

## TigerStack 100 SwitchReady Fast Ethernet Stackable Hubs

### Unmatched Scalability for Fast Ethernet Networks

- ◆ Stackable up to Eight Units  
High to Form a 192-Port Multi-Media Hub
- ◆ Segmentable up to 16 Fast Ethernet Segments per Stack
- ◆ Scalable up to 1.60 Gbps of Aggregate Bandwidth
- ◆ Manageable In-Band and Out-of-Band via SNMP and RMON
- ◆ Integrated 10/100 Switching
- ◆ Redundant Power Support

With its unique combination of scalable bandwidth, network management and integrated switching options, SMC's TigerStack™ 100 family creates a flexible and fault-tolerant environment for growing Fast Ethernet networks and for networks containing a mix of Ethernet and Fast Ethernet products.

The 12- and 24-port 100BASE-TX and -T4 hubs form the basic building blocks of this family. Fully compatible with IEEE 802.3 and 802.3u specifications, these hubs may be stacked in any combination. A slide-in module with one 100BASE-FX or 100BASE-TX port offers support for alternate media. And, a Redundant Power Unit (RPU) prevents network downtime in the event of a power supply failure.

The Network Management Unit (NMU) adds versatility by supporting a full range of unified management options. One expansion slot hosts an innovative RMON Probe Switching Module; and the other slot, a variety of 2- and 4-port Integrated Switching Modules so you can easily boost network bandwidth, connect to legacy LANs and support topology extensions without having to purchase a separate device.

Since the TigerStack 100 is SwitchReady™, "bandwidth-on-demand" can be achieved by isolating individual hubs or groups of 12 ports within the stack. Depending on connectivity or bandwidth requirements, these segments may be interconnected through a Fast Ethernet workgroup switch or integrated switch ports.

With SMC, you can be sure you're getting products of exceptional quality, reliability and value.



# Integrating Ethernet and Fast Ethernet

- ◆ Stackable Eight Units High
- ◆ Expandable to 192 Ports
- ◆ Slide-in Fiber and TX Modules
- ◆ Redundant Power Supply
- ◆ Temperature Sensor

## Stackable and Expandable

With SMC's TigerStack 100 hubs, it's easy to introduce Fast Ethernet to an Ethernet LAN.

The hubs can be used standalone for small groups of power users. And, as the network expands, as many as eight hubs can be stacked in any combination to form a single repeater with up to 192 ports. Since you can mix media types and port densities in the same stack, you can always buy what you need when you need it.

## Flexible and Fault-Tolerant

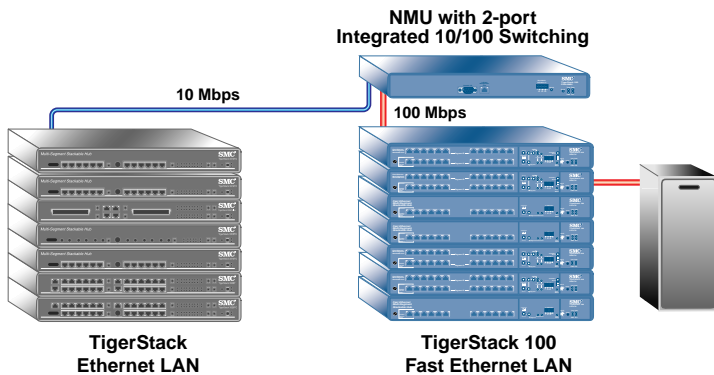
There are TX hubs for certified Category 5 cable and T4\* hubs for other twisted-pair cable types. And, front-panel LEDs to monitor bandwidth utilization, as well as both port and hub status.

In addition, one port on each hub can be replaced with a slide-in module for mixed media connectivity. With the FX module, you can add fiber to extend the reach of your network, and with the TX module, connect a T4 hub to a TX switch or station.

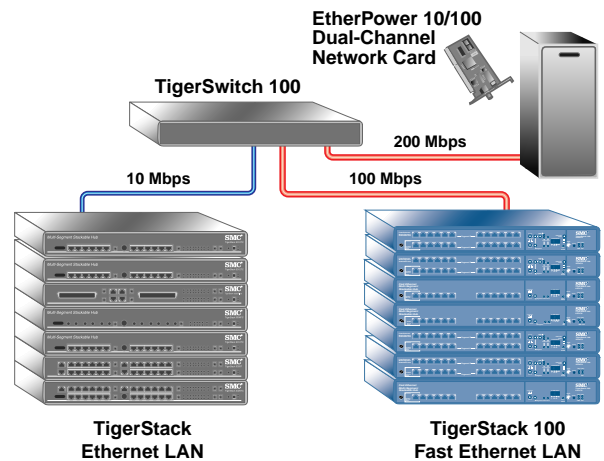
There's also a Redundant Power Unit (RPU) to minimize downtime in the event of an AC circuit loss or internal power supply failure. The RPU has its own power cord so it can provide power to up to five devices from a *separate* circuit breaker. And, there are front-panel LEDs to monitor the status of both the internal and external power supplies.

What's more, there are sensors to protect the electronics inside these devices. A warning LED will light if a hub overheats or a fault is detected in the RPU.

\* SMC developed and patented the 100BASE-T4 signalling method, which uses three wire pairs to transmit and receive data, and a fourth wire pair to listen for collisions (SMC's U.S. Patent No. 5,544,323).



Integration of 10 Mbps and 100 Mbps LANs can be achieved economically by installing a 2-port Integrated Switching Module in the NMU.



To scale network performance, interconnect both technologies through a switch and give the server its own dedicated 200 Mbps bandwidth. The switch supports multiple conversations simultaneously, provides wire-speed throughput to all segments, and enables the server to focus on its primary tasks.

# Increasing LAN Bandwidth

## SwitchReady

- ◆ Segmentable to 16 Collision Domains
- ◆ Scalable to 1.6 Gbps of Aggregate Bandwidth
- ◆ Integrated Switching for Bandwidth Boost, Legacy LAN and Long Distance Connections

## Highly Segmentable

When traffic on your mixed Ethernet/Fast Ethernet network increases, you can microsegment SMC's TigerStack and TigerStack 100 hubs and interconnect the isolated segments via switched ports. Microsegmentation reduces the number of nodes on a segment, minimizing contention and boosting the available bandwidth per node. Since a switch provides wire-speed throughput to each segment, a stack/switch combination can easily allocate and scale bandwidth to workgroups that need it.

With the TigerStack 100, entire hubs or groups of 12 ports can be isolated at the flip of a front-panel switch or via software to form as many as 16 separate segments. And, by adding a Segment Management Module (SMM) to each segmented hub, the entire stack can be managed by the Network Management Unit (NMU) via a single interface.

## Easy Interconnections

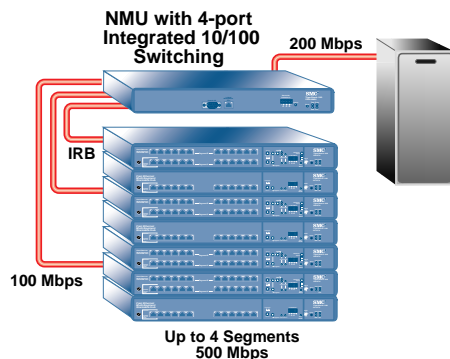
Each TX segment has an uplink port so it can be connected to a switch with straight-through cable.

For the T4 hubs, a TX module can provide connectivity to a switched TX port. And, by adding an FX module, both hub types can be connected to a switched fiber port.

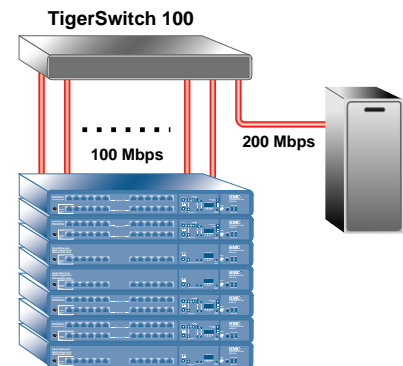
## Integrated Switching

With the TigerStack 100, you can increase the aggregate bandwidth of your network by adding an Integrated Switching Module to the NMU. Featuring a combination of Ethernet and Fast Ethernet ports, these low-priced modules can also be used for legacy LAN and long distance connections.

They're available in 2- and 4-port configurations, with one port reserved for connection to the stack's inter-repeater bus. The remaining 10/100 Mbps and 100BASE-FX switched port(s) may be set to operate in either half- or full-duplex mode. An FX port with up to 2 km of fiber cable can be used for connectivity to a backbone or higher speed technology. A 10/100 Mbps port provides connectivity to a 10 Mbps Ethernet LAN, server, or even to segments which have been isolated from the stack.



With an economical 4-port Integrated Switching Module in the NMU, the aggregate bandwidth of the network can be scaled to 500 Mbps — that's 100 Mbps for each of the three TigerStack 100 segments including the inter-repeater bus (IRB), and 200 Mbps for a server operating in full-duplex mode.



To improve performance on high-traffic networks, the aggregate bandwidth can be scaled to 1.6 Gbps by subdividing the stack into 16 segments and interconnecting them through a switch. As before, each server can be given its own dedicated 200 Mbps segment.

# Managing the LAN

- ◆ SNMP and RMON Manageable
  - ◆ In-band
  - ◆ Out-of-band
  - ◆ Remote
- ◆ Plug-in RMON Probe Switching Module

## Manageable

Front-panel LEDs on all units provide "at-a-glance" management. But, for more comprehensive capabilities, you can add SMC's intelligent Network Management Unit (NMU).

This unit features an RMON subset (including Event, Alarm, Statistics and History groups) for pro-active management, as well as SNMP for simple monitoring and control. Security features are built in to detect intrusions. If a packet's source address does not match the address assigned to that port, the port is automatically partitioned.

With the NMU, the stack can also be managed in-band via Telnet (either Client or Server).

The NMU contains a dedicated in-band port for a Network Management Station (NMS). In addition to freeing up a port on one of the hubs, this port allows the stack to be managed continuously in the event of a failure. The NMU also contains an RS-232 console port for out-of-band management (locally and remotely) via a terminal or SNMP using SLIP.

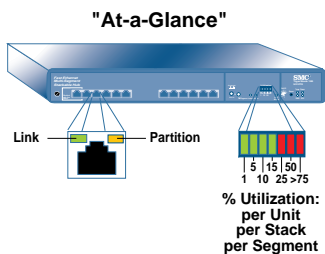
For effective control, the entire TigerStack 100 can be managed with EliteView™ for Windows,

SMC's low-priced, Windows-based SNMP manager. EliteView will also manage the TigerStack and all of SMC's other intelligent Ethernet and Token Ring products, as well as third-party devices. And, snap-in applications are available for the most popular network management platforms, such as Hewlett Packard's OpenView for UNIX.

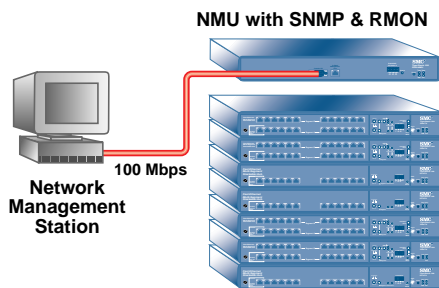
## RMON Probe Support

A second expansion port in the NMU hosts an innovative RMON Probe Switching (RPS) Module. With an SMM in each segmented hub and an RMON probe attached to the RPS Module, you can create a virtual connection to any TigerStack 100 segment. The module converts the probe to a roving multi-segment device, so all the segments can be probed without moving the probe connection.

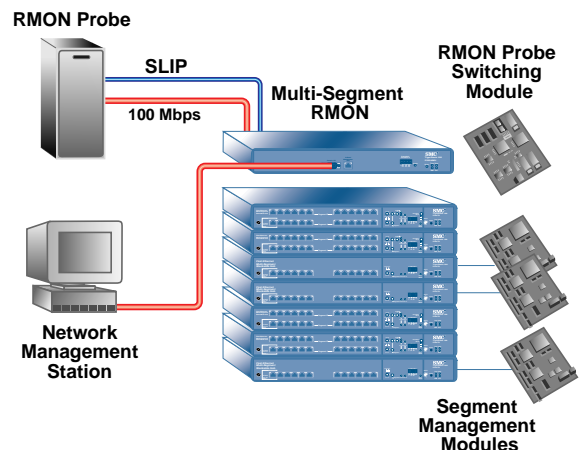
With an external RMON probe, you can obtain an end-to-end view of network conversations and accurate host statistics, regardless of the network connection. A probe with RMON2 capabilities can map all the major network layer protocols, such as IP, IPX, VINES, DECnet, AppleTalk and OSI and provide an accurate enterprise-wide view of the network.



Front-panel LEDs provide "at-a-glance" management of the hubs by displaying the bandwidth utilization, link/activity and partition status, and temperature.



Add an NMU for in-band management via SNMP and RMON.



Add an RMON Probe Switching Module to the NMU and Segment Management Modules in each hub for roving, multi-segment SNMP and RMON.

# Specifications

## TigerStack 100 12-Port Hubs

### Ports

12 100BASE-TX or -T4

### Fast Ethernet Interface

RJ-45 connectors, fixed crossover  
Port 12: switch-selectable  
crossover (TX hub only)

### Segments/Unit

One

### Weight

10 lb. (4.5 kg)

## TigerStack 100 24-Port Hubs

### Ports

24 100BASE-TX or -T4

### Fast Ethernet Interface

RJ-45 connectors, fixed crossover  
Ports 12, 24: switch-selectable  
crossover (TX hub only)

### Segments/Unit

Two

### Weight

11 lb. (5 kg)

## All TigerStack 100 Hubs

### Type

Class ①

### Size

17.0 in. W x 11.3 in. D x 1.7 in. H  
(43.2 cm x 28.7 cm x 4.3 cm)

### LEDs

Power  
RPU  
SMM  
Temperature  
Collision - one/segment  
Isolated - one/5312, three/5324  
Link/Activity - one/port  
Partition - one/port  
Aux Port Link/Activity  
% Utilization - seven

### Switches

Reset  
Unit ID  
Segment - one/5312, three/5324  
Crossover - (TX hubs only)  
one/5312, two/5324  
Utilization Select - one/5324

### Connectors

Stacking, 50-pin - two  
DC Input, 14-pin

### AC Input

100 to 240 V, 50 to 60 Hz  
2.5 A to 0.9 A

### Power Supply

Internal, auto-ranging transformer  
100 to 240 VAC, 50 to 60 Hz  
Redundant DC input

## Segment Management Module

### Weight

1.8 lb. (0.8 kg)

### Connector

SMM, RJ-45

## Network Management Unit

### Architecture

Processor-based

### In-Band Management

Telnet Server and Client  
SNMP (MIB I & MIB II)  
Terminal (SNMP Proxy  
Management)

### Out-of-Band Management

RS-232C

### Software Loading

TFTP in-band, out-of-band  
RS-232 File Download

### Size

17.0 in. W x 11.3 in. D x 1.7 in. H  
(43.2 cm x 28.7 cm x 4.3 cm)

### Weight

10 lb. (4.5 kg)

### LEDs

Power  
RPU  
Status  
% Utilization - seven  
Integrated Switch  
RMON Probe Switch

### Connectors

Stacking, 50-pin - two  
RPU, 14-pin  
In-Band, shielded RJ-45  
Out-of-Band, DB-9

### Switch

Reset

### MIB Support

Repeater MIB  
MIB II  
SMC Enterprise MIB  
RMON MIB - 4 groups  
History, Alarm, Statistics, Event

### AC Input

100 to 240 V, 50 to 60 Hz  
1.0 A to 0.5 A

## Slide-In Modules

### Port 1 Alternates

100BASE-FX  
100BASE-TX

### Fast Ethernet Interface

100BASE-FX  
SC connector  
100BASE-TX  
RJ-45 connector

## Stacking Cable

### Connector

50-pin conductor

## Integrated Switching Modules

### All Modules

Port 1  
100 Mbps internal  
For inter-repeater bus  
Remaining Ports  
Half/full duplex

### 2-Port Legacy (5300-STX)

Port 2  
10BASE-T/100BASE-TX  
RJ-45 connector  
Memory Buffer  
1 Mbyte

### 2-Port Fiber (5300-SFX)

Port 2  
100BASE-FX  
SC duplex connector  
Memory Buffer  
1 Mbyte

### 4-Port Legacy/Fiber (5300-STXFX)

Ports 2, 3  
10BASE-T/100BASE-TX  
RJ-45 connector

Port 4  
100BASE-FX  
SC duplex connector  
Memory Buffer  
2 Mbyte  
Address Table Size  
8 Kbytes

### 4-Port Legacy (5300-STX4)

Ports 2-4  
10BASE-T/100BASE-TX  
RJ-45 connectors  
Memory Buffer  
2 Mbyte  
Address Table Size  
8 Kbytes

## RMON Probe Switching Module

### Connectors

SMM, RJ-45 - eight  
RMON Probe Input, RJ-45  
SLIP, DB-9

## TigerStack 100 Family

### Network Interface

100BASE-TX  
EIA/TIA Category 5 UTP  
2 pairs  
100BASE-T4  
EIA/TIA Categories 3, 4, 5 UTP  
4 pairs  
100BASE-FX  
62.5/125 micron core fiber

### Temperature

Operating  
32° to 122° F (0° to 50° C)  
Storage  
32° to 185° F (0° to 85° C)

## Humidity

Operating  
10% to 90%  
Storage  
0% to 95%

## Standards

IEEE 802.3, 802.3u  
ISO/IEC 8802-3

## Compliances

CE marking  
Safety  
UL 1950  
CSA 22.2 No. 950  
EN60950 (TÜV)  
Emissions  
FCC Class A  
CDOC Class A  
EN55022 (CISPR 22) Class A  
VCCI Class 1  
Immunity  
EN50082-1

## Warranty

Unit  
Limited lifetime  
Power Supply and Fan  
Five years

## Redundant Power Unit

### Weight

25 lb. (11.3 kg)

### Connectors

AC Input, IEC 320  
DC Output, J1 to J5, 14-pin

### LEDs

Fan Fault  
Outputs - five

### Size

17.0 in. W x 11.3 in. D x 2.0 in. H  
(43.2 cm x 28.7 cm x 5.1 cm)

### Cooling Fans

12 VDC - two

### AC Input

100 to 240 V, 50 to 60 Hz  
7.0 A to 2.8 A

### DC Output Power per Connector

+5 VDC @ 17 A max.  
+12 VDC @ 0.8 A max.

### Overload Protection

475 W max. continuous output

### MTBF

100 K hours, min.

### Emissions Compliances

FCC Class A  
EN55022 Class A  
EN 50082-1

### DC Power Cables

RPU to hub - five

### Warranty

Three years

## SMC Offices Worldwide

### For information, call or fax:

◆ SMC—Headquarters

Hauppauge, NY  
 Phones: (800) SMC-4-YOU  
 (516) 435-6000  
 Fax: (516) 273-1803

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 Fax: 65-320-8359

◆ TMC—Japan

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 Phone: 81 (3) 57212271  
 Fax: 81 (3) 57212270

◆ SMC—EliteFax™

Fax-on-Demand System  
 US/Canada: (800) SMC-8329  
 Elsewhere: (516) 435-6107

### World Wide Web

<http://www.smc.com/>



Product	Order Number	Description
<b>TigerStack 100 Hubs*</b>	SMC5312TX	100BASE-TX Hub with 12 RJ-45 Ports
	SMC5324TX	100BASE-TX Hub with 24 RJ-45 Ports
	SMC5312T4	100BASE-T4 Hub with 12 RJ-45 Ports
	SMC5324T4	100BASE-T4 Hub with 24 RJ-45 Ports
<b>Accessories</b>	SMC5300-FXSC	Slide-in 100BASE-FX Module with SC Connectors
	SMC5300-TX	Slide-in 100BASE-TX Module
	SMC5300-CABLE	Stacking Cable
<b>Management Unit</b>	SMC5300-SMM	Segment Management Module**
<b>Accessories</b>	SMC5300-NMU	Network Management Unit with Stacking Cable
	SMC5300-RPS	RMON Probe Switching Module**
	SMC5300-STX	2-Port Integrated Switching Module with 10BASE-T/100BASE-TX Port
	SMC5300-SFX	2-Port Integrated Switching Module with 100BASE-FX Port
	SMC5300-STXFX	4-Port Integrated Switching Module with one 100BASE-FX and two 10BASE-T/100BASE-TX Ports
<b>Power Unit</b>	SMC5300-STX4	4-Port Switching Module with three 10BASE-T/100BASE-TX Ports
	ELITEVIEW 4.4	SNMP-based Network Management Software
	SMCRPUX5	Redundant Power Unit (supports 5 devices)**

\* US Power Cord included. Hubs also available with Continental Europe or UK Power Cord.

\*\* All cables included.

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