为满足高度自动化的需求，
提供可信赖的高性能服务。

As Automation Needs Become More Sophisticated,
Nippon Signal Stands for Reliable, High-Performance Solutions.
Railway stations are steadily evolving. Nippon Signal’s AFC business supplies equipment and systems to promote automation of station operations.
The development of IC cards has transformed passenger gate and fare collection operations, helping to make passenger flows smoother and faster.
The company’s AFC business was among the first to take advantage of the latest IC card systems. Using proven technologies whose reliability has been confirmed by long years of experience in delivering AFC systems, we are keeping ahead of the times with regard to future AFC needs. We do this by actively developing innovative systems that will promote the automation and accelerate the speed of a wide variety of station operations, keeping in mind that the latest concepts in station design seek to boost the value of stations by transforming them into centers of community life.
Nippon Signal has also developed AFC systems for airport use. We have already achieved good results with our boarding pass printer and automatic check-in machines.
1972年以后日本信号为多条线路提供了整套AFC系统

Nippon Signal has supplied various AFC systems to many railway companies since 1972.
日本国内市场份额  Our market share of AFC in Japan

日本的AFC市场有5家公司构成，其中日本信号占到了35%以上的份额，是市场的领军者。
5 AFC companies including us exist in Japanese market. We have more than 35% market share as a leader company of AFC in Japan.

日本信号 NIPPON SIGNAL
2004年5月现在 (As of May, 2004)

自动售票机  Ticket Vending Machine (TVM)
自动补票机  Fare Adjustment Machine (FAM)
定期票发行机  Commuter pass Vending Machine (CVM)

圆图数据 (
30%  13913台
70%  6034台
)

30%  13913台
70%  6034台
AFC Products

GX-7i-S 自动SJT检票机(非接触IC卡专用)
<可应对单程票IC卡>
GX-7i-S AG for SJT IC card collection at an exit (SJT means Single Journey Ticket.)

可实现短时间内的大客流通过
Large number of passengers can be passed through the AG in a short time.

- 可应对ISO14443TypeA·TypeB·TypeC
  ISO14443TypeA, TypeB and TypeC to be applicable.

- 可回收单程票IC卡
  SJT(Single Journey Ticket) IC card to be collectable.

- 高质量的数据保存能力（内存）
  Advanced storage of data (memory) to be guaranteed.

- 可回收3800张以上的IC卡
  (950张/盒×4盒)
  More than 3,800 pieces SJT IC cards to be collectable.
使用方法  Handling Manual

ICSJT出站时
IN the case of IC SJT

持其他IC票出站时
In the case of other IC tickets

IC天线部、ICSJT回收部
IC card attestation part / SJT IC card collection slot

盒式IC卡回收箱
(Cassette type IC card stacker)
(Storage of used SJT IC card)

醒目的引导显示灯
Prominent guide light
AFC Products
GX-7i 非接触IC卡专用自动检票机
GX-7i AG only for IC

IC卡车票系统的优势是无需维护，并已实现高处处理和小型化。
GX-7i is developed under the concept of high speed processing, size down and maintenance-free, that are the feature of IC ticket system.

- 可实现短时间内大客流通过
  Large number of passengers can be passed through the AG in a short time.

- 采用高性能CPU、实时OS
  High-performance CPU and real-time OS to be adopted.

- 可应对POST PAY (后付款)/自动充值等新系统
  New revenue systems such as post pay and automatic charge to be adopted.

- 可应对移动车票（手机、PDA等）
  Mobile ticket system to be adopted (I.E. a mobile phone, PDA terminal, etc.).

- 高质量的数据保存能力（内存）
  Advanced storage of data (memory) to be guaranteed.

- 配有电池，可应对IC处理中的停电现象
  Battery for IC processing at a power failure to be equipped.

利用声光引导乘客顺利通过
Light and audio guidance help a passenger to pass AG smoothly

- 引导显示灯  Guide light
  In case IC ticket is fair, guide light shall be switched on and then help a passenger to pass AG smoothly.

- 异常显示灯（红色LED）
  Warning light (Red LED)
  In case a passenger has not completed IC card processing, warning light shall be switched on.

- 门模块 Door unit
  Operation speed of door and it's pressure shall be adjustable at the discretion of a user.

- 通道照明 Passage light
  Passage is brightly lit up with a fluorescent light.

- 引导显示部  Guide display
  1. 处理内容显示
  2. 内置员工操作台
  The details of processing shall be displayed quickly.

- IC卡检定部 IC card attestation part
  Design of IC card attestation shall be modified at the discretion of a user.

- 禁止进入显示灯（红色LED）
  NO ENTER warning display (Red LED)
  In the case of "NO ENTER", big "x" mark sign shall show a passenger "NO ENTER" status.

- 进入显示灯（蓝色LED）
  "ENTER" display (Blue LED)
  Large-size and high luminosity LED display show a passenger the passage only for IC card holder clearly.
CGX-7i 简易非接触IC卡专用自动检票机

CGX-7i Compact AG only for IC card

可使用IC卡的省空间小型检票机。有立式和台式两种。
Space-saving type Compact AG. Both a stand type and a unit type shall be available.

- 可实现短时间内大批流通过
  Large number of passengers can be passed through the AG in a short time.
- 磁票自动检票机
  Magnetic ticket
- 采用5.5英寸彩色LCD，充分重视向导作用
  Intelligible display of 5.5 inch color LCD to be equipped.
- LED使判定结果一目了然
  LED shows a passenger result of IC card attestation clearly.
- 车票判定功能
  Ticket attestation function.

GX-7 非接触IC卡 + 磁票自动检票机

GX-7 AG for both IC card and Magnetic ticket

GX-7作为新一代检票机，不但可以同时处理多张票，更可应对新的客流形态，并具有小型化、高速化、安全性和可扩展性。
GX-7 AG which was developed as the next generation machine was also developed as space-saving/
High speed processing and security/expansion of system as well as multiticket processing at the same time with taking passenger flow in future into consideration.

- 可实现短时间内大批流通过
  Large number of passengers can be passed through the AG in a short time.
- 可用于磁票、IC卡的多用途检票机
  Both magnetic tickets and IC card tickets are usable.
- 流线型设计表现出众
  Streamlined soft design.
- 最大可达3张票同时投入，一起返回
  Max 3 tickets shall be inserted into slot at the same time and returned at the same time.
- 零部件寿命长，维护成本低
  Decrease of operation cost shall be materialized by long life units and parts.
- 向导显示用彩色图示表示
  Guide display is on the colour graphic screen.
- 检票口和取票口文字鲜明易懂
  Pictogram on both insert slot and ticket pick-up shall be adopted.
- 通过显示器采用170°视角的LED
  LED passage display with 170 degree angle is adopted.
- 轻巧的车票回收箱减轻操作负担
  Easy handling by light stacker of IC card.

KX-7 检票机监视盘

KX-7 AG Monitoring system

显示检票机的各种数据。Various data from AG shall be indicated.

- 数据的统计、显示
  Numerical data of AG operation shall be totalled and indicated.
- 检票机运行模式控制
  Control of AG operation mode.
- 通过数据显示
  Indication of passenger data from AG.
- 各种检票口其他设备监视情况的显示
  Other AFC equipments status such as TVM, FAM, etc., shall be indicated.
SX-7作为新一代售票机，采用大型彩色LCD触摸屏，不但可以销售普通车票，还可销售企画票（大型票）。

SX-7 was developed as a next generation TVM. A large size color LCD touch panel to be equipped. SX-7 shall be able to issue various kinds of tickets such as a commuter pass and a ticket for specified purpose.

大型彩色LCD触摸屏操作简单
Easy handling with a large size color LCD touch panel.

可处理IC卡
Processing of IC card to be applicable.

真正的节能设计, 省电达40% (公司数据)
Energy-saving design shall be materialized about 40% power saving. (A comparison of our products)

拥有各种划时代的, 具有先进功能的组件
Various components with an epoch-making and advanced function.

接客一面可以配备CCD摄像头
CCD camera at side of service to a passenger to be applicable.

大量部件耐用, 寿命长, 使维护成本大幅降低
Reduction of operation cost shall be materialized by long-life units and parts.

可按车站五十音图顺序检索运费, 方便快捷
A search of passenger fare by the initial letter of station name to enable to check it easily.

配有英文说明, 外国乘客也可方便使用
Guidance in English for foreigners is available.

屏幕显示, 语音提示, 罗马字运费检索
Indication-Audio guidance, A passenger fare list in alphabets.

坐轮椅者用指尖轻触即可, 人性化的设计使用更方便
Open space at leg part gives conveniences for those who are using the wheelchair.

拥有大型彩色LCD触摸屏。售票机的运行状况一目了然。
Large size color LCD to be adopted show the situation of TVM easily.

拥有大型彩色LCD触摸屏。大按钮简洁易用。触摸屏表面采用强化玻璃。
A large size color LCD to be adopted, which shows a big button on the screen clearly. A tempered glass to be adopted for the screen.

配有盲文。在操作位置上有盲文引导。
Braille guidance to be adopted and regarding to touch navigation the location of touch point shall be advised by Braille guidance.

各投入口、取票口用黄线标注，清晰明了。
Each insert slot and ticket pick-up is recognized clearly by yellow lines.
AX-7 自动补票机
AX-7 Fare Adjustment Machine (FAM)

Nippon Signal developed the new generation of Fare Adjustment Machine (FAM) based on the concept of “Safety, Reliance, and Environment” as the watchword.

彻底的运费质量管理
The thoroughgoing quality control of fare judgement

使用公司自行研制的『车票检测工具』确保费用判定的正确性
Reliance of fare judgement is secured by self-developed "ticket verification tool."

100万条以上的车票数据
Million mont tickets data
补票判断逻辑
Logic of fare adjustment
校验结果
The comparison of the results of test by 2 logics.

卡片发行、处理模块 (IC)
Card issuing / Card processing unit
IC卡处理部集约化，小型化，可处理各种卡片
IC card processing part is integrated in compact body. Various kinds of cards to be acceptable.

磁票发行模块
Printer unit of magnetic tickets.

横切票卷纸并列装填。定期票可印黑白两色
The roll of ticket paper is installed side by side. Commuter pass shall be printed two colors (red or black color).

纸币模块
Bill validating unit

硬币处理模块
Coin judgement unit.

采用实时OS
Real-time OS to be adopted.

盲文引导、数字键、声音识别
Touch Navigation/ Ten-key input/ Voice recognition.

采用多媒体OS（控制部同时使用两个OS）
Multimedia OS to be adopted. [Two OS shall be installed for a control part at the same time.]

故障率低，消耗品的使用寿命长
Low failure rate. Expendable parts with long life.

节能设计，材质环保
Energy-saving design with recycled materials.
自动IC卡充值机
Add Value Machine (AVM)

开发出了适应环境的，简洁实用，并且安全性很高的充值机。

AVM of Nippon Signal is materialized high level of security as well as slim and simple design.

安全 Security
防止现金的被盗、丢失的设计
To take prevention of cash burglary and mischief into consideration.

空间 Space-saving
外形尺寸在可能的范围内最小化，在有限的空间内也可自由应对
We designed AVM as small as possible, that be able to install narrow space.

对环境的考虑 We are considering the environments

资源节省 Resources-saving
机箱等部件构造简单化，使产品重量减轻
The weight of product shall be decreased by a simplification of the structure including the body.

再利用 Recycle
内部采用部件模块化构造，易分解
Sectional units to be adopted. So that it is easy to take the body apart and cleaned and repaired.

节能 Energy-saving
配有一个反射型传感器，节能设计。一定时间内无人使用，LCD画面自动转到待机状态。
A reflecting sensor to be adopted. In case a passenger did not use in specified time, LCD screen shall be changed to WAITING mode with taking energy-saving into consideration.

机身 The body

正常使用 Normal use

纸币插入口的位置 909mm
（我公司标准售票机920～940mm）
The location of bank note slot shall be 909mm from the floor. (Normal height of our TVM is 920～940mm.)

轮椅・儿童使用
To take the use of wheelchair and for small children into consideration.

金额选择键位置 1020mm
（我公司标准售票机触摸屏中心位置1190mm）
The button of amount selection are located 1020mm from the floor.
各种处理手段包括IC卡和磁卡。
Various processing’s for both IC cards and magnetic cards.

定期票的发行媒介可由磁票改为IC卡。
The change of ticket media shall be applicable, namely it can change a magnetic commuter pass to a IC commuter pass.

- IC定期票的新发行和继续发行
  New issue and extension of IC commuter pass.

- 磁票定期票的新发行和定期发行
  New issue and extension of magnetic commuter pass.

- 退票, 再发行
  Refundment, Re-issue

- 黑名单的登录
  Registration of black lists.
Remote Monitoring System consists of equipments at each station and system monitor. The user of remote monitoring system can check the status of various equipments at each station including the station which remote monitoring panel is located. The screen of remote monitoring system is adopted 15 inch touch panel display for the purpose of easy handling. A normal personal computer is adopted for the purpose of materializing high level of function and flexibility.

- **Remote monitoring control function** is used in the data collecting surveillance.
- The ITV screen on remote monitoring panel is adopted for the purpose of materializing cost competitiveness and space-saving.
- The system can materialize fare adjustment by remote control.
- Internet function on station equipments make more convenient for a passenger.
可实现收入管理、运用管理、运费数据生成、公司间清算等所有功能。
All functions, such as revenue management system, operation management system, system of fare list data, and system of fare adjustment between companies, are available.

各个单元及其概要 The server for each functions and its outline.

**收入管理服务器**
Revenue management server
设备数据及各种手工输入数据的收集、输入
Data of station equipments and various kinds of data by hand-input shall be calculated and reported and accumulated.

cyclist数据的采集与分析
Data base for information of accumulated data.

**运用管理服务器**
Operation management server
在运用管理上各种必要参数的设定
Set up of various parameters to be required for operation.

**维修管理服务器**
Maintenance management server
维护设备的运转状态（数据库化）
Operation status of AFC equipments at station (database).
所有数据的统计、输出
Calculation and output of report for all of data.

**IC卡管理服务器**
Revenue management server
IC卡销售数据的统计、输出
Calculation and report of output for IC cards tickets data.
**Core Unit**

**IC card reader/writer** Re-issuing machine of IC card with Re-Write function.

In case of machine with a hopper it shall be available automatic supply of IC card and issue. The card that a passenger inserts to the slot is also able to issue after re-writing.

**Use**: Various membership card, reservation card, point system card/parking system for both cars and bicycles, commuter pass for various kinds of traffic systems, issuing machines and extension machines of an admission ticket/issuing machines and extension machines of various kinds of security gate.

**Simple IC card reader**

- Size: 200(W) x 70(H) x 28(D) mm
- Card category: Various contactless cards
- Reader/Writer module is available to add
- Input/Output port: RS-232C
- LCD: 3.5 inch color, 320 x 240 pixels, 8 bits (input/output)
- Power supply: DC 12V/6W

**Table reader/writer (DTR-NO1)** Reader/Writer for desk top (DTR-NO1)

- Size: 140(W) x 90(H) x 25(D) mm
- Card category: Various contactless cards
- ISO18000-3 mode2 of radio frequency IC card, contactless card based on ISO18000-3 mode 2
- Interface: USB

**Component of TVM**

- Coin judgement unit: 1
- Card issuing / Card processing unit: 1
- Magnetic ticket issue unit: 1
自动检票机组件 Component of AG

门模块 Door unit
- 外形尺寸：340(W) x 255(H) x 135(D) mm
- 动作速度：0.3 秒 (高负荷，速度可调)
- 门材料：透明亚克力
- 输入电源：AC100V/50/60Hz / DC5V, 24V

控制装置 Control board
车票传送部 Ticket handling unit

IC币组件 The component for IC tokens

IC币回收模块 (检票机用) Token collection unit for AG
- 外形尺寸：377(W) x 200(H) x 119(D) mm
- 功能 (Function)：IC币回收
- 可使用 IC 币回收的条件：厚度 3mm 直径 30mm 的圆形
- IC 硬币类型 (IC token type)：多种用于接触式读写模块的 IC 币各种 kinds of contactless IC module to be able to install

IC币发售模块 Token issue unit for TVM
- 外形尺寸：270(W) x 600(H) x 900(D) mm
- 功能 (Function)：IC发售
- 可使用 IC 币情况：厚度 3mm 直径 30mm 的圆形
- IC 硬币类型 (IC token type)：多种用于非接触式读写模块的 IC 币各种 kinds of contactless IC module to be able to install
- 发售容量：约 2000 张 (About 2000 coins)

登机牌读卡器 Boarding Pass Reader (BPR)

为保证航班的准点，BPR (Boarding Pass Reader) 担负着短时间内处理大量乘客登机的重要任务。为此，该设备要求可靠性高而故障率低。我公司集结了10多年研发的专有技术，并结合铁路领域的最新科技经验和最大限度地满足设备的要求。

BPR (Boarding Pass Reader)
小型 BPR (Small-size BPR)

For the purpose of keeping flight time on schedule, BPR is required to check large numbers of passengers in short time. So that high level of reliability and low MTBF is required. Nippon Signal have experienced and cultivated know-how for quality assurance of BPR. More than 10 years Nippon Signal also do the best effort at making the excellent BPR machine with our advanced technology which we have obtained on railway signal business.
Network

Other products 其他产品

全新的事业 Visionary Business Center

MEMS
一次元型 One dimensional
二次元型 Two dimensional

RFID
桌面型读写器 Desktop Reader/Writer
手持型读写器 Handy Reader/Writer
盘式读写器 Panel Reader/Writer
隧道型读写器 Tunnel Reader/Writer
小型读写模块 Small Reader/Writer module
高速输出读写模块 High output Reader/Writer module

信息系统事业 Information Systems Division

1. 停车库场管理系统 Parking management system
2. 交通信息管理系统 Traffic Information Systems
3. 交通信号系统 Traffic Signal Systems
4. 交通指示系统 Traffic Indicator Systems
5. 车辆识别系统 Vehicle Identification System
6. 电子收费系统 Electronic Toll Collection System
7. 交通监控系统 Traffic Monitoring System
8. 交通诱导系统 Traffic诱导 System
9. 交通信息显示系统 Traffic Information Display System
10. 交通信号控制系统 Traffic Signal Control System

铁道信号事业 Railway Signal Systems Division

1. 道路信号盘 Track signal disk
2. 运行管理系统 Traffic management system
3. LED信号灯 LED signal light
4. 信号设备信号灯 Signal equipment signal light
5. 道口信号设备 Signal equipment at crossing
6. 自动道口设备 Automatic crossing device
7. 交通信号控制设备 Traffic signal control equipment

交通信息系统事业 Traffic Information Systems Division

1. 交通信息显示板 Traffic Information Display Board
2. LED车辆指示灯 LED vehicle indication light
3. 交通控制设备 Traffic Control Equipment

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相关公司

日信电设 ( 株 ) ／ 日信工业 ( 株 ) ／ 日信电子服务 ( 株 ) Nishin Electronics Service Co., Ltd. ／

札幌日信电子 ( 株 ) Sapporo Nishin Electronics Co., Ltd. ／ 札木日信 ( 株 ) ／ 日信兴产 ( 株 ) ／ 福冈日信电子 ( 株 ) ／

日信软件工程 ( 株 ) Nishin Software Engineering Co., Ltd. ／ 三重日信电子 ( 株 ) ／ 山形日信电子 ( 株 ) ／

日信器材 ( 株 ) ／ 株日电 ( 株 ) ／ 日信技术服务 ( 株 ) ／ 日信TM服务 ( 株 ) ／ 日信螺机 ( 株 ) ／

IPOSNET ( 株 ) ／ 电路技术 ( 株 ) CIRCUIT TECHNOLOGY Inc. ／ 横滨技术工程服务 ( 株 ) ／

2004年12月1日現在 ( As of December 1, 2004 )

THE NIPPON SIGNAL CO., LTD. 22