

Target Applications

HVAC systems for:

- Smart Cities

- Smart Home Industry 4.0

Smart Industry

Automated Home and Building

# **Endpoint AI-enabled Solution REALITYCHECK<sup>TM</sup> HVAC**

RealityCheck™ HVAC is an endpoint AI-enabled solution for creating smart, self-diagnosing HVAC and refrigerant systems. The solution combines machine learning and edge processing in the Renesas RA6T2 MCUs, utilizing vibration and electrical signals to allow HVAC systems to natively predict a wide range of anomalies, faults and operating conditions.

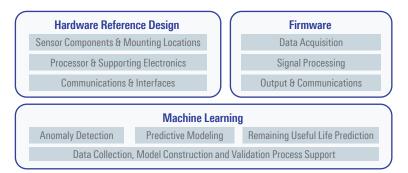
Refrigerant charge issues - undercharge / overcharge

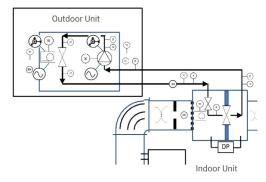
## Features/Benefits

Renesas

- Enables cost-effective service schedules and reduces emergency service calls by making the HVAC equipment self-aware:
  - Reports anomalies and service needs in advance to building managers, owners, or servicer
  - Sustainable service schedules to reduce environmental impact
  - Improves efficiency of HVAC systems
- Detects and predicts a wide range of conditions, including:
  - Blocked indoor / outdoor airflow
  - Heating / cooling capacity reduction
  - Faulty fan
  - Coil frosting
  - Faulty compressor

## Block Diagram





## Related Boards & Kits

- MCK-RA6T2 Renesas Flexible Motor Control Kit for RA6T2 MCU Group
  - <u>RTK0EMA270S00020BJ</u>



For more details, please visit: renesas.com/realityai

- Failing capacitor - Filter life prediction

Other conditions