NASH Group

NASH — Inspired Engineering
- **Contract Manufacturing**
- **Box Build Services**
- **EMS/SMT & Wire Harness Facilities**

NASH TECH LABS
- **OEM/ ODM Services**
- **Design & Engineering Services**
- **White Label Products & Solutions**

NASH ENERGY
- **ODM for Lithium Ion Cells**
- **Battery Management Solutions**
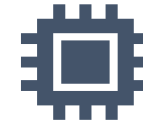- **Li-Ion Battery Pack**

Product Design | Built-to-Print Parts & Assemblies | Contract Manufacturing | Mechanical Assemblies | Box-Build Assemblies | ODM

"One Stop Shop from Ideation to Realization"

Brief History of NASH Group

Shyam S Wadhwa
Founder

- ✓ Founded in 1971

- ✓ Mr. Shyam Wadhwa, an engineer spent a decade at Hindustan Aeronautics

- ✓ Later become an entrepreneur and started NASH

Sanjay S Wadhwa
Chairman & Managing Director

- ✓ Sanjay took over the reins of the company in 1995

- ✓ Helped scale up the organization to its current strength of INR 1350+ Crore in revenue and 3000+ employees.

Sandeep R Wadhwa
Joint Managing Director

- ✓ Sandeep joined the company in 1998 when NASH's revenue was < 1 million dollars with 80+ employees.

About Us

- NASH Group (1971), India's leading product design and ODM services company spanning across 75,000+ Sq. Mt. Area

- 15+ SAP-enabled facilities across design, engineering, manufacturing, and supply chain operations

- 3000+ employees (125+ R&D) across India with over 45% export revenue

- Sales Offices in the USA, UK and Japan

- Customers across Banking, Automotive, IT Hardware, Medical, Defense, Telecom and Consumer Durables

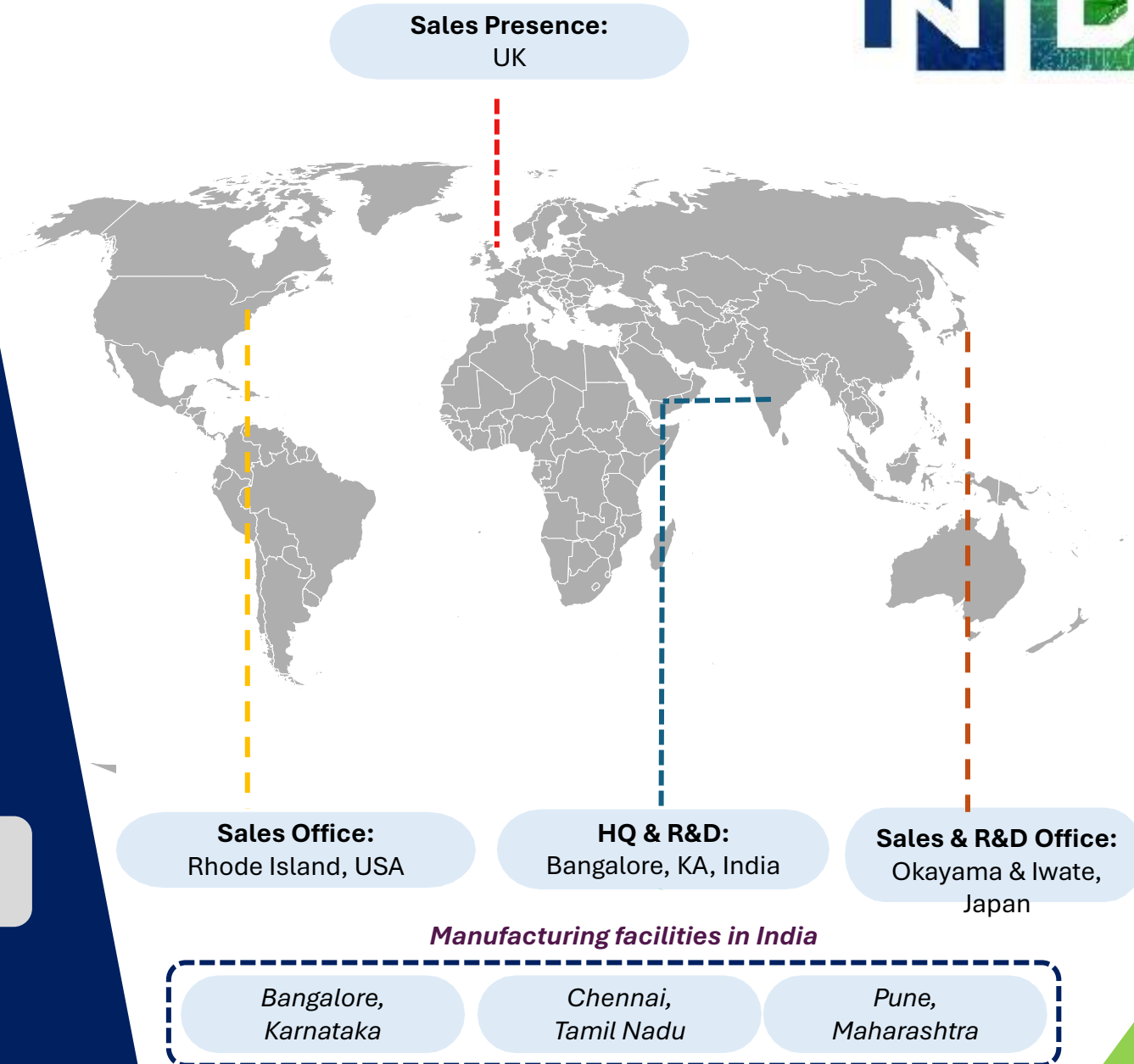- Partnerships with global technology leaders and best in the segment (Hitachi, Intel)

Certifications:

| IATF CERTIFIED COMPANY 16949:2016 | ISO 9001:2015 | EN 15085-2 CERTIFIED A3CERT | AS9100D CERTIFIED ISO 9001 | EMI/EMC |

PATENTED — Patents: 10+

Sales Presence: UK

Sales Office: Rhode Island, USA

HQ & R&D: Bangalore, KA, India

Sales & R&D Office: Okayama & Iwate, Japan

Manufacturing facilities in India

| Bangalore, Karnataka | Chennai, Tamil Nadu | Pune, Maharashtra |

Industry Segments & Key Customers

Automotive
- HYUNDAI
- DAIMLER TRUCK Asia
- ASHOK LEYLAND
- BOSCH
- HARMAN A SAMSUNG COMPANY
- TENNECO
- Visteon
- KSPG Automotive
- nexteer AUTOMOTIVE

Power Protection
- Schneider Electric

Telecom
- Reliance jio

Electrical
- GE Grid Solutions
- EATON COOPER

Banking Hardware
- NCR
- Diebold Nixdorf
- HITACHI Inspire the Next

Home Appliances
- B/S/H/
- BOSCH SIEMENS NEFF

Green Energy
- Bloomenergy
- ohmium
- ENERVENUE

Railways
- schunk
- Wabtec CORPORATION

Healthcare
- GE HealthCare

Aerospace
- TE connectivity
- DEUTSCH GmbH IHR PERSONALDIENSTLEISTER

One Stop Shop with Vertical Integration

Prototyping

Design & Development

Enhance customer value proposition

① Electronics & Mechanical Design

② PCB Assembly

③ Wire Harness

④ Metal

⑤ Mould & Tooling

⑥ Machining

⑦ Plastics / Die Cast*

⑧ Software Integration

⑨ Box-Build Assembly

⑩ QA/QC & Packaging

Reverse logistics

Repair & Rework

Logistics
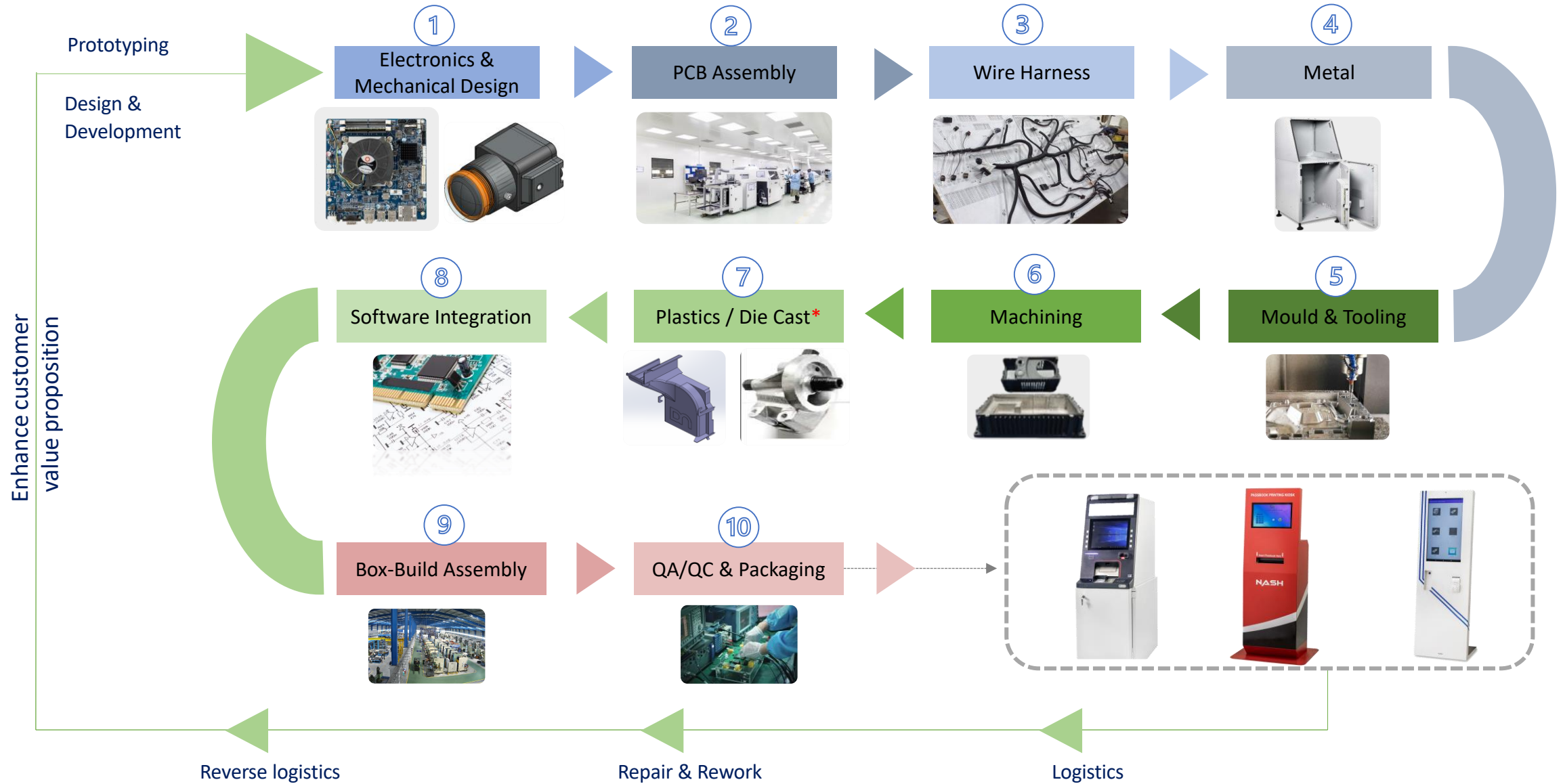
* Plastic In-Sourcing in progress

Automotive

Rear view camera

DC-DC Converter

Li-ion Battery Charger

ECU Covers

Dosing Control Unit

Cameras/Vision

Auto & Retail Camera

Camera Module

Webcam

Bullet CCTV Camera

Dome CCTV Camera

Smart Home Appliances

BLDC Controllers

IT Hardware

All-in-One PC

IOT

Motherboard

POS Printer

Banking Hardware

ATM

Passbook Printer

Smart Kiosk

Defense/Industrial

Compact Battery-Operated DC Control Torch

Alternate Energy

Hydrogen Fuel Cells

Healthcare

Oxygen Concentrator

UV Room Dis-Infection System

Eliminator UV Chamber

Urine Detection Cloth

Miscellaneous

RFID Reader

Distance Measurement Device

Fingerprint Reader

DC-DC Converters

2W (120W~220W),
3W (350W~500W),
4W (1500W)

EV Chargers / Swapping Stations

470W, 680W, 750W

15 A @ 230 V

Cell Cans and Tabs

Electrical Bus Bars & Assembly

NASH ENERGY

BLDC Controllers

2W – 800W

Cabinet Assemblies

BMS and Pack Design Services

Wire Harness

Sheet Metal frames for Packs
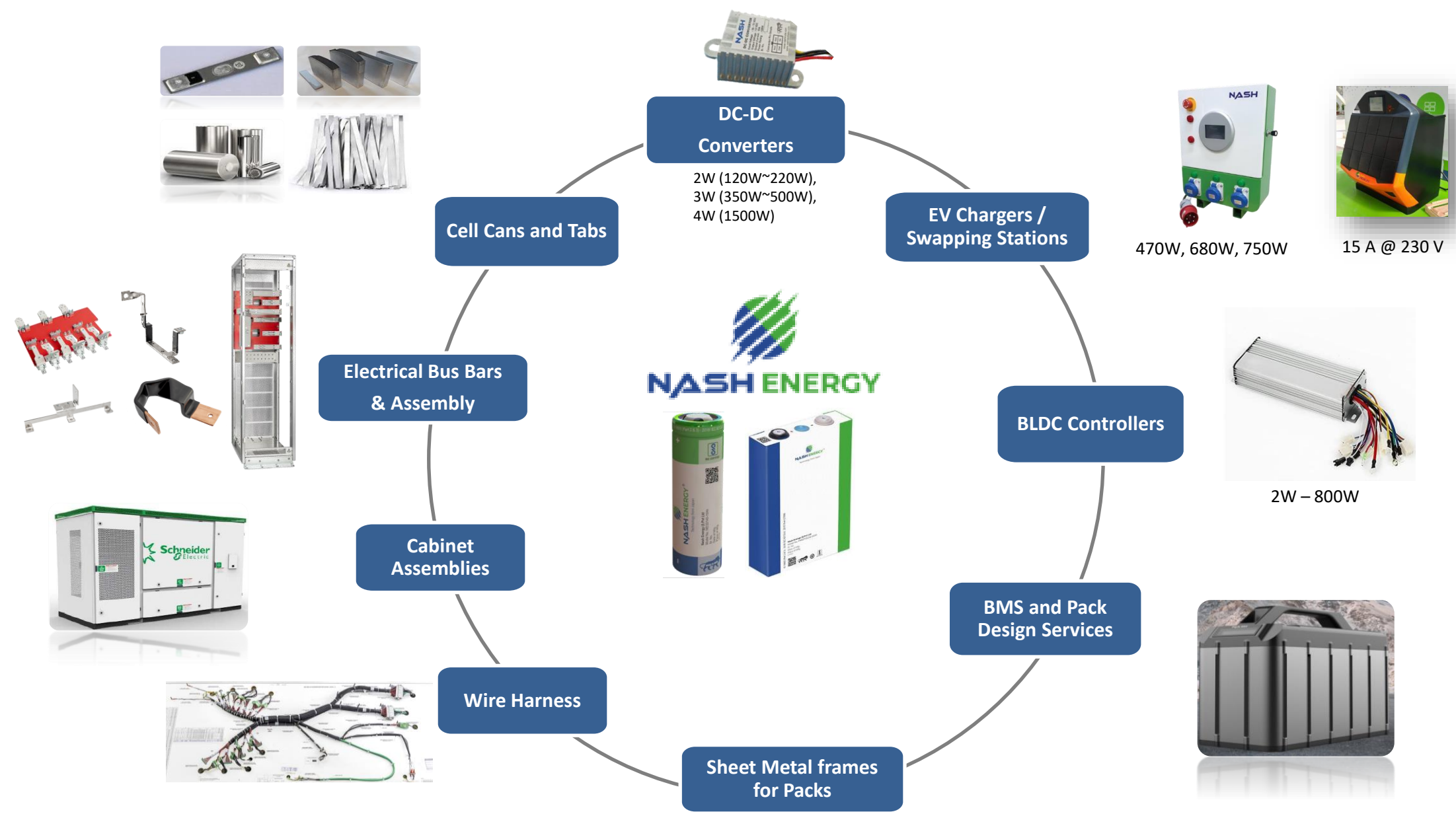
Research & Development: Capabilities & Tools

ID Creation

Harness Design

2D/3D CAD Design

Mechatronics Design

Product Testing

Cost Optimization

Electronics Design

Reverse Engineering

Obsolescence Removal

Firmware Design

Engineering Change Management

Cost Reduction

Application Software

Product Certification

Supplier / BOM Optimization

Tools

creo®

Visual Studio

SolidWorks

MATLAB

ALTIUM DESIGNER

Allegro® PCB Designer

cadence®

Mentor Graphics®
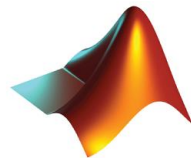
DFM, DFA & DFT activities

- With 10K+ Rules combination
- BOM Analysis
- PCB Analysis
- BOM/CAD Mismatch study
- Assembly feasibility study
- Panel Analysis
- Test Coverage Analysis
- Selective Soldering Analysis
- Hand Soldering Analysis

Radio Technologies

RFID

NFC

WiFi

Bluetooth

2G 3G

NB-IoT

LoRa

zigbee

4G 5G

Machines: Loader; Printer; SPI; Mounter; Link conveyor; Reflow; Cooling Conveyor; AOI; Unloader; Rework Station

Key Features
- Feeder Capacity - 102 Line items of 8mm & 48 Trays
- CPH: 48,000
- MES Software for Part Traceability
- PCB size:
    - Batch mounting: 50 mm × W 50 mm 〜 L 750 mm × W 610 mm
    - 2 position mounting: 50 mm × W 50 mm 〜 L 350 mm × W 610 mm)
- Component size :
    - Min 0201 chip / 03015 chip & 0402 chip 〜 L 150 × W 25 × T 40
    - Max weight 50Gms

Machines: Komax Wire Cutting & Stripping; Rotary Stripping; HST, Braid Sleeve Cut Machine Sl-100h; Crimping Press(2ton); Crimping Press(15 Ton) Komax Wdt Up- 60; Crimp Force Monitor Komax Qplite; Motorized Pull Load Tester Komax Qstat-100; Crimp Cross Sectional Lab Komax Sbl Micro Lab 3; Soldering Station Hakko Fx 838

Key Capabilities
- Multi-Conductor & Double Sheath Cable Processing
- Core Processing
- Intermediate Strip
- Hot Stamp Marking
- Inkjet Marking
- Sequence Processing

NASH Fabrication, Sheet Metal & Other Machineries

Fabrication Facility

Stamping Facility

Powder Coating

Ultrasonic Cleaning

CNC Tube Bending

Fiber Laser

Press Brake

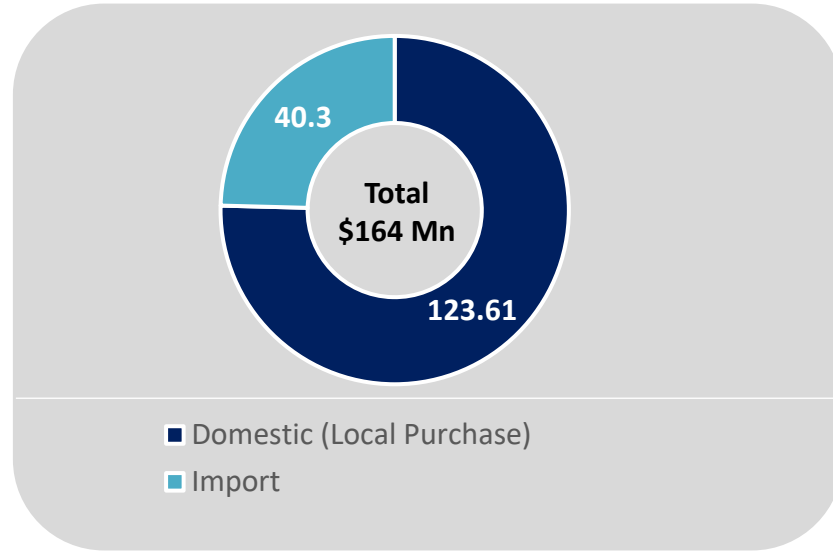Inert Atmosphere brazing furnace

Turret Punching
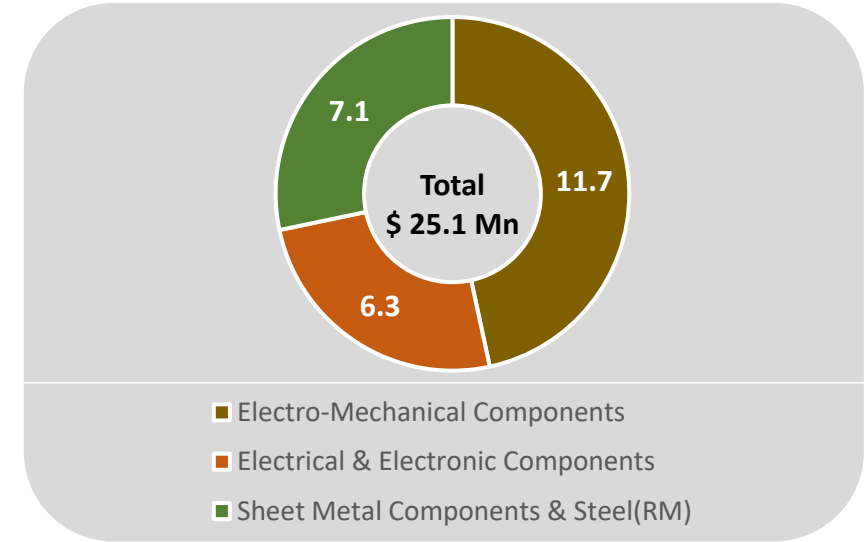

Wire Cut

CNC Machining

Robo Welding

Supply Chain Strength: 250+ Suppliers/Partners across the Globe

Total Purchase (All Plants) $ Mn

- 40.3
- Total $164 Mn
- 123.61

■ Domestic (Local Purchase)
■ Import

Note: Total Purchase for the FY 22-23 & FY 23-24 (till Jan 2024)

Total Purchase (ODM Plant) $ Mn

- 7.1
- 11.7
- Total $ 25.1 Mn
- 6.3

■ Electro-Mechanical Components
■ Electrical & Electronic Components
■ Sheet Metal Components & Steel(RM)

PS: Above data is pertaining to BOM parts excluding NASH interplant purchase & non BOM parts (Consumables/IDMs) - **FY 23-24**

Electronics / Metal / Wires - Suppliers

All-in-One PC

Product Highlights

- AIOT 8/9/12th Gen Motherboard
- 10.4", 15", 19" Display Model
- In-house design and development
- Economically efficient and high-quality industrial-grade refinement.
- Highly Reliable Design with BIOS customization option
- Test Diagnostic and Defect analysis Control
- Peripheral's connectivity USB/ HDMI/SATA/ Ethernet, M2.0, etc.,

Technology Highlights

Partners:

intel   avalue Technology Inc.

Software Compatibility:

Windows   Linux

Communication Protocols:

USB   WiFi   Bluetooth   microSD

Export To

TAIWAN   JAPAN

APPLICATIONS :

DEFENCE   ATM   KIOSK   BOARDING PASS/ MOVIES KIOSK   POS TERMINAL   HEALTH CARE   EDUCATION   INDUSTRY

- Mini-ITX industrial motherboard featuring rich I/O capabilities, advanced connectivity, and flexible customization options

- **Features**: 2 x HDMI 1.4 ,1 x LVDS; 2 x USB 2.0, 2 x USB 3.0; 1 x RS232C(COM1); 2 x SATA Ⅲ at speed of 6Gb/s; 2 x LAN(RJ45) connector; M.2 E key for Wi-Fi and Bluetooth interface; Intel I211AT GbE controller, Intel I219M Gigabit Ethernet PHY.

8/9th Gen Motherboard

- **Processor**: Intel Core i7/i5/i3/Celeron/Pentium 8/9th generation
- **Chipset**: Intel CNL PCH-H H310
- **Input Power**: 12~24VDC 6 pin lock type
- **OS Supported**: Win10 IOT, PRO; Linux 20.04
- **Temperature**: 0$^\theta$-60 $^\theta$ C & 0%~ 90%
- **Certification: RoHS**

12th Gen Motherboard

- **Processor**: Intel Core i9/i7/i5/i3/Celeron/ Pentium 11/12th generation
- **Chipset**: Intel CNL PCH- H610
- **Input Power:** 12~24VDC 6 pin lock type
- **OS Supported:** Win10 IOT Enterprise LTSC2022/Linux/Win 11 Professional/Win 11 IOT Enterprise LTSC2022
- **Temperature**: 0$^\theta$-60 $^\theta$ C & 0%~ 90%
- **Certification: RoHS**

Export To

JAPAN   USA

Industrial/Retail USB Camera

Description

- NDC2.4RT USB Camera is a Full High Definition (FHD) USB Camera with WDR up to 100dB
- Video: Maximum resolution of 1920 x 1080 at maximum frame rate of 60
- Camera Tuning Lab and Camera Dark Room facilities
- **Applications:** Kiosks, ATM, PC Multimedia, Biometrics etc.

Export To

Key Features

- Audio: In-built high-performance Omni-Directional digital MEMS microphone offers great sensitivity of about -46dBFS.
- In-built Image signal Processor Engine with USB2.0 high-speed controller with 2 lane MIPI Receiver interface and Parallel Interface.
- WDR – Wide Dynamic Range

Specifications

- **Imaging Sensor:** 1/2.7" CMOS Image Sensor
- **Interface:** MIPI/10 Bit Parallel Interface
- **Minimal Resolution:** 640 x 480
- **Other Resolution:** 768x432/ 1280x720/ 1920x1080 FHD
- **S/N:** Ratio 50 dB
- **Maximum Frame Rate:** 30 FPS
- **Scanning System:** Progressive
- **Video Output:** Highspeed, Full speed USB 2.0 Auto switch (UVC 1.1)
- **OS Supported**: Windows XP/Vista/7/8/10
- **AGC**: Auto
- **White Balance**: Auto
- **Working Temperature**: 0°C to 70°C
- **Certifications:**

UKCA CE UL CB

Automotive Camera

Description

- SD resolution camera module for Automotive application.
- Easy to install camera modules.
- Two standard video output (NTSC & PAL), which can be used all over the world.
- Can be used in ADAS system & 360° video Car camera setup.

Key Features

- Automotive grade SD resolution camera.
- Ultra-wide-angle compatibility.
- NTSC & PAL video Interface
- IP67 Water resistant.
- Over current, Over voltage & Reverse voltage protection.
- ESD & EMI protection up to 30KV.

Specifications

- **Image Sensor:** 1/3.5" CMOS sensor
- **Interface:** NTSC, PAL
- **Minimal Resolution:** 640*480
- **Other Resolution:** 720*530
- **S/N Ratio:** ≥38DB
- **Maximum Frame Rate:** 60 FPS
- **Scanning System:** Progressive
- **Video Output** NTSC/PAL
- **Screen:** 2.8" touch screen IPS Display
- **AGC:** Auto
- **White Balance:** Auto
- **Working Temperature** -40°C to 125°C
- **Certifications:**

UK CA CE UL CB

Security & Surveillance Camera: SKD/CKD Available

	NASH IP Camera Models				
Model Category	3/4/5Mp outdoor bullet Camera | Water proof IP66	2/4/5MP Outdoor PTZ camera | Two-way Talking | POE + Ethernet	2K Outdoor PTZ camera | Two-way Talking | POE + Ethernet	1080P wireless battery camera | Low power consumption | IP66 | No PTZ	1080P Indoor PTZ Camera | Two-way Talking | Cost-effective
Model:	NSC-31331WE	NSC-2241WE	NSC-12841E	NSC-2331W	NSC- 2441WA
Picture					
Lens & FOV	1G4P, F2.0 H92.3°*V67.6°*D120.3°	1G3P, F2.0, D86°, H74°, V42°	1G3P, F2.0, D86°, H74°, V42°	2G2P, F2.1; FOV: H101° V54° D121°	1G3P, F2.0 D91.9*H78.3*V42.8
Video Format	2048*1536 , 30fps, H.265	1920*1080 /15FPS, H.265	2560*1440P /15fps, H.265	1920*1080, 25FPS, H.264	1080P , 20fps, H.265
Network connection	2.4GHz Wi-Fi	2.4GHz, 802.11 b/g/n	Wi-Fi: No	Wireless, 2.4GHz Wi-Fi	2.4GHz Wi-Fi
Night vision	10 meters by 6pcs 850nm Infrared light and 4pcs white light	6pcs 850nm infrared light, Full color night vision, IR-CUT Auto switching	2pcs 850nm infrared light , IR-CUT Auto switching	5 meters by 4pcs*940nm infrared light and 2PCS*65lm LED light	10meters by 2pcs 850nm Infrared light
PTZ	355°Pan, 0°Tilt, Digital Zoom.	Pan 275°, Tilt 95°, 4x Digital Zoom	Pan 345°, Tilt 95°, 4xDigital Zoom	No	350°Pan, 67°Tilt, Digital Zoom.
Ethernet	RJ45 Ethernet 10/100Mbps	RJ45 Ethernet Port, 10/100Mbps	RJ45 Ethernet Port,	Lion 6500mAh	-
POE	Yes	No	Yes	6months if awake 300s per day	-
Single-way Audio	Support two-way voice intercom, echo cancellation	-	-	PIR, 8meters detection distance	-
Two-way Audio	-	Support two-way voice intercom, 5m distance, 4Ω3W speaker	Support single-way voice intercom, 5m distance , nospeaker	-	Support two-way voice intercom, echo cancellation
Motion detection	-	Yes	Yes	1meter distance with echo cancellation	Yes
Local Storage	-	-	-	Support upto 128GB TF card	-
Water proof	IP66	IP66	IP66	IP66	No
Power supply	DC12V / POE	DC 12V / 1A	POE	5V 1A	5V/1A
APP (IOS&Android)	PixStream	PixStream	PixStream	PixStream	PixStream

Camera Module

Description

- SD resolution camera module for Automotive application.
- NTSC & PAL video Interface worldwide application.
- Compatible to ADAS & 360° View
- Easy installation modules.
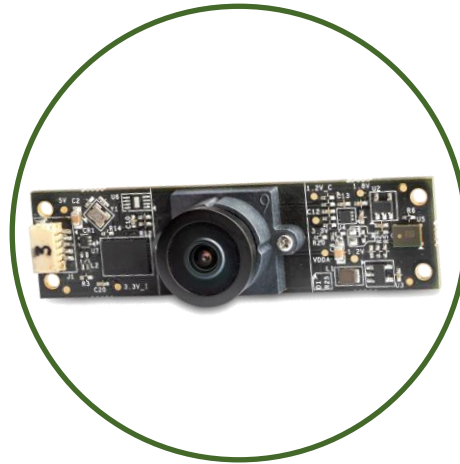
Key Features

- Ultra-wide-angle compatibility.
- IP67 Water resistant.
- Over current, Over voltage & Reverse voltage protection.
- ESD & EMI protection up to 30KV.

Specifications

- **Image sensor** 1/3.5" CMOS sensor
- **Interface** NTSC, PAL
- **Minimal Resolution** 640*480
- **Other Resolution** 720*530
- **S/N Ratio** ≥38DB
- **Maximum Frame rate** 60 FPS
- **Scanning System** Progressive
- **Video Output** NTSC/PAL
- **Screen** 2.8inch touch screen IPS Display
- **AGC:** Auto
- **White Balance:** Auto
- **Working Temperature** -40°C to 125° C
- **Certifications**

UK CA CE UL CB

Auto Focus Webcam

Product Features

- Full HD 1080p video calling, that's faster,
- smoother and works with different OS.
- Full HD 1080p video calling and recording.
- Brilliant 2MP pictures with Auto-Focus Statistical Engine.
- 3P+IR lens Construction with precisely tuned Fixed Focus with microphone for audio Capturing.
- Automatic low-light correction, White balance, Exposure control, Black Level offset control.
- Camera Enclosure Rotation Angle 360° and Tilt Angle 25° with Tripod option is also available.

System Requirements

- Windows XP/Vista/7/8/10/Linux
- Dual core 2Ghz or higher (Intel i3/i5/i7 or AMD equivalent)
- 2GB RAM or more
- Hard drive space for recorded videos
- USB 2.0 communication

Specifications

Brand	Nash Tech Labs
Manufacturer	Nash Industries
Model	VULCON USB CAM
Product Dimensions	95mmx57.5mmx46mm
Product Weight	
USB Cable Length	1m
Colour	Black
Item model number	6M00066
Operating System	Windows XP/Vista/7/8/10/Linux
Compatible Devices	Laptop, Computers, Smart TV
Special Features	In-build ISP tunning
Microphone	Sensitivity of −46 dBFS, Frequency Response from 45 Hz to >20 kHz
Number Of Items	1
Image Stabilization	Digital
Max Resolution	2.1MP
Video Capture Resolution	1920 x 1080
Connector Type	USB
Lens FOV	87.5° Max
Country of Origin	India

Thermal Printers

Product Highlights

- Android POS printer app on Play Store.

- Complex product: 2-sided printing, paper hopper, Dual feeder, Transport with capture.

- Environmental conditions: temp, humidity, ESD, safety, EMI/EMC.

- Printer sizes: 3-inch, 3.5-inch, 2-inch.

- Drivers & SDKs for Windows, Linux, Android.

- Communication protocols: USB, LAN, WIFI, BT.

- In-house life testing: 100 KM print length, 1 M cuts.

- Customer-specified features: font, character, image, diagnostics, QR code, Bar code, etc.

- Designed as per Japanese Standards
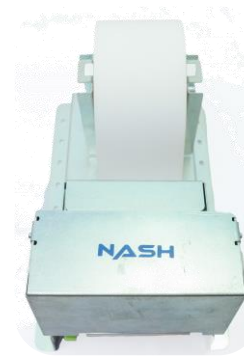
Technology Highlights

Partners:

SEIKO · MICROCHIP · PATENTED

IS 13252(PART 1)/IEC 60950-1
R - 62001864
Nash Industries (I) Pvt. Ltd.,
Designed By : Nash Industries (I) Pvt. Ltd.,
Manufactured in INDIA

Software Compatibility:

Windows · Linux · Android · CERTIFIED USB

Communication Protocols:

USB · Wi-Fi · Bluetooth · LAN

MAKE IN INDIA

BLDC Controller Solutions - Home Appliances
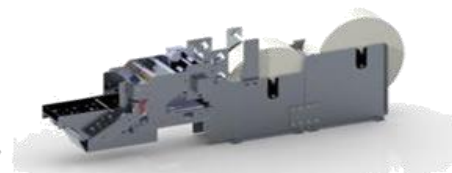
BLDC Controller Applications

Ceiling Fan

Water Pumps

Air Conditioner

BLDC Controller

Refrigerators

Washing Machine

TPW Fan

Available Solutions
Upcoming Solutions
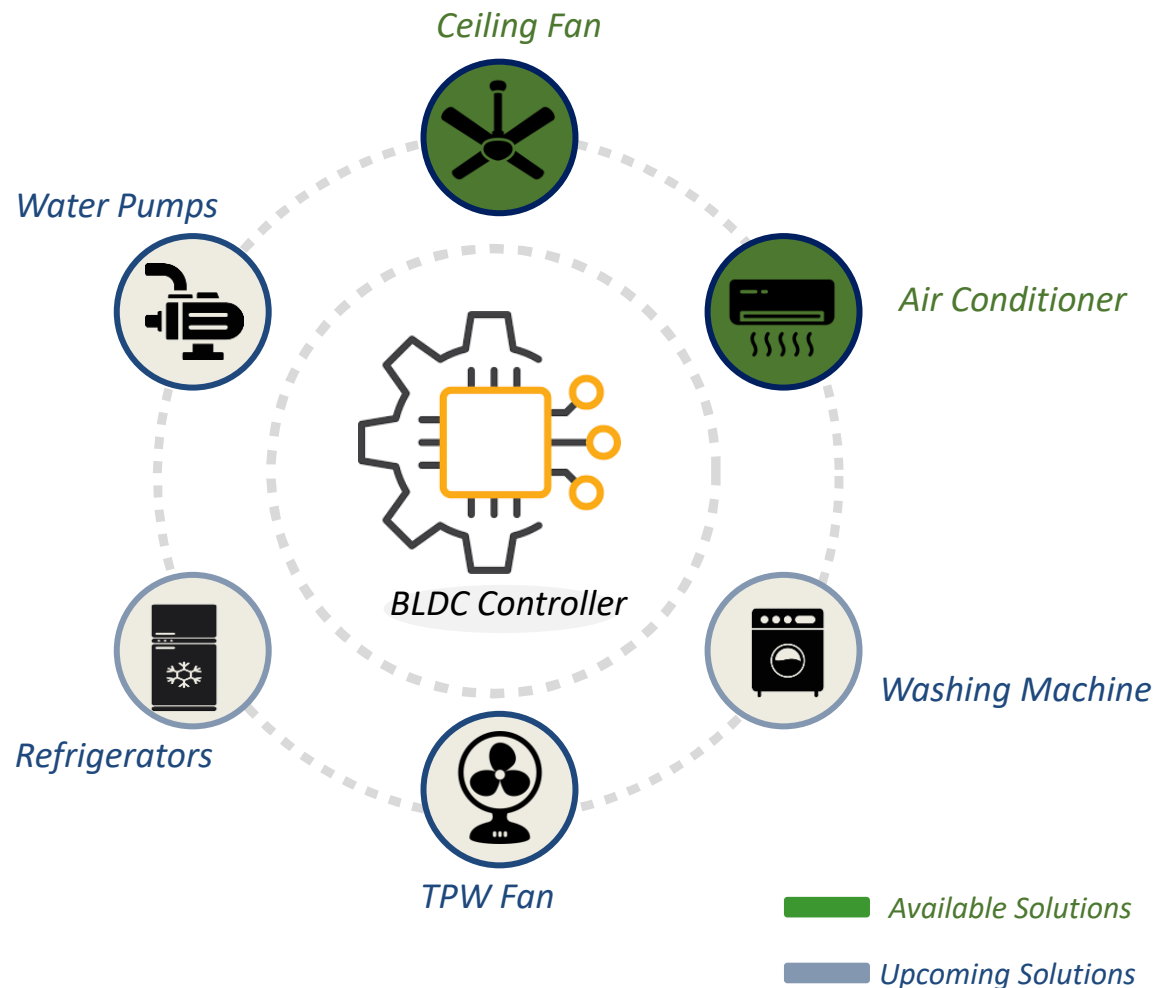
Current Capabilities

Ceiling Fan- Low Voltage

- Available LV solution up to 45W input power
- Active PFC design for >0.95 and <10% THD
- Solution will compliance up to 4KV Surge
- Efficiency >88%, 230V @Full Load
- MCU integration with Three Phase BLDC Motor Control IC.
- Integrated protections and reliability test compliance.
- Cost-effective module and seamless integration.

BLDC Motor Air Conditioner IDU/ODU Controllers

- ODU solution will support from 45W-135W input power
- IDU solution will support for 18W & 30W input power
- Efficiency >92%, 230V @Full Load
- Global proven solution with Japanese technology.
- Integrated protections and reliability test compliance.
- Cost-effective module and seamless integration

BLDC Motor Controller - Air Conditioner ODU/IDU

Description

- IPM used in the solution is globally proven

- Auxiliary power supply design for Industrial/ Residential cooling applications.

- Designed with Hall Sensor-based solution for IDU applications.

- Fully integrated Sensorless solution for Motor Controller designed up to 135W.

- Precision-designed for optimal performance and lower power consumption, using Hall sensor technology.
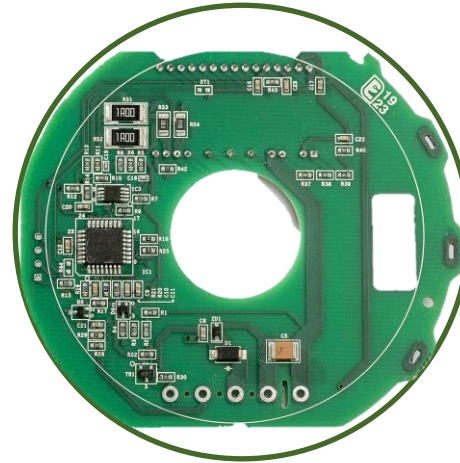
Key Features

- Over Voltage Protection
- Over Current Protection
- Thermal Protection
- Output short circuit protection
- Motor lock protection

Specifications-ODU

- Motor Type 3 phase BLDC
- Input Voltage Range 130~450 Vdc
- Current 0.7 A (max.)
- Power Rating: 35-135 W
- Speed 500-1350 RPM
- Control Technique V/F method
- Temp requirement -20°C to +70°C
- Sensor less Rotor positioning

Specifications-IDU

- Motor Type: 3 phase BLDC
- Input Voltage Range: 180-450 Vdc
- Current: 0.5 A
- Power Rating: 18-50 W
- Speed: 500-1350 RPM
- Control Technique V/F method
- Sensor-based Rotor positioning

BLDC – Ceiling Fan Controller Solution 35W & 45W (Low Voltage)

The BLDC Fan offers high speed, air delivery & consumes only 28-35W & 45W power with the advanced DC technology.

Description

- Low voltage controller operates with wide range of input with Low Total Harmonic Distortion.
- Enhanced Design with Active PFC technology to achieve high Power Factor.
- Control of Speed steps, Power, Timer using RF.
- IS 374:2019 Compliance
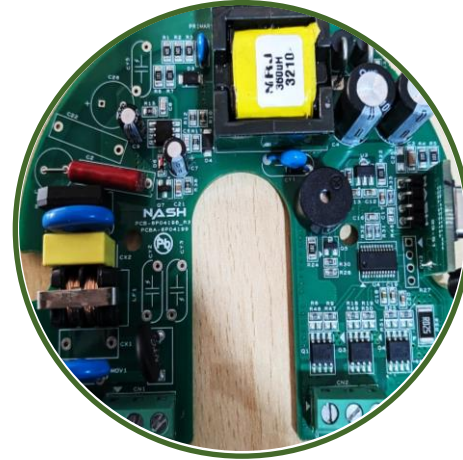
Specifications_35W

- **Input:** Single phase 90VAC-300VAC, 50Hz.
- **Power :** 35W
- **Power Factor**: >0.95 Power factor is maintained @ various voltages.
- **Total harmonic Distortion:** <10%

Key Features

- Capability to withstand 4KV Surge.
- Over voltage, Under voltage, Short circuit Protections.
- Auxiliary power supply (15V) for internal controllers.
- MCU integration with Three Phase BLDC Motor Control IC.
- Smart mode, Timer mode, Mop mode, Breeze mode.

Specifications_45W

- **Input:** Single phase 90VAC-300VAC, 50Hz.
- **Power:** 45W
- **Power Factor**: >0.95 Power factor is maintained @ various voltages.
- **Total harmonic Distortion:** <10%

Description

- IPM used in solution is globally proven

- Auxiliary power supply design for Industrial/ Residential cooling applications.

- Sensorless Cooler and Exhaust Motor Controller designed

- Precision-designed for optimal performance and lower power consumption

- Up to 4 Speeds controlled with Remote or Switch

Key Features

- Capability to withstand 4KV Surge.

- Over voltage, Under voltage, Over Current, Thermal, and Short circuit, Lock rotor Protections.

- 3-phase controller output

- Remote and switch-based Speed control

- Class B Insulation compliances

- Soft start for reducing inrush current

- Memory feature available for last speed during power failure and switch ON

Specifications 500W

- **Input:** Single phase 150-270VAC, 50Hz

- **Current:** 2A (Max.)

- **Power:** 500W (Max.)

- Motor Trip Voltage: <140VAC

- **Power Factor Correction**: Optional (APFC and PPFC)

- **Total Harmonic Distortion:** <20%

- **RPM:** 1130 – 1370 (Depends. On load)

- HiPOT protection: 1500VAC, <5mA

- Humidity 5 to 90%

- Withstand temperature 0°C to +40°C

EV - 3.3KW X3 AC Charger

Description

- Designing of electrical and electronics hardware, firmware, and software integration.
- Mechanical design meeting IP55 standards.
- Inclusive of safety measures.
- Product range: 1KW to 3.3KW.
- 3.3KW AC Charger tailored for EV-4W, delivering AC power at 230V/15A 1Ø from a 3Ø 415V AC

Certifications

Key Features

- User-friendly LCD display.
- Wired/wireless CMS integration.
- Battery backup for billing and data sync.
- Safety: Emergency stop button.
- Built-in network connectivity (OCPP).
- Online Payment Option

Specifications

- Simultaneous charging for three cars.
- 15A @230V charging output
- Power ratings 3.3KW Max.
- 3-pin Female Connector input plug.

DC-DC Converter

Description

- Converts 36-72V DC to 12-15V output.
- Compatible for EV application (2W & 3W)
- 4KV Electrostatic Discharge according to IEC 61000-4-2, and Automotive-grade
- Radiated Immunity as per AIS004.
- UV, OV, OC, & over-temperature protected
- Highly rugged and waterproof

Certifications

Key Features

- Make-in-India product.
- High efficiency with power rating of 60-220W.
- IP65/IP67 ratings
- Revers Polarity battery protection.
- Connector and wiring harness of superior quality.

Specifications-(60-220W)

- **Input: DC Input 36-85V**
- **Output Type:** Single Output
- **Output: 12V, 13V, 15V**
- **Power:** 60W-220W

Specifications-125W

- **Input:** DC input 36-85V
- **Output Type:** Dual Output
- **Output 1 :** 12V, 13V, 15V
- **Output 2 :** 5V for mobile charging
- **Power:** 60W-220W

A600-FINGERPRINT MODULE

Description

- FBI FAP 20 and STQC certified optical sensor

- Live Finger Detection (LFD) and AES-256 Encryption

- ISO19794-2, ISO19794-4, ANSI 378, ANSI 381 and WSQ supported

- Advanced Algorithm NIST MINEX III compliance Bione® fingerprint algorithm delivers the highest extracting and matching performance

Key Features

- FBI Certified: PIV Specification, Mobile ID FAP 20
- STQC Certified: UIDAI Level-0 certification
- Live Finger Detection (LFD)
- AES-256 Encryption
- High Image Quality Optical fingerprint technology
- Ideal for various industries like national ID, law enforcement, border security, finance, and healthcare.

Specifications

- Capture Mode: Optical Touch
- Fingerprinting Image: Distortion ≤1%
- Sensing Area :15.24*20.32
- Image Resolution: 500 dpi
- Gray level :256 level
- Communication Interface: USB 1.1 / 2.0
- Work Voltage :5.0 V
- Work Current: ≤200mA
- Temperature: 0°C-55°C
- Humidity :10-93%R.H
- ESD Contact: ±8KV, Air: ±15KV
- Certification :CE, FCC, RoHS, FBI PIV specification, Mobile ID FAP 20, STQC
- Supported OS: Windows XP / 7 / 8 / 10, Android, Linux

NEMO- RFID Module

Description

- The Wi-Fi module is an all-in-one system-on-a-chip (SOC) with a built-in TCP/IP protocol stack, providing Wi-Fi network connectivity to any microcontroller.

- Network Protocols: IPv4, TCP/UDP/HTTP/FTP

Key Features

- Security: WPA/WPA2

- Encryption: WEP/TKIP/AES

- Firmware Upgrade UART Download

- Onboard Antenna

Specifications

- Operating Current Average:80mA

- Operating Temperature   -40 °C ~ 85 °C

- MCU ESP8266

- Peripheral Interfaces
    - UART/I2C/I2S/GPIO/PWM

- External Interfaces (For Counting purposes)
    - 230VAC/Signal(J2)
    - 24VDC/Signal(J3)
    - 5VDC/Signal(J3)

- Operating Voltage   2.7V - 3.63V

- Wi-Fi Protocols 802.11 b/g/n

- Frequency Range 2.4GHz to 2.5GHz

19-inch Touch screen PC
(i7 Processor; 8GB RAM; 1 TB Hard disk)

3" Thermal Printer

Qatar Museum

CCTV Cover & Camera Provision

Enclosure Cabinet

Touch screen

Thermal Printer

Bank PoS Device Provision

POS Payment Module

Ticket Receipt Printer

Front Door

Storage Space

Plinth / Base
120 mm Exhaust Fans
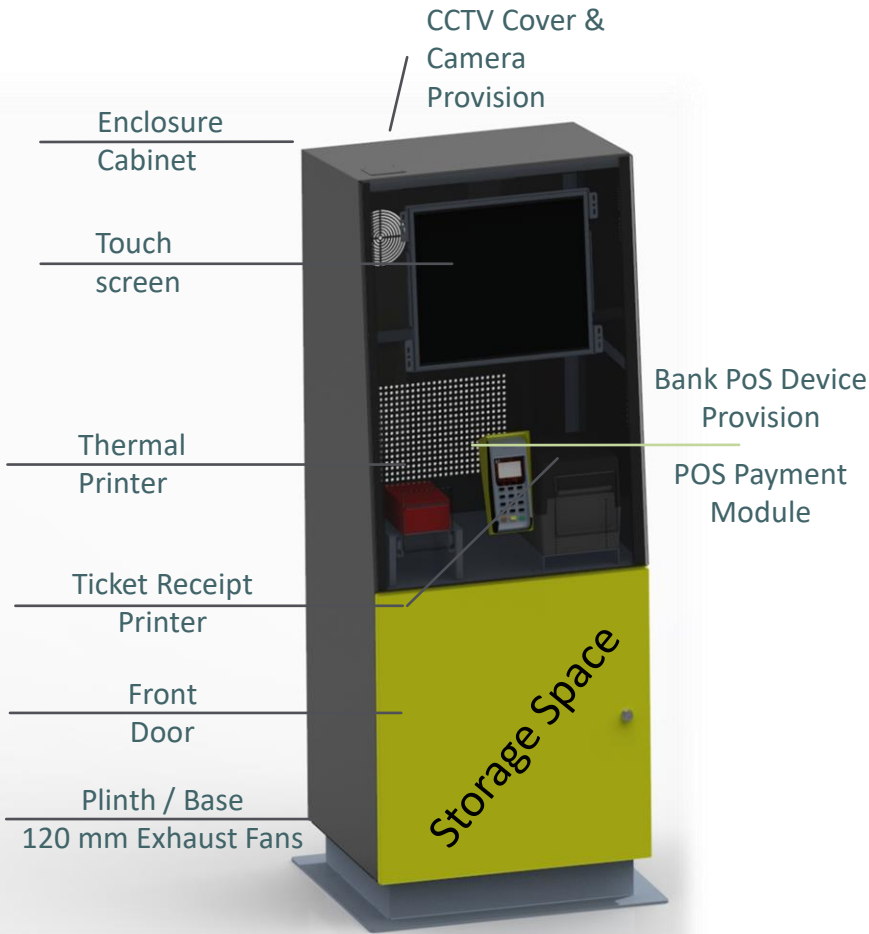
Key Highlights

- Standee Kiosk with All-in-one PC 17" touch monitor

- NASH 3.0" Thermal Printer for Ticket printing

- Intel Quad core processor, 4GB RAM, 128GB SSD

- Printer drivers, SDKs for Windows, Linux, Android

- USB, LAN, WIFI, BT communication protocols

SL No	Specification	Description
1	Product Dimensions in cm	50 X 44 X 127
2	Product Weight in KG	29.5 approx.
3	Enclosure	Sheet metal Fabrication Material – CRCA IS 513 D Thickness – 2 mm Powder Coting Base – RAL 9005 (Black) Stand – RAL 9010 (White
4	All in Once PC	17" PCAP Touch AIO Computer Intel J 1900 Quad Core 2.0GHz CPU / 4GB RAM / 128 GB SSD. OS Linux
5	Nash Printer	3" Thermal printer 100mm/sec speed, with smps
6	Bar code scanners	Provision in Kiosk available
7	4 socket extn	4 socket extention box
8	Power Cable	Yes, based on country
9	Ethernet Cable	Lan cat 6 cable
10	Power and Ethernet socket	combo socket for external interface

1050.0

550.0

1250.0

920.0

360.0

810.0

30.0

15.2" MONITOR

SPEAKER

PASSBOOK PRINTER

INNOVATION. TRUST.

Plant Digitalization
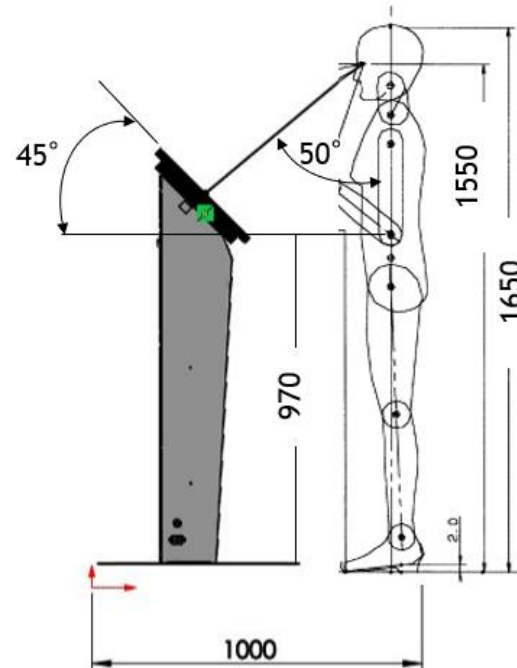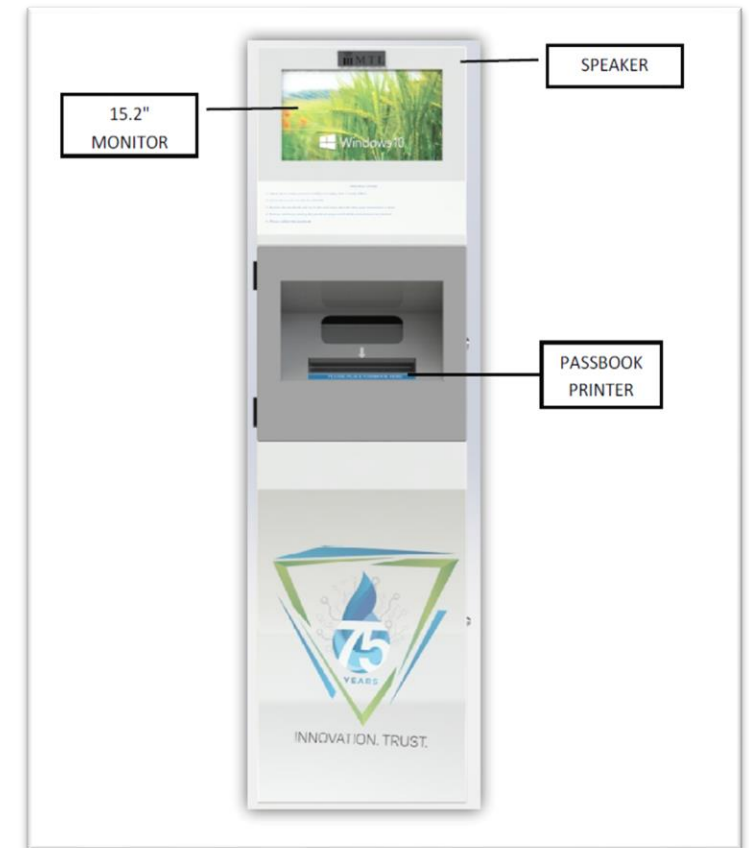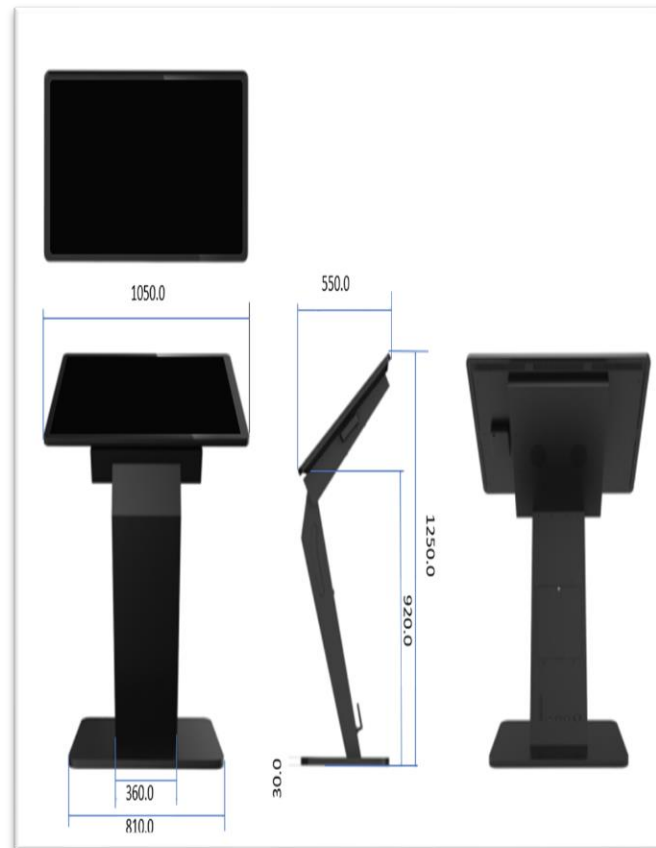
Centralized Document Management System

Benefits:

- Vision Control & Error Proofing
- Centralized Data Storage System For Easy Employee Reference During Inspection & Audits.
- Continues Improvement With Customer Satisfaction
- Reliable and Consistent Data With Long Retention Period
- Integrated With SAP
- Elimination of Storage Space & Reduction In Employee NV Activity
- Paperless Digital Environment with Effective Improvements in 5's
- Innovative Approach with Increased Employee Morale

Customer Touchpoint Information

Scanning Inspector Part number QR Code for Checklist
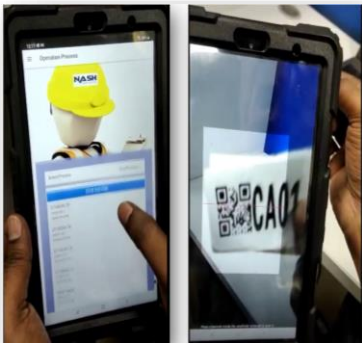
Inspector Enter Measure Result Picture
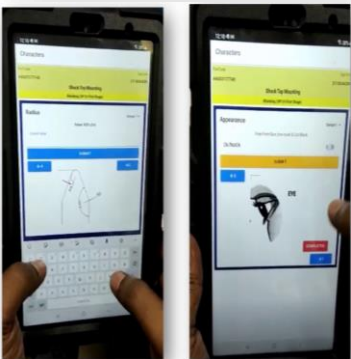
In Process Checklist

Planner Login & Daily Production plan Upload
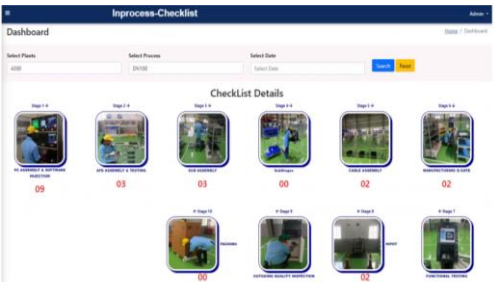
Dashboard Storage

Process Checklist

In Process Checklist

Reliability Testing

ENVISYS Environment Test Chamber
- Workspace: 650X600X800 MM
- Volume: 300 Liters (10CU.FT)
- Temperature: -40 °C to 180°C
- Humidity: 10% to 95% (10°C to 85°C)

Climate, Vibration, and Corrosion
- Electronic solution environmental testing facilities
- Compliance with industry standards

Accelerated Reliability Testing
- Failure Mode Verification Testing (FMVT®)
- Full System Life Testing (FSLT)
- HALT/HASS (IEC Standards)
- Step Stress Testing

Product Certification
- BIS, UL, CE, FDA, FCC
- UV Efficacy, UVC Light Intensity Measurement
- UV Leakage (NABL & ICMR Accredited)

Electrical, EMC, and Safety

ESD Simulator
- Output voltage: 0.1 AC 20kv ±5%
- Polarity: Positive/ Negative
- Test Function: Single, count, 20pps, Air, contact, IEC Level

Safety Standards
- Electrical safety tester (Gwinstek GPT-9000)
- AC/DC Withstand: 5KVA/6KVA
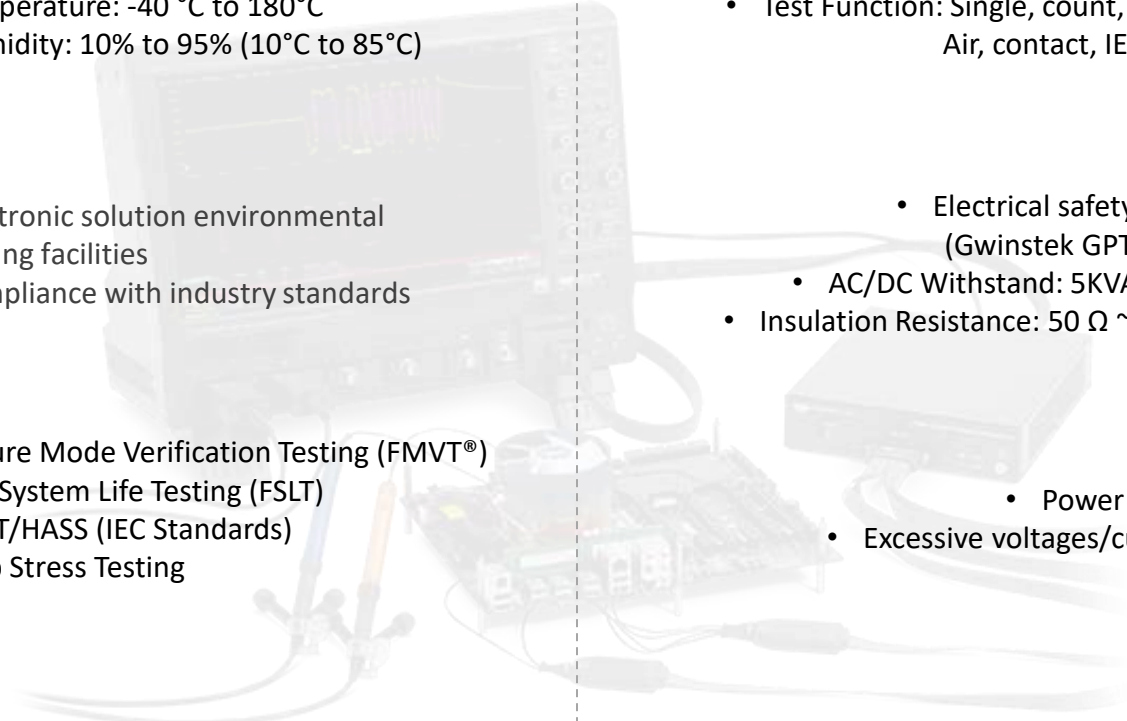- Insulation Resistance: 50 Ω ~1000Ω

Electrical Test
- Power cycling
- Excessive voltages/currents

USB Compliance Test
- Lecroy TF-USB-B Test Fixture (High speed/Full speed/low speed)

Testing Equipment's

- **Envisys Environment Test Chamber**
- **Waverunner**
- **Single-phase Master Programmable AC/DC Power Source**
- **Arbitary Function Generator**
- **AC/DC power Meters**
- **Driver Testing Machine**
- **DC Power Supply 30V/5A**
- **4-channel Keysight CRO**
- Variac
- ESD Simulator
- Data Acquisition System
- Digital Multimeter

- DC- Electronics Load 1200W
- DC- Electronics Load 300W
- 1Kw DC power supply 100V/10A
- Resistive load banks
- Digital tacho meter
- Anemometer
- 2-channel Keysight CRO
- Digital Mustimeters 0-1000V
- DC Power supply 30V/10A
- AC/DC clamp meters 200A
- Keysight LCR Meters
- AC/DC power Meters
- Lecroy TF-USB-B Test Fixture
- Electrical Safety Tester/ Hi-pot Tester

Awards & Recognitions

BOSCH India – Best Performance Award - 2022

Daimler Truck – Best Supplier - Quality - 2022

Tenneco

Hyundai

Danfoss

BOSCH – Best Supplier Multi-Year Awards (Global+India)

Hitachi Best Supplier Award - 2019

Schneider

Faurecia

NCR

Schneider – Best Responsiveness Award - 2022

Visteon – Best Supplier Award - 2022

Faiveley

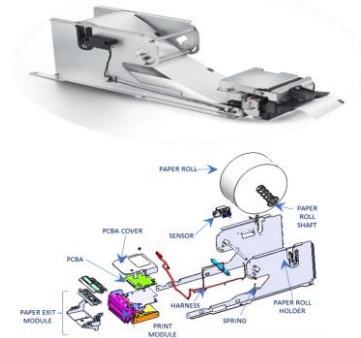**GE Healthcare**

www.nashtechlabs.com
www.nashindia.com
Email: info@nashindia.com

Patents & Technologies

Patent – 01
RPR Interactive Receipt Dispensing System

Patent Number: 201741042530
Date filed: Nov 2017

Patent – 02
External Air Purification System in Vehicles

Patent Number: 201941022243
Date filed: April 2020

Patent – 03 & 04
Smart Kitchen: Inventory & Ingredient Tracking Smart Jars in Pantries

Patent Number: 202041003118 / 1923701PCT
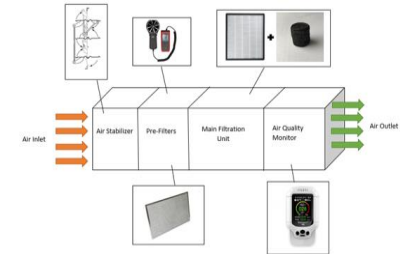Date filed: Jan 2020 / Mar 2020

Patent – 05
Battery Thermal Management System (BTMS) with Liquid cooling system with drag reducing polymers.

Patent Number: 202141030759

Patent – 06
Distance measurement on a mesh network

Patent Number: 202241007466
Date filed: oct 2021

Patent – 07
Reusable wetness detection sensor

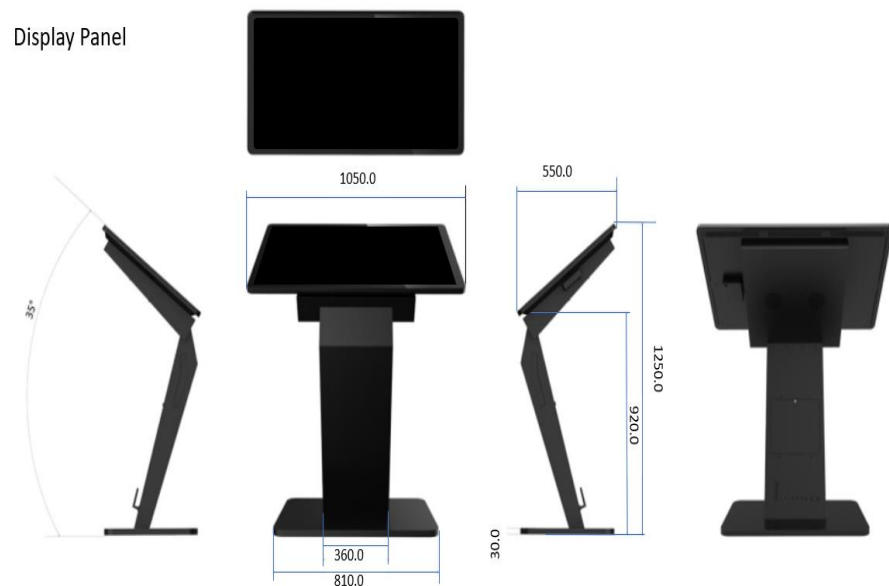Patent Number: 202141045207
Date filed: oct 2021

Patent – 08 : Combined CMOS Sensor In Single Chip with Four Angle Periscope Lens

Patent – 09 : IOT Device Connected to Pressure Sensor and Wetness Detection Sensor

Touch Panel Kiosk: 43"

Display Panel

- 10 Point PCAP Touch
- IPS Panel
- Portrait / Landscape Orientation
- Anti Fingerprint glass
- Smooth touch
- Wi-Fi
- USB ports

	Display Size	43 inch
	Resolution	1920 x 1080
	Display Area (mm)	942.5 x 530.5
	Aspect ratio	16:09
	Pixel Pitch	0.495 x 0.495
	brightness (cd/m2)	450
	Colour	16.7mn
	Viewing Angle	178 deg
PANEL	Contrast Ratio	5000:1
	touch Technology	Projected Capacitive
	Touch points	10
TOUCH	Glass Hardness	7H min
AUDIO	Speaker type	2W, 5Ω (x2)
	Inputs	HDMI, VGA, RS-232
	Audio input	Audio socket 3.5mm
AV I/O	Audio output	Audio socket 3.5mm
	Power consumption (W)	65
Power	Input voltage	AC 110 - 240V (50Hz - 60Hz)
	Dimension	1050 x 1250 x 550
	Net weigh	70
Mechanical	Gross weight	80
	Operating temp	0 C to 50 C
	Storage temp	-30 C to 60 C
	Operating Humidity	10% to 80%
Environmental	Storage Humidity	5% to 95 %
		Processor: RK3399
		Memory : 4 GB DDR3
		Storage : 32GB EMMC
		Interface : COM*6, Network port*1, audio output*1, VGA*1,
Computer	CPU	HDMI *1, WiFi interface*1, DC
Accessories	Included	Usermanual, Power cable