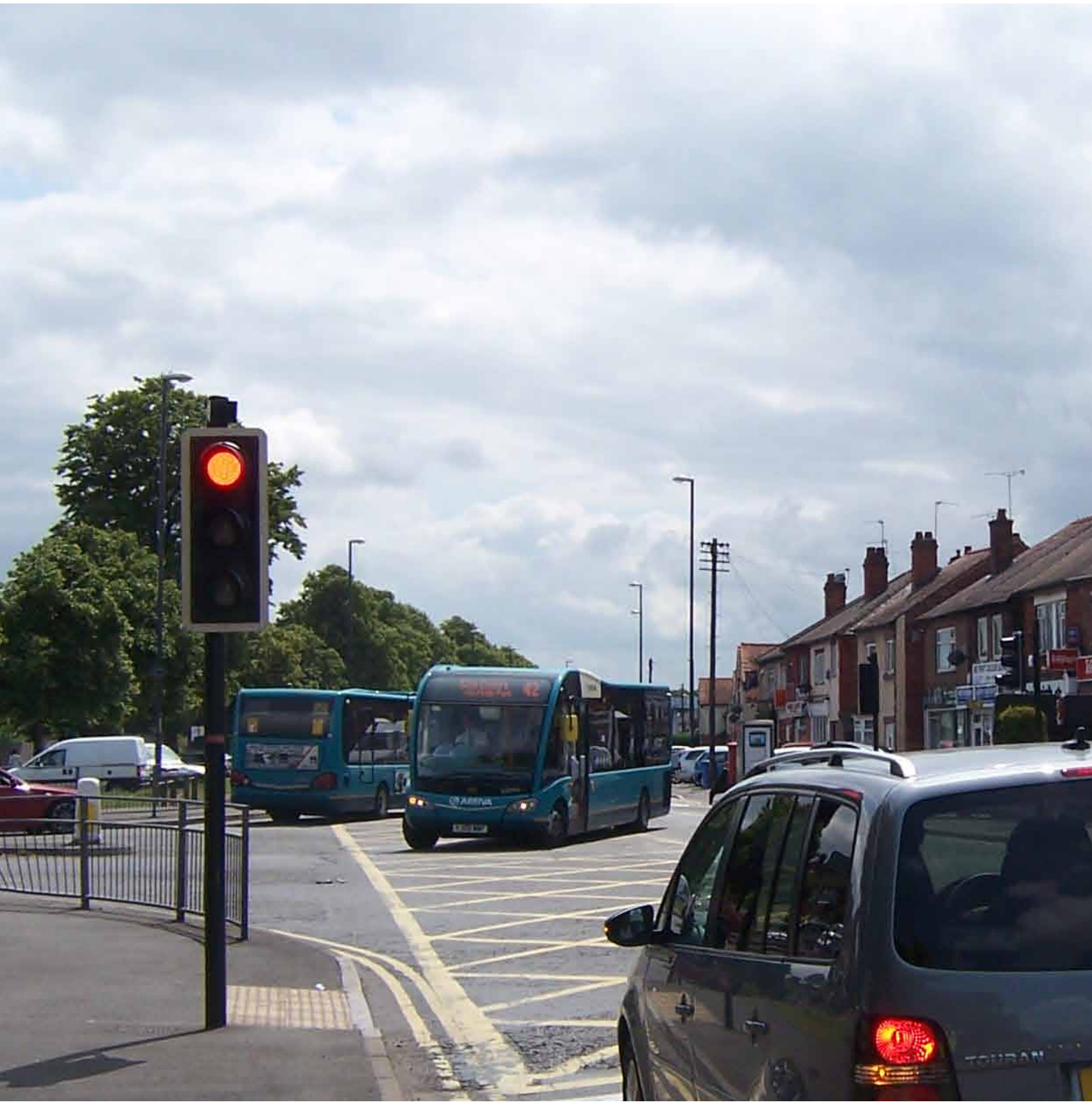
Road Traffic Equipment Manufacturers

App-driven multi-purpose intelligent loop detector platform



SP4 Loop Detection Platform

- Add Bus Priority using existing loops
  - Speed pairs or SCOOT loops
    - Replicate SCOOT output
      - Use Traffic Controller as count/classification site
        - Loop Signature Profiling
          - Store up to 50 Million Vehicle Records
            - Fast USB / CF card Data Retrieval
              - Compatible with all comms options
                - Remotely controllable
                  - License-free Apps & Software
                    - Traffic data compatible with popular analysis packages
                      - Interface to UTC / UTMC Systems

SP4 Loop Detection Platform

A unique development in the design and operation of loop classification equipment. The SP4 operates as a software platform – much as a smart-phone does – with interchangeable firmware "Apps" allowing the SP4 to perform the function of half a dozen different devices.
The SP4 Platform is designed to squeeze additional value from existing infrastructure and facilitate joined-up working between Local Highway Authority traffic data collection, road safety, environmental monitoring and traffic management / UTMC teams. It is also fully supported for use in ITS systems and for DBFO monitoring.

Key Features:

The SP4 rack-mounted detector card builds on the proven benefits of the boxed SP4.

- Connects to up to 4 inductive loops
- Multiple units can be networked
- Tolerant of a wide variance in loop specification and quality
- Records vehicle-by-vehicle data (up to 53 million vehicles)
- Multiple output switches for integration with external devices
- Removable flash memory card
- USB Engineers' interface to PC / Android tablet
- Low power – battery only, solar and mains operation
- GSM / GPRS telemetry options
- Compatible with ADSL / Ethernet / RS485 communications
- Data formats compatible with industry standard analysis packages and UTMC databases

"Apps"

Single Loop Classification

The **slp** firmware App is designed for the collection of fully classified vehicle data (length, speed, class, gap) from a single inductive loop in each traffic lane. This allows much more useful data to be obtained from legacy "volumetric" count sites or traffic signal loops without the cost of upgrading the loop arrays. Each SP4 can connect to up to 4 traffic lanes. Compatible with networking, SVDS, SCOOT, all alerting & communications options.

"Traditional" Dual Loop Classification

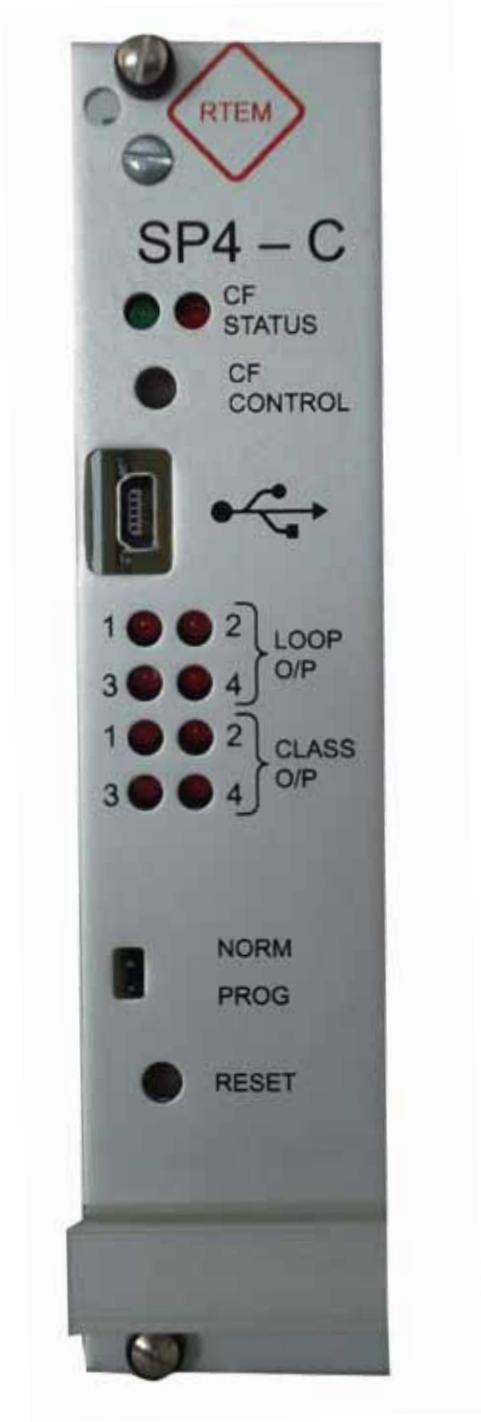
The **modsig** firmware App is intended as a direct replacement for legacy speed / classification loop detectors. Each SP4 can monitor 2 traffic lanes – expandable to 14 lanes by networking multiple units. Offers automatic switching to single loop classification mode in the event of a loop failure, providing continuity of operation and flexibility in scheduling repairs. Compatible with SVDS, SCOOT, incident detection and all communications options.

Cycle Detection

The **cycledet** firmware App allows the detection, counting and classification of pedal cycles in dedicated cycle lanes. Up to 4 cycle loops can be monitored by each SP4. Compatible with SVDS, alerting and all communications options.

Networking

Up to 7 SP4 units can be networked together either at the same site or within a 4km distance. Each SP4 can be configured separately and appropriately for the site using any of the Apps, but is then subsequently controlled through the "master" unit which stores all data and handles communications. This allows the flexibility to cover multi-lane sites without the need for specialist high-cost equipment, or to manage all the units along a road through a single communication channel. The RS485 connection can alternatively be used as a means of retrieving data from a single SP4.



Selective Vehicle Detection System (SVDS)

The SP4's SVDS functionality allows the triggering of external devices by any combination of vehicle type, lane, direction of travel and/or speed. The external device can be physically or wirelessly connected. Alternatively, an SMS or email alert can be generated when the defined condition(s) are met. This allows the SP4 to be easily integrated into ITS projects, whilst still collecting classified data on all passing traffic.

Common applications of SVDS are for triggering Vehicle Activated Signs where more than just vehicle presence and speed are required to trigger the sign or the provision of bus detection at traffic signal controlled intersections. The SP4 provides 4 user-programmable SVDS outputs – one for each loop.

SCOOT

Although some traffic count data can be collected from standard traffic signal loop detectors, this has typically been found to be of low accuracy compared with traditional automatic traffic count sites and was in any case only volumetric. SP4 units can be used to replace existing detector cards. Each SP4 can be connected to up to 4 SCOOT loops and provide standard SCOOT output to the signal controller whilst collecting fully classified data for all passing traffic. Data can be retrieved remotely by use of a modem or by using existing communications infrastructure in the controller cabinet. This functionality may mean separate automatic traffic count sites no longer have to be maintained, reducing overheads, staff time and the total number of loops required in the road.

Incident Detection

The SP4 can run incident detection algorithms to Highways Agency MIDAS standards. This includes queue detection and speed / flow alarm parameters. As with SVDS, external devices can be triggered or alerts produced.

Bespoke Apps can be produced for queue detection or speed/flow alarms for standalone projects (eg safety schemes where problems have been identified).

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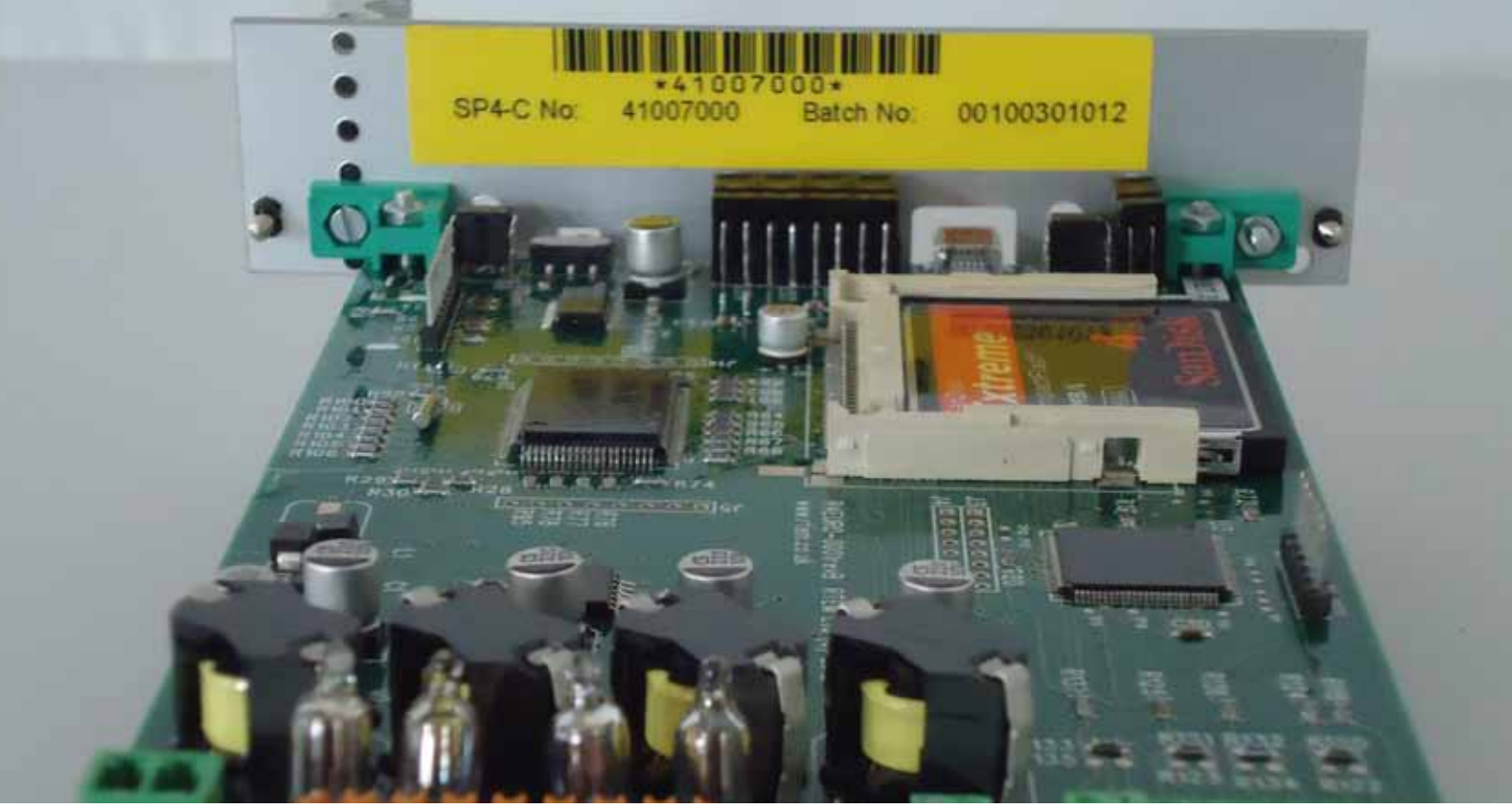

Technical Specification:

Weight:	160g
Dimensions:	"Eurocard" size to fit in 3U rack mounting
File Storage:	FAT 16 (Windows compatible)
Memory card type:	Compact Flash (CF). Size 512MB – 8GB
Voltage:	4-24v DC
Power Consumption:	100mW
Operating Temperature Range:	-20oC to +70oC
Environmental Protection:	IP64
Firmware:	Flash upgradeable by user
Ports:	USB comms
	RS232 comms/modem
	RS485 network
Data Retrieval Methods:	Direct USB connection with PC / Tablet
	Removal of CF card
	GSM "dial-up" telemetry
	GPRS telemetry
	ADSL connection
	Ethernet connection
	RS485 network connection
Length Classification Accuracy:	+/-3% with 95% confidence
Speed Classification Accuracy:	+/-3% (typically +/-1mph)
Vehicle Type Classification Accuracy (Euro6):	Pedal cycles: >95%
	Motorbikes: >95%
	Cars / Light Goods Vehicles: >98%
	Cars/LGVs with trailer: >90%
	Lorries: >95%
	HGVs: >95%
	Buses / Coaches: >95%
	With 95% confidence, based on typical loop array.
Supported Vehicle Classification Schemes:	DoENI5, Euro6
	User Definable Class Schemes (up to 24 vehicle types)
Switched outputs:	4 x SCOOT output (1 for each loop)
	4 x SVDS output (1 for each loop)