

# MICRO *connect*

Data Connection Solutions



## LCM RE

MODULAR  
TRAFFIC  
CONTROLLER  
COMMUNICATIONS

Document V1.03

3G/4G/4GX

ADSL2/VDSL

IPSEC  
Encryption

Multipath SCATS  
data transfer

Ethernet and SFP  
Fibre modules

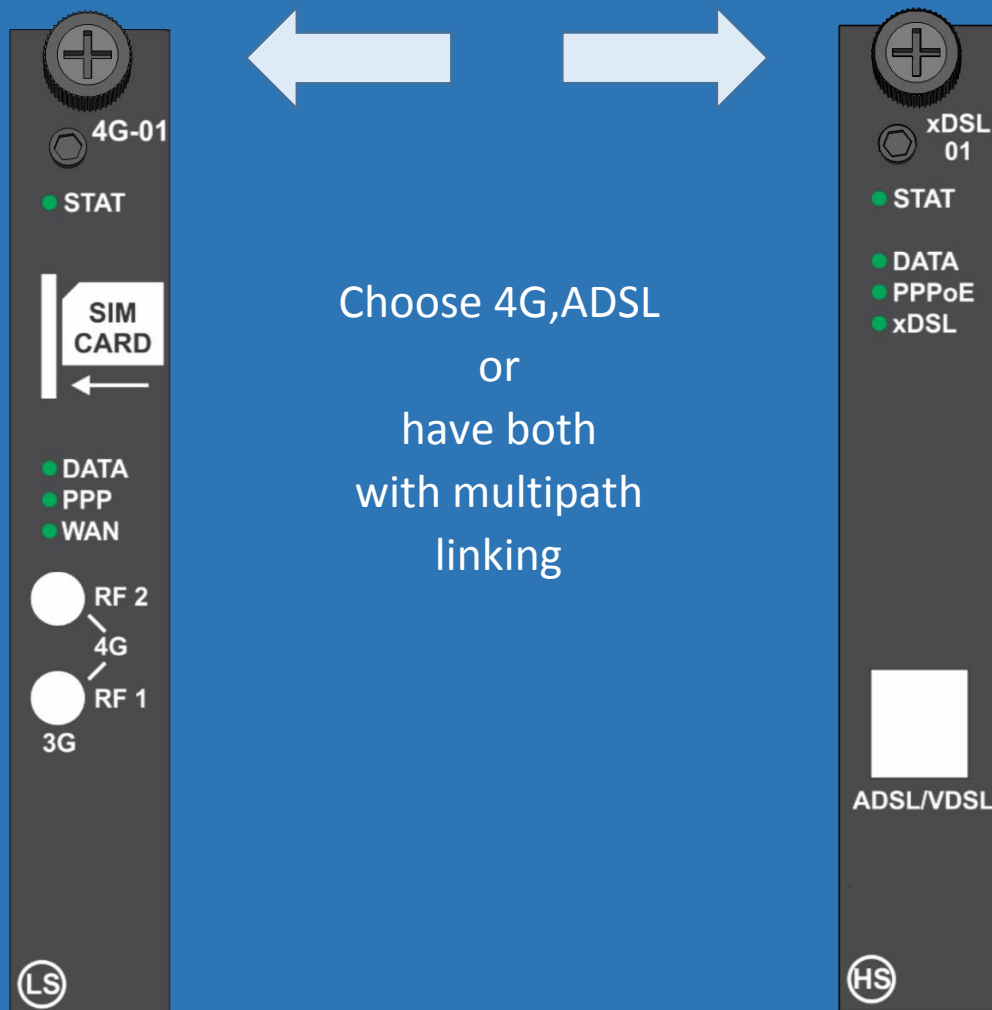
Bluetooth travel  
time with BLE

Flexible card  
based design

Based on our  
proven LCM  
platform

Introducing the next generation in SCATS® Traffic controller communications:

The Micro Connect LCM RE – (Standing for Rack Expansion) the latest in the line of Linking Communications Modules has now been designed to be fully modular allowing for the customer to choose cards based on their individual requirements.



Multiple cards of the same type are also supported. All cards are hot swap in the field.

Additional cards can be added at a later stage, ie if CCTV is required just add an Ethernet card.

With advanced on board LED diagnostics and our new simple push in smart card that has been based on years of development, we believe these features set us apart from our competition.

# THE MICRO CONNECT ADVANTAGE

Micro Connect is an Australian based company that has been at the forefront of Traffic Signals communication's equipment for the last 10 years, with a proven track record of over 10,000 LCM devices deployed in multiple countries we are dedicated to supplying our customers with reliable custom designed equipment.

Our design team has accomplished multiple RMS type approved products, designed specifically for use with the SCATS traffic system.

A long exposure to the traffic industry has given us a unique understanding of the requirements of field and network technicians that allows us to have many time saving features including quick swap hardware using smart cards, easy to understand LED diagnostics and remote logging of events.

We are ISO9001 quality assured and conduct in house circuit board assembly. With recent facility upgrades and the installation of a new Ipulse M20 pick and place line our we have increased our production output, whilst using the latest in circuit board assembly ensures our quality is maintained.

In addition to the production line a circuit board automated inspection system is also being installed to ensure any problems are identified before electrical testing.

We conduct product design and analysis on all circuit level componentry along with field, temperature and environmental testing.

Micro Connect offers complete customer support with all of our equipment designed for longevity and repairability.

We believe everyone should have the latest firmware and as such all software updates are supplied without cost to our customers.

Repairs are carried out in house with testing on real SCATS servers with the LCM's connected to hardware that fully tests the ADSL, VDSL, Fibre and 3G/4G connections.

# FEATURES

Diverse Multipath of the SCATS data allows simultaneous data transfer over xDSL + 4G or dual 4G carriers. This allows changing of paths without incurring any ST or DZ alarms.

Mix and match cards as needed, add or remove cards as needed for the site.

The current BTr2 hardware can be re-used with a low cost swap option for a BT-03 card.

CCTV can be routed over the WAN with SCATS set as priority data (TOS).

Multiple 256bit AES IPSEC tunnels for SCATS data encryption.

ON multipath CCTV data is restricted to the xDSL to avoid high cost data charges for using CCTV over 4G.

PPPoE, DHCP, Static and VLAN support on Ethernet interfaces.

Customizable firewall options on interfaces.

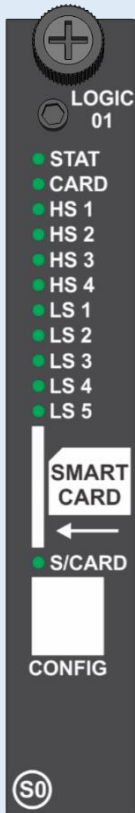
VLAN support on the Ethernet and SFP interfaces.

Support for NBN connections including VDSL.

Dual SFP Fibre connection with spanning tree to enable redundant fibre ring deployment.

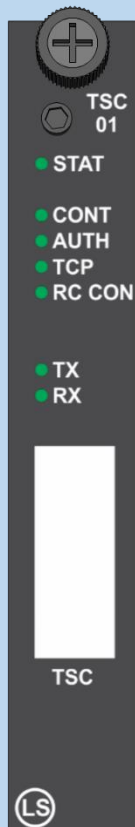
A single box solution with an internal power supply means a cleaner install, easier to maintain with less cabling and a vertical base option to mount next to existing traffic controller modules that is only 105mm wide.

# LCM RE CARDS-



## Logic

- Updated 32 bit high speed processor
- 4 x HS ports (100Mbps Ethernet) bus
- 5 x LS ports (up to 1Mbps) serial
- High speed CAN bus to cards
- USB Console port
- Easy replacement, no tray Smart Card sim
- Data/Link LED's for each port
- Compatible with Solarwinds and our search ID logging software
- High temperature operation, 70 deg C



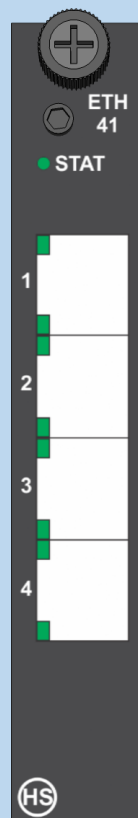
## TSC

- SCATS communications interface
- 1 x DB9 RS232
- TSC Quick connect (uses same cable as previous LCM's)
- Uses our proven SCATS TCP/IP code
- Sunlight viewable LED's
- LED Diagnostics in line with our other LCM range, easy for field techs
- High temperature operation, 70 deg C



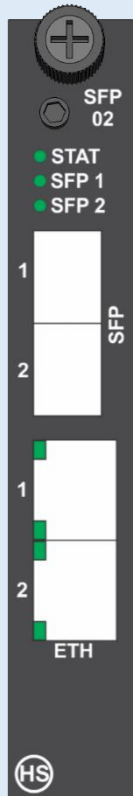
## HL

- 3G – UTMS 850/900/1900/2100MHz
- 4G – Bands 1,3,5,7,8,20
- 4GX – Band 28
- PPP connection with CHAP security
- High temperature operation, 70 deg C



## ETH4

- 4 x 10/100 Auto-MIDX Ethernet
- Managed interfaces
- Unused ports can be disabled
- Sunlight viewable LED's
- VLAN support
- High temperature operation, 70 deg C



## SFP2

- 2 x SFP 100Mbps
- 2 x 10/100 Auto-MIDX Ethernet
- Managed interfaces
- VLAN Support
- Unused ports can be disabled
- Support for ruggedized SFP modules
- Spanning tree
- High temperature operation, 70 deg C



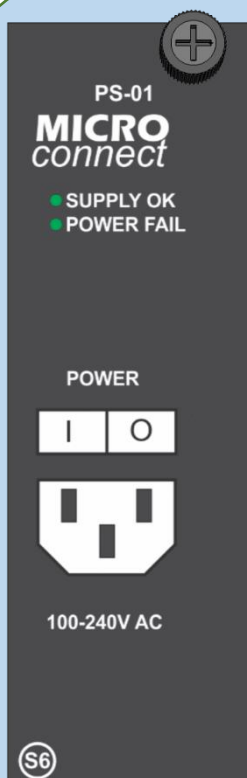
## ETH1

- 1 x 10/100 Auto-MIDX Ethernet
- Low cost
- Connects to the HS port on the Logic card
- PPPoE, DHCP, STATIC
- High temperature operation, 70 deg C



## BT-03

- 1 x BT port
- BLE support
- Diagnostic LED's for the BT port
- Low coast swap option for existing BTr2
- High temperature operation, 70 deg C



## PS1

- 20W power supply
- 10 second supercap backup
- Managed via logic module
- Power fail logging alarm
- Shuts down all cards after 10 seconds
- Front access locking IEC
- Field swappable
- High temperature operation, 70 deg C





## xDSL

- 1 x ADSL1/2 or VDSL wan link
- LEDs for PPPoE and link/data
- Hot swappable
- Includes an inbuilt 3 stage lightning protection with telco fuses
- CES quick connect/disconnect earth point
- **Supports:**
  - ANSI T1.413
  - ITU G.992.1
  - ITU G.992.2
  - ITU G.992.3
  - ITU G.992.5
  - ITU G.993.2
  - ITU G.993.5
  - ITU G.998.4

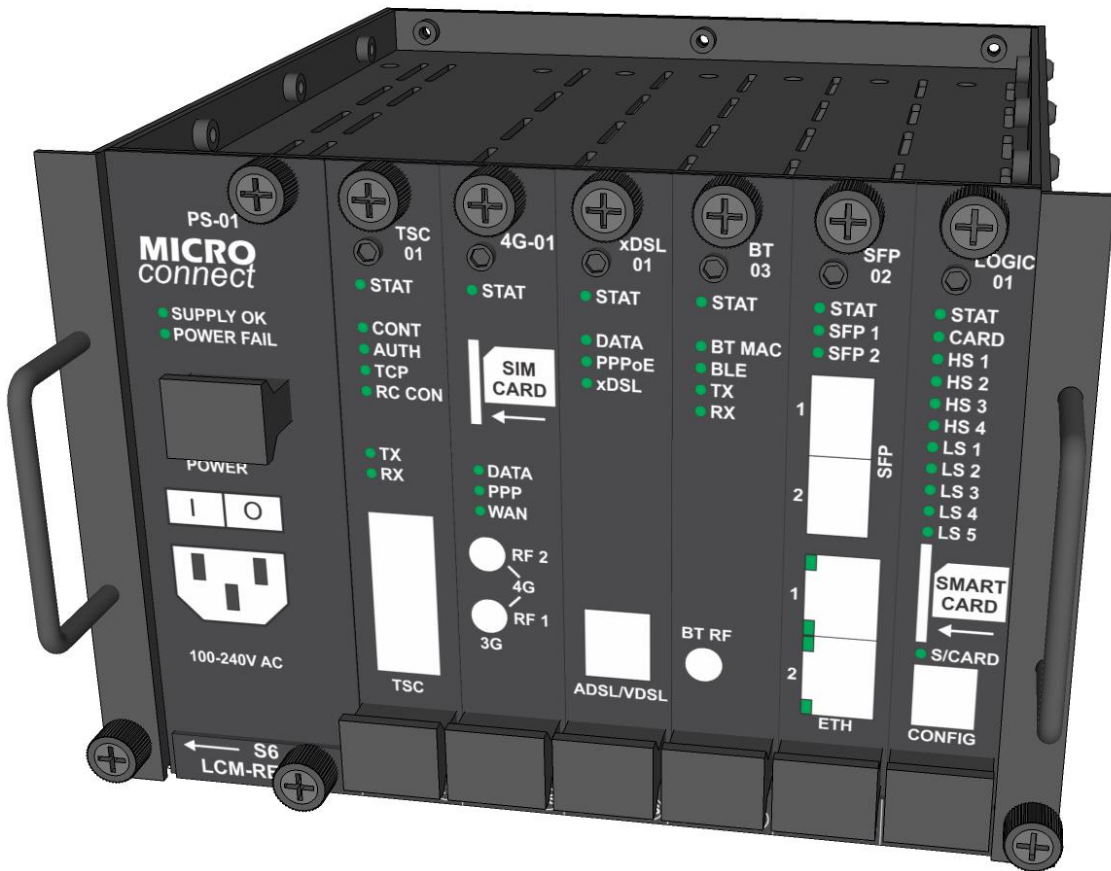
Other cards currently in design:

- 2 port POE+
- SPAT Card - (Linux PC Card)
- 1 port managed Gigabit SFP for NBN GPON SFP module

# BASE-

The LCM RE has 2 base units that allows installation in different TSC controllers to be catered for. The base units are a small footprint whilst being big enough to allow passive cooling of the boards to operate at 70deg C.

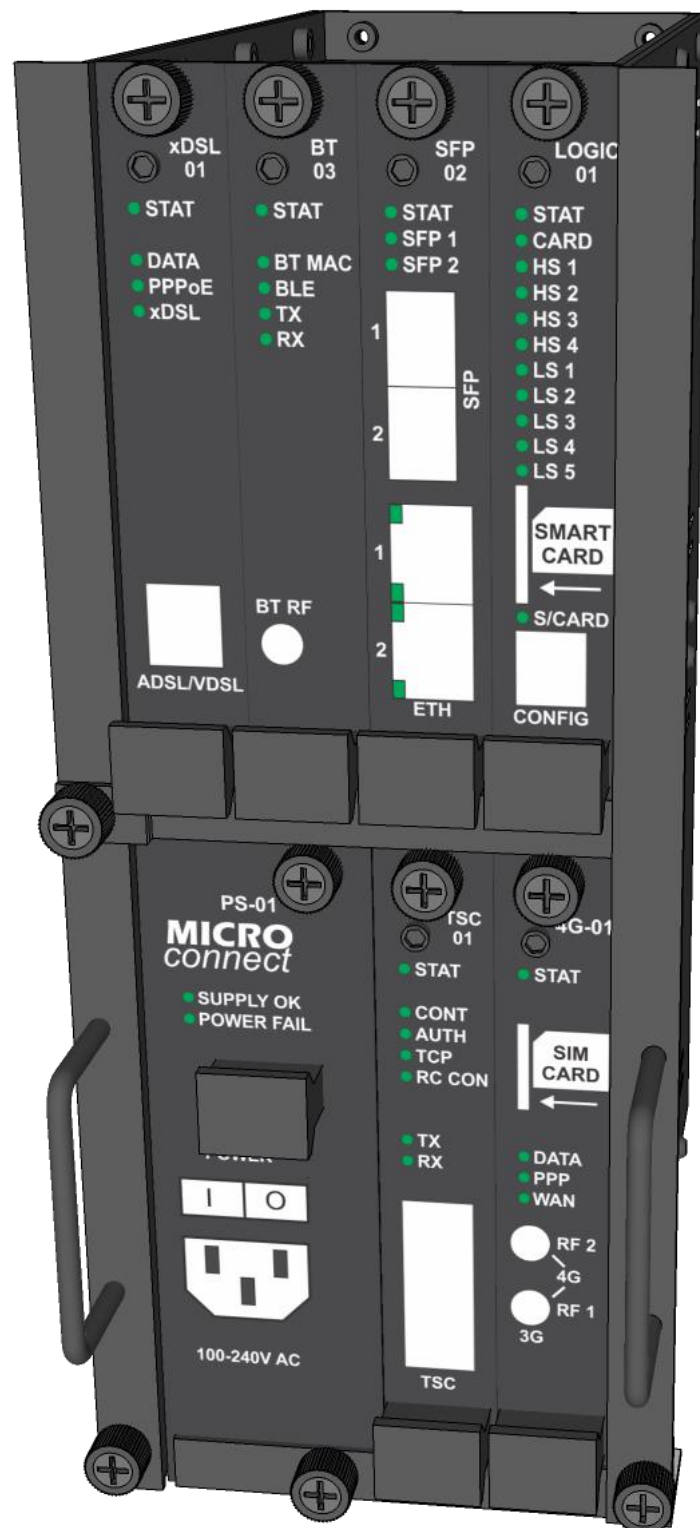
## RE-H Base



7 Slot base unit with a mounting bracket that allows the entire rack to be removed with just 2 panel fastener screws. A DIN mount bracket can also be supplied.

Dimensions (in mm) 185W x 180D x 126H

## RE-V Base



7 Slot base unit with a mounting bracket that allows the entire rack to be removed with just 2 panel fastener screws. Thinner to allow mounting beside a TSC head. Same cards and operation as the RE-H base

Dimensions (in mm) 105W x 180D x 252H

# **MICRO** *connect*

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