

Passenger Information and Coach Computing Unit (PICCU)

Automation on Indian Railways Coaches has been traditionally approached in a piecemeal manner. Each Microprocessor based equipment operates in its own silo. Railways dependence on third-party maintenance is hence overbearing and a large amount is spent on expensive AMC's for periodic maintenance of these devices. Further, the overriding paradigm is Reactive or breakdown maintenance owing to pressures of maintenance.

PICCU is a paradigm shift. It is a powerful expandable computing device based on Open Source Technologies that integrates all Control Systems related to Passenger Comfort or coach performance to a single web interface. Using industry standard Apps that may come from the PICCU OEM (pre-installed applications) or may be developed by third parties using the API documents provided by the OEM, PICCU performs an expandable platform.

Key Features :

- Fanless and Fully Sealed
- Best in-Class processor
- Capacitive 7" touch Screen
- Anti vandal Touch Panel
- Inbuilt GPS
- Inbuilt GSM/GPRS modem
- Wi-fi enabled
- Expandable
- Highly Rugged design



PICCU - Passenger Information and Coach Computing Unit, (also known as MPU server) - is an on-board high-end processing system/platform. It is a single integrated computing unit that performs the functions of Passenger Information and Display System, Passenger Address/Announcement System (PAS) and CCTV/Camera/Video Analytic System for Surveillance Applications. It can integrate with Train-wide/Coach-wide IP Backbone and Network for all Components/LRUs including functional Video modules (e.g. LCD Screens and IP Cameras etc.) and Multi-Drop RS-485 Data-link and Analog Audio Signal lines for high quality train-wide audio distribution. In addition to wired communications, it supports Wi-Fi/Wireless technology and network for integrating same components/LRUs wirelessly too. Hence, the system is a Hybrid and Redundant system to optimize bandwidth and handle failure and fault fall-back conditions, in which these systems and communication media work complementary and redundant to each other..The system operates on GPS and manual triggers to automatically generate a wide range of automatic alerts relevant to passengers and train operating staff.

Technical Specification:



Venus Optitech PICCU

Product Model	Optitech - PICCU-NVR-CVVR
Processor	Quad Core Intel Atom based processor/ Intel Core i3/ Core i5
Hosted Servers	Infotainment Media Content Server DHCP Server
Memory	Slot for 2 HDD/ SSD of 1TB each
Mechanical Dimension	Frontal plate: 420 W x 182 H mm Case without brackets: 370 W x 132 H x 262 D mm without connectors Case: CRCA and Aluminum sheet Fixing: 10 slots 12x6.5 mm
Electrical	Input power supply voltage: 110Vdc(85-145Vdc) Protections: Polarity inversion, Over voltage, Short Circuit Standards: IEC 60571, IEC 61000
Environmental	Operating temperature: -25 °C to 70° C Operating humidity: 0% to 95% Standards: IEC 60571, IEC 61373, IEC 60529, IEC 60068
User Interface	7" LCD with Touch screen
Data Communication	Data interface: 4xEIA RS485, 2x Gigabit Ethernet, 1x USB Input: 4x digital, 2x Audio Output: 2x 100V audio(40W each), 2x potential free contact, VGA signal
Network Communication	4G GSM, GPS, Wifi (Optional)
Vibration and Shock test	As per IEC 61373 and 60571