LECIP'S BUS TRANSIT CUSTOMERS

East Asia area, including Japan, Hong Kong and Singapore, is said to be the most advanced area in the world for transportation technologies. LECIP has been a leading solution provider to bus transit customers in this area for over 50 years.

Japan

- Automated fare collection
- Passenger information system
- LED destination sign system
- On-board lamps
- Others

Hong Kong.

Automated fare collection
(transit, parking, vending machines, shops)

Singapore.

- Automated vehicle location
- Automated fare collection

Consortium with a leading provider of AVL in U.S.A.

Market share in Japanese bus industry

-Approx. 61,000 fixed route buses in total-

On-board Lamp	**60%**
Farebox	**45%**
Magnetic Card Reader	**49%**
Contactless Smartcard Reader	**53%**
Passenger Information Display System	**65%**
LED Destination Sign	**42%**

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LECIP
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TRANSPORTATION TECHNOLOGIES CATALOG

OBC-Vision - Master Controller of All On-Board Equipment

On-Board Fare Collection System

LED Destination Sign System

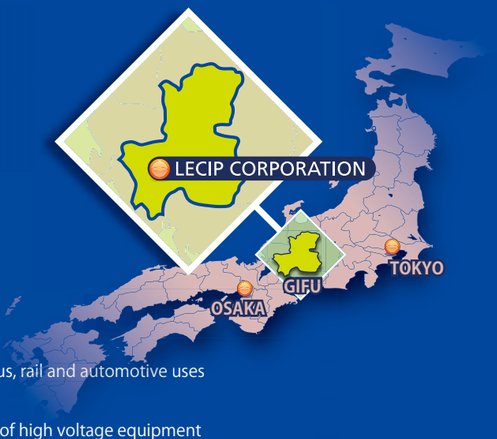
WHO IS LECIP?

Overview

LECIP is a Japanese full line manufacturer of on-board equipment and systems for buses, and is the supplier for the Japanese market.
LECIP's system is a one stop solution for your on-board technology needs. LECIP has in-depth knowledge in modern smartcard fare collection systems, LED destination signs, announcement systems, and on-board processors.
Outside Japan, LECIP is well established in Hong Kong and Singapore. These locations are the most advanced areas in the world for transportation technologies. With exceptional technologies, LECIP can provide benefits and advancement to U.S. transportation industry.

Company Profile

Address Head Facility: 1260-2 Kaminoho, Motosu City, Gifu Prefecture, 501-0401 Japan
Established: March, 1953
Capital: 735 million yen (7.4 million USD)
Total number of shares issued: 6,399,100 shares
Stock listing: Tokyo Stock Exchange (2nd section), Nagoya Stock Exchange (2nd section)
Gross Sales Fiscal year ending March 2008: 18.5 billion yen (185 million USD)
Employees: 546
Specialties: **Transport Equipment**
Production and sales of systems for bus, rail and automotive uses
Sign and Display Line
Production and sales of various types of high voltage equipment
Industrial Equipment Division
Production and sales of industrial equipment



THE NAME "LECIP"

The name LECIP comes from the initial characters of Lighting, Electric Power Conversion, and Information Processing, the three regions of the company's technological expertise.

WHAT WE DO

Designing, development, production and maintenance of your all on-board products and systems.

Automated Fare Collection	YES
Automated Vehicle Location	YES
Passenger Information System	YES
Destination Sign System	YES
On Board Lamp	YES

LECIP Strengths

Performance and reliability	No. 1 in Japan
Sales & share	No. 1 in Japan
Technology	Unique & Sophisticated

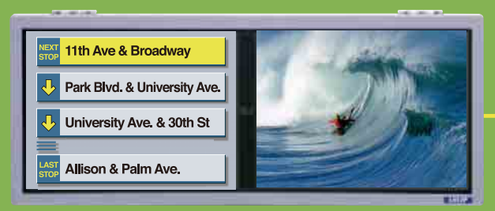
LECIP automates your entire bus

LECIP's Products & Systems

LED Destination Sign

20 x 160 dots and 40 x 168 dots models are available. With the built-in ambient light sensor, the sign ensures maximum readability day and night. The signs are easily controlled with our easy-to-use control panel and can be interfaced with other equipment.

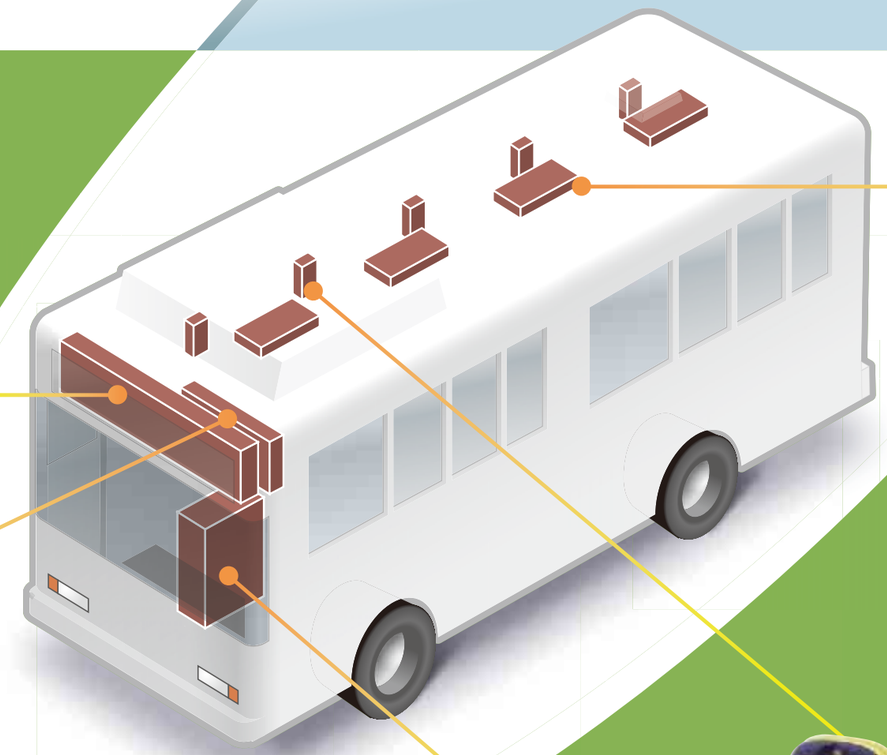
(See page 7 for more information.)



OBC-VISION

OBC-VISION (On-Bus-Computer) is a powerful, computerized controller for on-board system of buses and trains. As a fully integrated on-board system, OBC-VISION is equipped with a high quality LCD display to provide various passenger information and attractive entertainment content. This is the next-generation controller in transit industry.

(See pages 5 and 6 for more information.)



LED Passenger Information Sign

This is a LED display that is installed inside a vehicle and can show the next stop, useful information, time, advertisement and others.

- Three colors (green, red, orange) are available. You can display each character or word in different colors.
  (note: orange is displayed by lighting green and red together)
  (Display dimensions: approx. 20 x 5 inches, 32 x 128 dots)
- Enrich passenger information for your riders.

Interior lamps (Florescent and LED)

LECIP initially entered transit industry with florescent lamps for on-board use. For over 50 years since then, we have met various customers' needs, building up a broad range of florescent lamps product line.
LECIP is the pioneer who developed florescent lamps for trucks and passenger automobiles. Most Japanese trucks use our florescent lamp unit now.

(See page 8 for more information.)

Illuminating Stop-Request Button

Press this button if you are getting off at next stop. The built-in lamp illuminates to let the driver and other passengers know the bus should stop at the next stop. Being interfaced with a voice controller, voice messages such as "This bus will be stopping at the next stop" can be played back. Also texts and/or images can be displayed on OBC-VISION and/or LED Passenger Information Sign in relation to operation of Stop-Request Button.
Reset this button by a reset switch or door switch.

Farebox

Our integrated farebox features advanced on-board technologies, such as contactless smartcard reader, magnetic card reader, bar code reader, and coin validator.

(See pages 9 and 10 for more information.)

OBC-VISION

Master Controller of All On-Board Equipment

OBC-VISION (On-Bus-Computer) is a powerful, computerized controller for on-board system of buses and trains. As a fully integrated on-board system, OBC-VISION is equipped with a high quality LCD display to provide various passenger information and attractive entertainment content.

With Windows XP Embedded adopted as its OS, you can edit images (jpeg, bmp, etc.) and movies (mpeg, etc.) using standard application programs. The OBC-VISION efficiently uses limited space in buses and trains by integrating control and display components into a single unit. Furthermore, its power conditioning and construction are built strong for the tough transit vehicle environments.

OBC-VISION "D"

OBC-VISION "S"

With the OBC-VISION, you can:

- integrate your on-board system,
- easily create, edit, and update your own display content, and
- download new display content to the OBC via WLAN or USB.

Interfacing with back-office system

Upload and/or download various information (vehicle data, etc.) to and/or from your control center via WLAN.

Reduce human-errors and employment costs.

Integrating on-board equipment into a single system

Integrate and streamline your on-board system.

SYSTEM CONFIGURATION EXAMPLE

GPS compatible

Use GPS signals as a trigger to switch the display to another.

Voice announcement

Play back voice announcement linked with or independent from the display.

Basic Specifications

		Model	OBC-Vision D [Dual]	OBC-Vision S [Single]
Display Monitor		Monitor size and number	15-inch, 2 monitor screens	19.7-inch, 1 monitor screen
		Pixel dimensions	1,024 x 768 pixels, each of 2 screens	640 x 480 pixels
		Number of display colors	65,536 colors	262,144 colors
		Brightness	500 cd/m2	450 cd/m2
		Angle of visibility	Laterally 160°, upward 80°, down 55°	Laterally, 170° Vertically: 170°
		Contrast ratio	350:1	600:1
Controller		OS	Windows® XP embedded	
		CPU	Intel CeleronM 600MHz	VIA Eden ESP 5000 533MHz
		RAM	DDR333 256MB	PC133 256MB
		Graphics	Integrated into Intel855GE	Integrated into VIA PN133T
		Built-in memory (compact flash)	System: 480 MB User applications and data: 512MB (Supported Ultra DMA mode)	System: 352 MB User applications and data: 160MB
	See Note 1	Memory expansion	USB Stick memory (USB 2.0 spec)	USB Stick memory (USB 1.1 spec)
Interface		Serial port	RS232-C x 1	
		Network	LAN (100BASE-TX) x 1	LAN (100BASE-TX) x 2
		USB	USB 2.0 x 2	USB 1.1 x 2
	See Note 4	For in-vehicle network	(One of these doubles as the connection for memory expansion.)	(One of these doubles as the connection for memory expansion.)
		Power supply voltage	Current loop x 2, communications expansion port x 1 *See Note 3*	
	See Note 2	Current consumption	26V DC (20V to 30V)	
	See Note 2	Weight	Up to 3.5A	
		Outside dimensions: WxHxD	20 lbs. 27 x 11 x 3.2 inches	17.5 lbs. 18.5 x 14 x 3.5 inches

Notes:
1. The figure for extended memory capacity when using USB Stick memory, purchased separately, will differ from this.
2. This figure applies to using the standard type.
3. In the case of certain communications protocols, adding an expansion communication port will require a modification to the PC board. The specifications published here may be adjusted if needed, though only inside the range that maintains the principal functions and performance of the unit.
4. These interfaces are for communication with on-bus equipment, and controlled by built-in micro computer, not the Windows CPU board.

Edit the makeup of the display to suit the audience.

1 Setup of the content

Photographs and video segments of commercial messages are edited with standard applications.

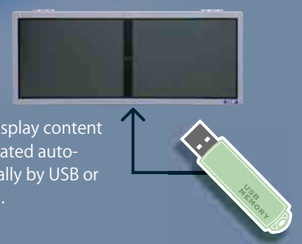
The system will also accommodate image data from digital cameras and scanners.

Note: You are free to make use of sample data that we have on hand, for such uses as gauging the system.

2 Editing the display pattern

With the dedicated OBC-VISION graphics arranging software, the user inputs and revises route data, and further sets up images for such presentation as commercial messages.

3 Loading the display data



The display content is updated automatically by USB or WLAN.

Please note that the dedicated OBC-VISION graphics arranging software must be purchased separately.

Your desired contents on full color LCD display

Utilize OBC-VISION-D's dual display system to display operational information on the left screen while displaying attractive passenger information on the right screen. Display movies and pictures as required.

e.g.)

Route map on the left screen, and advertisement, entertainment, weather report on the right.

Use GPS signals to trigger switching of the contents.

LED Destination Sign System

LECIP provides a complete state-of-the-art destination sign system, including front, side, and rear signs. The signs are easily controlled with our easy-to-use control panel and can be interfaced with other equipment.

High Visibility

- High-intensity, louvered LED's for high readability.
- Wide display area with large LED matrix. (40 x 168 dots)
- Wide-view angle. (160 degrees)

Easy Maintenance

- All solid state PCB construction eliminates the need for periodic inspection and minimizes maintenance requirements.

Automatic Brightness Control

- The built-in ambient light sensor ensures maximum readability day and night.

Current Consumption Control

- Current consumption is controlled according to engine status (off or on) and display ambient temperature, preventing battery drain.

High resolution version

DFE-17E1

External Dimensions (WxHxD)	61.3 x 14.5 x 5.4 inches
Dots	40 x 168 dots
Weight	39 lbs

DFE-18E7

External Dimensions (WxHxD)	31.1 x 17.4 x 2.3 inches
Dots	96 x 160 dots
Weight	26 lbs

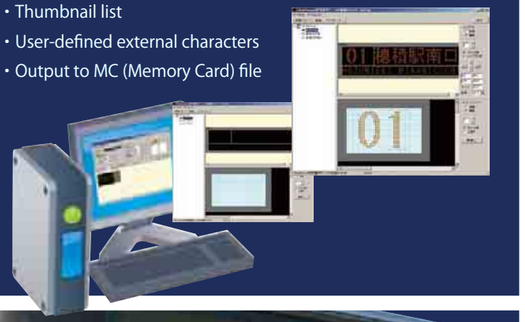
DFE-19E1

External Dimensions (WxHxD)	32.3 x 8.4 x 4.1 inches
Dots	20 x 120 dots
Weight	16.7 lbs

Sign Editor

Our LED destination signs are programmed by our LED-Painter software, featuring ease of use and expandability to fit your multiple requirements.

- What you see is what you get
- Dynamic simulation
- Screen library
- Thumbnail list
- User-defined external characters
- Output to MC (Memory Card) file



Interior Lamps for on-board use

LECIP provide Fluorescent and LED on-board Lamps for Buses and Rails. LECIP design and produce those lamps to meet with customer's requirements under the various operating conditions for wide range of temperature, on and off, heavy vibrations, etc.

Lighting Fixtures for Railroad Cars

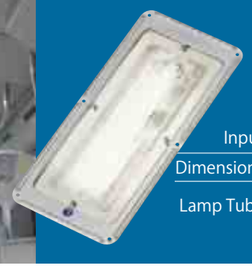
Lighting Fixture for Rail

Input	AC or DC input
Dimensions	can be designed to meet the required sizes.
Lamp Tube	40W Fluorescent Lamp or 180 x 0.6W LED

SY-A80-LED

Input	24VDC
Dimensions	W 27 x H 9.7 x D 3.0 inches
Lamp Tube	100 x 0.6W LED

SY-MT-7



Input	24VDC
Dimensions	W 16.5 x H 7.2 x D 1.1 inches
Lamp Tube	1 x 8W Fluorescent Lamp

MDT-LED

Input	24VDC
Dimensions	W 16.5 x H7.2 x D 1.1 mm
Lamp Tube	50 x 0.6W LED

Standard Models

Lamp Type	Fluorescent Lamps	LED Lamps
24VDC 1 x 8 Watts	SY-MT-7	SY-MT-LED
24VDC 2 x 8 Watts	MDT 10	MDT-LED
24VDC 1 x 20 Watts	SY-A80	SY-A80-LED
DC or AC 1 x 40 Watts	can be available with Fluorescent tube or LED	
Average Life	2,400 hours (8 Watts) / 8,000 hours (40 Watts)	40,000 hours (at 70%)

On-Board Fare Collection System

Our integrated farebox features advanced on-board technologies, such as contactless smartcard reader, magnetic card reader, bar code reader, and coin validator.

Full-Color LCD

Displays fare, card data, error data, etc.

Coin Validation

Validates 10 coins per second at a 99.8 % accuracy rate. Farebox is equipped with the full-color LCD monitor, which shows various operational information including fare and value paid by the passenger. This ensures correct fare collection at a glance. Furthermore, the farebox also reads barcodes printed on tickets.

Cash Viewing Window

The slope conveyor belt and LED lamps make it easy to recognize what is being carried on the belt. The driver can easily find a coin jam.

Built-In or Attached Contactless Smartcard Reader

Built-in and attached contactless smartcard readers are available.

Cash Box

Stores smartcard data (e.g. paid amount), vehicle data, etc.
Storage capacity up to 4MB RAM.
Ensured safety by electrical signal and motor-driven lock bar and shutter.
Bills and coins are stored in separate bins for ease of control.

Compact and Thin Design

The thin body design allows installation in a tight space.
(LF-C: width x depth x height = approx. 20 x 6.3 x 29.4 inches)

Easy Inspection and Maintenance

Modular construction allows easy inspection, repair, and module replacement.

Smartcard reader boarding end