

Touch Screen Serial Terminal



Touch Terminal

The touch screen unit offers an alternative to traditional manual toll terminals that are based on the use of mechanical buttons. Instead, information is displayed on a color screen and "touch targets" are used to perform the collection process. The advantage to using this device is that it is more flexible to changes such as the number of vehicle classes, the number of payment types, and the types of unusual occurrences that are needed in a toll collection system. If new classes are needed, there is no need to replace or modify a mechanical button-based terminal. Instead, new screens with new touch targets can be made in the software while retaining the same physical touch terminal.

Message areas on the screens allow detail information to be displayed to the collector. This information can include lane status, date/time, toll amount due, status information about the receipt printer, and information about the transaction being processed.

Below are a few sample touch screens to illustrate how a toll terminal based on a touch screen device looks and operates. The terminal display supports up to 16 colors that can be used for background fill, text, touch target fill, or borders. The samples are based on a Main Classification screen, which the collector uses to perform most of the vehicle classification and payment method processing. Other "sub-screens" are accessed by the collector touch function targets located on the main screen. All screens are stored in non-volatile RAM that results in immediate transfers between screens. The exact screens used for a system would depend on the requirements and methods of collection.

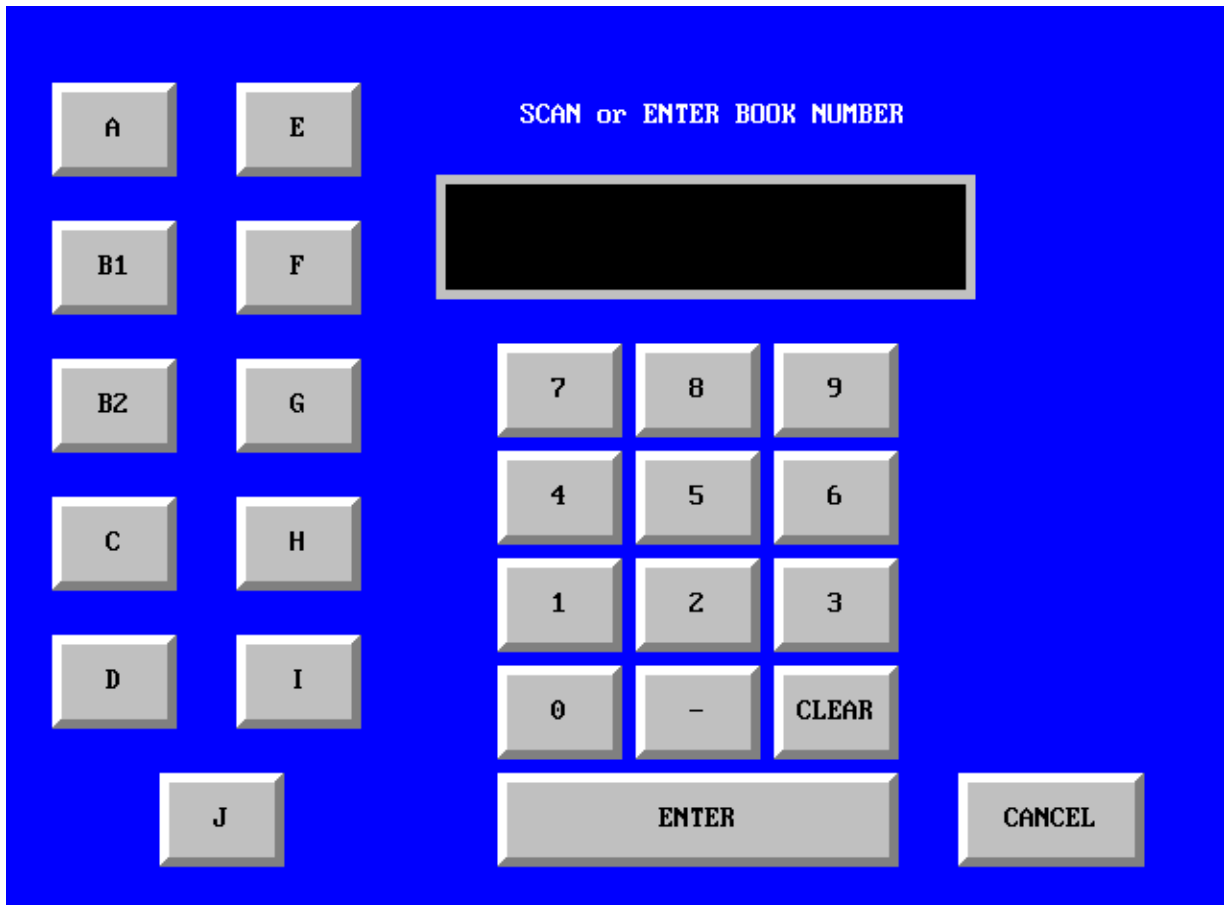


Main Collector Classification Screen

14-Mar-2002 11:22:00 Class A, Payment Cash			NO-FUNDS	BOOK SALE
CLASS F	CLASS G	Lane Open Collector ID: 0328 Time: 11:24	Non Revenue	Unusual Occurrence
		AMOUNT DUE: \$4.00	DIRECT CREDIT	LANE OPEN
CLASS D	CLASS E	PANIC	CANCEL	BATCH CREDIT
				CHECK
CLASS B2	CLASS C	OTHER VEHICLE CLASSES	COUPON	QUARTERLY PASS
CLASS A	CLASS B1	CASH	RECEIPT	

Special functions such as processing credit cards for payment or selling coupon books in the lane are better implemented using this device. Functional targets on the main screen allow a completely new screen to be displayed for processing special functions. For example, if coupons were sold in the lane, a target labeled "Book Sale" would be shown on the main screen. When touched, a new screen prompting the collector with the information needed to sell the book would be displayed. When the sale process is finished, a target would be touched and the screen would return to the main screen.

Book Sale Screen

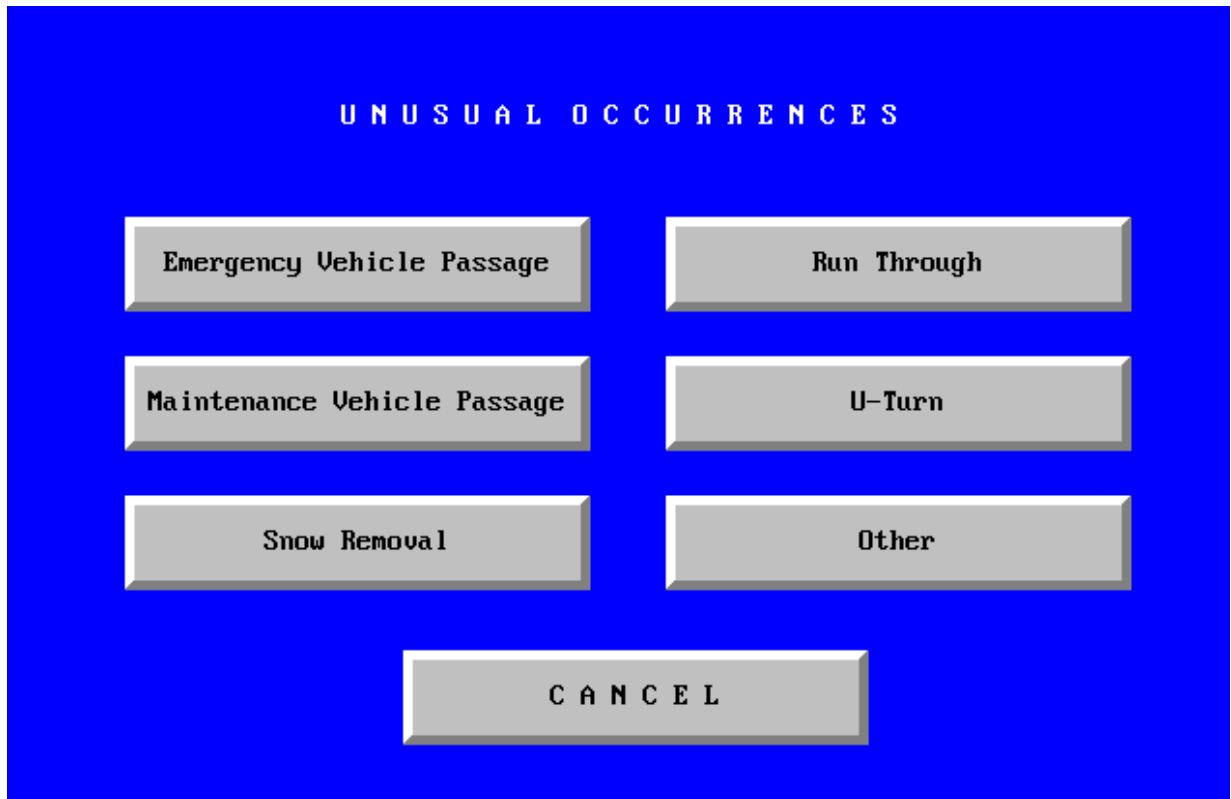


The sample screen shown above is a sub-screen that would be displayed by the collector touching the "Book Sale" target on the main screen. From here the collector would either scan the book being sold or enter the book number manually using targets that generate alphanumeric data.

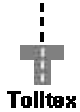
The black window at the top displays data entered. When all values are entered, the "Enter" target is touched and the screen returns to the main display. "Cancel" is used to exit the screen if it were reached by mistake.



Unusual Occurrence Screen



Lane operations often require the collector to record unusual events that occur in the lane. This screen presents a list of occurrences each identified as a touch target. This screen is reached by touching the "Unusual Occurrences" target on the main screen. To record the event, the collector simply touches the appropriate target, which will generate a message, clear the screen, and re-display the main screen.



Summary:

The unit attaches to a small stand that allows the angle of viewing to be adjusted left/right or up/down. The dimensions of the terminal installed in its stand are 13" (W) x 13" (D) x 15.5" (H) and it weighs approximately 31 lbs. The terminal without stand measures 13" (W) x 12.7" (H) x 5" (D) and it weighs approximately 26 lbs.

Communications between the terminal and the lane controller is via RS232 or RS422.

The terminal is encased in a rugged die-cast housing that is sealed from the elements.

Specifications:

Display: 10.4" 640x480 LCD

Viewing area: 8.3" (W) x 6.2" (H) x 10.4" diagonal

Brightness: 900 nits

Dimming: 30:1

Application memory: 128K bytes

Communications: RS232/RS422 up to 38,400 bps

Diagnostics: Self-test on power up, IR beam, ROM and RAM test

Real Time diagnostics: Lane controller requests status at will

Operating temperature: 0 deg. C to 55 deg. C

MTBF: Controller > 80,000 hours; display >45,000 hours

Compliance: NEMA 4/12 (IP65)