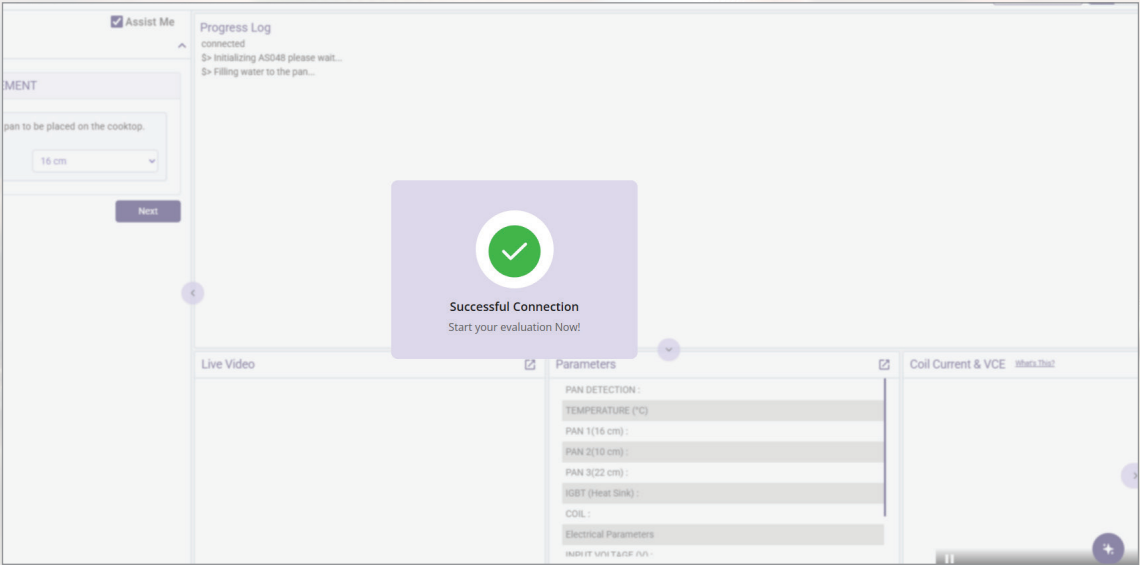
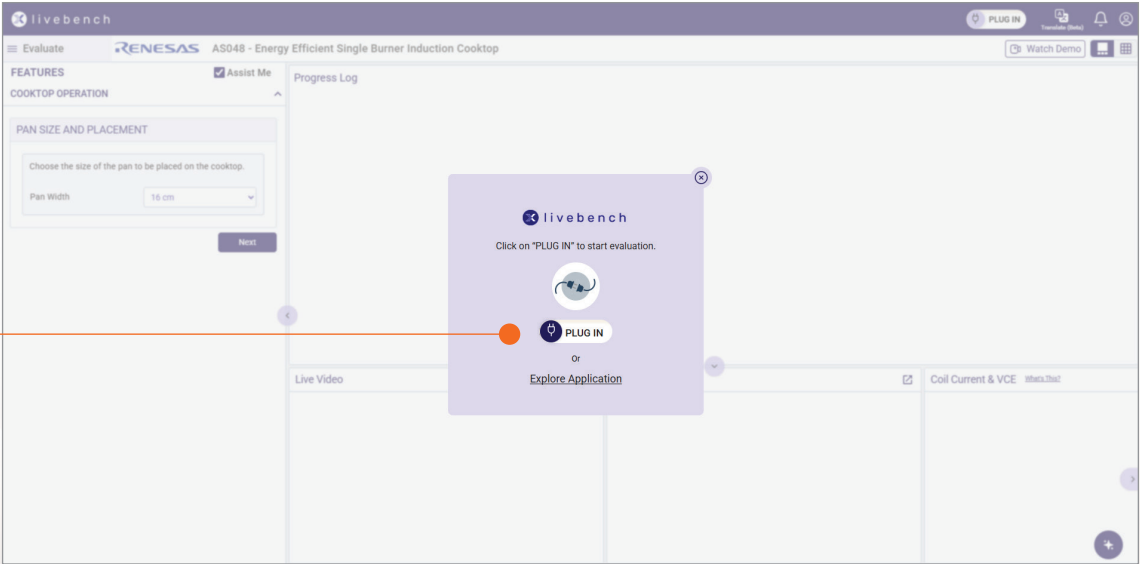
Register with MyRenesas if you are a new user

CONNECT TO LAB



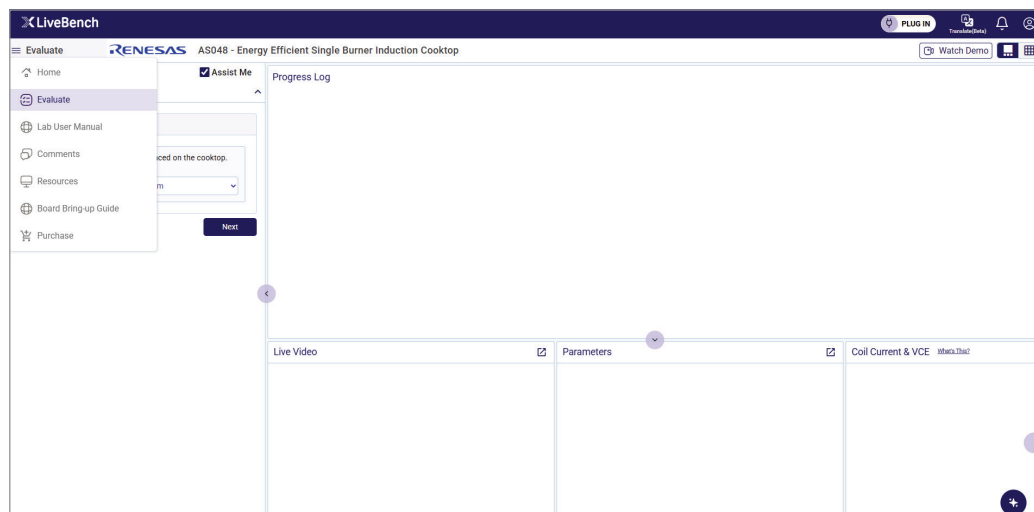
Click to view demo video

Click "Plug In" to connect with the lab



USER MANUAL

Lab user manual



Energy-Efficient Single-Burner Induction Cooktop

PAGE CONTENTS

- > Energy-Efficient Single-Burner Indu...
- > Introduction
- > Lab Setup
- > Block Diagram
- > LiveBench Evaluation Process
- > Inputs
- > Useful Links and References

This information should help you get started with the evaluation process. The following are covered in this section.

- Introduction
- UI and sequence of the steps to be followed.
- Configurable parameters and their definitions.
- Outputs that can be monitored.

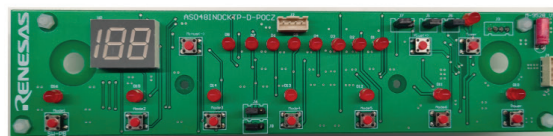
Introduction

The 2100W single plate induction cooktop design, using iW248 single chip ASSP offers a high efficiency and high reliability performance.

The design gives the flexibility to adjust the power in +/-10W steps, which allows the users to cook at simmering condition. The RL78/G15

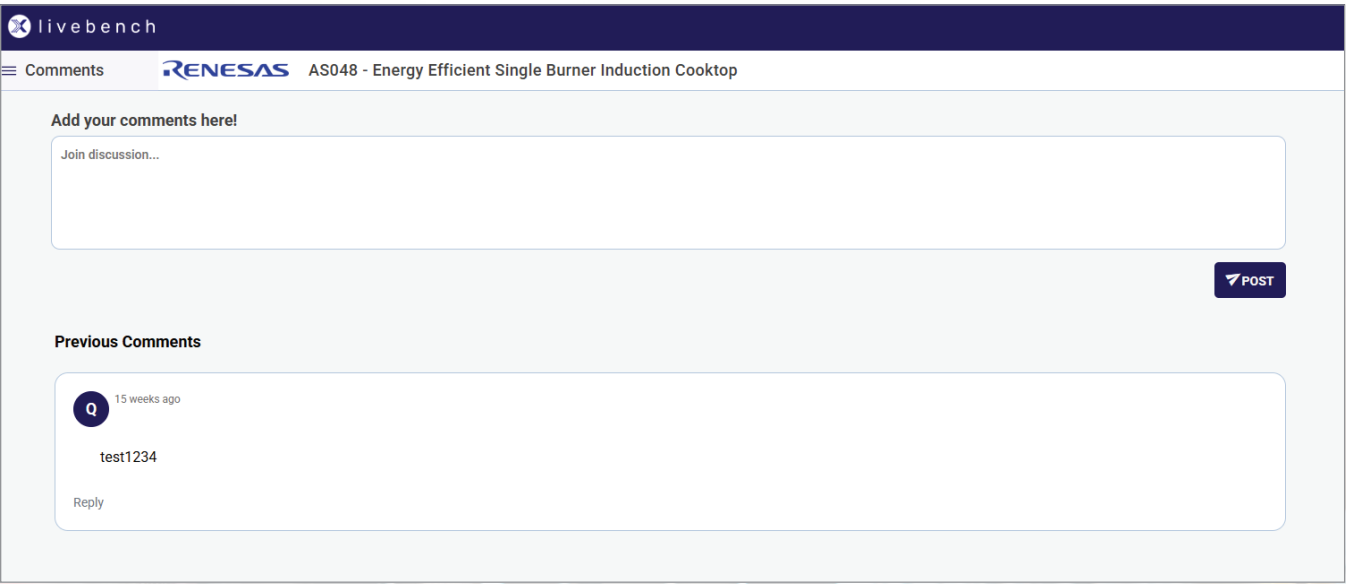
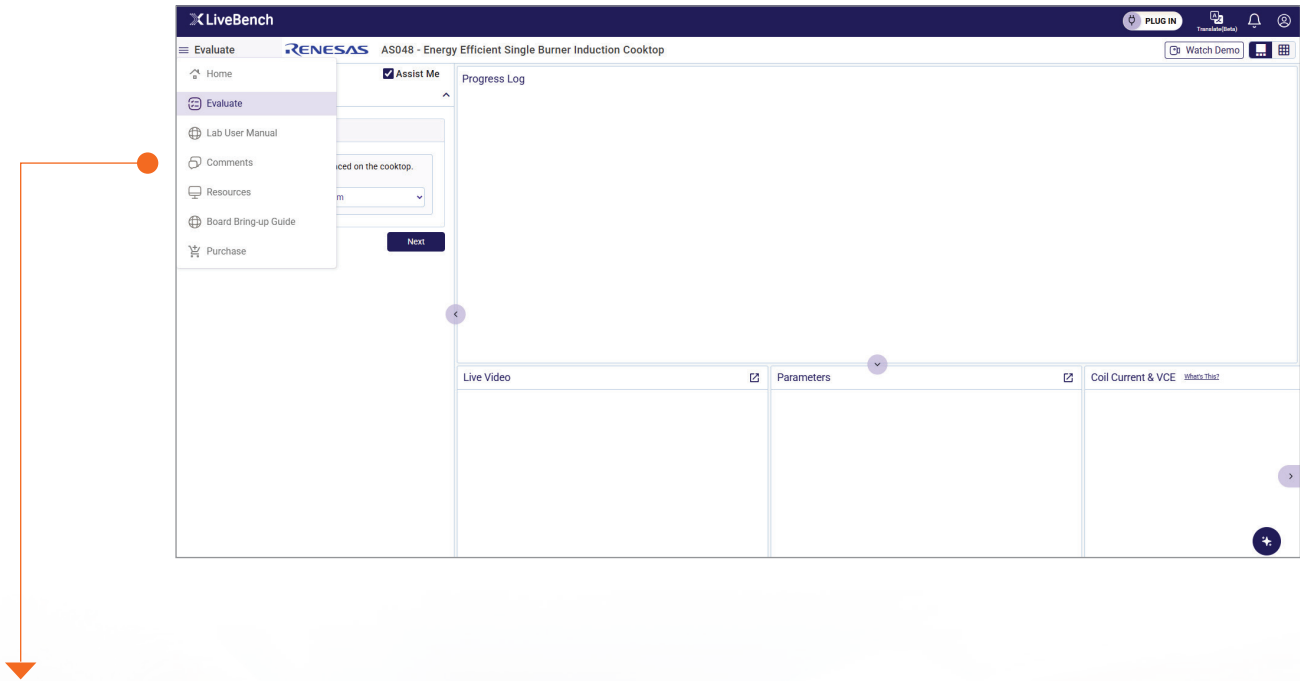
based HMI card offers low pin count, multiple matrix switch, LED Indication, and 7-Segment display. Over temperature detection

using three NTCs are provided in the ASSP.



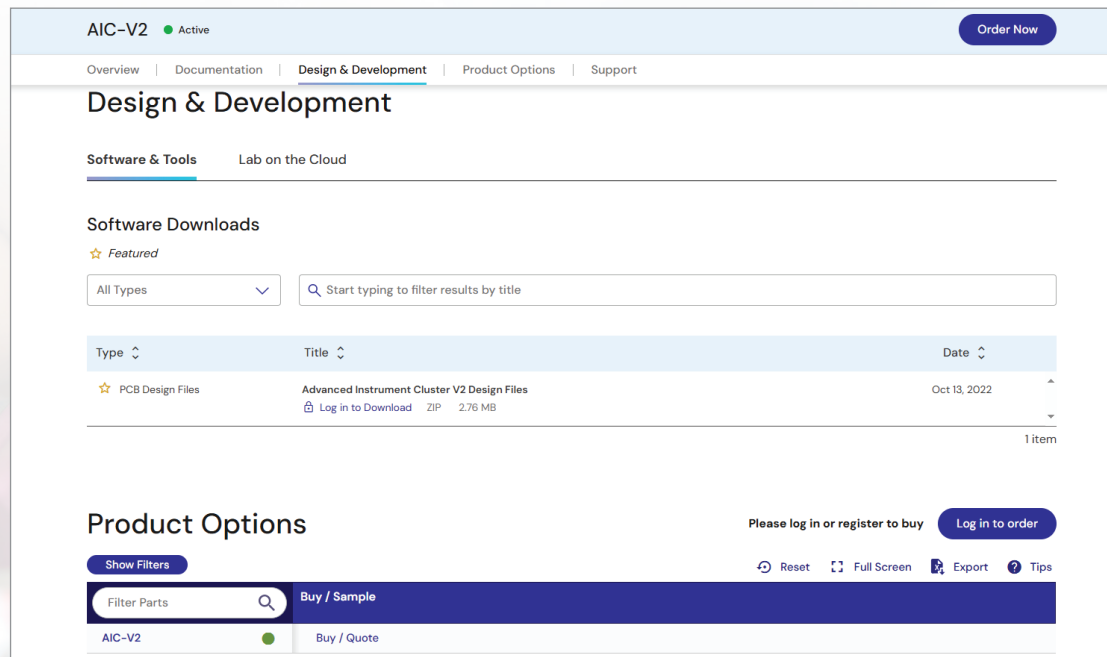
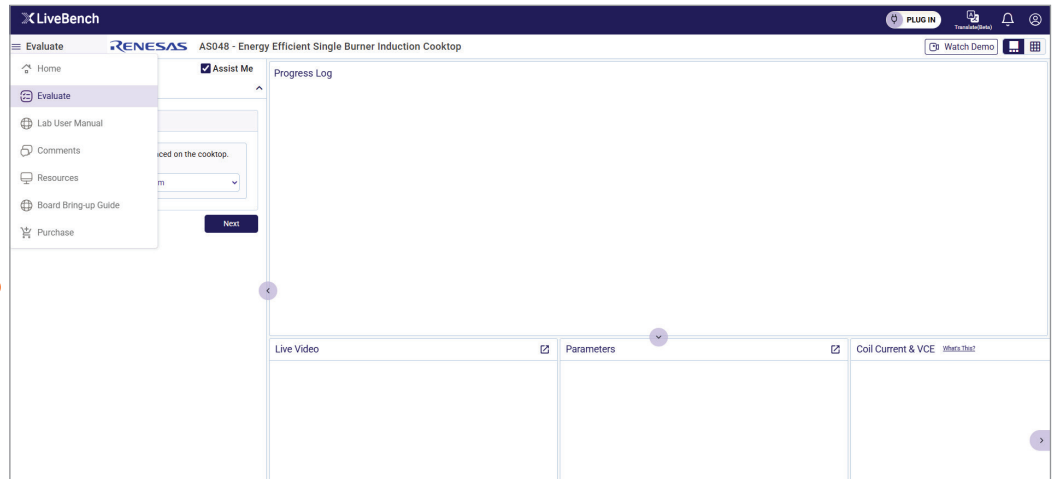
COMMENTS SECTION

Users can post their feedback and queries, that can be addressed by the experts



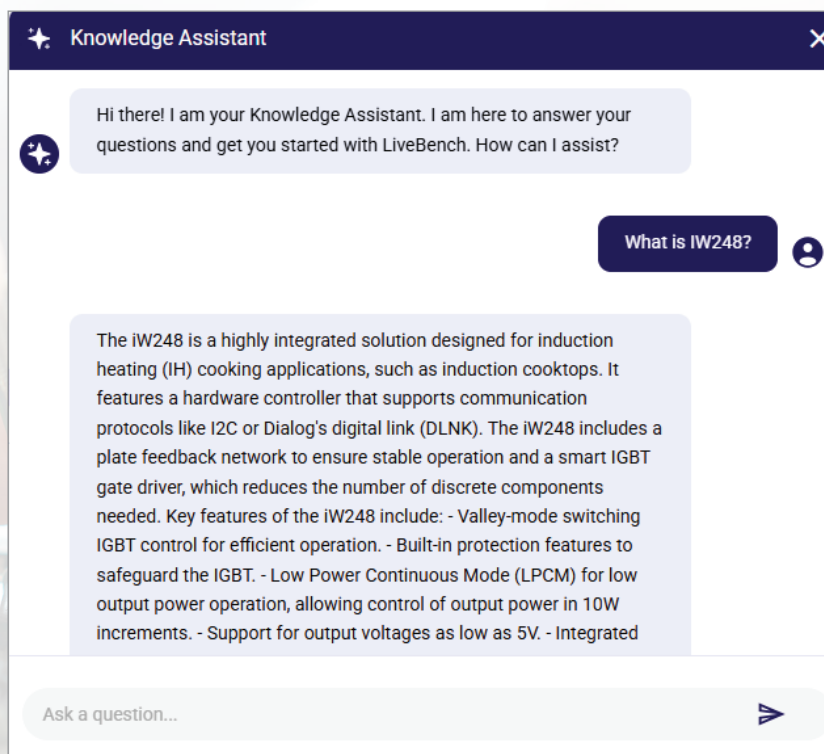
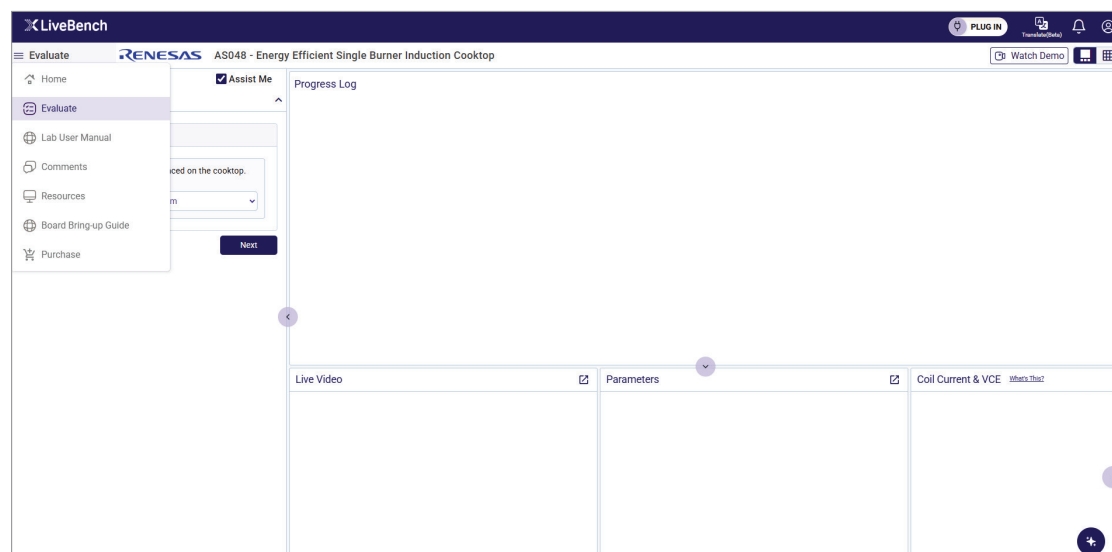
PURCHASE

Users can purchase boards, sample devices, and request quotes for higher volumes



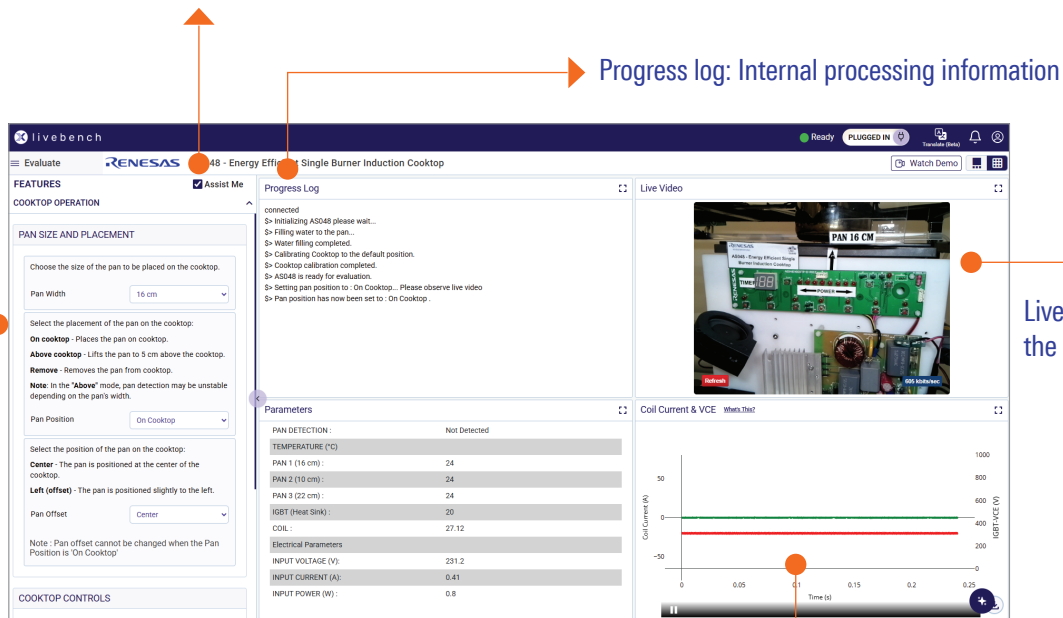
AI KNOWLEDGE ASSISTANT

An AI-powered knowledge assistant helps users find part information and documentation (available in select labs)



TEST & EVALUATE

Provides explanation for each feature that can be set by users

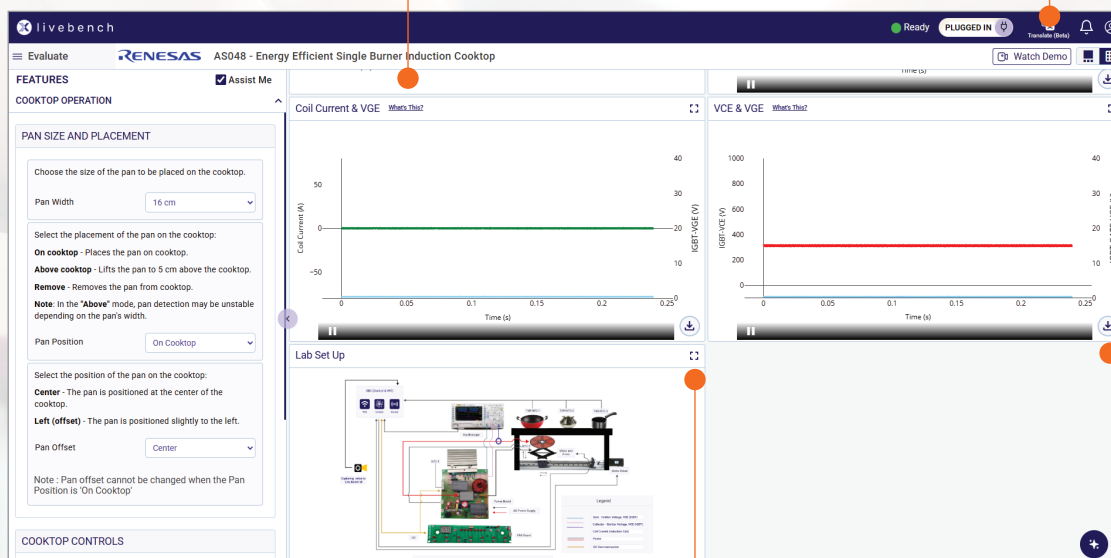


Control panel for users to send command

Data output can be viewed in the form of waveforms

The lab is now available in multiple languages

What's This: Helps understanding a specific waveform for better analysis



Download the plot in a .csv format

Easy access to understand the lab setup

Flexibility is provided to enlarge the tabs

LABS TO EXPLORE 1: ENERGY-EFFICIENT SINGLE-BURNER INDUCTION COOKTOP

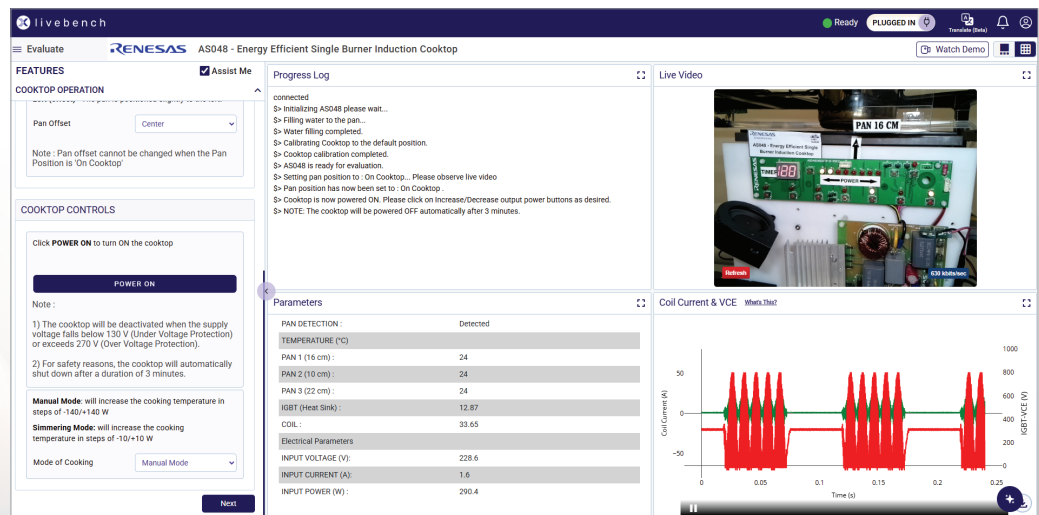
In this demo, users can test features like 200W to 1500W power control, and they can also test the power variation in ± 10 W steps, which allow the users to cook at the simmering condition.

Features:

- Evaluate board with live power supply and load system
- Select among three pan sizes and position the cooktop accordingly
- Evaluate board with live power supply and load system.
- Select among 3 pan sizes and position the cooktop accordingly
- Toggle cooktop power
- Choose cooking mode: manual or simmering
- Adjust temperature by varying wattage
- Demonstrate under/over voltage protection



Click to access the lab



LABS TO EXPLORE 2: LOW-COST TFT INSTRUMENT CLUSTER WITH TELEMATICS

This demo is a ready-to-use reference designs for advanced instrument clusters with an optional connectivity board. Compact and realistic form factor with classic LED tell-tale indicators.

Features:

- Evaluate the sensor settings such as speed, RPM, fuel indicator, and engine temperature.
- Evaluate the display settings to change the menu settings: bike settings, display settings, and navigation.

 Click to access the lab

AS252 - Low-cost TFT Instrument cluster with telematics

FEATURES

Dashboard Controls

Sensor Settings

Display Settings

The RPM is set on the display, observe the dial. The range is from 0 to 12000 RPM.

Revolution Per Minute (rpm)

5000

0 to 12000

Observe the fuel level in the fuel indicator. The lowest level is E and the highest level is F.

NOTE: 0% represent "EMPTY" (E) and 100% represent "FULL" (F).

Fuel Level (%)

30

0 to 100

Engine temperature is measured in percentages. Observe the colour bar at the bottom right. The range is from 0 to 100%.

Engine Temperature (%)

30

0 to 100

Ambient temperature is measured and displayed in degree Celsius. Observe the display. The range is from 0 to 60 degrees Celsius.

Ambient Temperature (Deg Celsius)

33

0 to 60

Click on the apply button to send "CAN" message.

APPLY

Progress Log

connected

S> AS252 is initializing. Please wait.

S> System is ready for evaluation.

S> Speed is set to : 120

S> RPM is set to : 5000

S> Fuel level is set to : 0

S> Engine temperature is set to : 0

S> Ambient temperature is set to : 0

S> Selected configurations are now applied, please observe the infotainment dashboard.

S> Speed is set to : 120

S> RPM is set to : 5000


S> Fuel level is set to : 50

S> Engine temperature is set to : 30

S> Ambient temperature is set to : 15

S> Selected configurations are now applied, please observe the infotainment dashboard.

Infotainment Dashboard



Lab Setup

SBC (Control & Wi-Fi)

Wi-Fi

Control

Sensor

12V Power Supply

Capturing Video to Livebench UI

CAN Message

Speed (Byte 0) = 0x78

RPM (Byte 1 and Byte 2) = 0x13 - 0x88

Fuel_Mf (Byte 3) = 0x00

Eng_Temp (Byte 4) = 0x1e

Amb_Temp (Byte 5) = 0x00

CAN Message Sent = [0x78, 0x13, 0x88, 0x00, 0x1e, 0x00, 0x00, 0x00]

Speed (Byte 0) = 0x78

RPM (Byte 1 and Byte 2) = 0x13 - 0x88

Fuel_Mf (Byte 3) = 0x00

Eng_Temp (Byte 4) = 0x1e

Amb_Temp (Byte 5) = 0x00

CAN Message Sent = [0x78, 0x13, 0x88, 0x00, 0x1e, 0x00, 0x00, 0x00]

AS252 - Low-cost TFT Instrument cluster with telematics

FEATURES

Dashboard Controls

Sensor Settings

Display Settings

Menu Level

Observe the changes in the menu level on the display.

MENU LEVEL UP

MENU LEVEL DOWN

Theme Color

Observe the change in the theme colour of the display.

THEME COLOR UP

THEME COLOR DOWN

Progress Log

S> System is ready for evaluation.

S> Speed is set to : 120

S> RPM is set to : 5000

S> Fuel level is set to : 0

S> Engine temperature is set to : 0

S> Ambient temperature is set to : 0

S> Selected configurations are now applied, please observe the infotainment dashboard.

S> Speed is set to : 120

S> RPM is set to : 5000

S> Fuel level is set to : 50

S> Engine temperature is set to : 30

S> Ambient temperature is set to : 15


S> Selected configurations are now applied, please observe the infotainment dashboard.

S> Menu Level up button clicked.

S> Theme color up button clicked.

S> Theme color up button clicked.

Infotainment Dashboard



Lab Setup

SBC (Control & Wi-Fi)

Wi-Fi

Control

Sensor

12V Power Supply

Capturing Video to Livebench UI

CAN Message

Speed (Byte 0) = 0x78

RPM (Byte 1 and Byte 2) = 0x13 - 0x88

Fuel_Mf (Byte 3) = 0x00

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CAN Message Sent = [0x78, 0x13, 0x88, 0x00, 0x1e, 0x00, 0x00, 0x00]

Speed (Byte 0) = 0x78

RPM (Byte 1 and Byte 2) = 0x13 - 0x88

Fuel_Mf (Byte 3) = 0x00

Eng_Temp (Byte 4) = 0x1e

Amb_Temp (Byte 5) = 0x00

CAN Message Sent = [0x78, 0x13, 0x88, 0x00, 0x1e, 0x00, 0x00, 0x00]

LABS TO EXPLORE 3: TELEMATICS GATEWAY

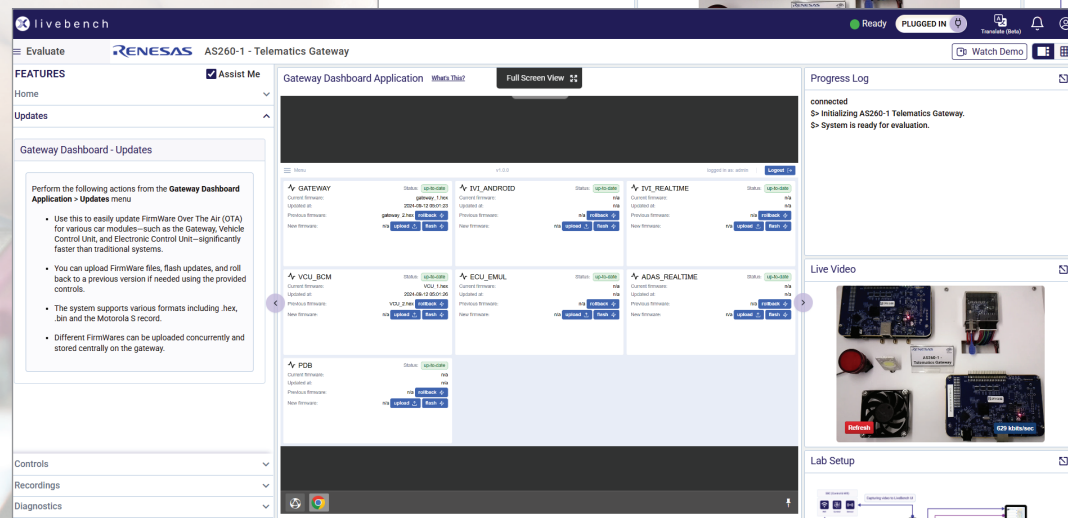
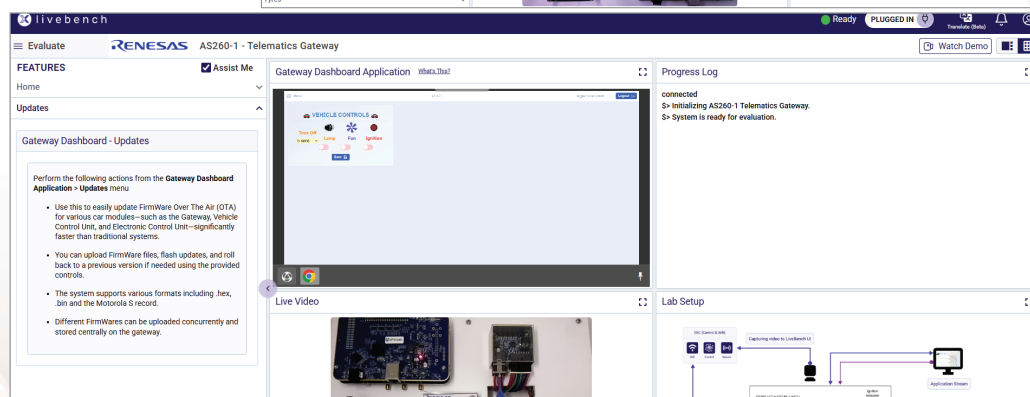
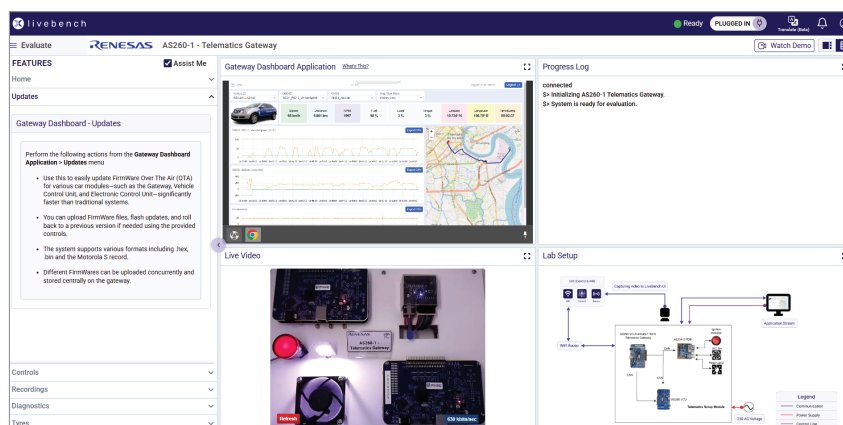
The Telematics Gateway combines the Vehicle Control Unit, and Wireless Communication Unit reference designs to demonstrate typical vehicle gateway software applications to showcase the transformation of vehicles into smarter, safer, and more connected experiences.

Features:

- Consists of a gateway dashboard application
- Emulates the functionality of a real cockpit
- Data can be downloaded in .csv format
- Remotely monitor key tire parameters: temperature and pressure
- No-wait OTA updates software in the background without disruption.

 [Click to check out the demo video](#)

 [Click to access the lab](#)



Renesas Electronics America Inc. | [renesas.com](https://www.renesas.com)
6024 Silver Creek Valley Rd, San Jose, CA 95138 | Phone: 1-888-468-3774

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