



- > data
- > voice
- > video

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## Espresso MDU Lite /8-Port Line Concentrator

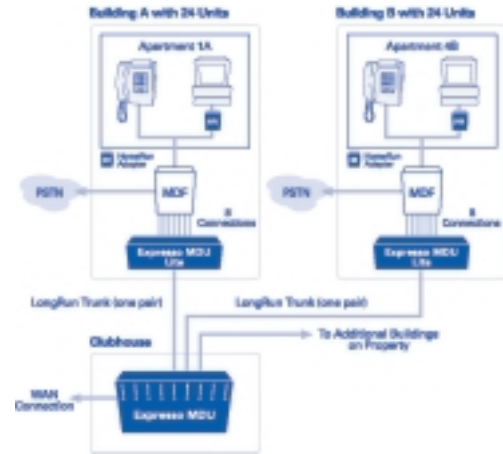
*Flexible high-speed internet access  
for multi-tenant buildings*



### The Espresso MDU Lite

The Espresso MDU Lite is an 8-port Access Concentrator that can be located inside or outside a building to provision high-speed Internet access to individual apartments, hotels, or commercial units. It is available as a HomeRun(HR) unit which is compatible with industry standard HPNA 1.1 or LongRun(LR). The Espresso MDU Lite utilizes the existing telephone wiring within a building to deliver data at 1Mbps and does not interrupt regular voice services. Data and voice run simultaneously on the same pair of wires and include built-in privacy capabilities. The Espresso MDU Lite is highly robust with the ability to run over any wiring topology. A wide array of WAN and trunk interfaces can be utilized with the Espresso MDU Lite including Tut Systems' LongRun, T1, xDSL, wireless, and cable networks.

**Application One:** Espresso MDU Lite extends the reach of applications on garden-style properties

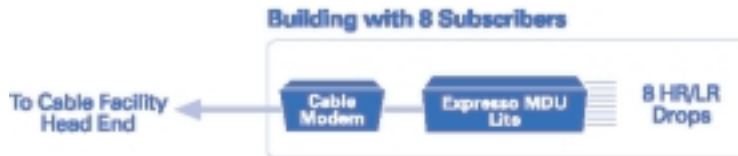


**Application Two:** Stacked Espresso MDU Lite using a wireless trunk to the clubhouse

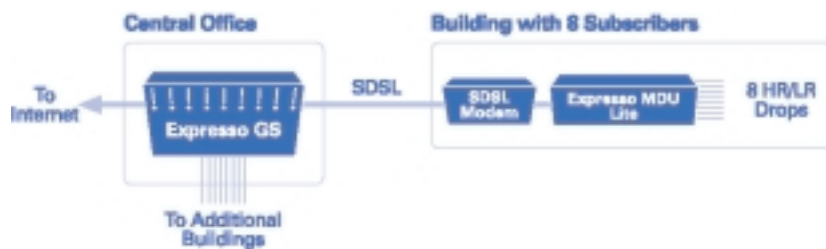


## Expresso MDU Lite • Features and Benefits

*Application Three:* Expresso MDU Lite can extend the reach of cable modem networks



*Application Four:* Expresso MDU Lite can be deployed from a Telco's central offices



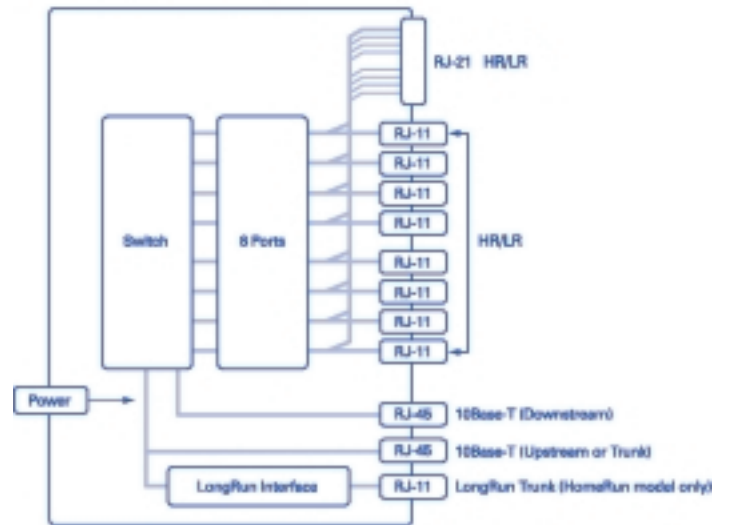
The Expresso MDU Lite represents the most recent expansion of Tut's MDU product offerings and ensures that high-speed Internet access solutions can be deployed to almost every MTU building configuration including small buildings and garden-style complexes.

Tut's Expresso MDU Lite contains an Ethernet switch that provides concentration of up to eight subscribers' traffic to a single trunk interface. The Ethernet switch enhances security by forcing subscriber generated packets to be forwarded only to the upstream or trunk ports. This prevents subscribers from snooping packets generated by other subscribers. In the downstream direction a learning bridge function prevents packets from being distributed to unintended subscribers once the MAC addresses are learned. Broadcast packets are forwarded to maintain compatibility with various functions including all modes of DHCP provisioning of IP addresses.

A wide variety of trunk facilities may be used with the MDU Lite. For properties where spare pairs to a central location are hard to find, Tut's LongRun may be used as a trunk connection for up to 2,000 ft. cable lengths as shown in Application One. Application Two shows multiple MDU Lites cascaded together to serve up to 64 subscribers by stacking the units using the 10Base-T expansion port. This application also demonstrates the use of wireless links to connect outlying buildings to a central clubhouse WAN port. In Application Three, cable modems are being used to aggregate traffic from each building to Internet access at the cable head end. Also, various DSL technologies may be used to trunk to a central point. In Application Four, Tut Systems' Expresso GS, which provides up to 2.3 Mbps full-duplex service over a single pair, is being used to aggregate traffic from multiple MDU Lites to a single high-speed Internet connection.

- Offers splitterless high-speed data transmission over existing POTS
- Offers Home Network capability to every RJ-11 Jack
- Ease of installation, configuration and maintenance
- Most cost-effective solution for provisioning high-speed Internet services within MDUs
- Enhanced privacy with Tut's exclusive Ethernet multiplexing architecture
- Ability to enable/disable service for each subscriber, and provide two-tiers of service
- LEDs provide a clear indication of proper operation and usage

Expresso MDU Lite Block Diagram



## Specifications

Subscriber Interfaces	HomeRun	LongRun
Quantity	8-Port	8-Port
Data Rate	1Mbps	1Mbps
Connectors	eight RJ-11, and RJ-21	eight RJ-11, and RJ-21
Distance	Up to 500 feet (152 meters)	Up to 2,000 feet (609 meters)
Frequency Spectrum	100KHz to 3.25MHz	5.5MHz to 9.5MHz

Trunk Interfaces	HomeRun	LongRun
LongRun	One	None
Data Rate	Up to 1Mbps	N/A
Connectors	RJ-11	N/A
Distance	Up to 2,000 feet	

10Base-T	HomeRun	LongRun
Quantity	One	One
Data Rate	Up to 10Mbps	Up to 10Mbps
Connectors	RJ-45	RJ-45
Distance	Up to 300 ft. (100 meters)	Up to 300 ft. (100 meters)

Expansion Interface	HomeRun	LongRun
Quantity	One	One
Capacity	Up to 8 MDU Lites	Up to 8 MDU Lites
Interface	10Base-T	10Base-T
Data Rate	Up to 10Mbps	Up to 10Mbps
Connectors	RJ-45	RJ-45
Distance	Up to 300 ft. (100 meters)	Up to 300 ft. (100 meters)

Power	Value
Power	23 Watts
Power (Outdoor)	23-275* Watts
Input Voltage	100/240 VAC
Frequency	50/60 Hz
Connector	Standard IEC connector
Cable	US version AC power cable supplied

\* 275 watts required in extreme low temperature conditions

Environmental	Value
Temperature Range	-5°C to 60°C, fan cooled (Indoor) -40° to 60°C (Outdoor)
Relative Humidity	5% to 95%, non-condensing

Size	Value
8-Port	2"H x 12.624"W x 9.148"D

Management	Value
Architecture	In stacked configurations, each MDU Lite will need to be managed individually
Access	In-Band over trunk connection SNMPv1 Agents: RFC 1213, Tut Enterprise MIB, Telnet  Out-of-Band (Console) Serial port (DB-9 connector), VT100 Terminal Emulation  Using customer supplied auto answer modem

## Outdoor Specifications

Mechanical	Value
Conduit	1.5" rigid wall EMT conduit; 0.5" rigid wall EMT conduit
Conduit Fittings	1.5" rigid wall conduit fitting; 0.5" rigid wall conduit fitting
Dimensions	16.7" wide x 23.8" high x 5" deep 42.4cm wide x 60.5cm high x 12.7cm deep
Weight	26 lbs (11 Kg)

Certifications	HomeRun	LongRun	Outdoor
	UL/CSA	UL/CSA	UL
	CE	CE	FCC Part 15
	FCC Part 15	FCC Part 15	FCC Part 68
	FCC Part 68	FCC Part 68	
	JATE & VCCI	JATE	

Ordering Information	Value
Model Numbers	65118 Expresso MDU Lite 8-Port, Indoor 65128 Expresso MDU Lite 8-Port, Outdoor

## About Tut Systems, Inc.

Tut Systems (NASDAQ: TUTS) is the leading provider of solutions that deliver reliable broadband services within multi-tenant buildings (MTUs) such as hotels, apartments, student housing and multi-tenant commercial properties. In partnership with service providers and real estate investment trusts, Tut's solutions have been deployed in hotel, commercial and residential properties worldwide.

More information on Tut and its products, including international availability, can be found at <http://www.tutsystems.com>, or by contacting Tut's US headquarters in Pleasanton, California, at +1-925-460-3900 or 800-998-4888. Investor queries should be directed to 800-486-1241.

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