KNOW LABS

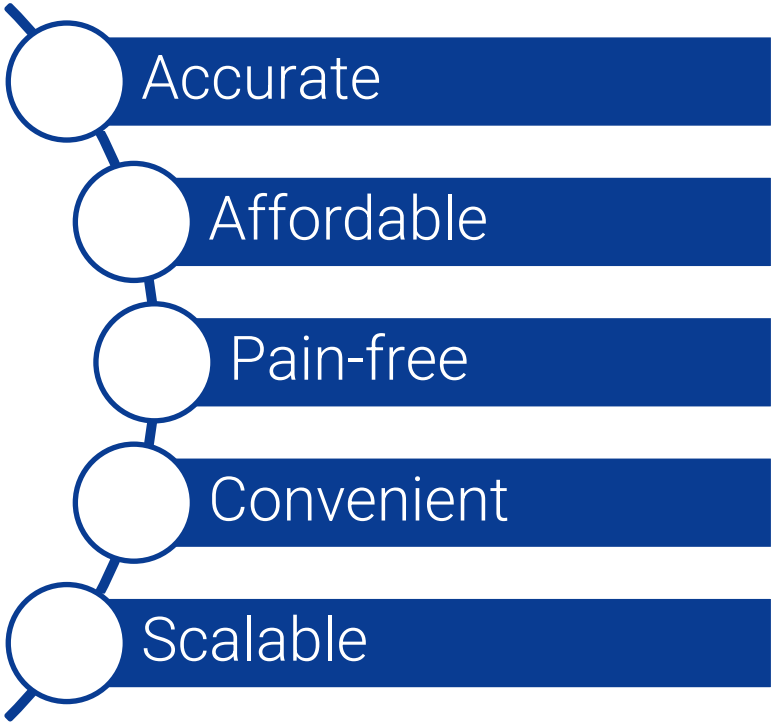
TRANSFORMING NON-INVASIVE MEDICAL DIAGNOSTICS

ATTD Tech Fair

March 7, 2024

Know Labs

We are building a **non-invasive continuous glucose** monitoring device.



KnowU™

- Dimensions (w x d x h) 47 x 76 x 20 mm
- Weight. 100 g

RF Dielectric Spectroscopy

No Needles | 100% Non-invasive

Continuous Monitoring | Real-time Data

No-Consumables | Rechargeable

Wearable | Adhesive or Strap

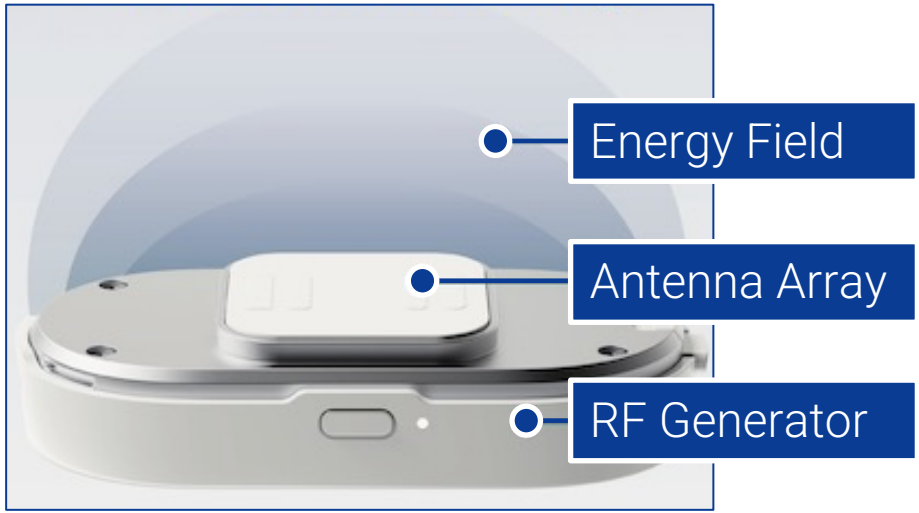
AI/ML-Powered Algorithms

100+ Potential Applications

Know Labs' Technology is in development, and there is no assurance that the development will have a successful outcome.
Past performance is not indicative of future results. There is no guarantee that any specific objective will be achieved.

RF Dielectric Sensor

IP-PROTECTED | INCLUDED IN THE KNOWU



Energy Field Dimensions at 2,500 MHz
- w x d x h: 2.54 x 2.00 x 1.27 cm
- 5.4 cm^3 of volumetric data

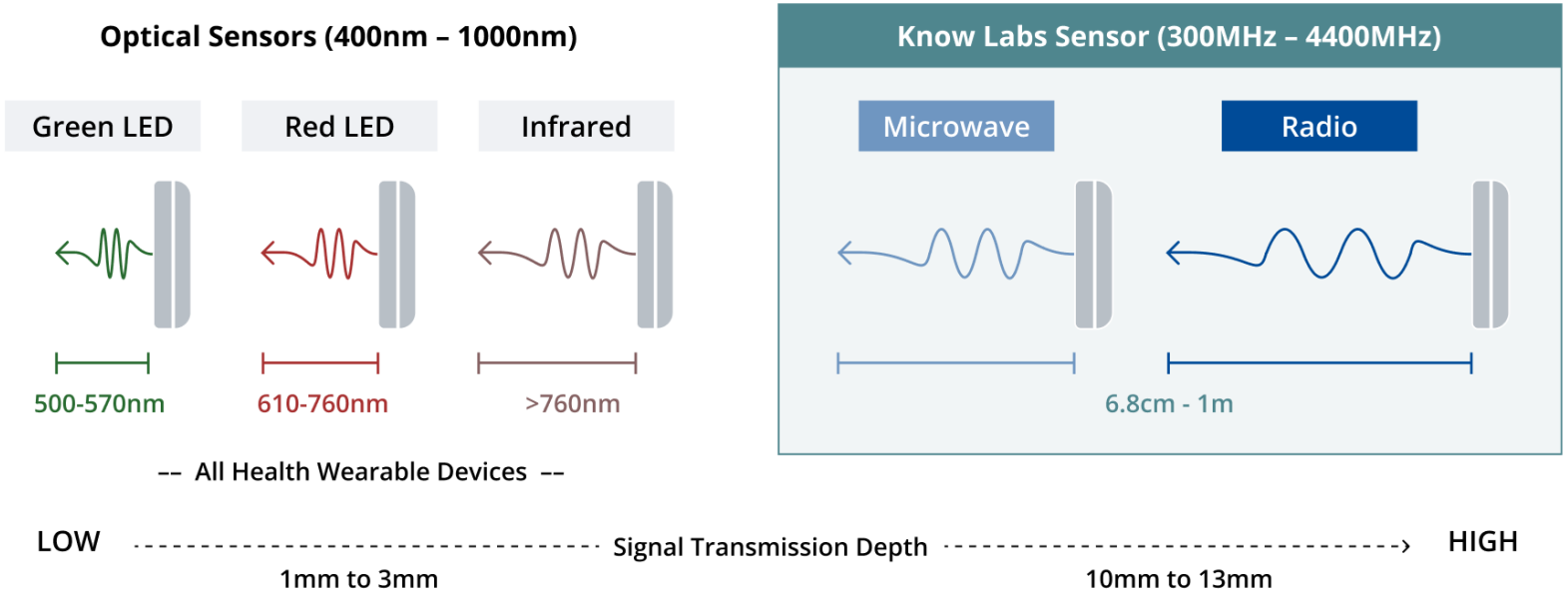
Antenna Array that emits and captures radio wave signals in the microwave spectrum and generates an **"Energy Field",** collecting "volumetric data"

RF Generator enables frequency sweeps from 300 to 4,400 MHz, at various intervals, **1.5M data points collected per hour = >400 per second**

6 Key Parameters, customizable with each sweep: power, frequency range, frequency step, dwell time, and antenna permutations = >30,000 combinations

Overcoming Limitations

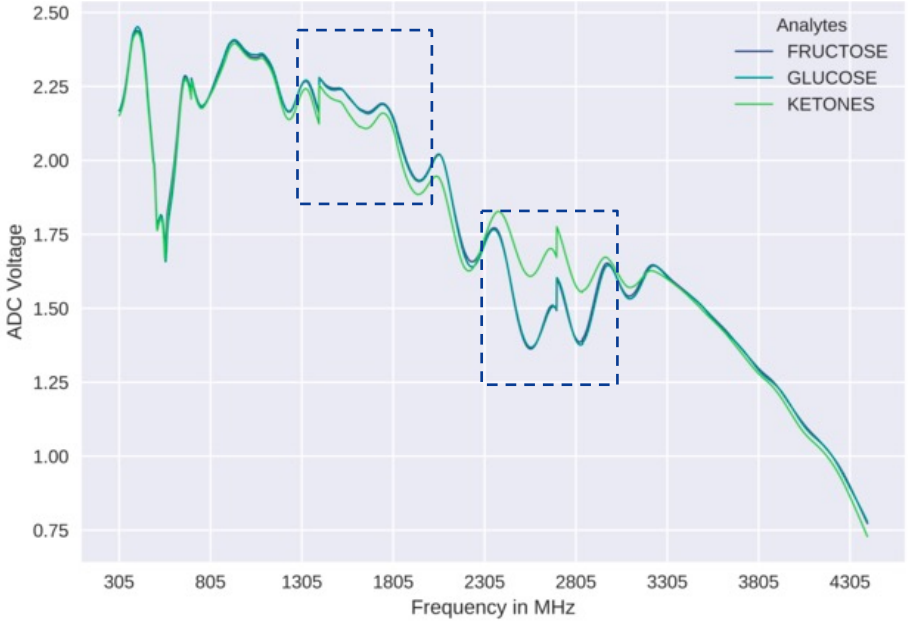
Our RF Dielectric Sensor sweeps the spectrum to collect **volumetric high-resolution data at high speed,** overcoming a limitation faced by fixed wavelength optical sensors.

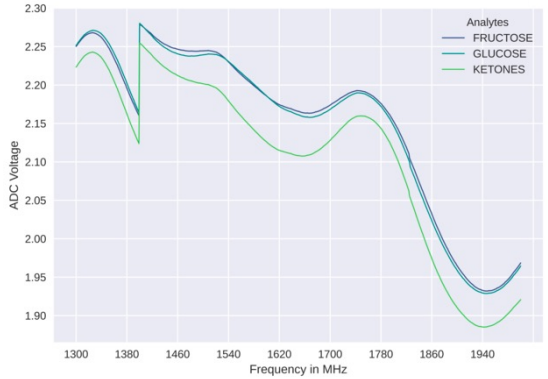


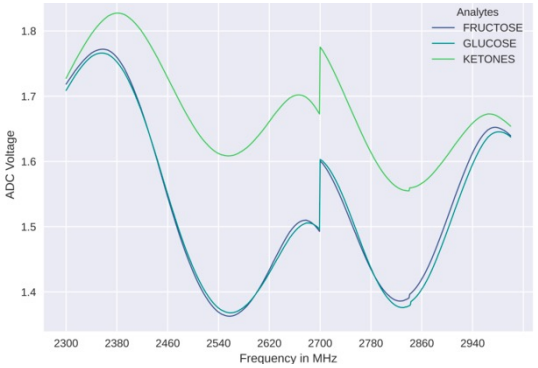
Know Labs' Technology is in development, and there is no assurance that the development will have a successful outcome. Past performance is not indicative of future results. There is no guarantee that any specific objective will be achieved.

High-Resolution Data for Multiple Analytes…

In Vitro Experiment
Know Labs Sensor Proprietary Spectral Signal
PBS Solutions with 200 mg/dL analyte concentration



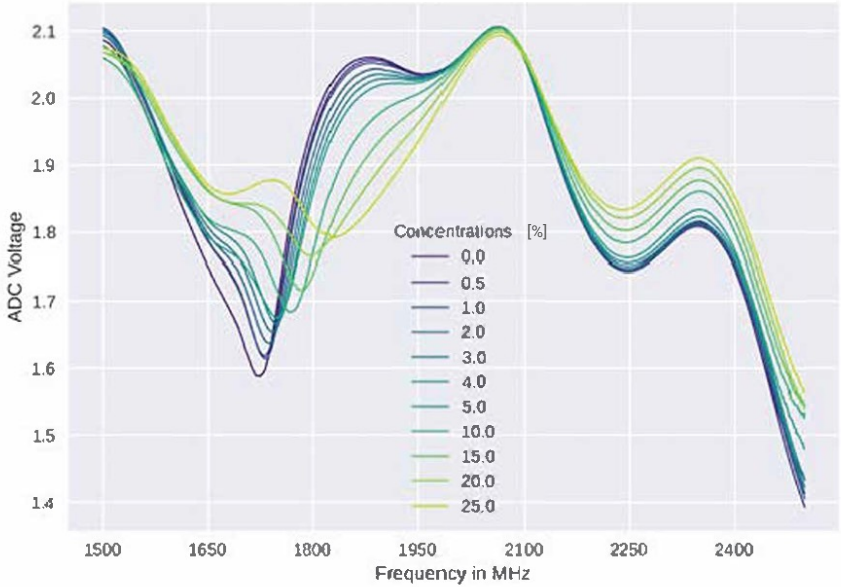




Know Labs' Technology is in development, and there is no assurance that the development will have a successful outcome.
Past performance is not indicative of future results. There is no guarantee that any specific objective will be achieved.

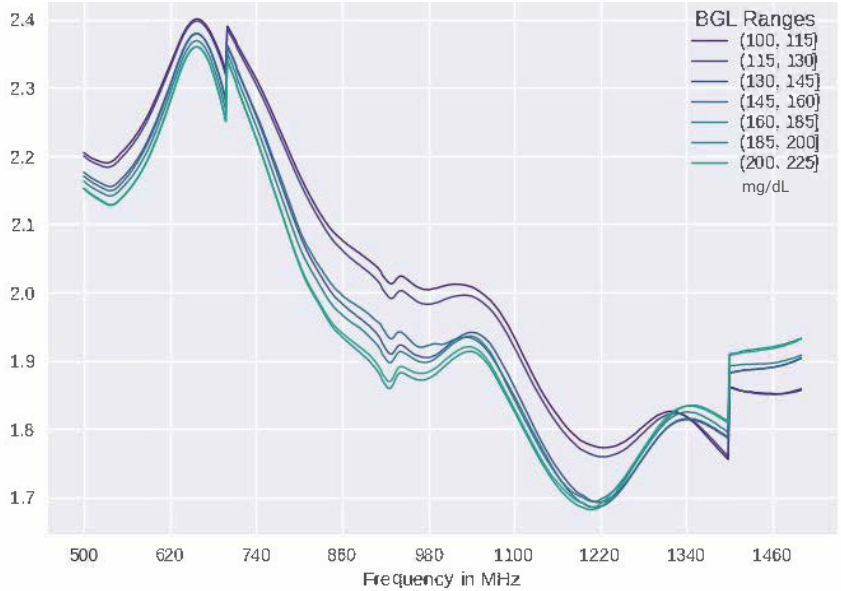
.. and for *In Vitro* and *In Vivo* Applications

In Vitro Glucose Solutions Readings



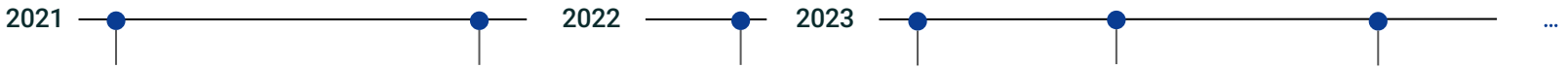
IN VITRO: ADC Voltage (y-axis) measuring voltage variance based on glucose concentration and frequency sweeps

In Vivo Glucose Readings Over 3 Hour Test



IN VIVO: ADC Voltage (y-axis) measuring voltage variance based on dielectric permittivities of blood glucose and frequency sweeps

Validation: Stability, Repeatability and Accuracy



Manuscript	Proof of Principle with Mayo Clinic	Exploratory Clinical Study	Proof of Concept Clinical Study	Technical Feasibility Study	New Algorithm Refinement Study	Data Preprocessing Techniques Study
Description	Demonstrated the accuracy of Bio-RFID sensor in quantifying different analytes *in vitro* (liquid solution).	First indication that Bio-RFID could be an accurate alternative to FDA-cleared glucose devices.	Proof of concept ability to quantify blood glucose non-invasively using RF.	Demonstrates Bio-RFID can deliver stable, repeatable results in measuring blood glucose levels.	Algorithm refinement in the non-invasive detection of blood glucose using Bio-RFID technology.	Improvement in machine learning model accuracy on an expanded mixed cohort dataset.
Accuracy	100% *in vitro* accuracy	MARD 5.3%-6.7%	MARD 19.3%	MARD 20.6%	MARD 12.9%	MARD 11.3%
# Participants	na	2	1	5	5	13
# Datasets	na	3	22	106	106	366
# Bio-RFID datapoints	na	1.5M	~183M	~430M	~430M	~1.7B
# Reference Observations	na	75	~383	~1,555	~1,555	~3,311

mg/dL

Know Labs' Technology is in development, and there is no assurance that the development will have a successful outcome.
Past performance is not indicative of future results. There is no guarantee that any specific objective will be achieved.

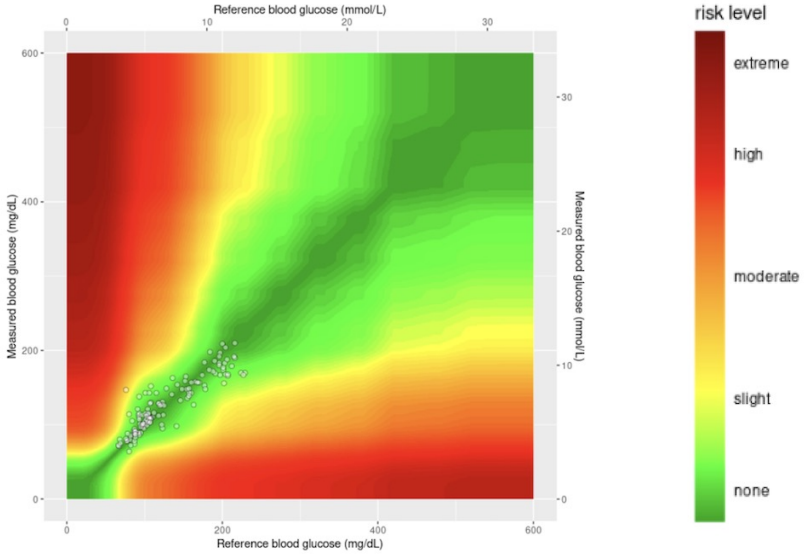
ATTD 2024 Poster: ~11% MARD in Normal & Hyper

Non-Invasive Blood Glucose Monitoring in People with Diabetes Using an RF Sensor and Venous Blood Comparator

D. Klyve, J. Anderson, K. Currie, C. Ward, K. Pandya, V. Somers

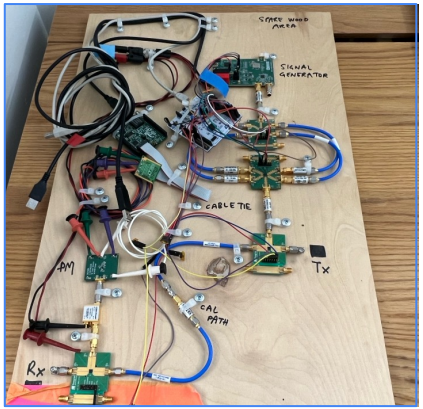
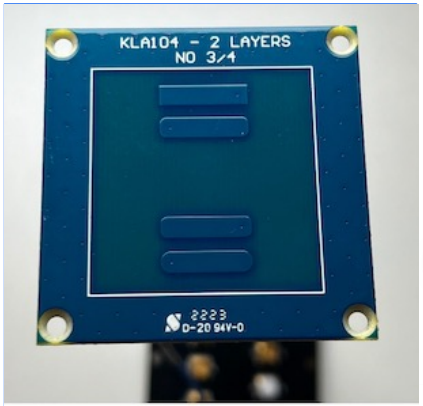
- 30 participants with prediabetes and Type 2 diabetes
- Venous blood as a comparative reference
- 3-hour Glucose Tolerance Test (GTT)

Glucose Range (mg/dL)	*n*	MARD (%)	±15%	±20%
Hypoglycemic (<70)	4	9.5 ± 8.3	75.0 ± 4.2	100.0 ± 0.0
Normoglycemic (70-180)	99	11.0 ± 2.7	75.8 ± 0.8	83.8 ± 0.7
Hyperglycemic (>180)	27	11.5 ± 3.1	66.7 ± 1.8	85.2 ± 1.3
Total	130	11.1 ± 2.1	73.8 ± 0.8	84.6 ± 0.6

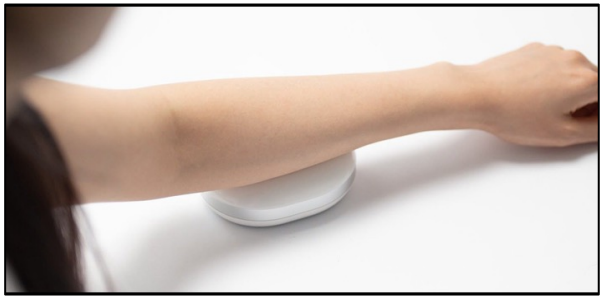


100% of estimations in Risk Grades A and B (82.3% in A, 17.7% in B)

KnowU Development Roadmap

Proof-of-Concept	Generation 0	Generation 1	KnowU
			
• **Exploratory** design • Multiple components wired to each other • Signal testing purpose • 2 x 3 ft board	• **Miniaturized** format • Wired connection to power source and data capture • Restricted to **laboratory controlled environment**	• **On-the-go** form factor • Place your palm or arm for an on-demand, non-invasive blood glucose level • Computer mouse size	• **Wearable** form factor • Continuous monitoring • 86% smaller and 68% lighter than previous Generation

Generation 1 Details: Research Form Factor



Using Gen 1 Prototype on Forearm

Using Gen 1 Prototype on Hand

Gen 1

- Computer mouse size
- Research Lab in your pocket to accelerate data collection

KnowU Details: Wearable Form Factor

KnowU Product Specifications

Wearable
Adhesive, or strap for wrist or arm.
Clip system allows for easy sensor attachment.

Battery
24-hour continuous use. Rechargeable.

Algorithm
Multiple algorithms in development.
See Know Labs Scientific Validation mobile app page.

Mobile app
Designed to companion the KnowU CGM device.
Enables advanced research.

Data Storage
256MB flash storage, 40 hours of offline research data.

Connectivity
BLE, WiFi, USB-C.

Processor
Ultra-low power consumption, onboard computer.
Wi-Fi & BLE capabilities, built-in ML.

Firmware
Custom firmware supports the entire tech stack.

KnowU vs. Gen 1

86% smaller

68% lighter

KnowU Real-life Application

Worn with Adhesive

Worn with Strap

Mobile App

Know Labs' Technology is in development, and there is no assurance that the development will have a successful outcome.
Past performance is not indicative of future results. There is no guarantee that any specific objective will be achieved.

2024 & Beyond

Clinical Data Collection	More participants with diverse backgrounds, including people with T1D, T2D, and pre-diabetes.
Algorithm Refinement	More data equals better accuracy – potential to accelerate time to market with calibration.
Hardware Development	Device adjustments and/or further miniaturization
Scientific Validation	External research institutes to further validate our technology and support FDA application.
Intellectual Property	#1 worldwide in non-invasive blood glucose monitoring (>300 patents filled and pending)

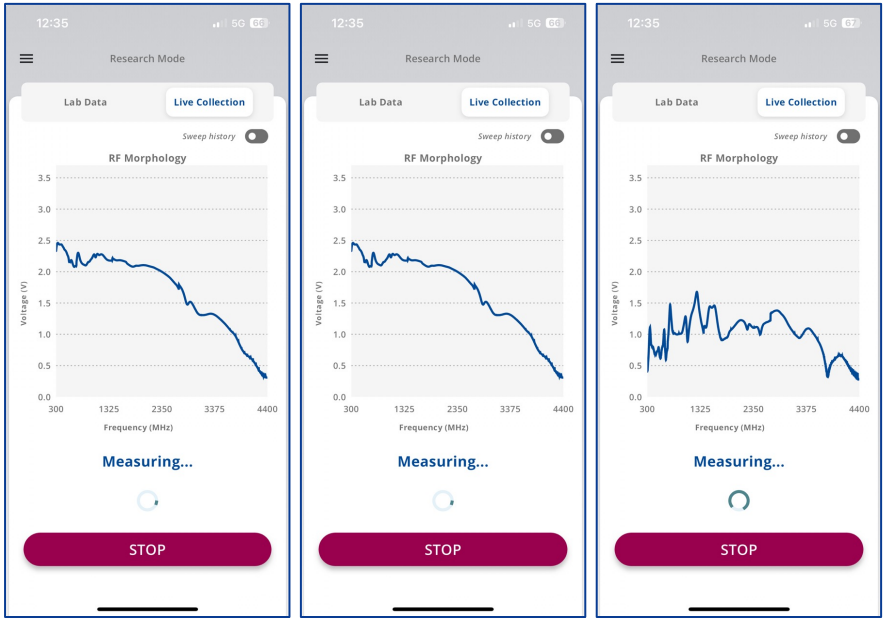
Increase the generalizability of the Bio-RFID

Must be safe and deliver required level of accuracy under any condition and regardless of the patient, as determined by its intended use

Know Labs' Technology is in development, and there is no assurance that the development will have a successful outcome. Past performance is not indicative of future results. There is no guarantee that any specific objective will be achieved.

Visit us at Booth #30

Try the KnowU and Scan your RF Signature



Air
Seattle-WA

Air
Florence-ITA

Body
Leo Trautwein

THANK YOU

Leo Trautwein
Chief Commercial Officer
leo@knowlabs.co