WORK AUTHORIZATION FOR HUB PARKING TECHNOLOGY SOFTWARE AND EQUIPMENT MAINTENANCE AGREEMENT

Contract Number: Z1388105A1
Work Authorization No. 23 ("Work Authorization")

This Work Authorization is between Broward County, a political subdivision of the State of Florida ("County"), and Hub Parking Technology USA Inc., a Delaware corporation ("Provider"), and is entered into pursuant to the HUB Parking Technology Software and Equipment Maintenance Agreement ("Agreement"), effective July 1, 2015. In the event of any inconsistency between this Work Authorization and the Agreement, the provisions of the Agreement shall govern and control.

Services to be provided:

Provider shall implement License Plate Recognition ("LPR") within the existing Parking Access and Revenue Control System ("WebParcs"), installing fixed position entry and exit lane LPR camera systems at each of the twenty three (23) entry and exit lanes of the Hibiscus and Palm parking garages at Fort Lauderdale-Hollywood International Airport ("FLL"), as further described in Exhibit A attached hereto and made a part hereof. Eighteen (18) camera systems shall be placed in the Hibiscus Garage at the Long term, Short term, and Main Exit Plaza lanes and five (5) camera systems shall be placed in the Palm Garage at the entry lanes.

Budget Source: Not-to-Exceed Optional Services, budgeted at $4,250,000.

Term: The term for this Work Authorization shall commence on the date of execution of this Work Authorization by County and shall terminate ninety (90) calendar days after the Contract Administrator's Notice-to-Proceed, unless otherwise extended by the Contract Administrator as provided herein.

Fee Determination: Payment for the Services (hereinafter defined) and Equipment (hereinafter defined) under this Work Authorization shall be as follows:

Professional Services	$ 135,000
General Services	$ 103,645
Equipment/parts Expenses	$ 771,100
Total Cost:	$ 1,009,745

The Total Cost shall be invoiced by Provider to County as follows: 100% upon written Final Acceptance (hereinafter defined) by County of all Services and Equipment provided under this Work Authorization.

IN WITNESS WHEREOF, the Parties hereto have made and executed this Work Authorization #23 under the Hub Parking Technology Software and Equipment Maintenance Agreement between Broward County and Hub Parking Technology USA Inc.: BROWARD COUNTY, through its BOARD OF COUNTY COMMISSIONERS, signing by and through its Mayor or Vice-Mayor, authorized to execute same by Board action on the __ day of _____, 2018, and HUB PARKING TECHNOLOGY USA INC. signing by and through its _____, duly authorized to execute same.

BROWARD COUNTY

ATTEST:

_____
Broward County Administrator, as
Ex-officio Clerk of the Broward County
Board of County Commissioners

BROWARD COUNTY, by and through
its Board of County Commissioners

By_____
Mayor or Vice-Mayor

___ day of _____, 20__

Approved as to form by
Andrew J. Meyers
Broward County Attorney
Aviation Office
2200 SW 45 Street, Suite 101
Dania Beach, Florida 33312
Telephone: (954) 359-6100
Telecopier: (954) 359-1292

Insurance requirements
approved by Broward County
Risk Management Division

By 3/23/18
Tracy Meyer, Esq. (Date)
Risk Insurance and Contracts Manager

By 3/23/18
Carlos A. Rodriguez-Cabarrocas (Date)
Assistant County Attorney

By 3/23/18
Alexander J. Williams (Date)
Senior Assistant County Attorney

WORK AUTHORIZATION #23 UNDER THE HUB PARKING TECHNOLOGY SOFTWARE AND EQUIPMENT MAINTENANCE AGREEMENT BETWEEN BROWARD COUNTY AND HUB PARKING TECHNOLOGY USA INC.

HUB PARKING TECHNOLOGY USA INC.

WITNESSES:

Carolyn Hodge
Signature

Carolyn Hodge
Print Name of Witness

Signature

Ercilia Martinez
Print Name of Witness

HUB PARKING TECHNOLOGY USA INC.

By _____
Authorized Signor

_____
Print Name and Title

23 day of March, 2018

ATTEST:

_____
Corporate Assistant Secretary

(CORPORATE SEAL OR NOTARY)

Work Authorization No. 23
Exhibit A – Statement of Work

Provider and County agree that Provider shall provide the following Services and Equipment under this Work Authorization:

1. Project Request

Provider shall install and implement the LPR feature of the existing WebParcs. Implementation of this feature will provide effective audit and security controls. High quality LPR cameras will be installed at each of the twenty three (23) entry and exit lanes of the Hibiscus and Palm parking garages at FLL. Upgrades to the Cypress Garage will be addressed separately. In addition, Entry Lane #7 of the Palm Garage, which has been inoperable for some time, will be reopened with all new lane equipment hardware including a ticket spitter, gate arm, LPR, and SunPass functionality.

Provider represents that the Equipment and related Services provided under this Work Authorization will provide this functionality and solution.

2. Services Description

Provider shall perform the following Services ("Services") as part of this Work Authorization:

A. Coordinate with the parking operator or any other person designated by the Contract Administrator for the installation of the new Equipment;

B. Install the new Equipment in the locations designated by the Contract Administrator;

C. Connect all communication and power cabling in compliance with the standards issued by the Broward County Aviation Department ("BCAD");

D. Test all functions of the new Equipment, assuring proper operation;

E. Test all new Equipment reporting functions, assuring proper operation;

F. Coordinate with the parking operator or any other person designated by the Contract Administrator for the use and management of the new Equipment;

G. Complete Final Acceptance testing;

H. Complete the training required herein;

I. Put the new Equipment in service for customer use; and

J. Provide documentation to the Contract Administrator detailing for all Equipment the installation location and the equipment make, model, serial number, purchase price, life expectancy, and warranty duration. This will be used for Asset Tagging by County.

Any subcontractors utilized by Provider must be approved in advance by the Contract Administrator. Provider and its subcontractors shall be solely responsible for obtaining any and all necessary permits for the Services provided by Provider or its subcontractors.

All Equipment and Services shall be warranted in accordance with the Agreement.

A. **Software.**

No new software is necessary for the work contemplated in this Work Authorization. All new Equipment is peripheral in nature and communicates with the existing parking and revenue control software currently in use.

B. **Equipment.**

Provider shall provide the following Equipment ("Equipment"), all of which shall constitute "Equipment" under the terms of the Agreement, including for warranty and Support and Maintenance purposes:

Quantity	**Equipment** *(identify by model number or other specific identification)*	**Comments**
18	HTS VRS N60L LPR Cameras, HTS LC2000/2100 Lane Controller, HTS L-200 Overview Illumination, Configuration, Interfaces for Fee Computer and Entry Station. Camera mounting pole and base units. Loop Detector for Trigger Output. The specifications for such Equipment is more fully described in Exhibit B attached hereto and made a part hereof.	Equipment will be new and installed in the Long Term Entry, Short Term Entry, and Main Exit Plaza Lanes of the Hibiscus Garage.
5	HTS VRS N60L LPR Cameras, HTS LC2000/2100 Lane Controller, HTS L-200 Overview Illumination, Configuration, Interfaces for Fee Computer and Entry Station. Camera mounting pole and base units. Loop Detector for Trigger Output. The specifications for such Equipment is more fully described in Exhibit B.	Equipment will be new and installed in the Palm Garage Entry Lanes.
1	HUB WebPARCS LPR Integration and configuration into the existing WebPARCS Application. Existing perpetual & unlimited licensing applies. Training on the use of the system provided.	

1	Zeag Entry Station and HTS VRS N60L LPR Camera with required peripheral equipment is provided. Transcore E-5 SunPass Reader and Accept / Deny sign provided. The specifications for such Equipment is more fully described in Exhibit B.	Equipment will be new and installed in the Palm Garage at Entry Lane #7.
1	Zeag Exit Station and HTS VRS N60L LPR Camera with required peripheral equipment is provided. The specifications for such Equipment is more fully described in Exhibit B.	Equipment will be new and installed in the Palm Garage at Exit Lane #16.

3. Technical Approach

A. **Phases.**

Provider will complete all Services and install all Equipment required under this Work Authorization, and submit such work to the Contract Administrator for Final Acceptance testing, within ninety (90) calendar days after the Contract Administrator's Notice-to-Proceed, unless such timeframe is extended in writing by the Contract Administrator. Any delays in Equipment delivery or implementation plan acceptance shall be reasonably considered by the Contract Administrator to extend this deadline.

B. **Implementation**

Provider will submit a detailed implementation plan and design to the Contract Administrator for review and approval. The implementation plan and design will include the system installation plan and timeline. The Contract Administrator will review and submit any edits or comments, which shall be incorporated by Provider in the final implementation plan and design. Provider will provide a detailed implementation plan upon receipt of the Notice-to-Proceed.

C. **Responsibilities**

County will provide access to the airport network, connection ports, and network switches.

Except as to the connection ports and network switches, Provider will provide all necessary Equipment, software, and Services to provide the full functionality set forth in this Work Authorization.

D. **Security/Access**

Provider will comply with all County security standards, as stated in the Agreement, as amended.

4. Managerial Approach & Communication

Provider will ensure that the persons responsible for Provider's performance of the Services under this Agreement and, to the extent applicable, identified below (collectively "Key Personnel"), are appropriately trained and experienced and have adequate time and resources to perform in accordance with the terms of this Work Authorization. To the extent Provider seeks or is required to make any change to the composition of the Key Personnel, Provider will provide the Contract Administrator with thirty (30) calendar days' advance notice (or as much advance notice as is possible if thirty (30) calendar days' notice is not possible) regarding such changes and the management plan associated with such changes. County shall not be responsible for any additional costs associated with a change in Key Personnel.

Key Personnel:

- HUB Project Manager: John Hatzis
- HUB Account Manager : Harvey Schwartz
- HUB Technician: Roland Patterson
- HUB Technician: Rob Hage

Provider and County will adhere to the following communication and reporting schedule unless otherwise agreed in writing by the parties: Provider will communicate weekly (in person or by telephone) with the Contract Administrator, the parking operator, and any other person designated by the Contract Administrator to provide project status updates. Any and all obstacles that may delay completion of the project as schedules are to be communicated immediately to the Contract Administrator, the parking operator, and any other person designated by the Contract Administrator.

5. Training

Upon completion of the installation of the Equipment, Provider will provide on-site training to the Contract Administrator, the parking operator, and any other person designated by the Contract Administrator, addressing all aspects of operation of the newly installed Equipment. Training time must be sufficient, as determined by the Contract Administrator in his or her reasonable judgment, so that such individuals obtain complete understanding of the new Equipment.

6. Final Acceptance Test Plan:

Upon completion of all Services and the installation of all Equipment required by Provider under this Work Authorization, Provider shall provide written notice to the Contract Administrator that the upgraded Equipment is ready for final acceptance testing. The Contract Administrator shall inspect and test the system utilizing the License Plate Recognition Test, attached hereto and made a part hereof as Exhibit C. Final acceptance ("Final Acceptance") shall be issued by the Contract Administrator based upon successful completion of all elements of the License Plate Recognition Test.

7. Support and Maintenance Services:

Equipment provided and installed under this Work Authorization shall be deemed included in the Equipment Schedule of supported Equipment under the Agreement. Following Final Acceptance, Provider shall provide Support and Maintenance Services in accordance with the Agreement, and Support and Maintenance Services Fees shall begin to accrue one year after Final Acceptance. County shall be invoiced as follows:

Description	Applicable Term	Invoicing	Amount
Support and Maintenance Services for Equipment under this Work Authorization	Annually commencing one year after Final Acceptance*	Quarterly in Arrears	Annual Total of $90,610

*Pursuant to the Agreement at Section 7.1 and Exhibit B, the System will be warranted for a one year period, and therefore no additional Support and Maintenance Services fees shall accrue for the Equipment until one year from Final Acceptance.

EXHIBIT B

HTS
Extending Your Vision

VRS N60L IMAGING UNIT

LOW- MID SPEED ACCESS CONTROL, PARKING AND SECURITY APPLICATIONS

The HTS VRS N60 imaging unit Vandal Proof 2MP IP camera with customized illumination for optimum LPR performance in low light and all weather conditions, for essential logistics and security performance.

The N60 provides precision and efficiency in low to mid speed, access control, parking and security/surveillance applications, including critical facilities for all reflective and non-reflective license plate types.

Proven technology

The highly reliable compact N60 unit features state-of-the-art hardware along with powerful patented PC-based HTS license plate recognition (LPR) and See-Control management software. The hardware is optimized specifically for high performance with HTS software applications. For maximum effectiveness, the VRS N60 should be implemented with the HTS VRS Lane Controller, specifically engineered for optimum accuracy, confidence and vehicle recognition solutions.

HTS Imaging Units and value added HTS solutions are proven in over 40 countries worldwide, including the 50 states of the United States. Sophisticated HTS algorithms identify both the state and country of any license plate.

The N60's live IP video streaming extends functionality to real-time monitoring applications, providing both an image of the license plate and video stream of the event.

Versatile integration

The VRS-N60 IP connectivity supports a distributed network of N60 imaging units over large single and multi-site applications. The N60 unit is controlled by a locally mounted HTS VRS lane controller, or the unit can be managed remotely.

Up to eight N60 units can interface simultaneously to a single HTS VRS Lane Controller for maximum efficiency, performance and cost-effectiveness.

Simple management

The feature rich See-Control management system provides easy and flexible integration, installation and configuration, as well as valuable reporting, informative statistics and robust monitoring, along with powerful event and alarm management. It is fully web-enabled, supporting these functions from any standard browser.

Hardware features

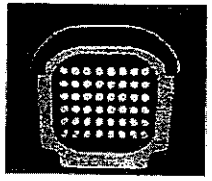
- Rugged compact 2M IP camera with live streaming for 24/7 operation
- Vandal proof IP65 /IP67 housing for outdoor or indoor applications
- Two types of IR , and white illumination for all environments and license plate types
- Motorized lens for remote management and control
- Power over Ethernet
- All weather conditions (-40°C - 60°C)

Software features

- Supports vehicle speeds up to 60 km/hour (37 miles/hour)
- Provides alerts in multiple message formats
- Features hardware and software (VMD) triggering capabilities
- Integrates via simple and friendly API based on Windows WCF and XML
- Transmits small data file for quick processing, low bandwidth and effective storage

Specifications

Camera	
Sensor Type	1/3"
Shutter Type	Progressive scan (rolling shutter) True WDR
Lens	Motorized 9-22 mm
IRIS	P-IRIS
Effective Pixels	1920 x 1080
Field of view	2 – 3.5 m (6.5 - 11.5 ft.)
Built in Illumination	Warm White, IR 850nm, IR 730nm
IR Filter	Included
Working distance	4 - 17 m (13 - 56 ft.)
Operation	
Video compression	H.264/MJPEG
Frame rate	60 fps
Web server	Yes EX up to IE 10, Chrome, Firefox, Safari
Network protocols	HTTP, TCP/IP, UDP, RTP, RTSP, SNMP, NTP, ONVIF
Triggers	Input/Output
Security	Multi-level passwords /HTTP encryption
Mechanical and Environmental	
Dimensions	406.2mm (D) x 161mm (W) x 263.3mm (H) (16 " 6"10 inch)
Weight	2.0 kg (4.4 lbs.)
IP rating	IP66/IP67
Vandal rating	IK10
Connectors	RJ-45, Power & alarm I/O terminal block
Operating temperature	-40°C~60°C / -40°F~140°F
Power requirement	YES/IEEE 802.3at (PoE+) DC12V/AC 24V terminal block/DC24V
Power consumption	14.3 W max
Safety and Regulatory Compliance	
FCC	YES
CE regulation	YES



HTS
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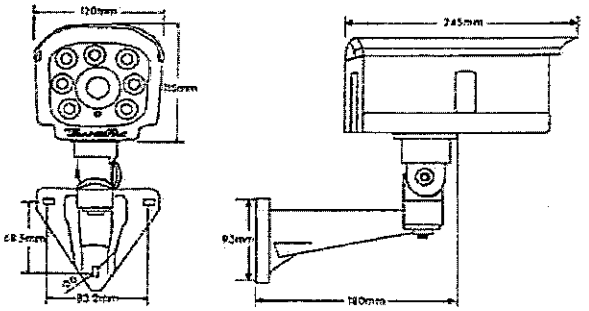
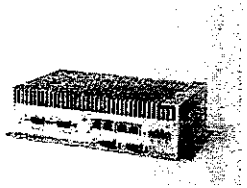


L-200 ILLUMINATION UNIT

Specification	Value
Illumination	
LEDS Quantity	Built-in 48 pcs super power LED
Spectrum	Infra-Red 850 nm, White, Yellow
Intensity	CPU controlled
Operation modes	Two modes of operation: Continues mode - light constantly on Sync. mode – Sync. to camera shutter
Reflectors	Short range (5-6 meters) (16.4 – 19.7 ft.) Mid. range (6-15 meters) (19.7 – 49.2 ft.) Long range (15-20 meters) (49.2 – 65.6 ft.)
Effective Range	5 meters to 20 meters (16.4 to 65.6 ft.)
Daisy-chaining	Illumination units chaining
Physical	
Case	Die-Cast Aluminum Alloy
Protection degree	IP66
Temperature	-40°C to +60° C (-40 to + 140 F)
Adjustment angles	2 levels (up/down, right/left)
Quality regulatory	ISO 9001-2008
Housing Dimensions	245(L) x 120(W) x 115(H) mm 9.6(L) x 4.7(W) x 4.5(H) Inch
Mounting bracket	Full cable management 180(L) x 93(W) x 100(H) mm 7.1(L) x 3.7(W) x 3.9(H) Inch
Weight	Including mounting bracket 3.2Kg/ 7.04 lb.
Electrical	
Power	24 VDC or 24VAC, 60W
Power consumption	Mode of operation dependent Average 18W Max 40 W
Safety	
LED's eye-safety	IEC60825-1, class-1 IEC6241-2008



HTS
Extending Your Vision

LC 2000/2100 Lane Controller

Powerful Communication Between Imaging Units and VRS SeeControl

The VRS Lane Controller is an essential real-time hardware communication interface to and from HTS Vehicle Recognition Imaging Units and the HTS Vehicle Recognition System.

The VRS Lane Controller also interfaces to related vehicle hardware and applications, such as gate operation and traffic control systems, Wi-Fi and GPRS solutions.

The VRS Lane Controller processes vehicle information received from the imaging units, such as vehicle identification or device functioning status, and transmits this data to the VRS via WLAN, LAN or Ethernet. The VRS communicates through the lane controller back to the imaging units—delivering information such as configuration instructions or event triggers.

The HTS VRS Lane Controller offers the essential communication relay with remote imaging units.

The device meets the demand of high-speed, high-volume open road vehicle recognition applications such as safe city and enforcement as well as traditional lower volume uses such as access control, critical-site security and management and parking control.

Outstanding Price-Performance

Supporting many imaging units per controller and requiring only 40 watts of power, the HTS VRS Lane Controller is extremely cost effective.

Size Savvy and Environmentally Conscious

The VRS Lane Controller is available in a small yet ruggedized industrial NEMA-compliant housing for harsh environments, such as outdoor installations.

Optionally, an auxiliary cabinet provides additional protection from temperature, weather and other extremely demanding conditions, providing a secure environment and the infrastructure to support all VRS functionality and physical connection requirements.

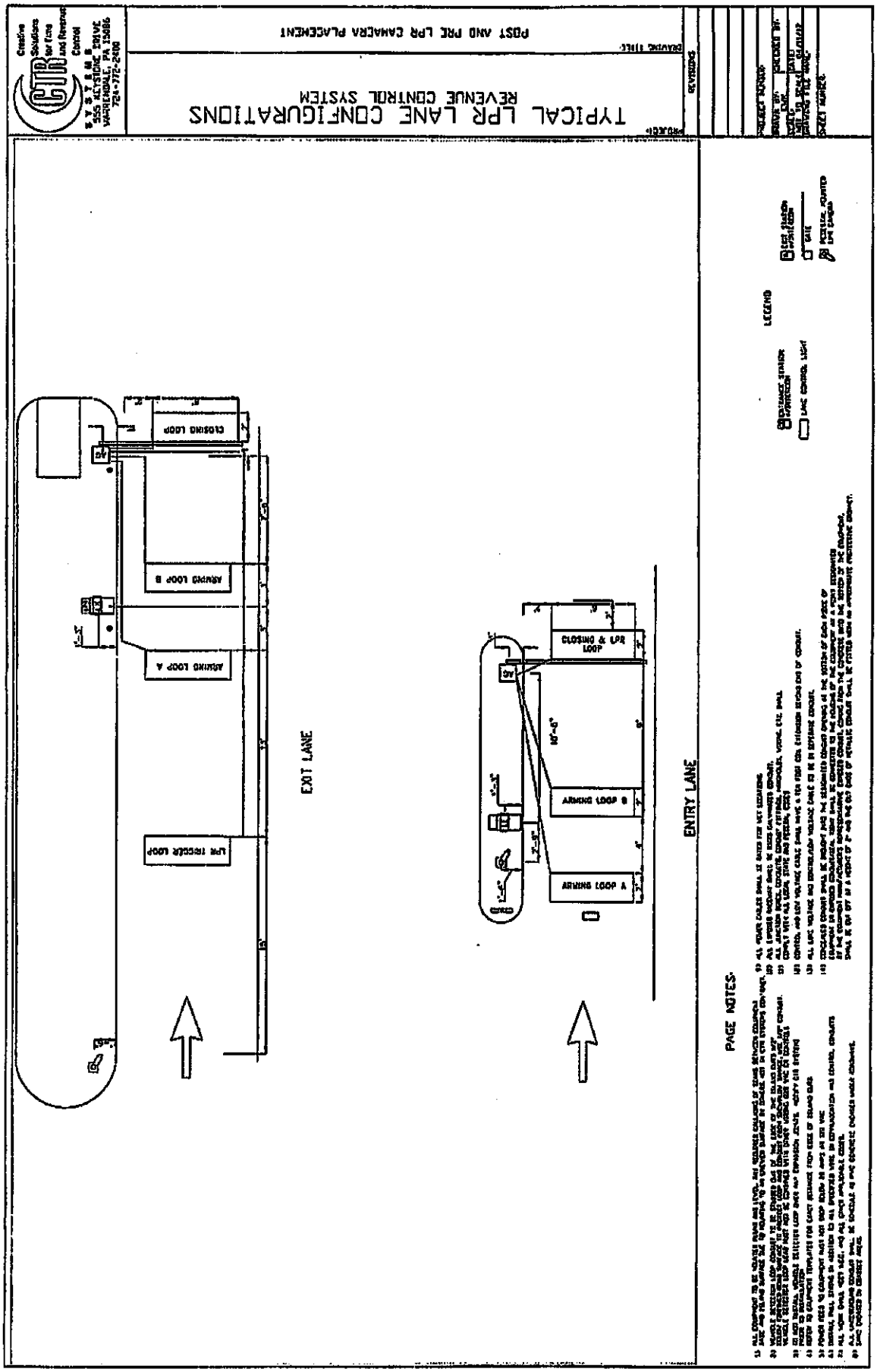
High Availability

The VRS Lane Controller is highly reliable, with built-in redundancy as well as sophisticated diagnostics and maintenance utilities.

Specifications

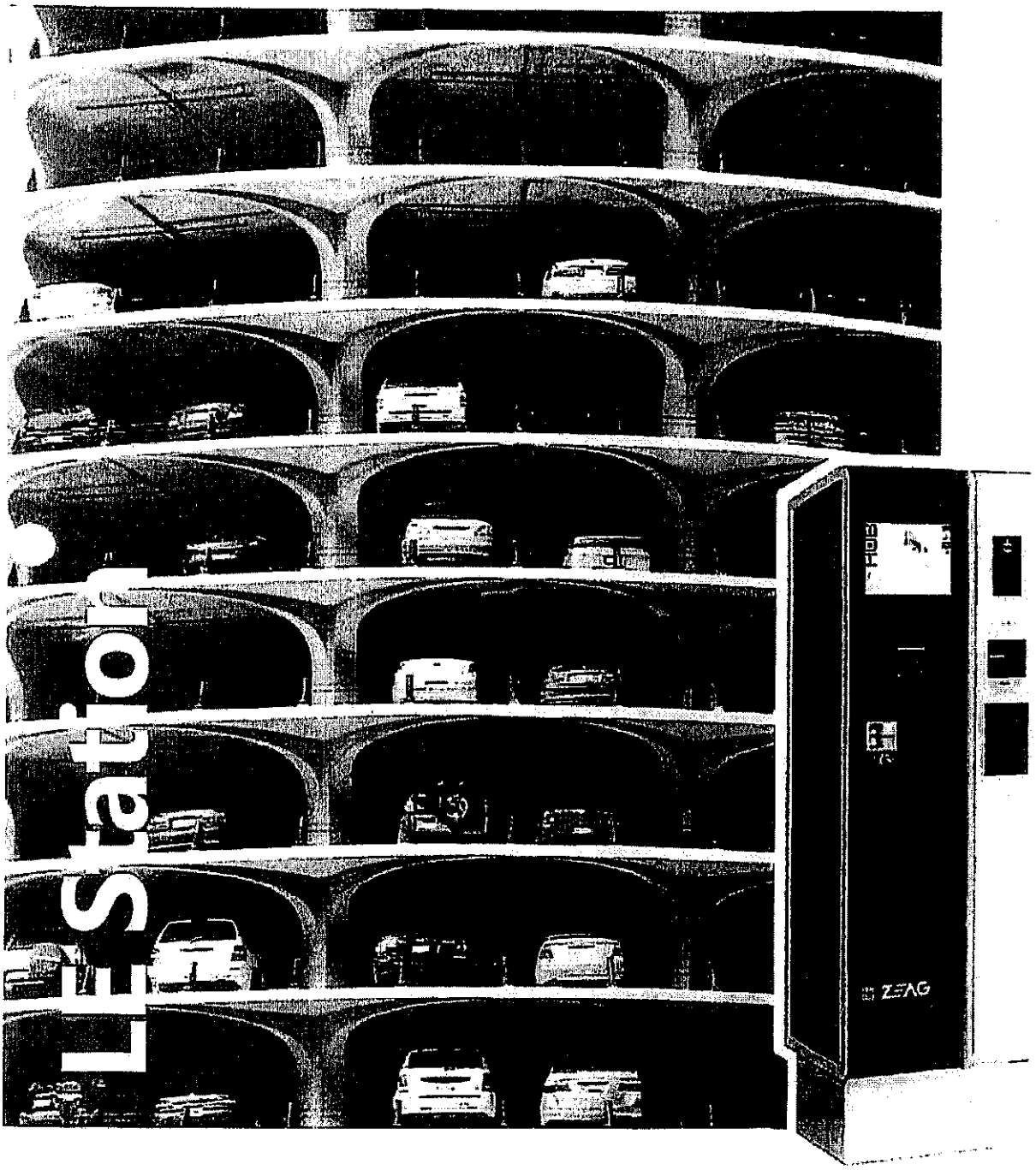
Device	LC 2000 - Ruggedized Lane Controller	LC 2100 - Ruggedized Lane Controller & VRS Server
Certifications	CE, UL, RoHS, CCC, CSA, FCC	CE, UL, RoHS, CCC, CSA, FCC
Dimensions	25.5 x 15.2 x 6.9 cm (10 x 6 x 2.7 in)	25.5 x 15.2 x 6.9 cm (10 x 6 x 2.7 in)
Mounting	Wall mount	Wall mount
Power consumption	40W typical	40W typical
Voltage	9-39 VDC AT/ATX	9-39 VDC AT/ATX
Weight	3 kg	3 kg
OS Support	Windows 7 Pro	Windows 7 Pro
System Hardware		
CPU	Intel® Core™ i7	Intel® Core™ i7
Memory	4GB DDR3 SDRAM built in	8GB DDR3 SDRAM built in
Storage	120GB SSD	256GB SSD
I/O Interfaces		
Serial Ports	2* RG-232 *RS-232/422/485 with DB9 connectors, automatic RS-485 data flow control	2* RG-232 *RS-232/422/485 with DB9 connectors, automatic RS-485 data flow control
LAN	4* Intel 10/100/1000 base-T RJ45 ports	4* Intel 10/100/1000 base-T RJ45 ports
USB Ports	6 USB 2.0	6 USB 2.0
Environment		
Humidity	95% @40° C (non condensing)	95% @40° C (non condensing)
Operating Temperature	-10° to 60° C (14°-140° F)	-10° to 60° C (14°-140° F)
Shock Protection	IEC 60068-2-27 CompactFlash 50G@ wall mount , half sine 11ms HSS 20G wall mount, half sine 11 ms	IEC 60068-2-27 CompactFlash 50G@ wall mount, half sine 11ms HSS 20G wall mount, half sine 11 ms

* Also available in Rack Mount Configuration: LC 1000, LC1100


TYPICAL LPR LANE CONFIGURATIONS
REVENUE CONTROL SYSTEM
POST AND PRE LPR CAMERA PLACEMENT
CTR SYSTEMS
555 KEYSTONE DRIVE
WARRENDALE, PA 15086
724-772-2400
EXIT LANE
ENTRY LANE
CLOSING LOOP
ARMING LOOP B
ARMING LOOP A
LPR TRIGGER LOOP
CLOSING & LPR LOOP
ARMING LOOP B
ARMING LOOP A
LEGEND
PAGE NOTES:

Entry Station

Lane Entry Station



Parking Technology ZEAG

Entry Station

Lane Entry Station

BASE MODEL

- Multilingual high contrast LCD display for user instructions (4x20 characters)
- Ticket issuing unit for Magnetic stripe or Barcode tickets
- Illuminated navigation to guide customers step-by-step through the entry process
- Stainless steel cabinet
- Standard color - Housing (RAL 9006 White Aluminium) plus side/front panels (RAL 7021 Black Grey)
- Peripheral control unit
- Power Supply
- Heating and cooling units with separate thermostats
- Intercom call button and loudspeaker
- Ticket box holder for 5'000 tickets and collection bin
- Individual security lock
- Push button operation controls

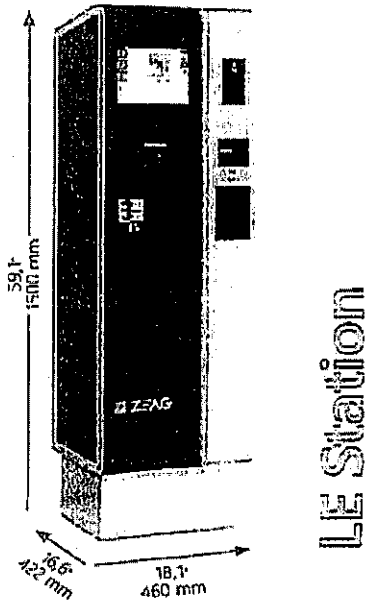
OPTIONS

- 10.4" color TFT display and touchscreen
- Chip & PIN plus Wave & Pay terminals for Credit Card In/ Credit Card Out (country specific certification)
- Range of contactless RFID proximity readers
- Range of long range AVI readers
- Customized side/front panel color
- Customized housing and side/front panel colors
- Sea/Ocean special protective treatment
- Thermal paper receipt printer
- Valiscan barcode scanner (1D or 2D options)
- Base (standard: 60mm, increased height for Chip & PIN: 200mm)
- Magnetic door lock & door open sensor options
- Double height frame (truck and car)

ZEAG Lane Entry Stations are designed for fast and smooth issuing of magnetic stripe or barcode tickets. Advanced thermal printing technology is used for clear text printing. The stations can operate as part of a networked system or alternatively stand-alone. Tickets can be automatically issued as the vehicle approaches the station or by touching a ticket issue button. The station also provides Contract Parking verification and securely handles credit cards.

STANDARD FEATURES

- Fast ticket issue (magnetic stripe or barcode tickets)
- Automatic issue as the vehicle approaches the station or, alternatively, by the user pressing a ticket button or inserting a card.
- Read after write and anti-pass back control
- Online operation (RS422/485 or TCP/IP) or standalone
- Contract, Season or Monthly parking using a wide range of media (magnetic cards, barcode, proximity, AVI, LPR)
- Accepts value cards for parking
- Event parking
- Credit Card In/Credit Card Out (subject to country specific certification)
- Chip & PIN plus Wave & Pay terminals (subject to country specific certification)
- PCI-DSS certified together with Parking Management System
- Retraction of alarm tickets and retention of invalid cards
- Barrier gate control
- Pre-booking and pre-payment
- Dual Rate - to allow issue of tickets with two different rates



Dimensions

- Width: 460mm / 18,1"
- Height: 1360mm / 53,3" (including standard base)
- Height: 1500mm / 59,1" (including Chip & PIN base)
- Depth: 422mm / 16,6"
- Standard height base: 60mm / 2,4"
- Increased height base for Chip & PIN: 200mm / 7,9"
- Weight: 53 kg / 116 lbs approx (incl. standard base)

Power

- 90 to 240 VAC, 47 to 63 Hz

Power Consumption

- Regular load: 114 W
- With heating: 350 W

Environment

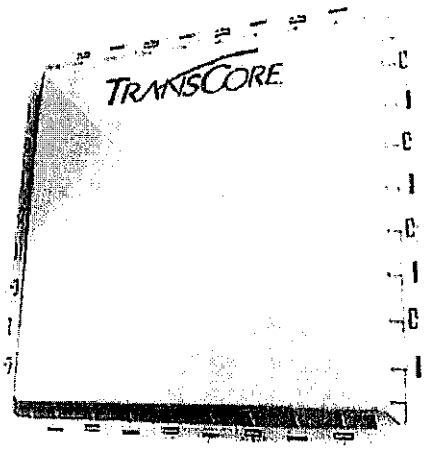
- Ambient temperature: -20°C / -4 F to +50°C / 122 F

Parking Technology ZEAG

Encompass® 4 Reader

Features

- Ideal for parking, security access, electronic vehicle registration, and traffic management
- Multiprotocol
- Fixed mount, integrated package with waterproof enclosure
- Reads Super eGo® (SeGo), eGo, ATA/AAR, and/or IAG tags
- 915 MHz RF band operation in North America
- Half-frame, full-frame (ATA), and Wiegand capability
- Internal and external antenna models
- Real-time clock
- Tag read buffering
- Programmable RF output power
- Quick, simple installation



TransCore's Encompass® 4 is a family of fully integrated, self-contained 915 MHz wireless radio frequency identification (RFID) readers that are specifically targeted at high performance applications in parking, security access, electronic vehicle registration (EVR) and traffic management. Each Encompass 4 reader includes a radio frequency (RF) module, digital signal processor (DSP), power supply, antenna (unless external antenna option is selected), input/output interfaces, and RS-232 or RS-422 serial communications interface.

The Encompass 4 family includes models capable of reading any two of the following standard protocols:

- Super eGo
- eGo (ISO 18000 6B)
- American Trucking Associations (ATA)
- Association of American Railroads (AAR)
- Interagency Group (IAG)

Additionally, for compatibility with existing security systems, Encompass 4 can read half-frame and full-frame ATA tags and Wiegand formatted tags and identification cards.

All Encompass 4 readers provide unparalleled flexibility by offering a real-time clock; expanded tag read buffering; programmable RF power; 250 KHz programmable frequency steps; system integrity checking; and programmable group select.

Encompass 4 readers are quickly and easily installed, tested, and maintained by TransCore trained, authorized personnel. The Encompass 4's command set is compatible with TransCore's SmartPass® and Encompass 2 readers.

TRANSCORE

Encompass® 4 Reader

RF CHARACTERISTICS

Frequency Range
902 to 928 MHz capable

911.75 to 919.75 MHz FCC-authorized in United States

Internal Antenna Gain
9.5 dBi

RF Control
By sense input or host command

Polarization
Linear, horizontal

Range
Read performance varies depending on tag and reader configuration and environment. Using the eGo or eGo Plus Windshield Sticker Tags, typical read range should be 12 to 17 ft (3.7 to 5.2 m).

Consult the *Encompass® 4 Reader System Guide* for tag and reader selection.

I/O CONTROL

Input: two independent dry contact closures for sense circuits

Output: two independent Form-C contacts

RS-232 with Wiegand or RS-422 with Wiegand-compatible host interface

POWER REQUIREMENTS

Input Power
16 to 20V AC, 47 to 63 Hz, or 16 to 28V DC

RF Output Power
2 W maximum to 200 mW minimum, selectable in 1dB steps

LICENSING

Equipment License
The user is required to obtain a Part 90 site license from the FCC to operate the unit in the United States. Access the FCC Web site at www.wireless.fcc.gov/uls for more information.

FCC ID: FIHO5531

Industry Canada ID: 1584A-05531

Users in all countries should check with the appropriate local authorities for licensing requirements.

COMPLIANCE

RF Interference
Units have been tested and are verified to Part 15 of the FCC rules for a Class A digital device.

Safety
Encompass 4 readers comply with the requirements of Underwriters Laboratories UL-1950, Standard for Safety of Information Technology Equipment.

PHYSICAL

Dimensions
Size: 15.5 x 15.5 x 3.25 in. (39.4 x 39.4 cm)

Weight: 9.5 lb (4.3 kg)

Mounting Location
Pole or wall mount

Indoor or outdoor

Enclosure
The system is environmentally sealed in a tamper-proof, polycarbonate housing.

ENVIRONMENTAL

Operating Air Temperature
-40°F to +131°F (-40°C to +55°C)

Humidity
100% condensing

Vibration
0.5 G_{rms}, 10 to 500 Hz

OPTIONS

Cable Accessory Kits
Cable Accessory Kits allow flexibility in installing the Encompass 4. Include the part number when ordering.

Part number 58-1620-001: connector with 5 ft (1.5 m) cable

Part number 58-1620-002: connector with 20 ft (6.1 m) cable

Wall Mount Bracket
Allows adjustment in all planes when used to install the Encompass 4 on a flat surface. Include the part number 54-1620-001 when ordering.

Transformer
A Class C transformer (part number 76-1620-005) is available to allow 110V AC to 18V AC conversion. Include the part number when ordering.

Training
Installation, operation, and maintenance training for TransCore authorized dealers is available through TransCore. For details, contact TransCore.

DOCUMENTATION

Encompass® 4 Reader Quick Start Guide
Encompass® 4 Reader System Guide

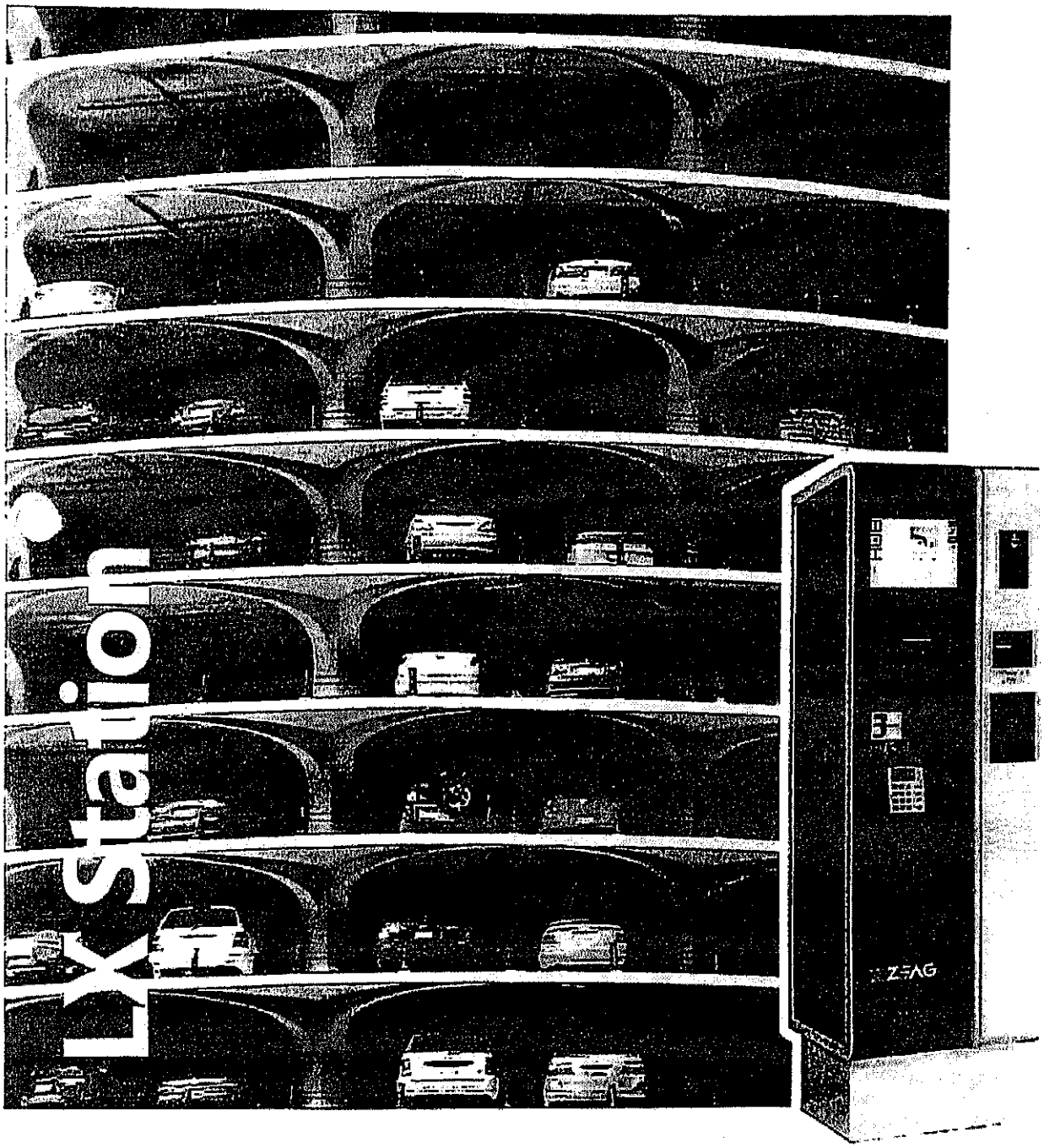
For more information:
Call **1.800.923.4824** • **214.461.4031** or fax **214.461.6478**

412074-004 • 05/10

TRANSCORE
transcore.com

Exit Station

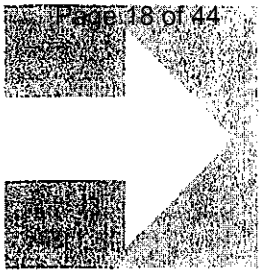
Lane Exit Station



Parking Technology ZEAG

Exit Station

Lane Exit Station



BASE MODEL

- Multilingual high contrast LCD display for user instructions (4x20 characters)
- Read/Write ticket unit for Magnetic stripe or Barcode tickets
- Illuminated navigation to guide customers step-by-step through the exit process
- Stainless steel cabinet
- Standard color - Housing (RAL 9006 White Aluminium) plus side/front panels (RAL 7021 Black Grey)
- Peripheral control unit
- Power Supply
- Heating and cooling units with separate thermostats
- Intercom call button and loudspeaker
- Collection bin for used ticket
- Individual security lock

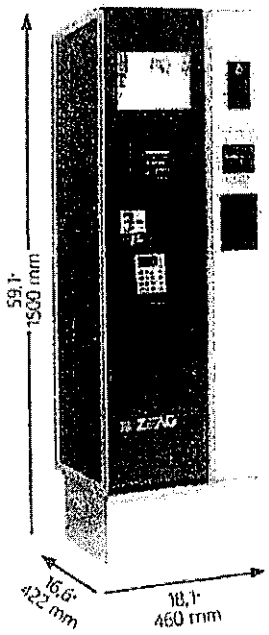
OPTIONS

- 10.4" color TFT display and touchscreen
- Chip & PIN plus Wave & Pay terminals for Credit Card In/ Credit Card Out (country specific certification)
- Range of contactless RFID proximity readers
- Range of long range AVI readers
- Customized side/front panel color
- Customized housing and side/front panel colors
- Sea/Ocean special protective treatment
- Thermal paper receipt printer
- Valiscan barcode scanner (1D or 2D options)
- Base (standard: 60mm, increased height for Chip & PIN: 200mm)
- Magnetic door lock & door open sensor options
- Double height frame (truck and car)

ZEAG Lane Exit Stations are installed at the exit of the parking area and can process pre-paid tickets or take payments using credit cards. It accepts a wide range of discount tickets.

STANDARD FEATURES

- Fast ticket read (magnetic stripe or barcode tickets)
- Read after write and anti-pass back control
- Online operation (RS422/485 or TCP/IP) or standalone
- Contract, Season or Monthly parking using a wide range of media (magnetic cards, barcode, proximity, AVI, LPR)
- Value card entry, exit and payment
- Accept rebate/ chaser/ discount tickets
- Read discount barcode vouchers
- Credit In/Credit Out (subject to country specific certification)
- Payment for parking tickets using credit or value cards
- Credit card payment (magnetic Credit Card – subject to country specific certification)
- Chip & PIN plus Wave & Pay terminals (subject to country specific certification)
- PCI-DSS certified together with Parking Management System
- Remote lost ticket (variable charge)
- Retraction of alarm tickets and retention of invalid cards
- Barrier gate control
- Pre-booking and pre-payment



Dimensions

- Width: 460mm / 18,1"
- Height: 1360mm / 53,3" (including standard base)
- Height: 1500mm / 59,1" (including Chip & PIN base)
- Depth: 422mm / 16,6"
- Standard height base: 60mm / 2,4"
- Increased height base for Chip & PIN: 200mm / 7,9"
- Weight: 53 kg / 116 lbs approx. (incl. standard base)

Power

- 90 to 240 VAC, 47 to 63 Hz

Power Consumption

- Regular load: 114 W
- With heating: 350 W

Environment

- Ambient temperature: –20°C / -4 F to +50°C / 122 F

Parking Technology ZEAG

EXHIBIT C

Parking Technology HUB

License Plate Recognition Test

Revision 1.1
January 6, 2015

1. Document History

Table 1 Documents the history of all revisions of this document from its initial creation throughout the iterations and versions.

Table 1 - Document History

Date	Revision	Author(s)	Description	Document Status
8/29/2014	1.0	Sandy Bosick	Initial Document Release	Initial Creation
01/06/2015	1.1	Sandy Bosick	Revised after internal testing	Release

2. Description

This is a test of the LPR subsystem utilized with the WebPARCS™ system. The entry and exit lane processes are tested, as well as invalid plate recognition. Exceptions and watch list maintenance and processing are also tested.

3. Resources/Conditions

1. Entry lane with LPR camera, presence detectors and TIM
2. Exit lane with LPR camera and presence detectors
3. WebPARCS™ Image Review Webpage

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4. Five unique License Plates
5. The following scenarios are to be tested:
   a. Valid Transaction
   b. Already in Lot
   c. On Watch List
   d. Low Confidence Factor
   e. Image Quality Too Low
   f. Swapped Media
   g. No License Plate Found
6. Laptop Running WebPARCS™ if available
7. Counter Reference if necessary
   Count 1 name _____
   Count 2 name _____
   Count 3 name _____
   Count 4 name _____
   Count 5 name _____
   Count 6 name _____
   Count 7 name _____
   Count 8 name _____
   Count 9 name _____

4. Entry Procedures

4.1 LPR valid entry procedure.

This is a test of a valid LPR Entry.

TEST APPLICABLE?				YES	NO
Step	**Action**	**Expected Result**	**Pass**	**Fail**	**N/A**
1.	Drive a vehicle over the dual detection loops (A & B). License Plate # _____	a. The station is armed. b. The display reads "Please insert Card or Credit card, Time/date, PRESS HERE FOR NEW TICKET". c. An audible voice prompt is heard.			
2.	The tester presses the ticket issue button on the screen. Ticket #s:_____	a. The parking ticket is ejected through the UCD. b. The display reads "Generating Ticket Please Remove Ticket".			
3.	The ticket is extracted from the UCD by the tester.	a. The display reads "Welcome". b. An audible voice prompt is			

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		heard. c. The barrier gate arm rises to the open position.			
4.	The tester attempts to insert or wave another media, credit card or proximity card.	a. The UCD does not accept the card. b. The display does not change. c. No record is created.			
5.	The tester drives a vehicle forward clearing the arming loops (A & B) and the closing loop (C). Plate:_____ Ticket: _____	a. LPR captures license plate image. b. The barrier gate lowers to the closed position when the vehicle clears the C-loop. c. An entry event is electronically stored in WebPARCS™. d. The ticket is placed in the outstanding ticket list in WebPARCS™. e. The Space Count System increments/decrements by 1. f. The station is reset for the next transaction. g. The display is cleared. h. The station is no longer armed.			

4.2 LPR plate already in lot procedure.

This is a test of the license plate recognition system when a vehicle enters a facility with a plate already in lot triggering a plate already in lot exception.

TEST APPLICABLE?				YES	NO
Step	**Action**	**Expected Result**	**Pass**	**Fail**	**N/A**
1.	Drive a vehicle with a License Plate that is already in the LPI inventory over the dual detection loops (A & B). License Plate # _____	a. The station is armed. b. The display reads "Please insert Card or Credit card, Time/date, PRESS HERE FOR NEW TICKET". c. An audible voice prompt is heard.			
2.	The tester presses the ticket issue button on the screen. Ticket #s:_____	a. The parking ticket is ejected through the UCD. b. The display reads "Generating Ticket Please Remove Ticket".			
3.	The ticket is extracted from the UCD by the tester.	a. The display reads "Welcome". b. An audible voice prompt is heard.			

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		c. The barrier gate arm rises to the open position.			
4.	The tester attempts to insert or wave another media, credit card or proximity card.	a. The UCD does not accept the card. b. The display does not change. c. No record is created.			
5.	The tester drives a vehicle forward clearing the arming loops (A & B) and the closing loop (C). Plate:_____ Ticket: _____	a. LPR captures license plate image. b. The barrier gate lowers to the closed position when the vehicle clears the C-loop. c. An entry event is electronically stored in WebPARCS™. d. The ticket is placed in the outstanding ticket list in WebPARCS™. e. The Space Count System increments/decrements by 1. f. The station is reset for the next transaction. g. The display is cleared. h. The station is no longer armed. i. LPR generates exception for "Plate already in lot".			
6.	Manually update the license plate in the LPR exception screen with the correct information.	a. Acknowledge exception on exception screen b. Parking ticket entry information, updated License Plate, and actual license plate image are stored together in the LPR database. c. Exception is closed.			

4.3 LPR plate on watch list entry procedure.

This is a test of the license plate recognition system when a vehicle enters a facility with a plate on a watch list triggering a plate on watch list exception.

TEST APPLICABLE?				YES	NO
Step	**Action**	**Expected Result**	**Pass**	**Fail**	**N/A**
1.	Drive a vehicle with on a watch list over the dual detection loops (A & B). License Plate # _____	a. The station is armed. b. The display reads "Please insert Card or Credit card, Time/date, PRESS HERE FOR NEW TICKET".			

		c. An audible voice prompt is heard.			
2.	The tester presses the ticket issue button on the screen. Ticket #s:_____	a. The parking ticket is ejected through the UCD. b. The display reads "Generating Ticket Please Remove Ticket".			
3.	The ticket is extracted from the UCD by the tester.	a. The display reads "Welcome". b. An audible voice prompt is heard. c. The barrier gate arm rises to the open position.			
4.	The tester attempts to insert or wave another media, credit card or proximity card.	a. The UCD does not accept the card. b. The display does not change. c. No record is created.			
5.	The tester drives a vehicle forward clearing the arming loops (A & B) and the closing loop (C). Plate:_____ Ticket: _____	a. LPR captures license plate image. b. The barrier gate lowers to the closed position when the vehicle clears the C-loop. c. An entry event is electronically stored in WebPARCS™. d. The ticket is placed in the outstanding ticket list in WebPARCS™. e. The Space Count System increments/decrements by 1. f. The station is reset for the next transaction. g. The display is cleared. h. The station is no longer armed. i. LPR generates exception for "Plate on Watch List".			
6.	Manually update the license plate in the LPR exception screen with the correct information.	a. Acknowledge exception on exception screen b. Parking ticket entry information, updated License Plate, and actual license plate image are stored together in the LPR database. c. Exception is closed.			

4.4 LPR low confidence entry procedure.

This is a test of the license plate recognition system when a vehicle enters a facility with an unreadable license plate that triggers a low confidence exception.

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TEST APPLICABLE?				YES	NO
Step	Action	Expected Result	Pass	Fail	N/A
1.	Drive a vehicle with license plate that will produce an image with a low confidence exception over the dual detection loops (A & B). License Plate # _____	a. The station is armed. b. The display reads "Please insert Card or Credit card, Time/date, PRESS HERE FOR NEW TICKET". c. An audible voice prompt is heard.			
2.	The tester presses the ticket issue button on the screen. Ticket #s:_____	a. The parking ticket is ejected through the UCD. b. The display reads "Generating Ticket Please Remove Ticket".			
3.	The ticket is extracted from the UCD by the tester.	a. The display reads "Welcome". b. An audible voice prompt is heard. c. The barrier gate arm rises to the open position.			
4.	The tester attempts to insert or wave another media, credit card or proximity card.	a. The UCD does not accept the card. b. The display does not change. c. No record is created.			
5.	The tester drives a vehicle forward clearing the arming loops (A & B) and the closing loop (C). Plate:_____ Ticket: _____	a. LPR captures license plate image. b. The barrier gate lowers to the closed position when the vehicle clears the C-loop. c. An entry event is electronically stored in WebPARCS™. d. The ticket is placed in the outstanding ticket list in WebPARCS™. e. The Space Count System increments/decrements by 1. f. The station is reset for the next transaction. g. The display is cleared. h. The station is no longer armed. i. LPR generates exception for "Low Confidence".			
6.	Manually update the license plate in the LPR exception screen with the correct information.	a. Acknowledge exception on exception screen b. Parking ticket entry information, updated License Plate, and actual license plate			

		image are stored together in the LPR database. c. Exception is closed.			

4.5 LPR no match recognizable plate date entry procedure.

This is a test of the license plate recognition system when a vehicle enters a facility with an unreadable license plate triggering an unreadable plate exception.

TEST APPLICABLE?				YES	NO
Step	**Action**	**Expected Result**	**Pass**	**Fail**	**N/A**
1.	Drive a vehicle with license plate that will produce an image with an unreadable plate exception over the dual detection loops (A & B). License Plate # _____	a. The station is armed. b. The display reads "Please insert Card or Credit card, Time/date, PRESS HERE FOR NEW TICKET". c. An audible voice prompt is heard.			
2.	The tester presses the ticket issue button on the screen. Ticket #s:_____	a. The parking ticket is ejected through the UCD. b. The display reads "Generating Ticket Please Remove Ticket".			
3.	The ticket is extracted from the UCD by the tester.	a. The display reads "Welcome". b. An audible voice prompt is heard. c. The barrier gate arm rises to the open position.			
4.	The tester attempts to insert or wave another media, credit card or proximity card.	a. The UCD does not accept the card. b. The display does not change. c. No record is created.			
5.	The tester drives a vehicle forward clearing the arming loops (A & B) and the closing loop (C). Plate:_____ Ticket: _____	a. LPR captures license plate image. b. The barrier gate lowers to the closed position when the vehicle clears the C-loop. c. An entry event is electronically stored in WebPARCS™. d. The ticket is placed in the outstanding ticket list in WebPARCS™. e. The Space Count System increments/decrements by 1.			

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		f. The station is reset for the next transaction. g. The display is cleared. h. The station is no longer armed. i. LPR generates exception for "No recognizable plate data".			
6.	Manually update the license plate in the LPR exception screen with the correct information.	a. Acknowledge exception on exception screen b. Parking ticket entry information, updated License Plate, and actual license plate image are stored together in the LPR database. c. Exception is closed.			

5. Exit Procedures

When accepting an alarm at the exit for LPR, this will permit the patron to utilize the provided media. If an LPR alarm occurs and that alarm is declined, this will not permit the patron to utilize the provided media. LPI lookups must be performed at the cashier station in order to retrieve the actual entry/LPI information.

1.1 LPR valid exit procedure.

This is a test of a valid plate scenario with the LPR System at an exit lane. Fee collection procedures are not detailed in this test. They are tested as part of the cashier and express exit lane validation tests.

TEST APPLICABLE?				YES	NO
Step		**Expected Result**	**Pass**	**Fail**	**N/A**
1.	Drive a vehicle with a valid license plate clearing the LPR trigger loop and onto the arming loop A.	a. LPR captures images for the vehicle.			
2.	Tester inserts a ticket into the UCD. Ticket # _____ License Plate #_____ Fee =	a. WebPARCS™ relays the ticket's unique identifier to the LPR database. b. Display reads "Please Wait VIS Wait Answer" at the Express Exit, "Processing Please Wait" at the attended FCXR or "Please Wait" at the unattended FCXR while it is checking the LPR. c. LPR successfully matches the ticket with the license plate within the specified time.			

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		d. Ticket reader calculates the length of stay and correct parking fee due based on the rate of the parking lot they entered. e. Ticket reader displays the parking fee due on the patron display. f. Ticket reader instructs patron to pay parking fee.			
3.	Tester satisfies parking fee.	a. Barrier gate rises to open position.			
4.	Tester drives vehicle forward clearing arming loops (A&B) and closing loop C. COUNT =	a. Verify that the gate is lowered upon clearing of the closing loop. b. Verify that the fee display clears and that the station resets after the gate closes. c. Exit event validated and electronically stored in WebPARCS™ with transaction and payment details. d. Applicable counters are incremented. e. Lane resets for next transaction. f. License plate is removed from the active inventory.			

1.2 LPR plate on watch list exit procedure.

This is a test of an LPR "Plate on Watch List" scenario at an Exit lane. Fee collection procedures are not detailed in this test. They are tested as part of the cashier and express exit lane validation tests.

TEST APPLICABLE?				YES	NO
Step		**Expected Result**	**Pass**	**Fail**	**N/A**
1.	Drive a vehicle with a valid license plate on a watch list clearing the LPR trigger loop and onto the arming loop A.	a. LPR captures images for the vehicle.			
2.	Tester inserts ticket into the UCD. Ticket #_____ License Plate #_____ Fee =	a. WebPARCS™ relays the ticket's unique identifier to the LPR database. b. Display reads "Please Wait VIS Wait Answer" at Express Exit, "Processing Please Wait" at attended FCXR or "Please Wait" at unattended FCXR while it is checking the LPR.			

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		c. WebPARCS™ determines that the plate is on watch list and populates an alarm. d. Alarm "Plate on Watch List" is visible on the Home Screen. e. Tester clicks on the alarm and handles accordingly. f. Ticket reader calculates the length of stay and correct parking fee due based on the rate of the parking lot they entered. g. Ticket reader displays the parking fee due on the patron display. h. Ticket reader instructs the patron to pay the parking fee.			
3.	Tester satisfies the parking fee.	a. Barrier gate rises to the open position.			
4.	Tester drives vehicle forward clearing arming loops (A&B) and closing Loop C.	a. Verify that the gate is lowered upon clearing of the closing loop. b. Verify that the fee display clears and that the station resets after the gate closes. c. Exit event validated and electronically stored in WebPARCS™ with transaction and payment details. d. Applicable counters are incremented. e. Lane resets for the next transaction. f. License plate is removed from the active inventory.			

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1.3 LPR multiple matches exit procedure.

This is a test of an LPR 'multiple matches found' scenario at an exit lane. Fee collection procedures are not detailed in this test. They are tested as part of the cashier and express exit lane validation tests.

TEST APPLICABLE?				YES	NO
Step		**Expected Result**	**Pass**	**Fail**	**N/A**
1.	Drive a vehicle with a valid license plate with multiple entries, clearing the LPR trigger loop and onto the arming loop A.	a. LPR captures images for the vehicle.			
2.	Tester inserts ticket into the UCD. Ticket # _____ License Plate #_____ Fee =	a. WebPARCS™ relays the ticket's unique identifier to the LPR database. b. Display reads "Please Wait VIS Wait Answer" at Express Exit, "Processing Please Wait" at attended FCXR or "Please Wait" at unattended FCXR while it is checking the LPR. c. WebPARCS™ found more than 1 entry match and populates an alarm. d. Alarm "Multiple Matches" is visible on the Home Screen. e. Tester clicks on alarm and handles accordingly. f. Ticket reader calculates the length of stay and correct parking fee due based on the rate of the parking lot they entered. g. Ticket reader displays the parking fee due on the patron display. h. Ticket reader instructs the patron to pay the parking fee.			
3.	Tester satisfies the parking fee.	a. Barrier gate rises to the open position.			
4.	Tester drives vehicle forward clearing arming loops (A&B) and the closing loop (C). Ticket #_____ Count =	a. Verify that the gate is lowered upon clearing of the closing loop. b. Verify fee display clears and the station resets after the gate closes.			

		c. Exit event validated and electronically stored in WebPARCS™ with transaction and payment details. d. Applicable counters are incremented. e. Lane resets for the next transaction. f. License plate is removed from the active inventory.			

1.4 LPR swapped media exit procedure.

This is a test of an LPR "Swapped Media" scenario at an exit lane. Fee collection procedures are not detailed in this test. They are tested as part of the cashier and express exit lane validation tests.

TEST APPLICABLE?				YES	NO
Step		**Expected Result**	**Pass**	**Fail**	**N/A**
1.	Drive a vehicle with a valid license plate clearing the LPR trigger loop and onto the arming loop A.	a. LPR captures images for the vehicle.			
2.	Insert a swapped ticket into the UCD. Ticket #_____ License Plate #_____ Ticket #_____ License Plate #_____	a. WebPARCS™ relays the ticket's unique identifier to the LPR database. b. Display reads "Please Wait VIS Wait Answer" at Express Exit, "Processing Please Wait" at attended FCXR or "Please Wait" at unattended FCXR while it is checking the LPR. c. Alarm "Swapped Media" is visible on the Home Screen d. Tester clicks on alarm and handles accordingly. e. - IF DECLINED - Display reads "[redacted]" at the Express Exit , 'LPR Failed' at the FCXR in either attended or unattended. f. – IF DECLINED - Ticket is ejected and Display reads Transaction Cancelled Please Remove Media. g. – IF ACCEPTED - Ticket reader calculates the length of stay			

		and correct parking fee due based on the rate of the parking lot they entered. h. Ticket reader displays the parking fee due on the patron display. i. Ticket reader instructs the patron to pay the parking fee.			
3.	Tester satisfies the parking fee.	a. Barrier gate rises to open position.			
4.	Tester drives vehicle forward clearing arming loops and closing Loop C.	a. Verify that the gate is lowered upon clearing of the closing loop. b. Verify fee display clears and the station resets after the gate closes. c. Exit event validated and electronically stored in WebPARCS™ with transaction and payment details. d. Applicable counters are incremented. e. Lane resets for the next transaction. f. License plate is removed from the active inventory. g. License plate is automatically added to Watch List			

1.5 LPR no plate read exit procedure.

This is a test of an LPR "Image Quality too Low" scenario at an exit lane. Fee collection procedures are not detailed in this test. They are tested as part of the cashier and express exit lane validation tests.

TEST APPLICABLE?				YES	NO
Step		Expected Result	Pass	Fail	N/A
1.	Drive a vehicle with a license plate covered, clearing the LPR trigger loop and onto the arming loop A.	a. LPR captures images for the vehicle.			
2.	Tester inserts ticket into the UCD. Ticket #_____ License Plate #_____	a. WebPARCS™ relays the ticket's unique identifier to the LPR database. b. Display reads "Please Wait VIS Wait Answer" at Express Exit, "Processing Please Wait" at attended FCXR or "Please Wait" at unattended FCXR while it is checking the LPR.			

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		c. WebPARCS™ determines that no plate was read and populates an alarm. d. Alarm "No READ" is visible on the Home Screen e. Tester clicks on alarm and handles accordingly. f. Ticket reader calculates the length of stay and correct parking fee due based on the rate of the parking lot they entered. g. Ticket reader displays the parking fee due on the patron display. h. Ticket reader instructs the patron to pay the parking fee.			
3.	Tester satisfies the parking fee.	a. Barrier gate rises to open position.			
4.	Tester drives vehicle forward clearing arming loops and closing loop C.	a. Verify that the gate is lowered upon clearing of the closing loop. b. Verify fee display clears and the station resets after the gate closes. c. Exit event validated and electronically stored in WebPARCS™ with transaction and payment details. d. Applicable counters are incremented. e. Lane resets for the next transaction. f. License plate is removed from the active inventory.			

1.6 Swapped ticket at attended exit with LPI lookup-plate match procedure.

This is a test of the cashiered exit lane involving a transaction with a swapped ticket.

TEST APPLICABLE?			YES	NO	
Step	**Action**	**Expected Result**	**Pass**	**Fail**	**N/A**
1.	Drive a vehicle with a valid license plate clearing the LPR trigger loop and onto the arming loop A.	a. LPR captures images for the vehicle.			
2.	Swapped Ticket Procedure.				
3.	Insert a swapped ticket into the UCD.	a. Alarm generated in WebPARCS™ for swapped ticket.			

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	License Plate #_____ Ticket #_____ License Plate # of vehicle that pulled ticket_____	b. License plate is automatically added to Watch List. c. Alarm is declined within WebPARCS™. d. Display reads 'LPR Failed'. e. Cashier hits Ok. f. Ticket is ejected from the UCD. g. Date/time sent to the station to be determined from manually recorded information obtained from LPR/LPI system and using the LPI lookup functionality.			
4.	Activate LPI/LPR functionality by pressing the (F9) LPI button.	a. The LPI search form is displayed.			
5.	'XX' will be in the State which will have the system use the plate that is presently in the lane, Enter a "1" for license plate Number Field in case the plate was obscured then press (F5) Search button. Ticket # _____	a. The FCXR screen display reads "LPI Search". b. The FCXR will send the license request to WebPARCS™. c. After the search is processed, the FCXR journal display reads 'Found'			
6.	Press the Entry Ticket (F1) button to process the manual ticket.	a. The FCXR inserts the entry time and date with the appropriate location (Rate).			
7.	Press the Enter Key to calculate the fee	a. The display reads "Processing Please Wait" while it is checking LPR. b. The FCXR calculates and displays the fee on the FCXR and on the patron's fee display. c. The patron's fee display reads "Please pay $x.xx".			
8.	Enter the amount tendered and press the Cash payment button.	a. The FCXR calculates and displays the accurate amount of change to return to the patron. b. The patron's fee display reads "Transaction Paid Change: $x.xx". c. The ticket is removed from the "Outstanding Ticket List" in WebPARCS™. d. The cash drawer opens. e. A receipt is generated, if required/requested, and printed correctly as per the approved format. b. The FCXR screen display reads "Please enter ticket for validation".			
9.	Insert a blank ticket to be processed.	a. Audit Ticket is processed			
10.	Close the cash drawer.	a. The barrier gate opens. b. The display reads "Good Bye".			
11.	If no fee was due Cash drawer did not	a. The barrier gate opens.			

	open....Cashier presses OK to open barrier.	b. The display reads "Good Bye".			
12.	Proceed over the closing loop (C). Count =	a. The barrier gate is lowered upon clearing of the closing loop. b. The station display clears and the station resets after the gate closes. c. The exit event is stored in WebPARCS™ with transaction and payment details. d. The parking ticket is deleted from the "Outstanding Ticket List" in WebPARCS™. e. The Space Count System increments/decrements by 1. f. The station resets for the next transaction. c. LPR removes the license plate from the inventory.			

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1.7 Lost or swapped ticket at attended exit procedure using plate read.

This is a test of the manned cashiered exit lane involving a transaction with a lost or swapped ticket set.

TEST APPLICABLE?				YES	NO
Step	**Action**	**Expected Result**	**Pass**	**Fail**	**N/A**
1.	Drive a vehicle with a valid license plate clearing the LPR trigger loop and onto the arming loop A.	a. LPR captures images for the vehicle.			
2.	Lost Ticket procedure				
3.	The cashier Performs an LPI lookup using the LPI Button (F10). License Plate# Exit _____ Ticket# Used _____	a. "XX" is entered into the state which will use the plate read in the lane to initiate a lookup of the LPR/LPI database. b. Cashier hits the Search button (F5) c. "Search" message is displayed on the screen.			
4.	License plate found message is displayed And cashier performs a cashier entry ticket (F1).	a. The Entry Date/time and "Lot" from the LPR/LPI transaction is pre-populated in the fields b. The cashier selects "Enter and the FCXR calculates and displays accurate fee on FCXR and on patron fee display using the information from the lookup. c. Patron fee display reads "Amount Due $x.xx".			
5.	Insert/Present a valid credit card. Visa _____ Master Card _____ American Express _____ Discover _____	a. Credit card is processed. b. Verify appropriate amount is charged. c. Credit card is returned to front of the UCD. d. Patron fee display reads "Amount Paid".			
6.	Remove the credit card from the UCD.	a. Station auto-generates an audit ticket and swallows it using receipt stock, then generates and issues the receipt.			
7.	Remove receipt.	a. Gate opens. b. "Thank You" is displayed on the fee display.			
9.	Proceed over closing loop.	a. Verify that the gate is lowered upon clearing of the closing loop. b. Applicable counters increment.			

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		c. Lane resets for the next transaction.			

1.8 Lost or swapped ticket at attended exit procedure using RTP.

This is a test of the manned cashiered exit lane involving a transaction with a lost or swapped ticket set.

TEST APPLICABLE?				YES	NO
Step	**Action**	**Expected Result**	**Pass**	**Fail**	**N/A**
1.	Drive a vehicle with a valid license plate clearing the LPR trigger loop and onto the arming loop A.	a. LPR captures images for the vehicle.			
2.	Lost Ticket procedure - cashier Performs LPI lookup using the RTP Functionality.				
3.	RPT Functionality: Within WebPARCS™ > Add Ins > Remote Exit Processing, locate patron using search criteria and click their name from the list.	a. The specific Entry Location detail for that patron displays.			
4.	At the Exit Location field, click the drop down and select the correct exit location kiosk where the patron will be processed. Click the Confirm button to initiate the exit process remotely.	a. By selecting the Confirm button you are sending the patron's entry information to the kiosk so that it may process the payment, if applicable, and subsequently start the vehicle retrieval process.			
5.	Cashier continues with payment processing.	a. FCXR calculates and displays accurate fee on FCXR and on patron fee display using the information from the RTP functionality. b. Patron fee display reads "Amount Due $x.xx".			
6.	Insert/Present a valid credit card. Visa _____ Master Card _____ American Express _____ Discover _____	a. Credit card is processed. b. Verify appropriate amount is charged. c. Credit card is returned to front of the UCD. d. Patron fee display reads "Amount Paid". e. Station auto-generates an audit ticket and swallows it using receipt stock, then generates and issues the receipt.			

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7.	Remove receipt.	a. Gate opens. b. "Thank You" is displayed on the fee display.			
8.	Proceed over closing loop.	a. Verify that the gate is lowered upon clearing of the closing loop. b. Applicable counters increment. c. Lane resets for the next transaction.			

5.12 LPR V-Ticket swapped media exit procedure.

This is a test of an LPR "V-Ticket Swapped Media" scenario at an exit lane. Fee collection procedures are not detailed in this test. They are tested as part of the cashier and express exit lane validation tests.

TEST APPLICABLE?				YES	NO
Step		**Expected Result**	**Pass**	**Fail**	**N/A**
1.	Drive a vehicle with an already in Inventory license plate (not the plate that was associated with the V-Ticket Entry) clearing the LPR trigger loop and onto the arming loop A.	a. LPR captures images for the vehicle.			
2.	Tester Credit Card into UCD. CC# _____ License Plate #_____	a. Display reads "Please Wait." b. WebPARCS™ determines that the plate is already in inventory and populates an alarm. c. Alarm "Swapped Media" is visible on the Home Screen. d. Tester clicks on alarm and handles accordingly. e. Ticket reader calculates the length of stay and correct parking fee due based on the rate of the parking lot they entered. f. Ticket reader displays the parking fee due on the patron display. g. Ticket reader instructs the patron to pay the parking fee.			
3.	Parking Fee is Satisfied.	a. Barrier gate rises to open position.			
4.	Tester drives vehicle forward clearing arming loops and closing Loop (C).	a. Verify that the gate is lowered upon clearing of the closing loop. b. Verify fee display clears and the station resets after the gate closes. c. Exit event validated and			

		electronically stored in WebPARCS™ with transaction and payment details. d. License plate is automatically added to Watch List. e. Applicable counters are incremented. f. Lane resets for the next transaction. g. License plate is removed from the active inventory. h. V-Ticket is removed from V-Ticket Outstanding if the Swapped Media Alarm was accepted.			

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5.13 LPR no license plate found exit procedure.

This is a test of an LPR "No license plate Found" scenario at an exit lane. Fee collection procedures are not detailed in this test. They are tested as part of the cashier and express exit lane validation tests.

TEST APPLICABLE?				YES	NO
Step		Expected Result	Pass	Fail	N/A
1.	Drive a vehicle with a valid license plate clearing the LPR trigger loop and onto the arming loop A.	a. LPR captures images for the vehicle.			
2.	Tester inserts ticket into the UCD. Ticket #_____ License Plate #_____	a. Display reads "Please Wait." b. WebPARCS™ determines that the plate is already in inventory and populates an alarm. c. Alarm "Plate Not Found" is visible on the Home Screen. d. Tester clicks on alarm and handles accordingly.			
3.	Tester presses the intercom button.	a. Ticket reader calculates the length of stay and correct parking fee due based on the rate of the parking lot they entered. b. Ticket reader displays the parking fee due on the patron display. c. Ticket reader instructs the patron to pay the parking fee.			
4.	Tester satisfies the parking fee.	a. Barrier gate rises to open position.			
5.	Tester drives vehicle forward clearing arming loops and closing loop (C).	a. Verify that the gate is lowered upon clearing of the closing loop. b. Verify fee display clears and the station resets after the gate closes. c. Exit event validated and electronically stored in WebPARCS™ with transaction and payment details. d. Applicable counters are incremented. e. Lane resets for the next transaction. f. License plate is removed from the active inventory.			

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5.14 Lost ticket LPI/LPR <1 day (no plate match) procedure.

This is a test of the cashiered exit lane when a lost ticket process is initiated without an LPR match.

TEST APPLICABLE?			YES	NO	
Step	Action	Expected Result	Pass	Fail	N/A
1.	Drive a vehicle with a valid license plate clearing the LPR trigger loop and onto the arming loop A.	a. LPR captures images for the vehicle.			
2.	Cashier Performs an LPI lookup using the LPI Button (F10). Cashier enters a "1" for the license plate.	a. "XX" is entered into the state which will use the plate read in the lane to initiate a lookup of the LPR/LPI database. b. Cashier hits Search button (F5) c. "Search" message is displayed on the screen			
3.	license plate not found message is displayed cashier performs a Lost ticket transaction (F2)	a. FCXR calculates and displays 1 day fee on FCXR and on patron fee display. b. Patron fee display reads "Amount Due $x.xx".			
4.	Hit Receipt (F3), Enter amount tendered and Press Cash payment.	a. FCXR calculates and displays accurate amount of change to return to patron. b. Patron fee display reads "Amount Paid Change $x.xx". c. Parking ticket is processed. d. Cash drawer opens. e. Receipt is generated and printed correctly as per approved format if the receipt button (F3) was pressed. f. Barrier gate opens. g. Display Reads "Thank You".			
5.	Insert a blank ticket into the UCD.				
6.	Proceed over closing loop.	a. Verify that the gate is lowered upon clearing of the closing loop. b. Verify display clears and station resets after gate closes. c. Exit event validated and electronically stored in WebPARCS™ with transaction and payment details. d. Parking ticket is validated in WebPARCS™. e. Applicable counters increment f. Station resets for the next transaction.			

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1.9 Lost or swapped ticket at unattended exit procedure using RTP.

This is a test of the unmanned cashiered exit lane involving a transaction with a lost or swapped ticket.

Step	Action	Expected Result	Pass	Fail	
1.	Drive a vehicle with a valid license plate clearing the LPR trigger loop and onto the arming loop A.	a. LPR captures images for the vehicle.			
2.	Swapped Ticket procedure				
3.	Insert a swapped ticket into the UCD. License Plate # Exit _____ Ticket # Used _____ License Plate # of vehicle that pulled the ticket_____	a. Display reads "Please Insert Ticket", Date/Time. b. Alarm generated in WebPARCS™ for swapped ticket. c. Alarm is declined within WebPARCS™ d. LPR decline message displayed at the cashier station. e. Ticket is ejected from the UCD f. License plate automatically added to Watch List.			
4.	Press the intercom button.	a. Date/time sent to the station to be determined from manually recorded information obtained from LPR/LPI system and using the RTP functionality.			
5.	RPT Functionality: Within WebPARCS™ > Add Ins > Remote Exit Processing, locate the patron using the search criteria and click their name from the list.	a. The specific Entry Location detail for that patron displays.			
6.	At the Exit Location field, click the drop down and select the correct exit location kiosk where the patron will be processed. Click the Confirm button to initiate the exit process remotely.	a. By selecting the Confirm button you are sending the patron's entry information to the kiosk so that it may process the payment, if applicable, and subsequently start the vehicle retrieval process.			
7.	Tester Insert/Present a valid credit card. Visa _____ Master Card _____ American Express _____ Discover _____	a. Credit card is processed b. Verify appropriate amount is charged. c. Credit card is returned to front of the UCD.			
8.	Remove credit card from the UCD.	a. Station auto-generates an audit ticket and swallows it using receipt stock, then generates			

		and issues the receipt.			
a.	Remove receipt.	a. Gate opens. b. "Thank You" is displayed on the fee display.			
c.	Proceed over closing loop.	a. Verify that the gate is lowered upon clearing of the closing loop. b. Applicable counters increment. c. Lane resets for the next transaction.			

6 Watch list management procedure.

This is a test of the watch list management functions within WebPARCS™.

TEST APPLICABLE?				YES	NO
Step		Expected Result	Pass	Fail	N/A
1.	Log on to WebPARCS™				
2.	Access the LPR/Watch List feature.	a. Watch List feature is displayed.			
3.	Add a plate to the watch list.	a. License plate on the watch list is displayed			
4.	Search for a plate that is known to be on the watch list.	a. License plate on the watch list is displayed.			
5.	Select the previously added entry in a watch list.	a. Information entered is displayed.			
6.	Remove the entry.	a. Entry is deleted from the watch list.			
7.	Search for the license plate that was removed from the watch list.	a. Plate is not found.			

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7 Results

Test procedure: license plate recognition system Test			
Test Date/Time:		**Test Location:**	
Tester Name:			
Test Result:	Passed:	Conditionally Passed:	Failed:

Signatures			
Company	**Name**	**Signature**	**Date**

Failed Step	**Test Result Deviation**	**Cause/Required Measure**	**Deviation Class (A,B,C,D)**