



KELSIUS

Butchers

Digital HACCP & Wireless Temperature Monitoring





KELSIUS

Company Story

Kelsius are one of Europe's leading manufacturers and providers of Wireless Temperature Monitoring systems and Digital HACCP systems and we take pride in working with Worcestershire Regulatory Services in a Primary Authority Partnership.

Founded in 2003, Kelsius is a technology company that has a strong market presence in Ireland and the UK and exports their products and services to over 50 countries across the globe.

Our customers range from pharmaceutical manufacturers, hospital pharmacies, laboratories and blood science departments, life science facilities and vaccination centres.

We are committed to continuous innovation and our systems utilise the latest technologies to provide peace of mind and easy-to-use systems to our customers.

Kelsius prides itself in providing unrivalled customer support. Based in Kelsius headquarters, customer support works closely with technical and delivery teams to understand and serve customers' needs to the highest standards.



Our Mission:
To make the world
safer for consumers
of food and
medicine.

ISO9001:2015 Accredited

ISO14001:2015 Accredited

ISO 27001 compliance through our partners AWS

Kelsius system complies with FDA 21 CFR Part 11 regulations

Sustainability

Our Commitment

We are committed to improving global sustainability by focusing on four principles.

**Remove
Paper**



**Reduce
Waste**



**Protect
Stock**



**Save
Energy**



EcoVadis - Sustainability Bronze Medal Certificate

Kelsius has been rated amongst the top 35% of companies assessed by Ecovadis. The rating was achieved based on EcoVadis' evidence-based assessment of Kelsius in relation to its sustainability impacts.



Our Solutions

Reduce Food Waste

Every year, the billions of tonnes of food products that go to waste directly contribute to generating 8-10% of associated global greenhouse gas emissions. The vast majority of this waste is due to lack of cold chain traceability or incorrect storage temperatures.

Reliable temperature monitoring ensures storage units and stock are consistently kept at optimal temperatures removing the risk of stock being spoiled. This prevents large amounts of unnecessary food waste and the CO₂ emissions that come from that waste.

Reduce Paper Usage, Paper Waste and Paper Storage

The average small-medium business must have on average 10,000 sheets of paper available annually to conduct manual temperature monitoring, with each sheet taking 6-9 years to decompose.

Our systems remove the need for manual paper records therefore significantly reducing a company's paper and ink cartridge waste.

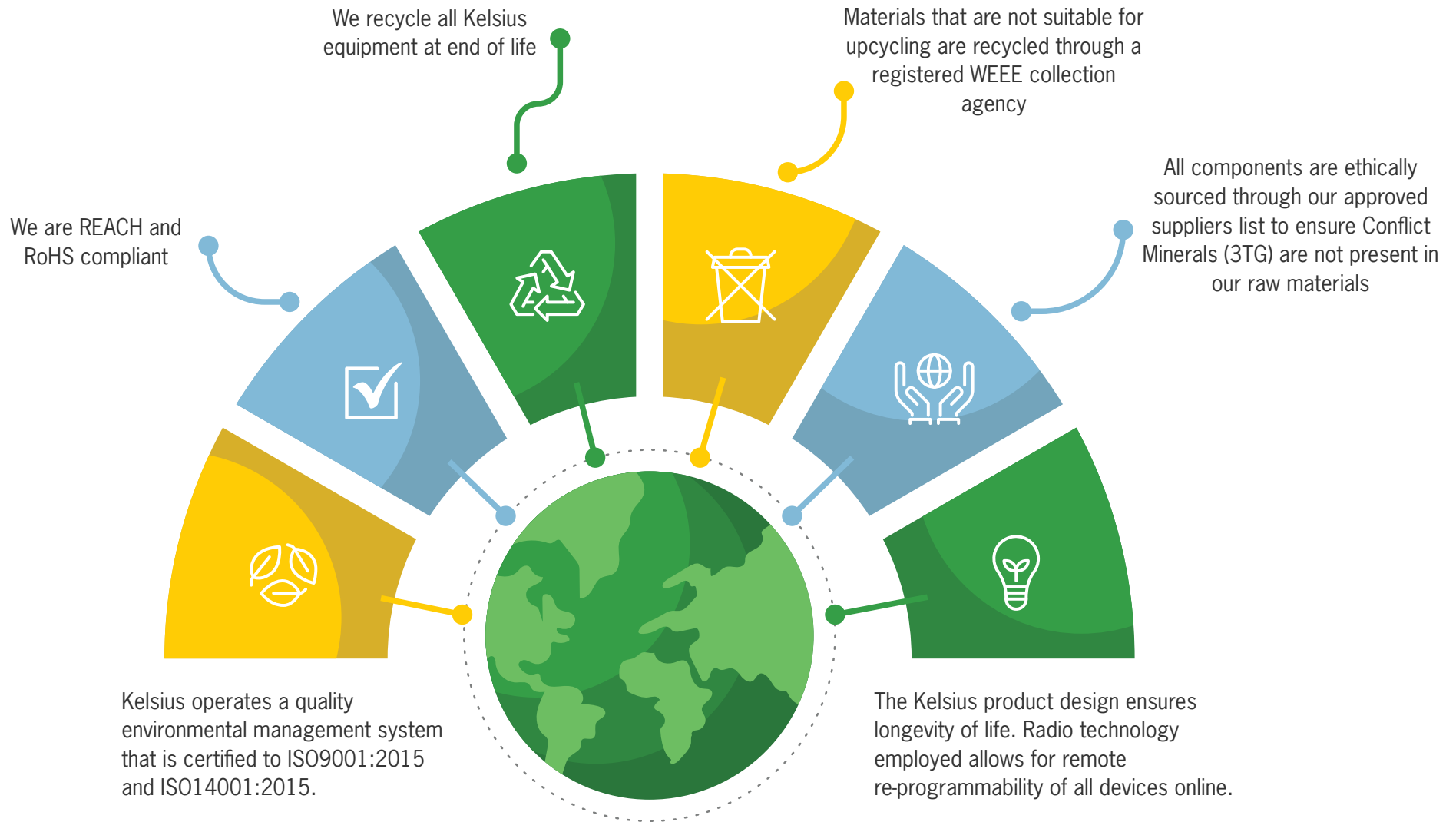
Save Energy

As well as using valuable resources such as land and water, the growing, processing and transportation of food that ends up as waste each year also uses significant amounts of energy.

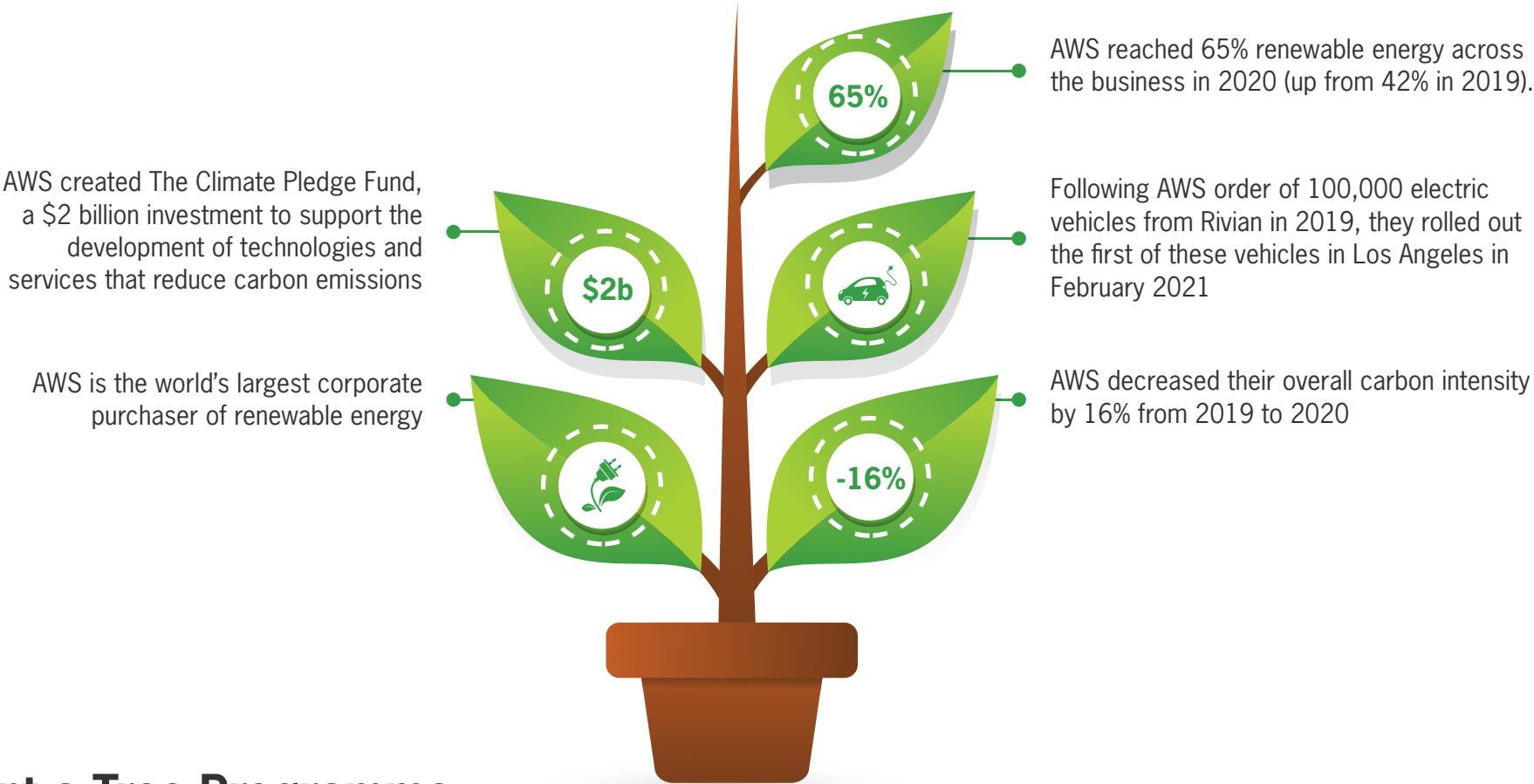
By reducing the amount of unused food, the Kelsius system ensures that this energy does not go to waste. The temperature monitoring system also allows for constant monitoring of your fridges, freezers and chill and cold stores, allowing you to ensure that temperatures are set at optimum levels to ensure your units are operating at the most efficient energy levels.

Our Contribution

Our contribution and responsibility is to reduce emissions and environmental impact across our operations.



With the requirement to maintain records for up to 30 years, data storage is a large and important part of our business. We chose Amazon Web Services (AWS) as data storage partner as a result of AWS' focus on Sustainability.



Plant a Tree Programme

Reducing global paper usage and waste is one of our main objectives as a company and to enhance this, we have decided to plant a tree for every new customer that comes on board. Trees remove carbon dioxide from the atmosphere, produce oxygen and support the building of biodiversity, so together we will be directly contributing to improving the environment.

Security



Security & Compliance with Kelsius

Your Data and Privacy are Protected and Secured

Kelsius develop secure software design practices that include defining security requirements, threat modelling, code reviews, vulnerability management, incident resolution management and security testing. There are controls in place to validate/reject access to the customer portals including multi-factor authentication, roles and permissions.

- GDPR Compliant
- Data processed and stored in the EU
- Data encrypted at rest (data storage) and in transit (data transfer)

Information is readily available

Daily and incremental backups allow data to be restored to any 5-minute period between backups. Data archived for more than 13 months can be restored from the portal at any time for audits of historical data and there is data retention for 30+ years. There's also an automated disaster recovery plan in place to ensure maximum uptime across 3 geographically dispersed data centre locations within Ireland.

- 24/7/365
- Alerts via push notifications/email/voice calls
- Self-healing data storage
- Automated crash recovery over multiple data centres



You are compliant

Kelsius complies with FDA 21 CFR Part 11 regulations – ISO 27001 compliance (AWS). A complete audit trail is available including user activity and change management audit records. There are multiple user roles to customise and control access to data and system configurations, and strong data governance where data is only accessible by the customer and a controlled small number of Kelsius employees.

Strong password policy is enforced and multifactor authentication is used to access the customer portal.



System Main Menu

- Delivery
- Cook & Cool
- Tasks
- Traceability
- HACCP Checks
- TRAINING

9/04/23 5:27:43 CHANS 1 AlienPKT (064716)
CRITICAL
MainsPower 15:24,19 CRITICAL OFF
322703p1 T 14:43,19 CRITICAL 25.5C
336106p1 T 15:21,19 CRITICAL 25.1C
22704p1 T 14:51,19 CRITICAL 25.3C
22705p1 T 15:13,19 CRITICAL 25.2C
22708p1 T 15:24,19 CRITICAL 25.1C
ppVoltsV 06:31,28 NORMAL 3.9V

- Alert Events (55)
- WARNING 35.20°C K201 TestNC SiteMap2 30-04-2024 14:34:25
 - WARNING 35.10°C K201 TestNC SiteMap2 01-05-2024 13:20:00
 - WARNING 35.10°C K201 TestNC SiteMap2 02-05-2024 13:20:29
 - CRITICAL 14.90°C K201 TestNC SiteMap2 07-05-2024 03:32:11
 - CRITICAL 14.90°C K201 TestNC SiteMap2 07-05-2024 03:47:27
 - CRITICAL 38.70°C K201 TestNC tempSwap1 01-05-2024 12:27:13
 - CRITICAL 25.20°C K201 TestNC tempSwap1 07-05-2024 11:11:34
- Corrective Action

KELSIUS
Wireless Temperature Sensor

KELSIUS
AMPLIFIED WIRELESS REPEATER

Thermopar
73.0°C

Butcher Challenges

- Butchers are required by law to keep a significant amount of food safety records. They must ensure that they are compliant with regulations at all times to meet the standards for audits and EHO inspections.
- Failure to comply with these Food Hygiene Regulations can lead to food poisoning, loss of reputation, brand damage, legal costs, increased insurance premiums, fines and even closure.
- Maintaining the traceability records for the consumer and the regulator by paper can be slow and laborious, leaving a lot of room for error.
- Maintaining a manual paper HACCP system means that staff members spend a lot of time on paperwork and manual temperature checks instead of preparing meat and serving your customers.
- Manual HACCP records are open to falsification, difficult to manage and slow to access for auditing.

- Missing records can lead to audit failure.
- Abattoir and Carcass Butchery requires significant amounts of paper records to be generated, managed, and stored for compliance.



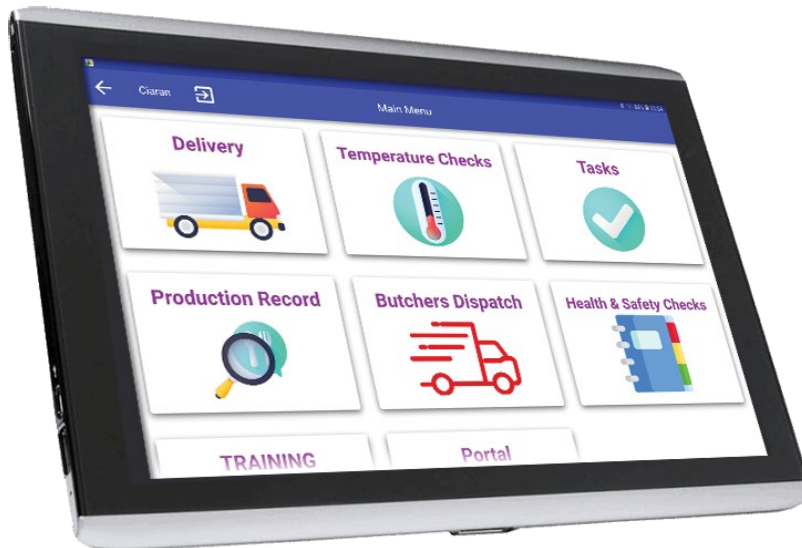
The Solution



- FoodCheck 2.0 offers you a fast and easy way to maintain and store HACCP records for compliance.
- Eliminates all paper and paper record storage from your operation.
- Temperature Sensors can be placed in each of your Fridges and Freezers, removing the need to manually monitor the units, with alerts to notify you of any non-conformant temperature.
- The system can offer you complete traceability with each critical control point covered right from Delivery to Boning Traceability to Meat, Sausage and Mince Production right through to serving the Customer over the counter or Delivery to your Business Customers. This makes it easy for you to create reports and provide traceability information for audits and EHO inspections.
- Seamless integration of our system allows your staff to easily enter information such as batch codes when you receive the goods at Delivery. This information will then be available at every point in the Production Process, from the first CCP to the last for ease of use for your staff. This will also simplify the regulatory inspection.
- 24/7 monitoring via local A/V alarm, FoodCheck App push notification, email and voice call can be set up to warn key staff of temperature excursions, power outages or doors left open to avoid any expensive stock loss and disruption to operations.
- Push notification alerts provide maximum security and reliability, with the most robust encryption protocols. They eliminate the risk of being treated as spam and not delivered or blocked by network providers. Two-factor authentication provides additional security. The app also provides secure remote functionality, delivery confirmation and delivers notifications even when the recipient is offline. It provides full remote functionality with the ability to close off alerts and record corrective actions without returning to a hub or office. There is a full audit trail for all alerts and actions.
- Automated alerts notify staff when product is going out-of-date and staff will be prompted to discard produce, eliminating human error and saving time compared to manual checks.
- Each product, ingredient or final dish will have a pre-set shelf-life built into the system removing the risk of human error.
- Labels can be printed and attached to open product. Eliminates human error and easier to read.
- FoodCheck 2.0 simplifies the auditing process with all records, current and historical, available from any web enabled device.
- FoodCheck 2.0's powerful search allows you to track by batch code, product, invoice number or task completed by user at every critical control task completed by user at every critical control point of the HACCP process.
- The system allows you to record evidence of food waste disposal and quickly and easily create a report on how the waste disposal process is managed.

The FoodCheck 2.0 Digital HACCP System

- Robust & Reliable Samsung Tablets with Protective Case, Holder and Wall mounted Bracket.
- Bluetooth Probes which communicate directly with the FoodCheck 2.0 App.
- Bluetooth Label Printer allowing for the Printing of Labels directly from FoodCheck 2.0.
- Flexible & wireless sensor network that supports both large and small environments.



- Easy-to-use, non-disruptive deployment—no need for expensive hard-wired infrastructure.
- Cost-effective, automated record keeping eliminates manual checks and records.
- Secure, centralised, encrypted data keeps your records safe.
- Global access to information when and where you need it— by sensor, by room, by facility.
- Real-time alarming and alerting for temperature compliance and product quality assurance.
- Improved visibility and compliance through online data history and audit trail.

Lifetime Warranty

Eliminate system redundancy and end of life re-purchase costs. All Kelsius manufactured equipment including sensors, repeaters and network controllers come with a lifetime warranty during the term of your agreement. Items will be replaced with like-for-like or an upgraded version where an older part has been made redundant. New parts are manufactured to be backwards compatible with the existing system and software.

FoodCheck Push Notification Alerts

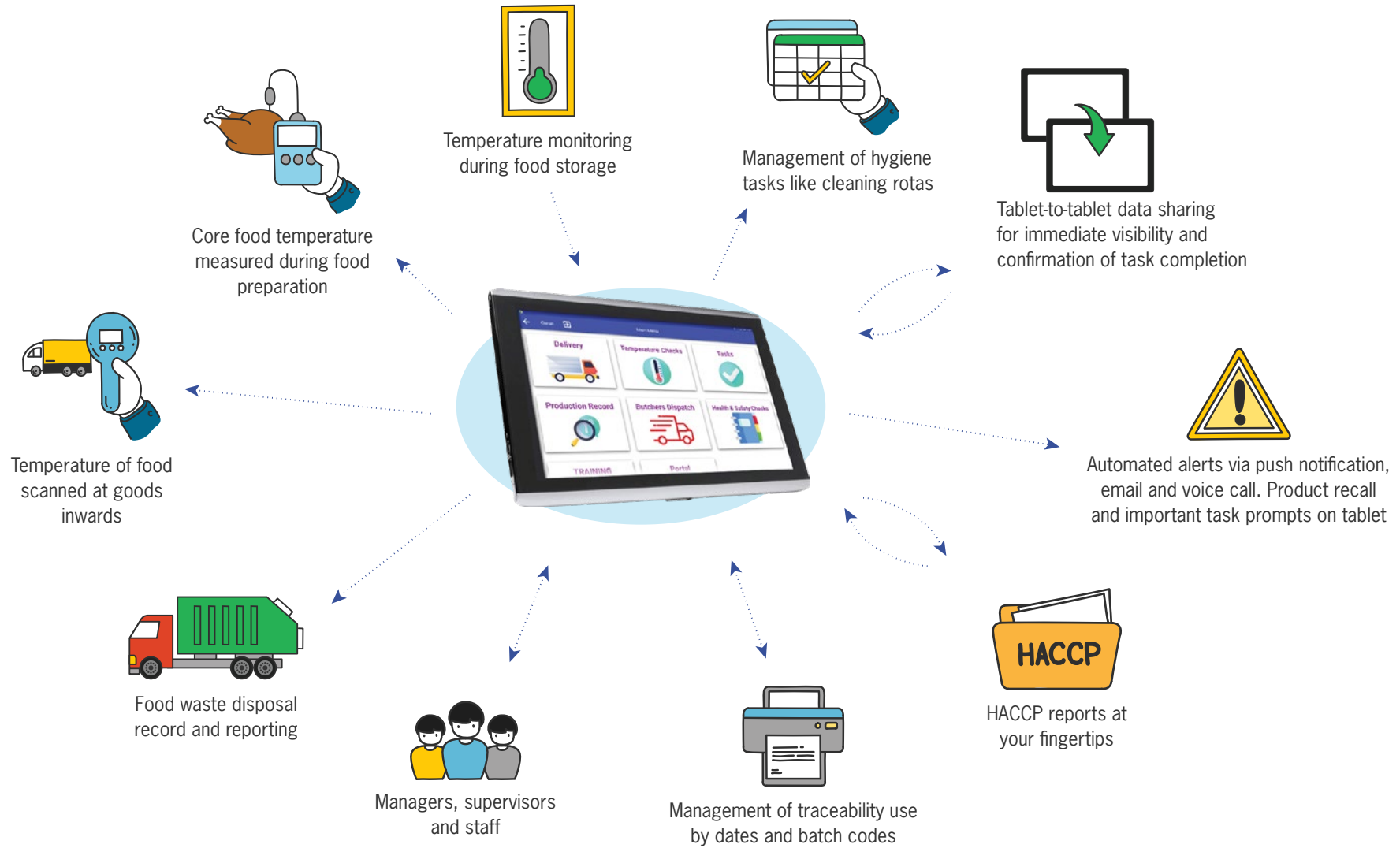
Push notifications are a secure and reliable alternative to SMS or voice call alerts. Mobile phone network operators are increasingly treating automated SMS and automated voice calls as spam. This can result in the non-delivery of messages and in turn risks the user not receiving critical alerts of temperature excursions that could affect food quality and safety.

Push notifications are delivered via the FoodCheck App and have multiple benefits for food professionals:

- **Encryption and Security:** The app uses more robust encryption protocols, providing a secure way to transmit information. This ensures that messages are less susceptible to interception, being isolated or not delivered, and are delivered in a reliable, consistent and dependable manner.
- **Two-Factor Authentication (2FA):** The app supports two-factor authentication, adding an extra layer of security. Users can receive secure authentication codes directly through the app, enhancing the overall security of the communication.
- **Delivery Confirmation:** The app provides delivery confirmation, letting users know when a message has been successfully delivered and when it has been read. This feature enhances reliability and helps users ensure that their messages reach the intended recipients.
- **Offline Message Delivery:** Push notifications are designed to be more reliable in delivering messages even when the recipient is offline. In addition, the app can store notifications until the user is back online, ensuring that important messages are not missed.
- **Remote Functionality:** Remote features include:
 - Secure login from any mobile device
 - Ability to select any individual alert event by entering a PIN
 - Ability to enter a predefined or custom corrective action
 - Ability to close the alert event without going back to office or a central location
 - App will report if alert notification was delivered, if it was opened and if it was actioned
 - All actions recorded and viewed on portal audit section
Provides improved traceability, convenience and saves time

FoodCheck 2.0

Complete Food Safety Control



FoodCheck 2.0 Monitoring System at work:

FoodCheck 2.0 Digital HACCP system removes paper from your HACCP operation. The system is specifically designed to automate and speed up many laborious tasks and checks, saving you and your staff time.

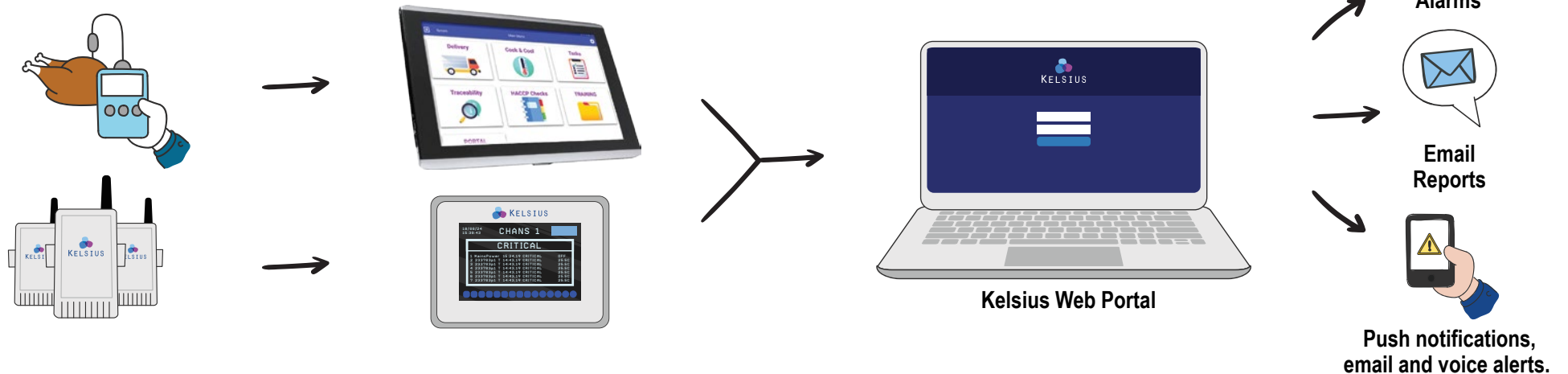
A Bluetooth Probe will electronically transmit the temperature of product to the App with specially designed modules for each type of check you need to complete.

Traceability Module is designed to manage the shelf life of your products with built in reminders to discard product once it is out of date. Labels can be printed directly from the FoodCheck 2.0 App. Allergens can be highlighted on the labels.

Cleaning Tasks lists are automated and scheduled in line with you specific needs and requirements.

FoodCheck 2.0 is a fully integrated solution for temperature monitoring which combines wireless sensors which are linked to their own network and web portal.

Wireless sensors are configured with user-defined alarm thresholds and measurement intervals. They are strategically placed inside any number of storage areas to record environmental conditions. The sensors record data and transmit the encrypted information wirelessly to a local Network Controller.



Traceability

The Compliance Check Search function offers complete traceability with each critical control point covered right from delivery to boning traceability to meat, sausage and mince production through to serving the customer over the counter or delivery to your business customers.

This makes it easy for you to create reports and provide traceability information for audits, EHOs and customers.

The Compliance Check Search function allows tracking by batch code, product, invoice number or task completed by user at every point in the HACCP process.

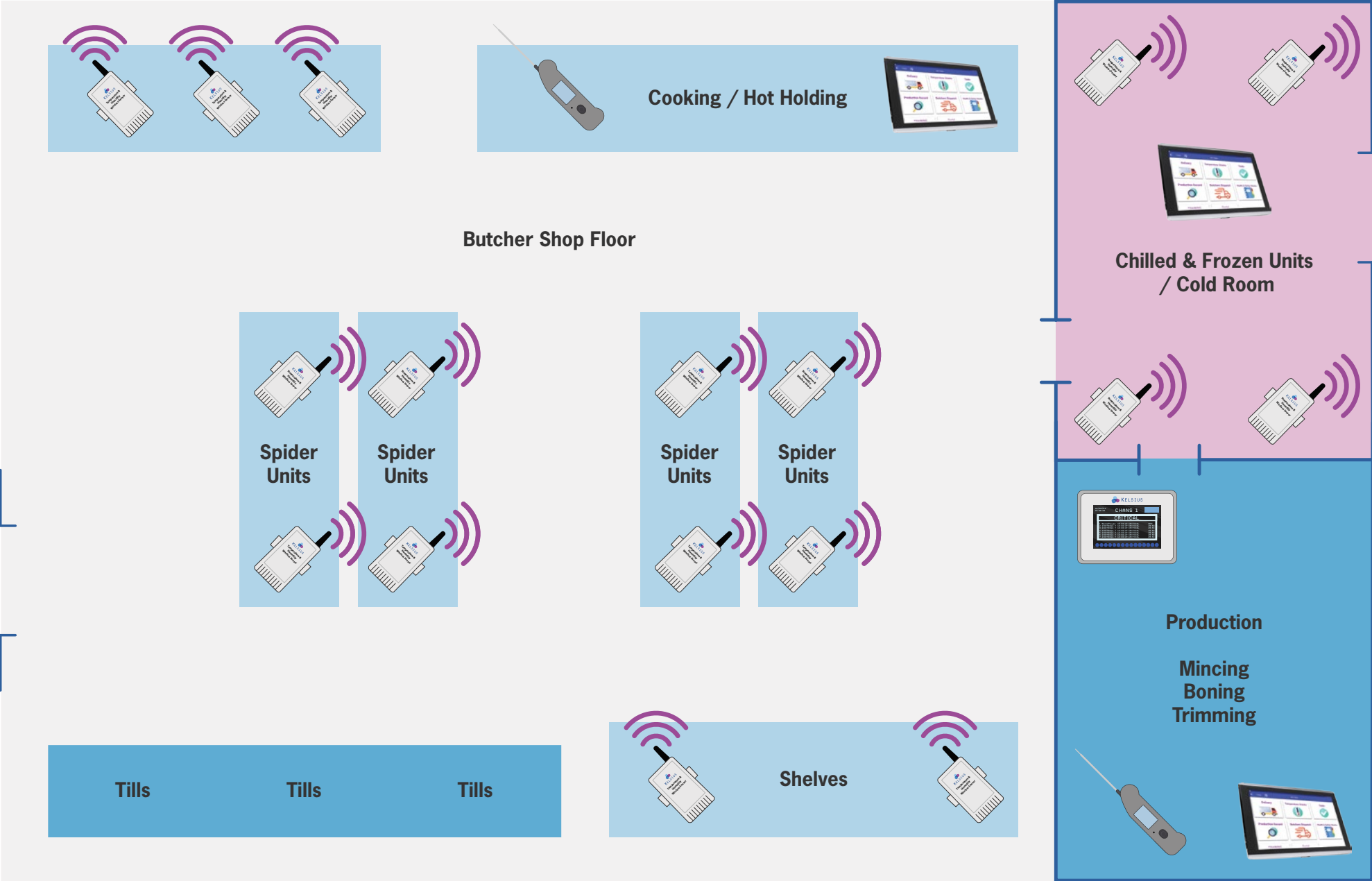
This answers all queries that may arise during an audit or an EHO inspection.

The screenshot displays the 'HACCP Records' section of a software interface. On the left is a navigation menu with options: Dashboard, Site Map, HACCP records, Sensor Graphs, Alert Events, Report Wizard, Documents and Manuals, HACCP Records (highlighted), Configuration, Audit Trail, and User Profile. The main content area is titled 'Search Records' and includes a search filter for 'beef' and a date range of 'This month'. Below the search bar, there are download icons for PDF, Excel, and CSV. A table titled 'Cold Serve Over' lists three records with columns for Date & Time, Operator, Product, Use by/Best before, Batch Code, Unit, Temperature, Corrective Action, and Photo. The temperature values are 3.2°C, 3.4°C, and 1.4°C, each with a '[1]' icon. At the bottom, a legend indicates that '[1]' represents '[60:8A:10:75:CC:B0] 22075580 BlueTherm One'. A footer contains contact information and a generation timestamp.

Date & Time	Operator	Product	Use by/Best before	Batch Code	Unit	Temperature	Corrective Action	Photo
2023-04-01 16:33:54	John Ramsay	(Hanging) Ham Of Beef	2023-04-15	073231	Cold Serve Over	[1] 3.2°C	n/a	
2023-04-08 15:21:31	John Ramsay	(Hanging) Ham Of Beef	2023-04-22	073231	Cold Serve Over	[1] 3.4°C	n/a	
2023-04-14 10:13:59	John Ramsay	(Hanging) Ham Of Beef	2023-04-28	101231	Cold Serve Over	[1] 1.4°C	n/a	

[1] [60:8A:10:75:CC:B0] 22075580 BlueTherm One

If you need help, please contact: support@kelsius.com by email, or phone 00 353749162982 UK: 08452994202
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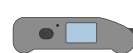
Wireless Temperature Sensor



Tablet



Network Controller



Thermapen ONE Blue Thermometer

Web Portal Reporting Suite delivers:

- Operations leaders use reporting and insights within FoodCheck 2.0 to oversee performance across every site, make data-driven decisions, and prioritize opportunities for improvement.
- Know what's happening across the operation with real-time reporting that drives operational efficiencies.
- Automated reporting and dashboards allow your team to see which tasks and procedures have been completed across the operation, or drill down to reports or submissions at a specific site.
- Automated pdf reports can be set-up daily, weekly or monthly.
- All data is time & date stamped with option to add photograph.
- Allows you to see what tasks and been completed, when and by who.
- Freezer/chills/display units/hot holding temp checks & reports.
- Non-conformances highlighted & corrective actions logged.
- Alerts for any fridge or freezer non-conformance or failure.
- Live & historical data available at all times on Web Portal.



Data at your Fingertips

Using FoodCheck 2.0 greatly reduces the risk of record falsification and errors. All data is entered via the FoodCheck 2.0 App and is safely stored on the tablet until it can be transmitted to the Kelsius Web Portal. All information can be viewed locally on the App via the Auditor function.

The portal's dashboard and site map provide immediate visibility of the current state of all monitored locations. The dashboard highlights sensor alerts, while the site map provides an overview of all sensors, current readings and current status, e.g. normal, warning, or critical.

Information is configured to suit your organisation's preferences. Data can be viewed on demand or downloaded for a specified timeframe in multiple formats, for example PDF, .xls, .csv.

Group Usage Reports highlight excellence and non-conformant results across all locations.

The system can alarm on sensor-level readings (i.e. temperature excursions) or system-level issues such as damage to or removal of sensors, power failure, device malfunction, and network connectivity loss.

Dashboard
Site Map
Sensor Graphs
Alert Events
Report Wizard
Documents and Manuals
Configuration
Audit Trail
User Profile

Customer Notice
Please note: Flashing icons representing outstanding Corrective Actions will appear in the device boxes below for a period of 7 days, after which the icon will no longer appear. All outstanding Corrective Actions are listed as normal in the Alert Events tab. We've introduced this change to greatly enhance the speed at which your Site Map loads.

Legend:
WARNING Sensor has been above the Warning threshold for longer than the delay period
CRITICAL Sensor has been above the Critical threshold for longer than the delay period
MAINTAIN Sensor is in Maintain Mode. No alerts will be generated while the sensor is in this mode
ALARMOFF Alarm has been turned off on this sensor
SERVICE Sensor is in Service Mode. After the Service Timeout this sensor will return to Normal. No alerts will be generated while in Service
MISREAD Sensor has recorded a value which the system detects as a bad reading.
COMMFAIL Communication with this sensor has failed
COMMISS Temporary Communication failure with this sensor

Code Area Room
Sensor 1: 1 A, 5.0 °C
Sensor 2: 1 P, 5.3 °C
Sensor 3: 2 A, 4.9 °C
Sensor 14: 2 P, 4.9 °C
MainsPower: ON
Repeater 1: 11.5 V
Repeater 2: 11.2 V

Freezer 1
MainsPower: ON
Repeater 2: 11.1 V
Repeater 3: 11.0 V
Fridge 1 A: 3.6 °C
Fridge 1 B: 3.6 °C
Fridge 2 A: 3.8 °C
Fridge 2 B: 3.8 °C

Cold Serve Over
Fridge A: 6.1 °C
MainsPower: ON
Fridge C: 5.2 °C
Fridge D: 5.1 °C
Short Stay Fridge A: 3.8 °C
Short Stay Fridge B: 3.9 °C

Spider Units
Fridge A: 3.6 °C
Fridge B: 3.6 °C
Freezer A: -18.0 °C
Freezer B: -18.0 °C
Fridge C: 5.1 °C
Fridge D: 5.6 °C
MainsPower: ON
Fridge E: 5.4 °C

Secure Data, Real-Time Alerts

The Network Controller relays information to the Web Portal. Data is secure, only accessible to authorised users via a web browser. Additional software is not required. All data transmissions are encrypted for additional security.

The Portal provides on-demand access to real-time and historical data and reports for all locations. The Report Wizard can create scheduled reports distributed automatically via email.

Push notifications, email and voice calls can be configured to reach designated personnel and provide delivery confirmation, with messages including the exact location and details of the

alarm. Escalating alerts can be made to designated personnel until someone logs in, investigates the alarm, and takes action.

Audible/visual alarm beacons can be installed at high-visibility points within the facility to alert on-site staff. Beacons can be configured to alarm for an individual sensor or group of sensors.

Once a problem is identified and corrected, the incident can be recorded in the historical audit log. The user can use a pre-defined list or manually enter a corrective action. Every corrective action is date and time stamped and includes electronic signatures.

The screenshot displays a web portal interface for HACCP records. On the left is a dark blue sidebar with navigation buttons: Dashboard, Site Map, HACCP records, Alert Events, Report Wizard, HACCP Records, and User Profile. The main content area is titled 'First Cook' and includes a 'Tablet' label, a dropdown menu set to 'All', and a 'Back' button. Below this is a 'Quick Date Range' section with a dropdown set to 'Last month' and a 'Go' button. A 'Download detailed records' link with three document icons is present. The core of the interface is a table with the following data:

Date & Time	Operator	Product	Use by/Best before	Batch Code	Temperature	Corrective Action
2020-03-03 11:04:24	Mary	5 Spice Pork	28-01-2022	407054	76.2°C	
2020-03-03 12:57:15	Dave	5 Spice Pork	28-01-2022	347589	77.0°C	
2020-03-03 11:39:59	Julie	Beef Stroganoff	28-01-2022	180687	76.5°C	
2020-03-03 12:11:16	Kevin	BBQ Chicken	28-01-2022	279899	75.1°C	
2020-03-03 12:28:25	Patrick	BBQ Ribs	28-01-2022	978433	76.7°C	
2020-03-03 12:51:54	Kerry				26.2°C	

FoodCheck 2.0 Technical Specification

	Temperature Sensor	Bluetherm One LE	Ray Temp Blue
Temperature Range	-30°C - +50°C (-22°F - +122°F)	-199.9 to 1372 °C	-49.9 to 349.9°C
Accuracy	+/- 0.5°C (0.9F)	±0.4°C ±0.1% of reading	±1 °C (0 to 100 °C) otherwise ±2 °C
Resolution	—	0.1 °C/°F to 999.9	0.1 °C/°F
Communication Type	Radio Frequency	Bluetooth	Bluetooth
Communication Range	100m	Bluetooth	Bluetooth
Display	—	12mm LCD	0.01 to 1 12mm LCD
RF Band	916MHz (USA); 868MHz (Europe).	—	—
Battery Type	2x 3.6V 2Ahr AA Lithium Battery	1 x AA	3 x 1.5 volt AAA
Battery Life	5 years with a 5 minute read data transmission interval.	3000 hours	3000 hours
Dimensions	36 x 50 x 65 mm	34 x 66 x 109 mm	25 x 56 x 128mm
Weight	75g	165g	140kg
Enclosure	IP67 Polycarbonate	ABS plastic with Biomaster anti-bacterial additive	ABS plastic with Biomaster anti-bacterial additive
Communicates with	Network Controller	FoodCheck 2.0 Tablet	FoodCheck 2.0 Tablet





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Kelsius is a partner and member of the following trade associations:

