



World Leaders in Taximeters

NOVAX DATA TRANSFER Novax IN OPERATION Operators' Guide

3-51

Scottronic Sales and Service Ltd.
Innovators in Electronics.

P.O. Box 495, Kerikeri.
Bay of Islands. New Zealand 0470.
Web site: www.scottronic.com

Phone: (64) 9 407-5581
Fax: (64) 9 407-5582
Email: keith@scottronic.com

Internal Datalog

Novax taximeters are now provided with two internal data logs:

1/ **All transactions**, cash and non-cash payments. The last fifty job records are stored in a revolving buffer. As a new record is stored, the oldest record is overwritten, thus the latest fifty jobs can be recovered at any one time.

2/ **Non-cash payments only**. The last ninety six records are stored in a second revolving buffer. As a new record is stored, the oldest record is overwritten, thus the last ninety six jobs **which have been recorded as a non-cash transaction** (credit card, subsidy card or charge card payment) can be recovered at any one time.

Every transaction recorded contains the following:

- Job ID number
- Date/Time stamp at start-fare
- Total Km. recording at start-fare
- Tariff selected at start-fare
- Time stamp at end-of-fare
- Total Km. recording at end-of-fare
- Fare displayed at end-of-fare
- Extras displayed at end-of-fare
- Waiting time recorded during fare

If the fare recorded was a payment-card transaction then card details (as read by an attached swipe reader) will also be stored with the transaction.

To transfer the data stored to the office requires a computer to be connected to the meter, either directly or indirectly via a wireless link. This can be a third-party's radio dispatch network, payment terminal or a dedicated cellular modem.

Wireless Datalog Transfer via Cellular Modem

A Novax meter can now be connected directly to a modem, permanently fitted in the vehicle. The meter can be configured to answer incoming calls thus providing the required wireless link, without a third-party. Periodically the office computer will dial the modem attached to the meter, provided the meter is not engaged, you may see the message "Waiting for connect" appear on the

screen. The meter will confirm the authenticity of the caller, then allow the connection, and display "Logged On". During the connection the office computer will request the meter's records from the appropriate datalog. The office computer sorts new records from old, and appends the new records to your data file. The connection times-out after approximately 60 seconds, ensuring the connection time is kept to a minimum. As the call is initiated by the office, no network charge is apportioned to the mobile, thus a "Pre-Pay" SIM card will remain in credit indefinitely, requiring only annual renewal in order to reserve the assigned phone number.

Office Support Software (Cabtab Lite).

"CabTab" has been written specifically for supporting the Novax taximeter equipment. It can read the meter's internal data-log via the wireless link, as explained above. New transactions are identified and appended to the appropriate Cab's data file. Periodically each cab's data file will be opened and the various record types (Subsidy Card Records, Credit Card Records, Charge Card Records) for the period will be appended to the appropriate batch files ready to send to the service provider for payment. In addition to the batch files, summary files are stored, showing breakdowns of each cab's data-log read, and the grand total for the batch. Third party software can access these files for invoicing purposes etc. A detailed printout for each upload is available for drivers' records, and an archive file with full details of every transaction recorded. Data transfer can be done manually, for individual cabs, or automatically sequencing through the entire fleet.

Meter Initiated Dial-up

In some cases it may be considered more appropriate for the driver to initiate the call rather than the office. Provision has been made for the meter to dial the office, actuated by a simple button sequence. The appropriate number for the taxi office, is dialed via the modem and communications established. The meter will then respond to the remote computer's commands, thus the required records stored in the internal log can be requested and sent. The call cost in this case will be borne by the driver and a pre-pay SIM card may not be the best option.

*Q. **What action does the driver need to take to transfer data?**

*A. The data transfer requires no action by the driver and the disruption to meter operation is virtually nil.

*Q. **Will it effect the current fare?**

*A. If the meter is HIRED at the time the office computer calls, the modem will simply not be answered by the meter and the office will hang up and try later.

*Q. **How will I know if something is wrong, and the data doesn't transfer?**

*A. The meter checks the modem after every fare, and prepares to "listen" for a call, if there is no response from the modem the meter will spend approximately 5 seconds attempting to reset the modem. If the driver sees a delay after each job, he will know; something is wrong, requiring attention. It is essential that the modem is permanently connected to the vehicle's power.

*Q. **What happens when the datalog is full?**

*A. The datalog is always 'full!' As a new record is stored, the oldest record falls off the bottom. Provided the data is uploaded frequently enough, no records will be lost. The frequency will obviously depend on the use, and a routine must be established.

*Q. **What happens in areas of poor reception?**

*A. A "Checksum" accompanies every file transfer. If data is corrupted the records are not 'logged' by CabTab, and the Cab goes on the 'redial list'. To prevent repeated attempts, in poor reception areas the meter's auto-answer mechanism is switched off after each attempt. This is re-enabled after the completion of another job. Presumably the vehicle has moved from the problem area.

*Q. **What does it all cost?**

*A. A 12 v modem to operate on the Vodaphone cellular network is approximately \$380 plus GST. A pre-pay card will retain your number for twelve months, no other charges apply to the mobile. Data transfer takes approximately one minute, which typically costs under a dollar, depending on the time of day.

Data Transfer Options and their cost.

1/ **Direct Connection.**

Internal Datalogs can be accessed by connecting a computer directly to the meter in the vehicle. Obviously for a fleet of taxis this would involve taking the computer from cab to cab, probably involving a notebook computer. CabTab would be required, configured to access the required datalog. Novax 2020 meters have a serial port connector on the cradle, Novax Ledas require a "Breakout board" to connect to the serial port.

The costs:

CabTab Software (1)	\$300
Interface cable (1)	\$20
Breakout board (1 per Novax Leda)	\$42 (not required for Novax 2020)
A notebook computer is also required	

2/ **Wireless Transfer..**

Internal Datalogs can be accessed via the cellular network, effectively connecting the office computer directly to the meter in the vehicle. Each cab in the fleet of taxis requires a cellular modem. The office uploading the data also requires a cellular modem and CabTab software, configured to access the required datalog.

Novax 2020 meters have a serial port connector on the cradle for connection to the modem, Novax Ledas can be hard-wired to the modem or connected via a "Breakout board".

Novax offer an uploading service for operators who don't wish to be involved in the technical nor administrative chores.

The costs:

GSM Modem (1 per cab, plus office*)	\$380
pre-pay sim card (1 per cab plus annual renewal)	\$50 (refer Vodafone)
Cellular connection contract (1 office)*	monthly fee (refer Vodafone)
CabTab Software* (1)	\$300
Breakout board (1 per Novax Leda)	\$42 (not essential)
Upload service fee	\$20 per fleet plus \$20 per cab per upload (subject to finalisation)

(*not required if third party provides upload)

3/ **Memory Card**

Each driver (or each Cab) can be issued with a memory card. When plugged in to the meter this records all transactions in the same way as the internal datalog. The meter can be configured such that a memory card is mandatory. If without the memory card plugged in the meter is locked in the "Off" mode.

Data is transferred to the office computer via the memory card; the driver periodically removes his card and takes it to the office for uploading into the office computer. A TaxiTerminal is required in the office connected to the office computer running CabTab Software. Novax 2020 meters have a memory card connector on the cradle, Novax Ledas require a "Breakout board".

The costs:

Memory Card (1 per cab or 1 per driver)	\$50
TaxiTerminal (1)	\$595
CabTab Software (1)	\$300
Interface cable (1)	\$20
Breakout board (1 per Novax Leda)	\$42 (not required for Novax 2020)
An office computer system is also required	

All prices are plus GST and do not include installation or setup costs.