

55409A Mini SSU

Synchronization from the Backbone to the Network Edge



Your business is driven by the Quality of Service (QoS) of your network. Your customers demand the best. Many operators have invested in synchronization equipment for the network backbone. *Is that enough?*

As you expand your network or add advanced applications onto your network such as Constant Bit Rate (CBR) services over ATM (Asynchronous Transfer Mode) networks¹, you need better synchronization at the edge nodes for the same reasons that you need high quality synchronization at the backbone. However, at these edge nodes, you need equipment that is more economical, has enough performance and is highly reliable.

When synchronization references are distributed through the network, the quality is diminished by the accumulated jitter and wander. The degradation may be caused by poor quality transport facilities and by the number of network equipment the references propagate through, as illustrated by the two plots² on the following page. In both cases, the PRC quality reference had been degraded to a point where it exceeded the ETSI PRC mask. You need to deploy SSUs (Synchronization Supply Unit) at the edge nodes to meet the service requirements of packet switched networks.

55409A Mini-SSU Specifications

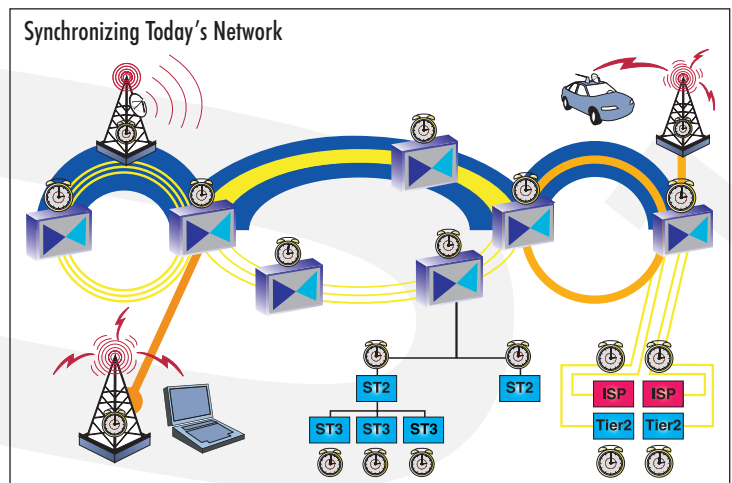
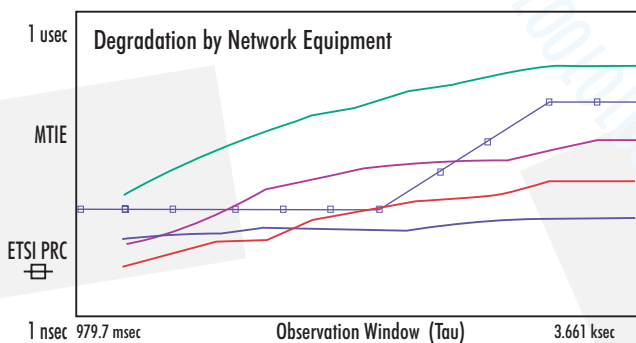
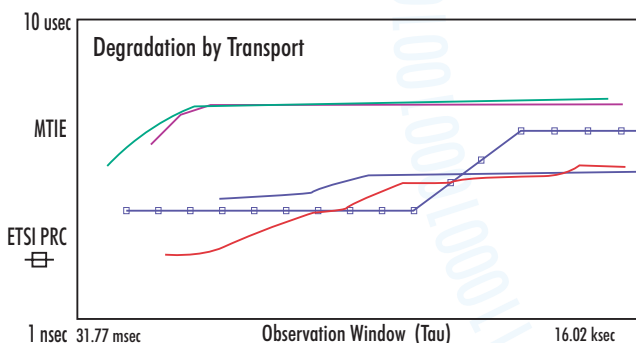
INPUTS (OPTIONAL 1:1 PROTECTION)	3 ports: 2 of 2048 kbit/s or 2048 kHz, 1 of 5 MHz or 10 MHz
TRAFFIC RESYNC SUPPORT	Yes
CONNECTORS	75 ohms, BNC, Siemens 1.0/2.3. Others available.
FREQUENCY STABILITY IN HOLDOVER	At 25°C after 10 days of continuous operation, Enhanced Stratum 2 (rubidium): $\pm 2.0 \times 10^{-11}$ Enhanced Transit Node: $\pm 1.0 \times 10^{-10}$ /day for 3 days Stratum 3E: $\pm 1 \times 10^{-8}$ /day
JITTER AND WANDER LIMITS	ITU-T G.823
ALARM INTERFACE MANAGEMENT (OPTIONAL)	Open and closed relay contacts. Critical, Major, Minor. TL/1 commands via RS232, TCP/IP, or X.25. Manageable by 55452A open synchronization management framework.
SYSTEM SUPPLY VOLTAGE	Dual redundant inputs, -36 Vdc to -57 Vdc
OPERATING TEMPERATURE	-5° C to 45° C
RELATIVE HUMIDITY	45% at 45° C, 95% at 30° C
RACK MOUNTING	EIA 19 inch, ETSI 535 mm

¹ Symmetricom application note "Synchronizing ATM Networks", March 1999.

² Symmetricom application note "An Introduction to GSM Synchronization", by Lee Cosart and Kasra Nobahar.

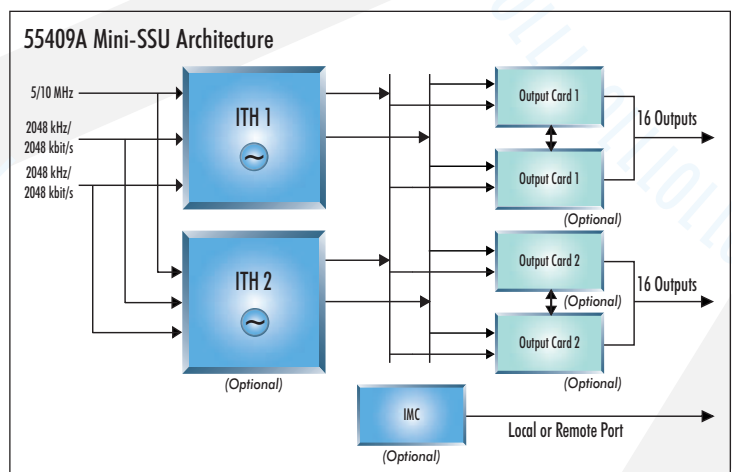
For Telecom Operators and Network Equipment Manufacturers who need to ensure the QoS throughout the whole network, Symmetricom provides the 55409A Mini-SSU. The 55409A is an economical SSU (Synchronization Supply Unit) optimized to fit the performance and capacity requirements for the rest of the network, particularly the access nodes and remote offices.

Combined with Symmetricom's TimeSource® 3100 Primary Reference Source (PRS), Symmetricom has made synchronization affordable for the rest of the network.



Built upon the proven design of the 55400A SSU, the 55409A employs the same architecture and functionality, including redundancy, reliability, SSM, and integrated management with 55452A open synchronization management framework. It is scalable and can be upgraded to a full SSU as capability at the edge nodes increases.

Whether you are expanding your network or you just need better synchronization for your existing network, Symmetricom has the perfect solution.



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