# Sub I/O Scanner Module

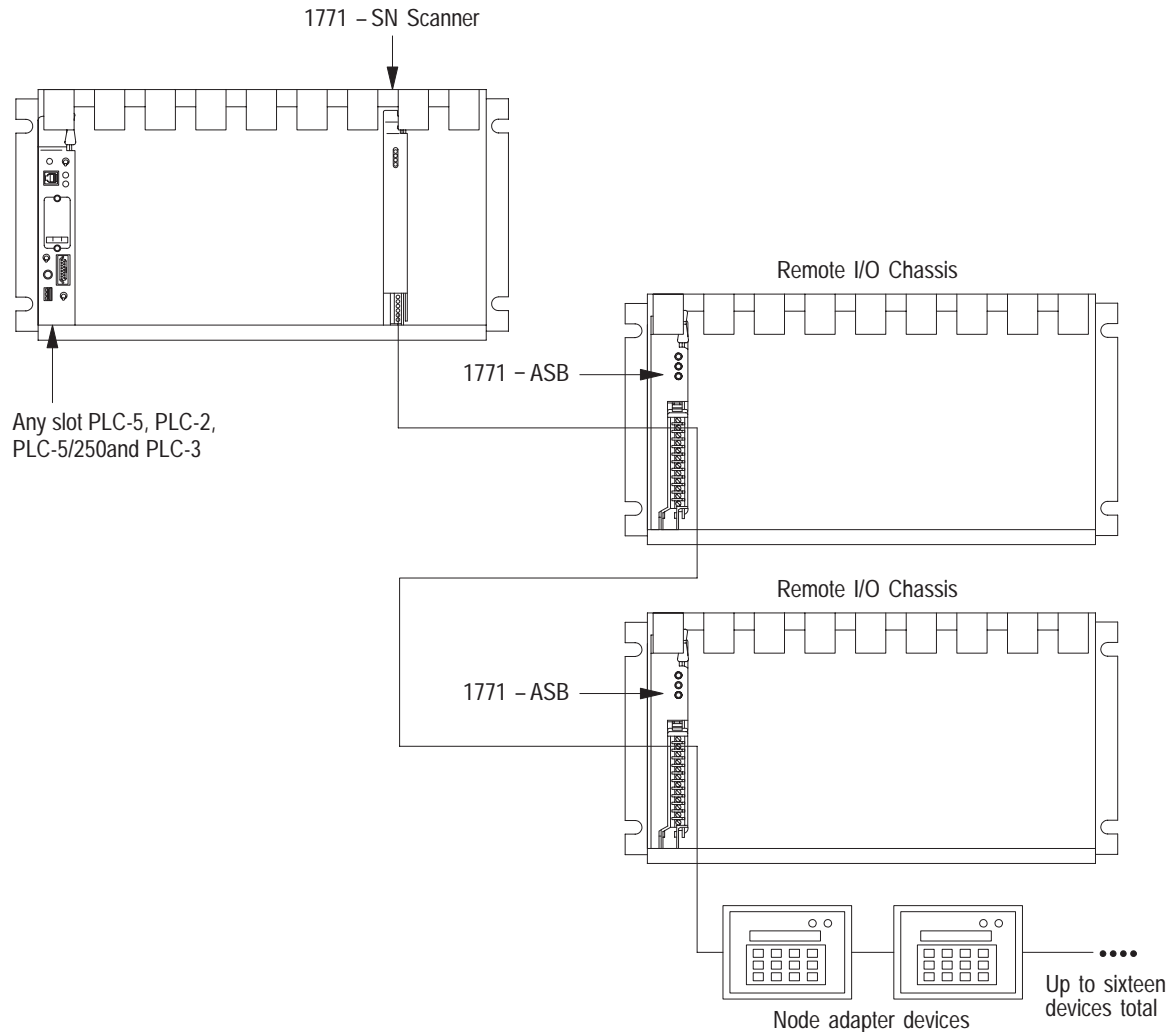Cat. No. 1771-SN, Series A, Revision D

Product Data

**Expand your system with remote I/O.** Use the 1771-SN Sub I/O Scanner to expand your I/O sub-system by up to 896 digital remote I/O.

**Locate I/O in up to 16 remote chassis using as many as seven rack numbers.** The sub I/O scanner can interface a maximum of 16 remote I/O adapters on an Allen-Bradley universal remote I/O link. The addressing scheme of the sub I/O scanner module can accommodate up to seven logical racks in quarter-rack increments.

## System Overview

The figure below shows a typical configuration using a 1771-SN Sub I/O Scanner Module with a local PLC® processor. You install the scanner into an I/O module slot in the PLC chassis and connect it to the remote I/O adapters (using discrete I/O) through a twinaxial cable.

1771 – SN Scanner

Remote I/O Chassis

1771 – ASB

Any slot PLC-5, PLC-2,
PLC-5/250and PLC-3

Remote I/O Chassis

1771 – ASB

Up to sixteen
devices total

Node adapter devices

18404

## Response Time

Remote I/O response time is longer than local I/O response time. For example, with 2 remote I/O chassis, a local scan time of 40ms, and an input-circuit delay time of 24ms, the worst-case response of a remote output to a change at a remote input would be 203ms.

Use the 1771-SN Scanner module for monitoring digital input and controlling digital outputs not requiring fast response times. For example, thumbwheel switch inputs, pilot light outputs and other operator-interface switching and read-out devices.

**Compatible Processors**

Use the 1771-SN Scanner Module with any processor with block-transfer capability.

**Compatible Adapters**

The 1771-SN Scanner Module communicates only with adapters with discrete transfer capability.

The module does not support complementary I/O.

**Compatible Remote I/O**

Communication on the remote I/O link is limited to single-transfer of I/O data (a single word of input and/or output data per I/O group). This means you must use only discrete I/O modules.

**System Compatibility**

You can use the 1771-SN Sub I/O Scanner Module in any 1771 I/O chassis. Communication between the scanner module and the processor is bi-directional. The processor block-transfers output data through the output image table to the module and block-transfers input data from the module through the input image table. The module also requires an area in the data table to store the read block and write block. I/O image table use is an important factor in module placement and addressing selection. We list module use of the processor's data table in the following table:

| Catalog Number | Input-image Bits | Output-image Bits | Read-block Words | Write-block Words |
|---|---|---|---|---|
| 1771-SN | 8 | 8 | 16–64 | 16–64 |

The read and write blocks each require an overhead of 8 words plus an additional 8 words for each remote I/O rack

**Operation**

The 1771-SN Scanner Module communicates with the local processor using block-transfers. You enter the block-transfer instruction into your processor's ladder program. A block-transfer write instruction placed in the processor's ladder program transfers data from the processor's data table to the 1771SN Scanner Module's output image table to remote output modules.

The 1771-SN Scanner Module maintains an input image table with data collected form the remote input modules. A block-transfer read instruction place in the processor's ladder program transfers data from the 1771-SN Scanner Module's input image table to a location in the processor's data table.

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## Specifications

| 1771-SN Sub I/O Scanner Module | |
|---|---|
| Module Location | 1771-A1B thru -A4B or later I/O chassis and 1771-AM1 and -AM2 I/O chassis |
| Data Transmission Rate | 10,000 cable-feet at 57.6k bits/s 5,000 cable-feet at 115.2k bits/s |
| Interconnect Cable | 1770-CD or equivalent (refer to the Approved Cable Vendor List, pub. no. ICCG-2.2) |
| Backplane Current | 1.2A |
| Power Dissipation | 7W maximum @ 1.2A |
| Thermal Dissipation | 24 BTU maximum @ 1.2A |
| Keying | Between 2 and 4 Between 24 and 26 |
| Environmental Conditions: Operating Temperature Storage Temperature Relative Humidity | 0° to 60°C (32° to 140°F) –40° to 85°C (–40° to 185°F) 5% to 95% (without condensation) |
| System | Supports PLC-2 rack addresses 1 thru 7 Supports up to 16 total adapters Does not support complementary I/O |
| Part Numbers and Catalog Numbers | Daisy-Chain configurations Phoenix Connector (6-pin) (Allen-Bradley part number 940611-01) 1771-ASB Remote I/O Adapter termination resistor (Cat. No. 1770-XT) Dropline Configurations T-Connector (Cat. No. 1770-XG), Allen-Bradley part number 966308-01) Station Connector (Cat. No. 1770-SC), (Allen-Bradley part number 966080-01) Terminator Set (Cat. No. 1770-XF), (Allen-Bradley part number 966307-01) |

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