

Menara Telekom

MALAYSIA

C-Bus Control and Management System

Case Study ¹¹

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Telekom Malaysia's new HQ

The Menara Telekom building, Telekom Malaysia's new corporate head office, can never be mistaken as just another Kuala Lumpur city high-rise. Externally, the 55 storey building was designed by award-winning Malaysian architect Hijjas Kasturi to resemble a sprouting bamboo shoot. Internally, this unique office building contains a state-of-the-art Integrated Building Management System (IBMS). The IBMS provides infrastructure for multimedia services with high-speed connectivity and features an energy-efficient management system.

Predictability is the essence of the IBMS. Menara Telekom's automation systems ensure round-the-clock efficient management, operation, control and monitoring of all mechanical and electrical building services such as air-conditioning, lift operation, lighting, etc.

One of the 11 systems that makes up Menara Telekom's IBMS is the Clipsal C-Bus Addressable Lighting Control System (ALCS). It is the largest installation in Malaysia, with over 3,700 C-Bus units controlling over 6,500 individual circuits. These units are located throughout the building in areas such as corridors, meeting rooms, toilets, the auditorium, carpark, server rooms and outside garden areas.

Lobby of the Menara Telekom Building.



Clipsal C-Bus networks, on each of the 62 floors, connect a central server via a high speed fibre optic backbone and Ethernet hubs to allow for high speed centralised control and monitoring.

At the network level, to ensure robustness and reliability, each network connects to a high speed 10 Base T Ethernet network. All active Ethernet equipment and servers are connected to a backup UPS (uninterrupted power supply) system to ensure continued operation during a power failure.

Conveniently located in the riser cupboard on each of the 62 floors is a C-Bus Clock Module used to provide time scheduled lighting control for its floor. By default, the central server controls all scheduling for the entire building. However, the clock module on each floor serves as a backup facility should any problem arise in the central network.

Scattered in strategic locations, 1,150 C-Bus Key Inputs (master light-switches) provide both the overall building operator and individual tenants local switching control. These microprocessor-driven addressable switches can be programmed to control any lighting circuit within a C-Bus network.

There is no limit to the type of lighting fixtures controlled by C-Bus units. In the Menara Telekom Building, fluorescent, incandescent, halogen, neon and other decorative lights are C-Bus controlled. Over 350 C-Bus Passive Infrared Occupancy Sensors (PIR sensors) are used to automate special areas such as lift lobbies, main entrances and washrooms for the handicapped. Lighting Control can be assigned to these sensors in many ways including scheduled duty periods.

Clipsal C-Bus provides the operators of Menara Telekom with a number of advantages and benefits:

- Changes in tenancy are easily accommodated through reprogramming rather than physical rewiring.
- Centralised command and control.
- Scheduling.
- Reduced operating costs using C-Bus occupancy and light level sensors in selected areas.
- Scene setting – Telekom routinely illuminate the side of the building with their logo – a giant “T”.
- Integration into other sub-systems such as Fire Detection and Access Control.



Telekom Control Room.

LIGHTING MANAGEMENT SOFTWARE

In the control room located in the ground floor, a server running Clipsal C-Gate and Clipsal C-Lution Software, controls and monitors over 7500 dynamic C-Bus points. Use of the high speed Ethernet backbone and C-Gate allows for control and monitoring of all points in the C-Bus system in real-time. C-Lution is a graphical user interface (GUI) displaying a multi-menu system including the building layout. Control icons displayed on screen indicate the status of each lighting circuit in real-time. Control and dimming of these circuits is as simple as a mouse click.

Within C-Lution, the operator can also view the system configuration and topology, network status, alarms and event logs. Access is protected using a multi-level password system allocated to authorized personnel, such as the building manager and operator.

C-Lution is configured to schedule events for all C-Bus units as required by Telekom Malaysia. For instance, the different areas require illumination at different times of the day with varying light levels. C-Lution ensures all lighting scenes are activated automatically with minimum human intervention.

The Benefits of C-Bus Control

Features	Benefits
Central Control - Integration to Telekom IBMS (Integrated Building Management System)	Lighting Management can be done at a central location. Any lighting circuit can be controlled and monitored from a PC.
Scheduling	Daily routines, special events and maintenance processes can be pre-programmed to run automatically (eg. Lift lobbies, stairways, external lighting, corridors, etc.)
Local Networks	Every level has its own C-Bus network linked to the main server. Hence tenants can customise the operation of lighting to suit their liking.
Local Control	Local switches can be programmed to switch any lighting circuit according to convenience as well as providing more than one switching location per circuit. Master and sub group functions as well.
Passive Infrared Occupancy Sensors	Automates lighting in specific areas according to occupancy. Reduces unnecessary lighting redundancy - hence reduction in operation costs.

Installation Data

C-Bus Project	Telekom Malaysia HQ
C-Bus Installer	A&S Building Tech Sdn Bhd
C-Bus Products Used	5500PC DIN PC Interface 5104D750 Four Channel Dimmer 5104RVF Four Channel Relay 5100PS Power Supply 320mA E5751WE PIR Occupancy Sensor E5034N Four Gang Key Input E5032N Two Gang Key Input E5031N One Gang Key Input E5034NIR Four Channel Key Input c/w IR Receiver E5031NIR Four Channel Infrared Receiver 5034TX Four Key IR Remote 5004S 164/3 WE Four Gang Stainless Steel Key Input 5008S 164/3 WE Eight Gang Stainless Steel Key Input E5031/2TC7 2 Channel, 7 Day Clock Module E5104AM 4 Channel Analogue Output Module

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