

IT-ATP* Series (CBTC)

* IT-ATP: Information Technology ATP

Radio-Based Train Control System for Airport APM/Urban Transport

Kyosan's radio-based train control system: IT-ATP, is a train control system which is designed to make transfer to radio easy, whether step-by-step or partial, for not only newly-built lines, but also for existing lines. Kyosan has delivered this system for three lines in total: two Airport Automated People Mover (APM) lines, and one urban transport line.

In addition, our IT-ATP can be used for both LCX (Leaky Coaxial) and space-wave radio methods. It can also be applied to a wide variety of railway lines such as iron-wheeled metros and urban railways.



South Airport APM,
Orlando International Airport



SkyConnect APM,
Tampa International Airport



Macau LRT Taipa Line

Table 1: IT-ATP System Design Specifications Already Delivered

Items	Orlando International Airport South Airport APM	Tampa International Airport SkyConnect APM	Macau LRT Taipa Line
Operation Area	Orlando International Airport (City of Orlando, Orange County, Florida, USA)	Tampa International Airport (City of Tampa, Hillsborough County, Florida, USA)	Taipa Island and Cotai Strip (Macao Special Administrative Region of the People's Republic of China)
Opened	17th November, 2017	14th February, 2018	10th December, 2019
Track Length	2.3 km x 2 (Double-Track)	2.3 km x 2 (Double-Track)	9.3 km x 2 (Double-Track)
Number of Stations	2 Stations	3 Stations	11 Stations
Track Type	Rubber Tire	Rubber Tire	Rubber Tire
Number of Trainsets	1 Car x 6 Sets (Maximum: 3-Car Set)	2 Cars x 8 Sets (Maximum: 4-Car Set)	2 Cars x 55 Sets (Maximum: 4-Car Set)
Depots	None	Included	Included
Maintenance Cars	None	Included	Included
GOA*	GOA4 (Unmanned Operation)	GOA4 (Unmanned Operation)	GOA4 (Unmanned Operation)
Maximum Speed	72km/h (45mph)	80km/h (50mph)	80km/h
Minimum Time Interval	120 sec	120 sec	95 sec
Radio System	LCX Cables	LCX Cables	LCX Cables
Supplementary Train Detection	None	None	Included
Coupling/Decoupling	Manual Only	Manual Only	Automatic or Manual
Triangular Junction	None	Included	None

* GOA: Grade of Automation

Table 2: IT-ATP System Variations in Accordance with Target-Track Sections

Items	For Urban Transport	For Airport APM
ATP Wayside Controller	Multiple Controllers According to Control Sections	Single Control Section (Can be Enhanced to Multiple Controllers)
Monitor	Multiple-Equipment Integrated Type	Simple, Per-Equipment Type (Integrated Type Also Available)
Number of Trainsets	Available over 100 Sets	Up to 20 Sets per Controller
Operation Plan	Scheduled Operation	Shuttle/On-Demand Operation
Temporary Speed Limit	Advanced Setting Available per Section with Temporary Controllers	Uniform Speed Limit for All Lines (Multiple Speed Levels Available)