http:// www.shinytech.co.kr

TRAFFIC SIGNAL CONTROLLERS & LED TRAFFIC SIGNAL EQUIPMENTS

SHINYTECH Co., Ltd. ,

Traffic Signal Equipment Company.

Shinytech co., Ltd.

Company Introduction

Greetings

The Shinytech has been offering our customers traffic signal controllers and LED traffic signal equipments of high quality since 1995. As the leader in the field, we provide solutions to keep traffic moving adaptively and efficiently in urban road networks and to help road users well-informed and thus drive more safely. The company is growing very fast and providing high quality products, as we make efforts to continue to invest in research and development.

The Shinytech will become the leading provider of innovative, high quality traffic signal controllers and LED traffic signal equipments. We try efforts to provide energy efficient, impact-resistant and durable products in order to make cities safe and pedestrians friendly. Moreover, we will go beyond just meeting customer expectations and work to exceed expectations. Please feel free to keep in touch with us about any of your business related requirements or queries.

Major History

1995	Shinytech co., Ltd. Established
1996	Electrical Construction Business Permit (Class II)
2003	New Plant in Suwon
2004	LED Lights Drive System Patent (Article No. 0440184)
	High Efficiency Certificate for LED Lights
	Venture Company Certificate: Gyeonggi Small and Medium Business Administration
2006	ISO 9001 Certification
	New Headquarter in Suwon
	Passed Traffic Signal Controller Specifications from the National Policy Agency
2008	Patent Registration : Power Supply for LED Traffic Lights
2009	Excellent Product Certification: Public Procurement Service (LED Traffic Lights: Article No. 2009096)
2011	Excellent Product Certification: Small and Medium Business Administration (ST-09ST , ST-09SL , ST-09SM)
2013	High efficiency Certificate (LED Traffic Light: Article No. 2013169)
	Patent Registration : power supply for LED traffic light capable of controlling Luminous-intensity in dimming control mode - Green Technology (Patent No: 10-1289438)
	Green Technology Recognition (Article No. GT-13-00133)
	Excellent Product Certification: Small and Medium Business Administration
2014	Excellent Product Certification: Public Procurement Service (Traffic Signal Controller Model, ST-09ST-D, ST-09SL-D, ST-13SL)

Licenses and Records

Excellent Product Certification

The Public Procurement Service certifies Small and Median Enterprise (SME) products of superior technology and of high quality.

Products : 3 traffic signal controllers

Excellent Product Certificatio

The Public Procurement Service certifies SME products of superior technology and of high quality.

Products : 15 traffic lights

Performance certified products

The Small and Medium Business Administration cirtifies exellent commentcial products according to its patent and utility model.

Products: 4 traffic signal controllers and 6 traffic lights

Green Technology & Products

The Ministry of Trade, Industry and Energy Greenhouse cirtifies products of energy efficiency technology and of eco-friendly technology.

Products: 6 signal controllers and 21 traffic lights

Certificate of Direct Productions

The Federation of Small and Medium Business cirtifies that Shinytech manufactures all the roducts by itself.

Products: Traffic Lights / Traffic Signal Controllers

Utility Model Patent

The Korean Intellectual Property Office cirtifies Traffi Signal Controller (Patent No. 10-1214468) and cirtifies that LED lights are equipped with a brightness control function and with a power supply function (Patent No. 10-1289438)

Products: Traffic Lights / Traffic Signal Controllers

High efficiency Certificate

The Korea Energy Management Corporation (KEMC) certifies products of high efficient energy consumption; and certifiies that Shinytech products passed the official tests offered by KEMC's designated testing agencies such as KATS.

Products: Traffic lights

Other certification

- Research and Development Certificate
- Venture Company Certificate
- High Quality Management System Certificate

Police standard traffic signal controller

Overview

1. The product has sophisticated control and coordination to ensure traffic moves smooth and safe and pedestrians protected .
2. The product has three convenient types: standard, slim and small that meet the guidelines of the National Police Agency.
3. The product can provide a function of adjusting the brightniess for 24 hours.
4. The product is energy efficient with improved electrical properties (through dimming control)
5. The product controls the traffic lights by controlling light output according to the information collected through vehicle detectors at the intersections and the product has several key features such as detecting contradictions of traffic detection function, detecting red light absence function, and dimming control.

Specifications

Standard

- National Police Agency Standard
- Curve shapes to support aesthetic urban design

Slim

- Designed to improve the city appearance
- Smart design for samll space
- Installed in local cities in Korea

Small

- National Police Agency Standard
- Curve shapes to support aesthetic urban design

Items			Our production	Requirements
Main control Unit	MCU	CPU	32bit, 180MHz	⩾ 32bit, 25MHz
		RAM	**64MB**	⩾ 256KB
		FLASH	8MB	⩾ 256KB
		PORT	Serial 6Port / Ethernet 1Port	Serial 6Port
	Vehicle Detection	Channel	8CH (4CH can accommodate)	Min. 4CH
Signal control Unit	SCU	CPU	32bit, 50MHz	8bit 이상
		RAM	64KB	⩾ 64KB
		FLASH	256KB	⩾ 64KB
	Function	Dimming	Alternation(+,-), **Half-wave control**	Half-wave control
	LSU	Q'TY	6Circuit, 4set	6Circuit, 4set

1. The Police Traffic Signal Controller Standard
2. Nationally recognized technology
3. Application of the high-performance, high-reliability microprocessor design (32Bit)
4. Application of International Standards VME BUS-compatible design (Backplane)
5. FLASHER function is sustained by input power operations
6. Various options can be installed -
   - Pedestrian entered Card
   - Wired and wireless interlocking
   - GPS Card - Video detector
   - MODEM Card
   - Detector Board (Loop Detector)
   - Others

1. On-Line Control

- Real-Time Control
- Time of Day Control
- Manual Control

2. Interlocking control

- Communicating with a central computer using a Modem
- Time calibration using a GPS receiver

3. Actuated control

» Real-time signal control at intersections with high fluctuations of traffic volume
- Left-turn actuated control
- Spillback Control
- Gap-Time Actuation
- Loss-Time Actuation
- Saturated-Flowrate Actuation

4. Pedestrian-sensitive control

- Output control of walking signal can be made by the input device of pedestrians

5. Special control functions

- Flashing control
- Dimming Control
- Off control - Omit Control
- Phase Maintenance

6. Manual control

- In emergency , a policeman can control operations using special signals or MMI
- Manual operation, off, flashing
- Forced release for contradictory situations

Details of Traffic Signal Controller

Configuration

The main configuration is composed of MCU (main control unit), SCU (signal control unit), T / F (terminal block), and other equipment parts, as follows.

❶ Power Supply
- MCU / SCU power supply
- Other control power supply

❷ Man-Machine Interface
- Entering and modifing the database
- Controller status information

❸ MODEM
- Data transmission / reception from the information center
- 2,400bps(Valiable)

❹ MCU(Main Control Unit)
- Traffic information collection and analysis
- Real-time Signal Control

❺ Loop Detector Unit
- Traffic volume occupied / unoccupied detection
- Loop Break Detection

❻ Flasher
- Flashing signal driving
- Flashing function when abnormal operation of controller

❼ SCU(Signal Control Unit)
- Signal control & output status monitoring
- Contradiction signal detection

❽ LSU(Load Switch Unit)
- Traffic light driving
- Vehicle lights / Walking lig of individual drivinghts

❾ Terminals / input unit
- Signal generation unit/ loop-wire
- Surge protection circuit

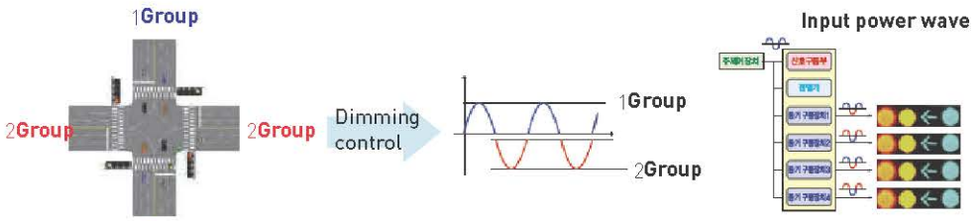
❿ Police Panel
- Automatic / manual control
- Contradictory released, normal / flashing function

Special Features

1. Key Features

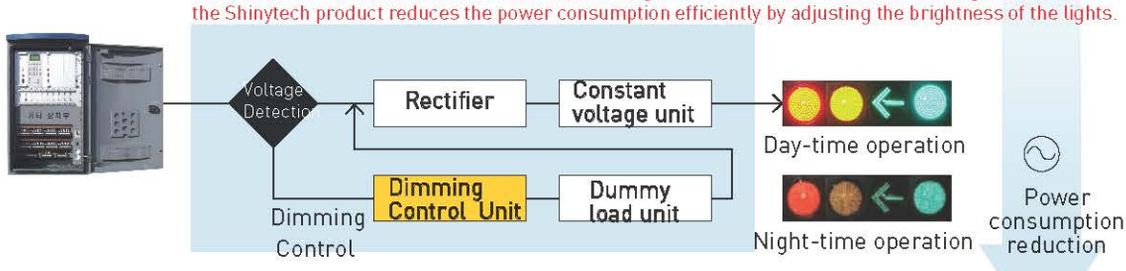
- The product saves the power consumption by reducing harmonic wave generations more significantly than conventional products.
- The product has a dimming control function for drivers to avoid dazzling at late-night time and also the product reduces the power consumption by adjusting the brightness of the lights.
- In dimming control modes , the product receives (+) waves and (-) waves of AC waves alternately, supplying optimal power to the lights, and the product acheives the best possible efficiency.

2. The New Technology :Patent (No. 10 to 1,214,468)



In the dimming control mode, the product classifies the Load Switch device to provide the Load Switch Unit with (+) waves and (-) waves of the AC waves alternately, divides them into two groups (first & second), and outputs a half wave signal of the AC waves.

The deriver at the intersection can avoid the dazzling effects for drivers to drive at late-night time and the Shinytech product reduces the power consumption efficiently by adjusting the brightness of the lights.



* In the dimming operation mode, in particular, the product satisfies the requirements of the National Police Agency for both brightness and energy efficiency.

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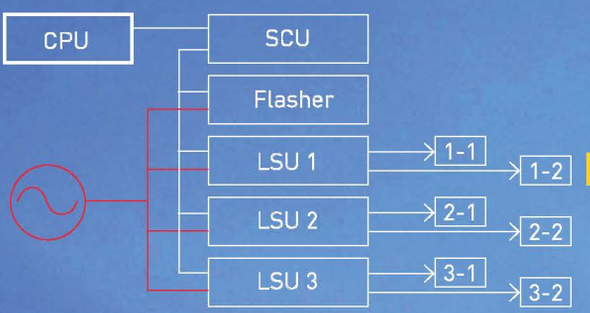
Dimming Control Technology

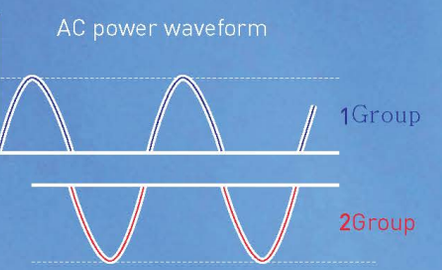
* Patent (No. 10-1214468)

Our new technology

Traffic Signal Controller



Dimming



The controller classifies the Load Switch Unit device that supplies electricity into two groups: group 1 and group 2; the controller sorts the signal lights belonging to the Load Switch Unit device as group1 and group2; and the controller outputs the signals with positive (+) portion negative (-) portion in the dimming control mode..

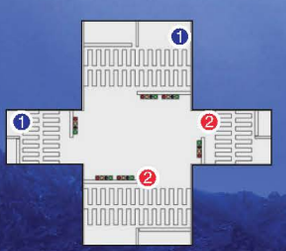
Our own simulator can dedicate a dimming control function to each traffic light in an intersection.
In an asymmetric intersection, symmetric signal groups can be classified.

Dimming output setting

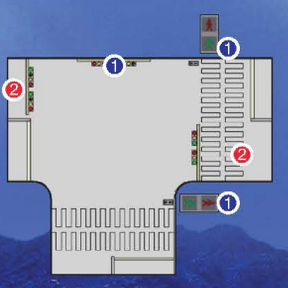
Checked LSU : Load Switch Unit outputs when the Zero Cross value of + in dimming control
Unchecked LSU : Load Switch Unit outputs when the Zero Cross value of - in dimming control

Reset | Upload | Download

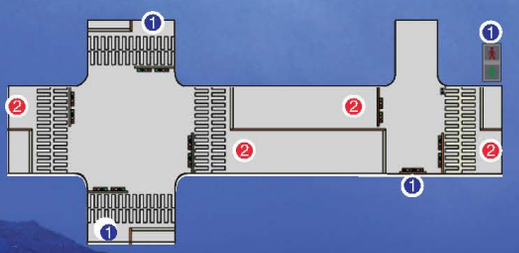
	1	2	3	4	5	6	7	8
R, Y, A, G	☐	☐	☐	☐	☐	☐	☐	☐
PR, PG	☐	☐	☐	☐	☐	☐	☐	☐



» Signal combinations in asymmetric intersection

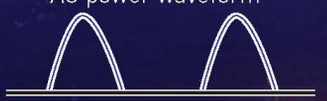


» Signal combinations in three-way intersection



» Signal combinations in double intersection

Traffic lights Group 1
AC power waveform



Traffic lights Group 2
AC power waveform

Traffic signal controller products

- Procurement Excellence
- Performance certified Products
- Green Technology & Products

Model	ST-09ST-D(Standard)	ST-09SL-D(Slim)	ST-13SL(Slim)
Specifications	580 X 450 X 1000mm	350 X 320 X 1200mm	320 X 345 X 1200mm
No. of ID	22572856	22572855	22585064
Certification			
Basic configuration B'D	MCU/SCU/GPS/FLASH/LSU(4)	MCU/SCU/GPS/FLASH/LSU(4)	MCU/SCU/GPS/FLASH/LSU(4)
Remarks	Year 2009 Standard by National Police Agency	Year 2009 Standard by National Police Agency	Year 2010 Standard by National Police Agency

- Performance certified Products
- Green Technology & Products

Model	ST-13ST(Standard)	ST-09SL(Slim)
Specifications	580 X 450 X 1000mm	350 X 320 X 1200mm
No. of ID	22588833	
Certification		
Remarks	Year 2010 Standard by National Police Agency	Year 2009 Standard by National Police Agency

LED Traffic light

Overview

1. The product provides signals of the red, green, yellow, and green arrow to ensure orderly movement of traffic in all directions and to for pedestrians to cross the street safely.

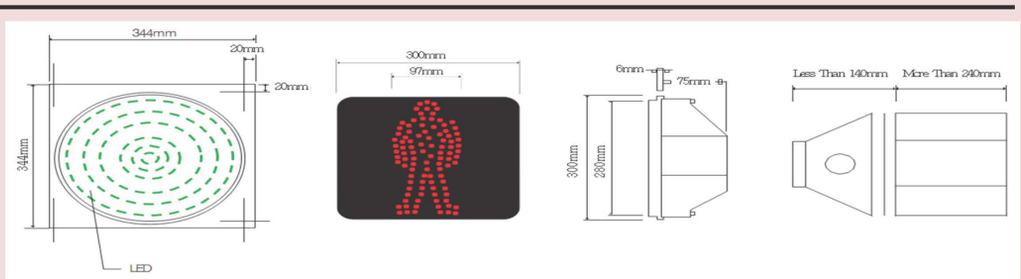
2. The product has a dimming control function for drivers to avoid dazzling at night time and reduces the power consumption with the brightness adjustmetnt.
(The dimming control function is highly recommended by the National Police Agency)

Specification

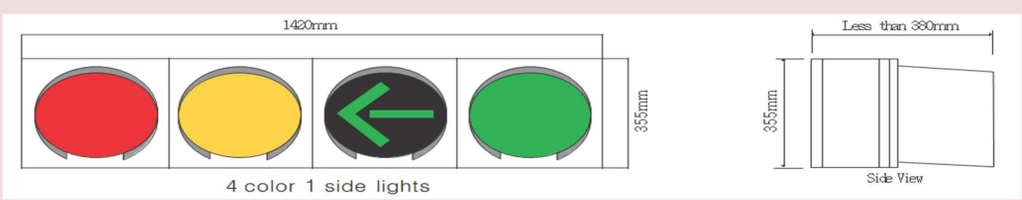
Division	Vehicle light				Pedestrian light		Bicycles light			Countdown timer	
	RED	YELLOW	ARROW	GREEN	RED	GREEN	RED	GREEN	YELLOW	Numeric	Figure
Appearance											
Rated Voltage[V]	220V ± 10(50/60Hz)										
Operating Voltage[V]	AC 176V~242V										
Consumption (W)	9	6.5	4.3	9	6	5.3	3.9	5.4	5.8	6.36	5.8
In dimming Consumption (W)	6	3.6	2.5	4.5	3.4	2.9	2.3	3	2.2	3.9	3.4
LED(QT'Y)	144	186	54	144	74	54	90	90	90	140	72
Power factor(RF)	More than 0.9										
Lens /diameter	Colored and transparent lens / 300 Ø										

Dimension

Module



Traffic Lights



LED Traffic light products

- Procurement Excellence
- Performance certified products
- Green Technology & Products

No. of Identification	Image	unit	Specification & Model		Certification	Remark
			model	Specification		
22510750		set	ST-133RD	Vehicle red module		For maintenance
22512266		set	ST-133YD	Vehicle yellow module		For maintenance
22510745		set	ST-133AD	Vehicle arrow module		For maintenance
22512265		set	ST-133GD	Vehicle green module		For maintenance
22510747		set	ST-133PRD	Pedestrian red module		For maintenance
22510746		set	ST-133PGD	Pedestrian green module		For maintenance
22510748		set	ST-133PRPG-D	Pedestrian Lights 2Colors		
22510749		set	ST-133RA-D	Vehicle auxiliary lights 2 colors		
22510751		set	ST-133RG-D	Vehicle auxiliary lights 2 colors		
22510752		set	ST-133RR-D	Vehicle Warning lights 2 colors		
22511154		set	ST-133YY-D	Vehicle Warning lights 2 colors		
22510754		set	ST-133RYA-D	Vehicle lights 3 colors		
22511153		set	ST-133RYG-D	Vehicle lights 3 colors		
22511155		set	ST-133YYY-D	Vehicle lights 3 colors		
22510755		set	ST-133RYAG-D	Vehicle lights 4 colors		

- Green Technology & Products

No. of Identification	Image	unit	Specification & Model		Certification	Remark
			model	Specification		
21661080		set	ST-R	Vehicle red module		For maintenance
21661077		set	ST-Y	Vehicle yellow module		For maintenance
21661083		set	ST-PRPG	Pedestrian Lights 2Colors		
21661082		set	ST-RA	Vehicle auxiliary lights 2 colors		
21661081		set	ST-RG	Vehicle auxiliary lights 2 colors		
21661076		set	ST-YY	Vehicle Warning lights 2 colors		
22039844		set	STN-B-RG	Bike lights 2 colors		
22033990		set	STN-B-RYG	Bike lights 3 colors		
21661074		set	ST-YYY	Vehicle Warning lights 2 colors		
21661078		set	ST-RRR	Vehicle Warning lights 2 colors		
21661075		set	ST-RYA	Vehicle lights 3 colors		
21662991		set	ST-RYG	Vehicle lights 3 colors		
21655503		set	ST-RYAG	Vehicle lights 4 colors		
22033692		set	ST-083N	Countdown timer[Numeric]		
22039845		set	ST-083D	Countdown timer[Figure]		

D

Delivery performance

Domestic

Project sites cover all the providences in the Republic of Korea

Seoul, Forcheon, Gapyeong, Yangzhou, Paju, Gimpo, Gapyeong, Uijeongbu, NamYangzhou, Yeongjongdo, Ilsan, Gwacheon, Hanam, Guri, Incheon, Bucheon, Gwangmyang, Shiheung, Seongnam, Anyang, Anshan Suwon, Gunpo, Yongin, Osan

Yeoju, Pyeongtaek, Gosung, Hwacheon, Chuncheon, Yanggu, Sokcho, Hongcheon, Hoengseong, Wonju, Donghae , Pyeongchang, Taebaek,

Dangjin, Seosan, Taean, Hongsung, Asan, Chenan, Chungbuk Innovation City, Naepo-newtown, Boryeong, Sejong, Gongju, Cheongju, Chungju, Jecheon, Nonsan, Deajeon, Okcheon, Uljin,

Mungyeong, Andong, Sangju, Gimcheon, Gumi, Daegu, Mungyeong, Pohang, Goreung, Changyeong,

Ulsan, Jinju, Gimhae, Busan, Jejudo, Seogwipo

Overseas

Our business grows globally

Iraq, Japan, Singapore, Philippines, Vietnam, South Africa, Brazil, Paraguay

Future projects

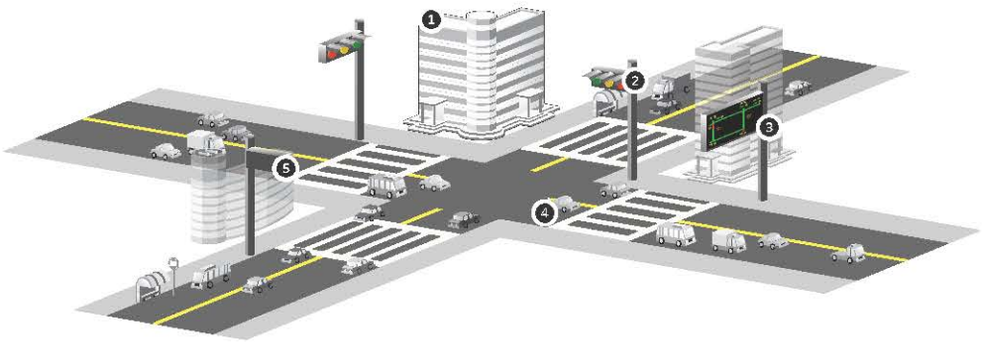
Building of Intelligent Transportation Systems

"Intelligent Transportation Systems (ITS: Intelligent Transport Systems) "means that a traffic system improves the efficiency of and the reliability of traffic movements by utilizing the operations and management of the transportation system scientifically and automatically.

- **The Shinytech will do intensive research and development on ATMS(Advanced Traffic Management System) in the ITS field.**

The traffic signals change automatically according to both the volume of traffics and the need of pedestrians.

- For traffice to move in all directions smoothly and safely
- For pedestrians to cross the street safely
- Reduction of accidents, conflicts, delays and improvement in road capacity.



1 ITS Center

Based on the traffic data collected from local controllers, the center controls the traffic movements and provides information and directions.

2 Traffic Signal Control

Real time control is made by providing signals according to traffic volume

3 Road Traffic Displayer

The dispalyer provide traffic information and condition around its surrounding areas.

4 Traffic Vehicle Detector

It detect the speed of the vehicles and send the informaiton to the ITS center.

5 Dimming Control

Based on the real time data, the lights put in the dimming control mode to minimize the energy consumption.

6 Traffic Road Line Control

Based on the real time data, the traffic lights are controlled for orderly and smooth traffic movement.

7 Emergency Vehicle Control

Emergency vehicles such as police car, ambulance and fire truck receive priority real time signals.

Effect of Intelligent Transportation Systems

» Traffic Efficiency Increase by Reduced Traffic delays

30%

Logistics cost savings:
KRW 5 Trillion per annum

» Traffic safety Increase by Traffic accident reduction

60%

The accident cost saving:
KRW 11 Trillion per annum

» Improvement of National Competitiveness Vitalization of related industries

Advanced technology development, market activation

Projects

Slim-type Controller




Project Sites: Sejong new towns, Chungbuk Innovation City, Jeonnam Innovation City, wirye New Town, Hoengseong, Siheung, Gwangyang, Guri, Gwanggyo New Town, ,Ulsan, JeonNam jangseong county, Dangjin, Namyangju, Icheon, Ilsan, etc.

Standard / Small Controller




Project Sites: Suwon, Icheon, Ulsan Metropolitan City, Yangju City, Incheon, LH Corporation , etc.

Project Sites: Incheon, Pyeongtaek, Namyangju, etc.

LED Traffic Lights




Project Sites : Gimpo Hangang New City, Changwon, Ulsan, Gimhae, Jeju, Pohang, Suwon,etc

Flashing Controller

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