Renice Storage Device
In Public Transportation Passenger Information System

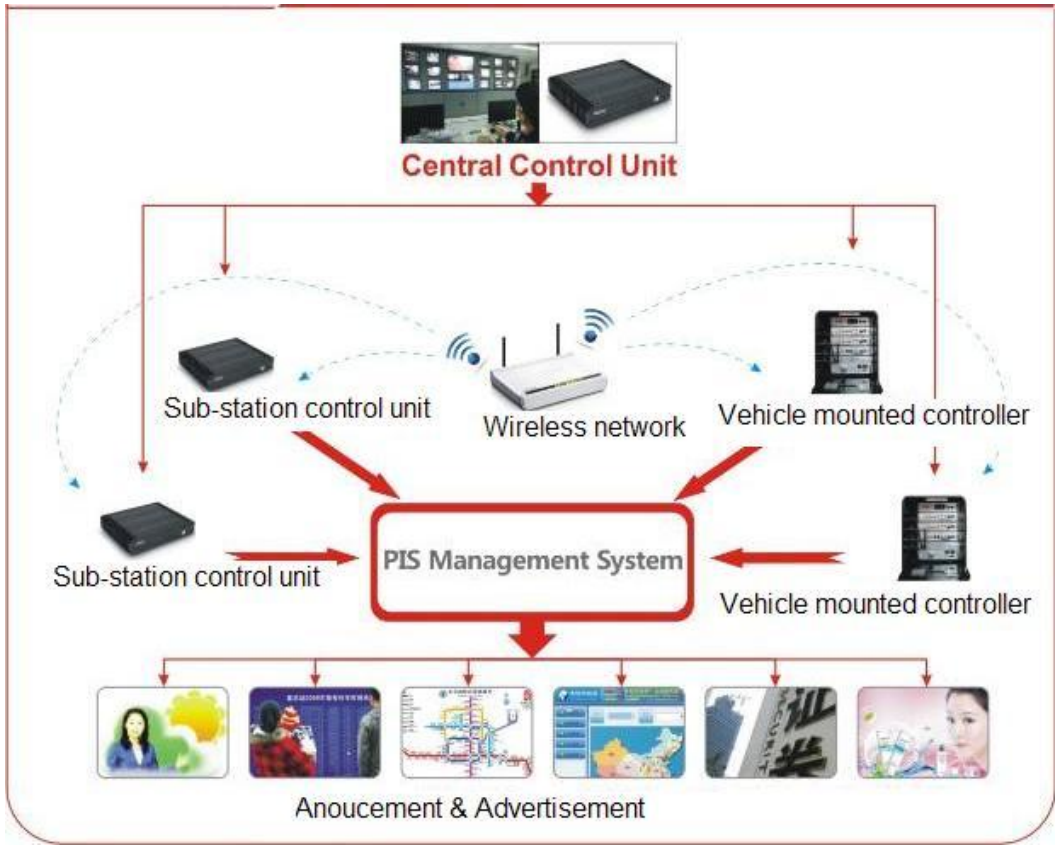
Background - Passenger Information System

Public transportation passenger information system is one of the important part of public transportation system. Passenger information system(PIS) provides multiple transport means information to passengers before or during travels. Among the passenger information systems, the system mainly provides public transportation information is called public transportation passenger information system.

International market:
Developed countries take passenger information system as an important sector of intelligent public transportation for study. Countries like US, Japan, Canada, UK, France, Korea invested great human and material resources working on intelligent public transportation systems and got notable achievements.

Domestic market:
Our public transportation passenger information system is still at startup stage, information inquiry is single and lack of rationality. Although public information service system base on internet or telephone happens in some cities, the overall still at a low level.
Public transportation passenger information system includes the basic algorithm study like passenger travel path optimization and predictions about bus arrival and departure times, while there is little study on this in domestic transportation field.

Public Transportation Passenger Information System



PIS system mainly consists of five parts:

- Central control unit: provides the core information of the whole PIS, program broadcast, video surveillance, operations info check and system management.
- Station control unit: rebroadcast the programs from the central system, video surveillance, station operations info check and station system
- Vehicle mounted controller: rebroadcast the programs from the central or station systems, video surveillance, in-vehicle operations information, passengers' information management, etc.
- Network sub system: The central system communicate with station systems via wired network. Station systems and buses communicate with wireless network.
- Advertisement system: make and edit the dynamic pictures of information, video, etc.

Storage Device Requirement by Passenger Information System

As a part of public transportation system, PIS has very demanding requirements on storage solutions like small size, low power consumption, high reliability working in extreme high/low temperatures, high resistance to shock/vibration.

Meanwhile, PIS is often expensive to replace, and thus the integrated storage must be engineered for a long operational field life. Storages with fixed BOM and long term availability would be favorable choice for PIS designers.
Besides, surges, spike, blackouts and brownouts may happen in public transportation fields, storages without power fail protection function may fail when power fault happens. Thus the high Robustness of storages under Power Fault is required.

Compact Size

Low Power Consumption

High Reliability Working in Harsh Environment (Extreme temp, high vibration/shock)

Fixed BOM and Long Term Availability

Robustness under Power Faults

Product Name	Industrial mSATA SSD	
Interface	52pin, SATAIII 6.0Gbps	
Capacity	MLC: 32GB~1TB/ SLC: 16GB~256GB	
Performance	Sequential Read/ Write: 520MB/ 440MB/s 4K Random Read/ Write IOPS: 70,000/ 75,000	
Dimension	50.95x30.0x3.65mm	
Environment	Vibration	10Hz-2000Hz, 16.4 G (X, Y, Z axis, 1 hour /axis)
	Shock	1,500 G, 0.5ms(Half-sine wave, ±X,±Y,±Z axis, 1 time/axis)
	Operation Temp.	-40° C ~+85° C
Power	Input Voltage	3.3V±5%
	Power Consumption	R/W: 1.5W/ 6W Idle: 0.6W
Advanced Features	TRIM Support	YES
	SMART Support	YES
	NCQ	YES
	Power Failure Protection	YES
	Over voltage & Inrush Protection	YES
	Secure Erase & Quick Erase	Optional