BRAEMAC

BRAEMAC TECHNOLOGIES FOR

PORTABLE HEALTHCARE/ MEDICAL DEVICES

avalue

SILICON LABS

RECOM

Honeywell

CONTENTS

ABOUT BRAEMAC

Braemac is a global leader in the distribution of semiconductor components and electronic systems as well as value-added services. Empowering engineers and developers for over 40 years–Braemac features expert in-house engineers, extensive design-phase support, state-of-the-art distribution, value-add facilities, comprehensive supply chain solutions, and unparalleled customer service. Braemac offers solutions for diverse markets and applications, helping customers streamline development, reduce costs, accelerate time to market, and support long-term interoperability.

BRAEMAC

www.braemac.com
Contact Us

FOREWARD

HOW TO DESIGN SMARTER MEDTECH

Scalable Systems for Connected Care

The future of healthcare is no longer confined to hospital walls and waiting rooms. It's worn on wrists, embedded in patches, and carried in pockets. As patient care shifts beyond traditional settings, the demand for tech that's smaller, smarter, and more connected has never been greater. Portable and wearable solutions are no longer add-ons, they're critical components in connected care ecosystems that enable real-time data collection, faster diagnostics, and more personalized treatment.

However, designing smarter MedTech isn't just about miniaturisation. It's about building interoperable, secure systems that can adapt to different environments and scale with evolving patient needs. For developers, that means balancing strict medical standards with the flexibility and innovation required to keep pace with the future of connected care.

What is Connected Healthcare?

A connected care ecosystem breaks down silos through a wide range of capabilities:

Cloud Communications: Wearables, implants, and portable monitors transmit real-time data to secure cloud platforms for analysis and storage.

Cross-System Interoperability: Electronic health records (EHRs), remote monitoring platforms, and diagnostic tools seamlessly share data.

Patient-Centric Feedback Loops: Insights flow back to patients and providers through apps, dashboards, and alerts for more proactive and personalized treatment plans.

Whether it's a smart inhaler tracking usage patterns or a wearable ECG streaming data to a cardiologist, connected healthcare is the foundation for scalable, intelligent MedTech.

FOREWORD CONTINUED

Where Does Smart MedTech Fit In?

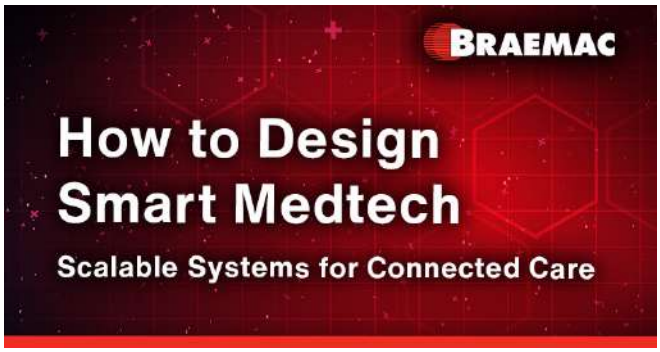
Smart MedTech refers to medical devices and systems that combine portability, real-time data intelligence, and interoperability. They're designed not only to sense and monitor, but also to integrate and learn across platforms. Portable medical solutions allow clinicians to monitor patients outside traditional settings like homes using connected sensors, mobile apps, or telehealth platforms. RPM increases access to care, supports chronic disease management, and can reduce re-admissions and healthcare costs.

Within broader connected healthcare systems, portable MedTech delivers the following advantages:

- Unifies data across patients and providers.
- Improves operational efficiency, enhances transparency, and optimizes treatment plans.
- Enables predictive analytics for early intervention.
- Supports automated treatment responses.

Designing Future-Proofed MedTech with Solutions Available at Braemac

As a distributor with over forty years of industry success, Braemac is a leader in wireless innovation. We deeply understand the nuances of developing next-generation healthcare solutions. Our comprehensive line card features best-in-class suppliers with cutting-edge components that can take smart MedTech innovations to the next level.



TECHNOLOGY 1

MEDICAL PANEL PCS AND COMMUNICATION BOARDS

Founded in 2000, Avalue Technology has delivered a broad range of smart healthcare innovations for over 25 years. Utilizing state-of-the-art tech, their portfolio streamlines clinical workflows and supports medical professionals with improved patient care capabilities.

With key medical applications in bedside entertainment, digital patient and room displays, ePaper systems, telemedicine platforms, operating room imaging, life sciences, rehabilitation tools, and AI-enabled solutions, Avalue helps providers optimize operations while elevating patient experience.

HID-2140 | 23.8" Multi-Touch Medical Panel PC

Key Features:

- Onboard 12th Gen. Intel® Core™ i Processor
- Support 1x 260 pin SO-DIMM up to 16GB DDR4 SDRAM
- Anti-Microbial finish
- 4x USB3.0, 1x RS-232/422/485, 1x RS-232, 2x Intel® Gigabit LAN
- LED reading light bar
- Front panel IP65

CLICK HERE TO LEARN MORE

RCC-ARM-HGD-02R

Pair the HID-2132 with Avalue's RCC-ARM-HGD-02R bedside monitor arm with wall-mounted integration. Designed to support panels of 15"~24", the RCC-ARM-HGD-02R delivers smooth articulation, height flexibility, and sturdy support for mid-to-large medical displays like patient panels or works stations.

CLICK HERE TO LEARN MORE

RCC-GENICART-02R

The RCC-GENICART-02R from Avalue is a height-adjustable geni-cart with a dual-power system (HA). It's a portable solution purpose-built to support connected care networks across various healthcare environments, including remote patients, hospitals, care facilities, and community clinics.

Key Features:

- Easy Cleaning & Silver-ion defence
- Award winning power solution "hot-swappable" Dual system
- Lightweight Maneuverability
- Ergonomically Designed
- Small footprint for space saving
- Heavy duty castors, all wheel braking
- Robust construction for busy environments
- Custom mount fittings and accessories
- Wireless cable management system, no trip hazards
- Height Adjustable or Fixed Height
- GeniTec Power module (IP67), for shift-to-shift use and easy cleaning

CLICK HERE TO LEARN MORE

Comprehensive Portfolio

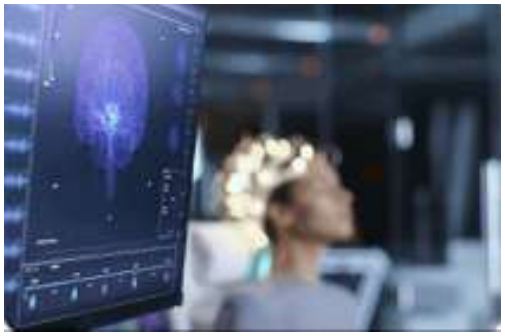
SILICON LABS

CASE STUDY

PROJECT EPIDET

At a Glance

Avalue's BGM220 Bluetooth® are purpose-built to deliver the efficiency, security, and dependability needed for battery-powered IoT devices. Powered by SiLabs' EFR32BG22 SoC, BGM220 modules provide a complete solution with upgradable software stacks, global regulatory approvals, and comprehensive development and debugging resources to speed up product deployment.



OBJECTIVE	Develop a comfortable, easy-to-wear monitoring device that provides reliable, early seizure warnings to caregivers of epilepsy patients.
SOLUTION	The EFR32BG22 was selected for Project Epidet, serving as the single-chip solution for the device. Its built-in Bluetooth® connectivity, ultra-low power consumption, compact form, and reliable performance made it ideal for continuous monitoring in a wearable format.
OUTCOME	The use of EFR32BG22 enabled the creation of a portable epilepsy-monitoring device that helps detect seizures early—providing accuracy, reliability, and peace of mind for patients, families, and healthcare professionals.

"A device like this could radically change the way we look at patients and could improve access to epilepsy management."

-- Pediatric epileptologist, Dr. Dave Clarke

CLICK HERE TO LEARN MORE

TECHNOLOGY 3

NEXT-LEVEL POWER SUPPLY

When designing for next-gen connected healthcare, power supply consideration is critical. It ensures devices run safely, reliably, and in compliance with strict medical-grade standards.

RECOM Power's medical-grade DC/DC and AC/DC power supplies are engineered to satisfy stringent regulatory standards for both hospital and non-hospital settings. Designed for cost efficiency without sacrificing quality, these converters are fully tested, certified, and ready for immediate integration into medical applications.

REM60-W Series

The REM60-W series from RECOM delivers medical-grade regulated DC/DC conversion with reinforced 5kVAC isolation for one minute and an ultra-low leakage current of just 4.5µA, making it suitable for B, BF, and CF applications.

CASE STUDY

SECURE BREATHING

OBJECTIVE	Design a compact, life-critical respirator for operating theaters and ICUs with comprehensive power redundancy—capable of running continuously from AC or DC sources and sustaining operations for up to 8 hours during outages.
SOLUTION	RECOM delivered a fully integrated power architecture featuring medically certified AC/DC and DC/DC converters, dual input support (100–240 VAC worldwide plus 12/24 VDC from external supplies or batteries), and an internal backup battery that provides eight hours of runtime and recharges within four hours, along with isolated DC/DC modules powering patient-connected sensors.
OUTCOME	The respirator achieved maximum operational safety and compliance with medical standards, ensuring uninterrupted ventilation even under power interruptions—enhancing reliability and patient protection in the most critical healthcare settings.

CLICK HERE TO LEARN MORE

Honeywell

TECHNOLOGY 4

SENSOR SOLUTIONS

Sensors are the foundation of portable MedTech, enabling real-time, accurate monitoring of vital signs while keeping devices compact, energy-efficient, and patient-friendly. By capturing and transmitting health data seamlessly, they support remote care, early detection, and more personalized treatment.

Honeywell's sensors are widely used in a variety of medical applications, including ventilators, oxygen concentrators, patient monitoring systems, and laboratory test equipment.

ABP2 Series

The ABP2 series from Honeywell is a portfolio of piezoresistive silicon pressure sensors that deliver either digital or analog outputs to measure pressure across a defined span and temperature range. Each sensor is factory-calibrated and temperature-compensated via an on-board ASIC, correcting for offset, sensitivity, non-linearity, repeatability, hysteresis, and other accuracy factors.

CLICK HERE TO LEARN MORE

EMBEDDED PRODUCTS SELECTION GUIDE – HOSPITAL

CLICK HERE TO LEARN MORE

	SENSORS											BARCODE SCAN ENGINES AND DECODING SOFTWARE		SWITCHES		
	Airflow Sensor	Force Sensor	Humidity Sensor	Optical Sensor	Pressure Sensor – Board Mount	Pressure Transducer – Heavy Duty	Sensor IC – Hall-Effect Magnetic Position	Sensor IC – Magnetoresistive	Temperature Probe (Pre-Packaged)	Thermistor or Temperature Sensor	Thermostat	Barcode Scan Engines	Barcode Decoding Software	Basic Switch	Position Switch	Pressure Switch
LABORATORY: HOSPITAL OR THIRD PARTY																
Blood Analyzer				●	●	●				●		●		●		
Chemistry Analyzer			●	●	●	●	●			●		●		●		
Chromatography Equipment	●			●	●	●	●					●		●		
Cytometry/Cellular Analysis Equipment				●	●	●				●		●		●		
Molecular Diagnostics/Polymerase Chain Reaction (PCR) Equipment				●	●	●						●		●		
Specimen Warming Incubators			●							●						
OPERATING ROOM																
Anesthesia Delivery System	●				●	●	●			●		●				
Blood Pressure Monitoring					●											
Respiratory Monitoring	●															
Surgical Instruments		●			●											
Ventilator	●		●		●	●	●			●						
PHARMACY																
Automated Medication Dispensing Cabinets							●	●				●	●			
POINT OF CARE																
Bed/Chair					●			●							●	
Dialysis Machine		●			●	●	●			●						
Infusion Pump		●			●		●	●				●				
Oxygen Concentrator	●				●	●										●
Patient Monitoring					●					●			●			
Sleep Apnea Machine	●		●		●		●		●	●						
Spirometer	●				●											
Workflow Solutions												●				
Wound Therapy					●											
WELL NEWBORN NURSERY																
Infant Incubator			●							●						

CONCLUSION

MEETING THE FUTURE OF CONNECTED HEALTHCARE DESIGN

The future of healthcare innovation relies on medical devices that are not only portable and reliable but also intelligent, interoperable, and secure. Achieving this requires a careful balance of advanced technologies like sensors that capture precise patient data, low-power wireless connectivity that ensures seamless communication, power management solutions that extend device life, and medical-grade platforms that meet the highest regulatory standards.

At Braemac, we provide the expertise and resources to turn these technologies into real-world solutions. With our ISO 14001 certification, proven design and assembly services, and deep experience across the MedTech ecosystem, we help developers create smarter connected devices that improve patient outcomes and streamline care delivery.

Make Braemac your trusted design partner.

QUESTIONS?

CONTACT BRAEMAC TODAY!

www.Braemac.com | info@braemac.com