HUNTRON SCANNER II Model 30S

USER'S MANUAL

P/N 21-2563

Rev. E

May 2014

HUNTRON INSTRUMENTS, INC.

LIMITED WARRANTY

Huntron, Inc. believes in the quality of its products. Accordingly, Huntron provides the following non-transferable warranties for the benefit of the original end-use purchaser of the Huntron Scanner II Model 30S instrument.

Huntron warrants that the Huntron Scanner II Model 30S hardware shall be free from defects in material and workmanship for one (1) year from the date of purchase.

The above warranties are in lieu of all other warranties, express or implied, including all warranties of merchantability and/or fitness for a particular purpose. Huntron's liability under these warranties, including any damages sustained by the customer through malfunction or failure of the Huntron software, shall not exceed the amount of the purchase price of the Huntron Scanner II Model 30S, regardless of the extent of any such damage, including any special, consequential, or incidental damages of any kind.

These warranties shall only apply to products in ordinary use. Huntron shall have no obligation under these warranties with respect to damage caused by accident, transportation, neglect, misuse, unauthorized alterations or repair, improper installation, or operating conditions.

Products purchased in the United States are to be returned to Huntron, Inc. at its factory, transportation prepaid. Products purchased outside the United States are to be returned to the source of purchase for Warranty repair.

Written notice of, and an explanation of the circumstances of, any defect believed to be covered by this agreement shall be provided promptly to Huntron by the customer following discovery of the defect. In satisfaction of its warranty liability, Huntron agrees to take reasonable and prompt action to correct the defect, either by repair or replacement, at its option.

CONTACTING HUNTRON

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TABLE OF CONTENTS

SECTION 1 INTRODUCTION & SPECIFICATIONS

1-1. INTRODUCTION

The Huntron Scanner II, shown in Figure 1-1, has been designed as a compatible interface for the Huntron Tracker Model 30. Together, they create an effective test system for component troubleshooting. The Scanner II allows faster comparison testing of components and boards by the use of direct cabling and optional IC clip cables for in-circuit ICs (integrated circuits).

Figure 1-1. Huntron Tracker Model 30 and Scanner II

1-2. SPECIFICATIONS

The specifications for the Scanner II are listed in Table 1-1.

ELECTRICAL

Interconnections:
- Channels
  - Number 2
- Pins
  - Test ..... 64 per channel
  - Common ..... 64 per channel
- Connectors
  - SCSII-2 ..... 68 pins each channel

Power Requirements
- 5Vdc 0.05A

GENERAL
- Size ..... 11.2” W x 1.9“ H x 8.5” D (28,45 cm W x 4,83 cm H x 21,59 cm D)
- Weight ..... 4.5 lbs., (2.04 kg)

ENVIRONMENTAL
- Temperature
  - Operating ..... 59°F to 86°F (15°C to +30°C)
  - Storage ..... -50°F to 140°F (-58°C to +60°C)
- Relative Humidity ..... 0 to 50% from R.H.

Table 1-1. Scanner II Specifications.

1-3. SAFETY CONSIDERATIONS (Considérations de sécurité)

Symbols and Warnings: **(Symboles et avertissements:)**

The following symbols are used either in this manual or on the unit:

Protective Ground (Earth) Terminal. **Do not disconnect any protective ground wires.**

Rez de protection (terre). **Ne débranchez pas de fils de terre de protection.**

CAUTION This symbol is used in the user’s manual as a warning that improper use could result in unit malfunctioning. For your safety always follow the instructions next to the symbol on the unit and in the manual.

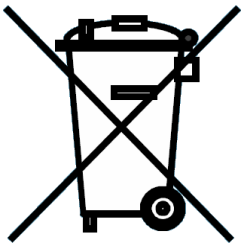
ATTENTION Ce symbole est utilisé dans le manuel de l'utilisateur comme un avertissement que l'usage abusif peut entraîner des dysfonctionnements unité. Pour votre sécurité toujours suivre les instructions à côté du symbole de l'unité et dans le manuel.

CE The Huntron Scanner II Model 30S conforms to the following Standards:

EN 55011
EN 61000-3-2:2000
EN 61000-3-3:1995/A1:2001
EN 61000-4-2
EN 61000-4-3
EN 61000-4-4
EN 61000-4-5
EN 61000-4-6
EN 61000-4-11
EN 61000-6-1:2001
EN 61000-6-2:2001
EN 61000-6-3:2001
EN 61000-6-4:2001
EN 61010-1:2001 (Second Edition)

c ETL LISTED us
Intertek Meets the Standard for Safety Requirements for Electrical Equipment for Measurement, Control and Laboratory Use; Part 1 General Requirements – UL 61010-1, 2nd Ed., with revisions through 07/22/2005, and CAN/CSA-C22.2 No. 61010-1, 2nd Ed., dated 07/12/2004.

1-4. WEEE AND RoHS



Huntron is aware of the recycling needs for Waste Electronic and Electrical Equipment (WEEE) and Restriction of certain Hazardous Substances (RoHS) and is co-operating with systems established, worldwide for the collecting and recycling of our products.

Huntron has applied the Wheeled bin recycle mark (EN50419) to our products. At the present time, some European countries are not complete in their compliance with the European WEEE legislation and they do not have collective systems fully operational and registration initiated.

Recycling is important to all communities, therefore we ask our customers to be responsible in recycling. Please check your local recycling laws for further information. Further recycling information

will be added to our website www.huntron.com as it becomes available.

Huntron products, being electronic test equipment, are classified as monitoring and control instruments and are presently exempt from the RoHS directives. We are working for total compliance to RoHS.

SECTION 2 OPERATING INSTRUCTIONS

2-1. INTRODUCTION

This section describes the basic operation of the Huntron Scanner II. Throughout the rest of this manual the Huntron Scanner II will be referred to simply as the Scanner II. Take time to read this section carefully so that you can take full advantage of all its capabilities.

2-2. UNPACKING YOUR INSTRUMENT

Your instrument was shipped with the following items:

QTY	DESCRIPTION	HUNTRON P/N
1	CD, Manuals	06-5217
1	Getting Started	21-1367
1	Scanner II Interface Cable	98-0480
1	Cable Breakout 68 pin	98-0493

Check the shipment carefully and contact the place of purchase if anything is missing or damaged in shipment. If return is necessary, please use the original shipping carton and packing foam. If these are not available, be sure that adequate protection is provided to prevent damage during shipment.

2-3. PHYSICAL FEATURES

Before you begin to use the Scanner II, please take a few minutes to familiarize yourself with the instrument. All of the externally accessible features are shown in Figure 2-1 and summarized in Table 2-1.

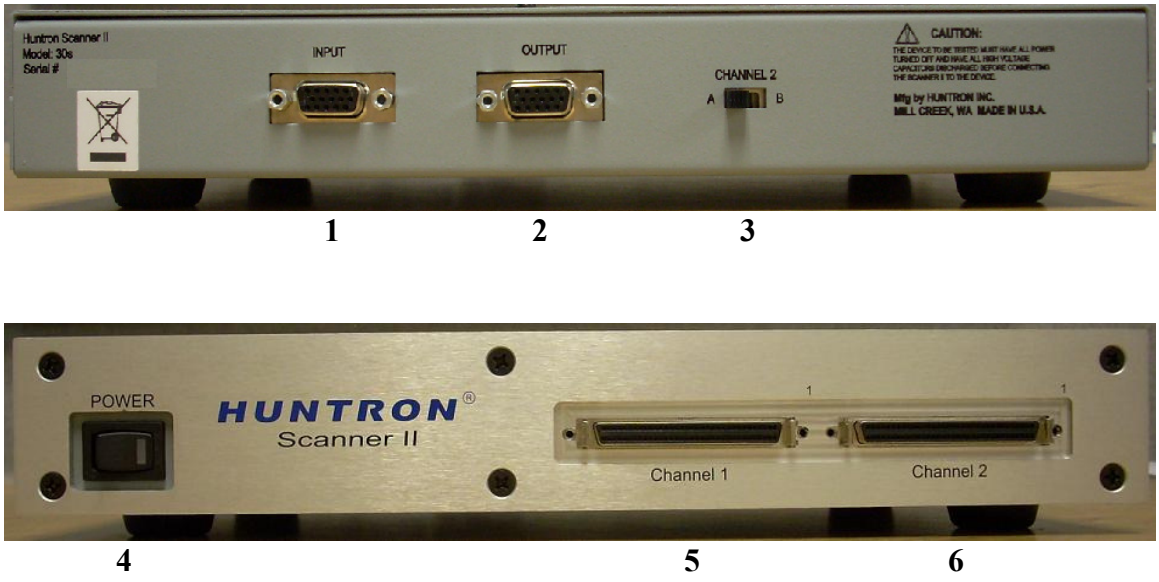


Figure 2-1. External Features

Item No.	Item	Description
1	Input DB15 Connector	Connection to the Huntron Tracker Model 30 or Previous Scanner II in the chain.
2	Output DB15 Connector	Connects to the next Scanner II in the chain.
3	Channel Switch	Sets Channel 2 to Tracker Channel A or B.
4	Power Switch	Power switch with indicator.
5	Channel 1	SCSI-2 68 pin connector to connect UUT.
6	Channel 2	SCSI-2 68 pin connector to connect UUT.

Table 2-1. Controls and Connectors.

CAUTION

Use only a Tracker Model 30 or previous Scanner II in the chain to power the Scanner II. Any substitution may damage your instrument and/or result in an unsafe condition.

2-4. SETUP

Note: User should take ESD precautions (wear ground straps) before operating the unit.

The following procedure details how to setup the Scanner II with a Tracker Model 30 for in-circuit testing.

1. Connect the Interface cable supplied with your Scanner II to the Scanner connector on the back panel of the Tracker Model 30. Connect the other end of this cable to the Input connector located on the back of the Scanner II.

2. Turn on the Power Switch on the front panel and the indicator will illuminate.

3. Note the Channel 2 switch setting on the back of the Scanner II. It will be set to “A” or “B”.

4. Start Huntron Workstation and select Tools/Maintenance/Tracker Model 30 Diagnostics from the menu.

5. In the Tracker Model 30 Diagnostics set the “Channels” setting to 1 if the Scanner II Channel 2 switch is set to “A”. Set the “Channels” setting to 2 if the Channel 2 switch is set to “B”.

6. Click the “Scanner II Test” button to test the Scanner II functions. If the test fails, contact Huntron Technical Support.

7. Exit the Tracker Model 30 Diagnostics when the Scanner II Test is complete.

2-5. TYPICAL APPLICATIONS

CAUTION

The device to be tested must have all power turned off, and have all high voltage capacitors discharged before connecting the Scanner II to the device. Failure to do so may cause damage to the Scanner II and void the warranty.

This section covers the use of the Scanner II and the breakout cable supplied.

1. Connect the breakout cable to Channel 1 of the Scanner II.

2. Connect the loose ends of the breakout cable to connector or test pins on the UUT.

3. Connect the Common test lead from the Tracker Model 30 a common point (i.e. ground) on the UUT. You can also set common pins using the Huntron Workstation software.

The topics that follow clarify various points and expand into other areas.

TESTING ICs – To test ICs using clips and cables, optional accessories are required. The Scanner II Adapter (P/N: 98-0491) allows connection of IDC ribbon cables to Channel 1 and 2 of the Scanner II. The Thru Hole IC Clip Kit (P/N: 98-0490) provides IDC ribbon cables and DIP IC clips for thru hole DIP ICs. The SMT IC Clip Kit (P/N: 98-0492 provides IDC ribbon cables and DIP IC clips for surface mount SMT DIP ICs.

TESTING OUT OF CIRCUIT COMPONENTS – To test thru hole DIP ICs out of circuit, optional accessories are required. The Scanner II Adapter (P/N: 98-0491) allows connection of IDC ribbon cables to Channel 1 and 2 of the Scanner II. The ZIF Adapter Board (P/N: 98-0146) provides IDC ribbon cables and ZIF sockets for thru hole DIP ICs.

TESTING CMOS DEVICES - CMOS ICs sometimes produce unstable signatures. Whether the device is in-circuit or out of circuit, if instability occurs it is advisable to connect the 10kΩ resistor jumpers provided with the Tracker Model 30 across the V_{DD} and V_{SS} pins of the device. This will help to reduce or eliminate the unstable signatures. To use the resistor jumpers, select V_{DD} or V_{SS} as the common pin in the normal manner or use common leads.

SELECTING COMMON PINS - In theory any pin on an IC that is not an open circuit could be used for the common pin. In practice, however, the normal procedure is to use one of the power supply pins on an IC as the common pin. V_{SS}, V_{DD}, V_{CC}, and Ground are some typical names for power supply pins. There is one situation where it is sometimes useful to not use a power supply pin. When testing boards where bus architectures are in use, most of the pins on one IC will be connected in parallel with the same pins on other

devices. Using the normal procedure above you can see a fault on one bus line, but you do not know which IC is causing it since they are all in parallel. In this case try using one of the “non-bussed” pins on the IC as the common pin. A non-bussed pin is any one that is not connected in parallel with all other ICs. Examples include “Chip Select” and “Enable” lines.

2-8. FRONT PANEL PIN CONFIGURATION AND CABLES

The following diagrams outline the Scanner II front panel connections to assist in configuring custom cables and fixtures. The Scanner II utilizes SCSI2 style front panel connectors that are readily available from electronic supply sources. Pin 1 on the connectors is in the upper right corner. Be aware that the four bottom left pins are not used for scanning purposes and that each Scanner channel has 64 scan pins even though the connector has 68 pins. The four bottom left pins are used for other Tracker signal lines as shown in figure 2-2.

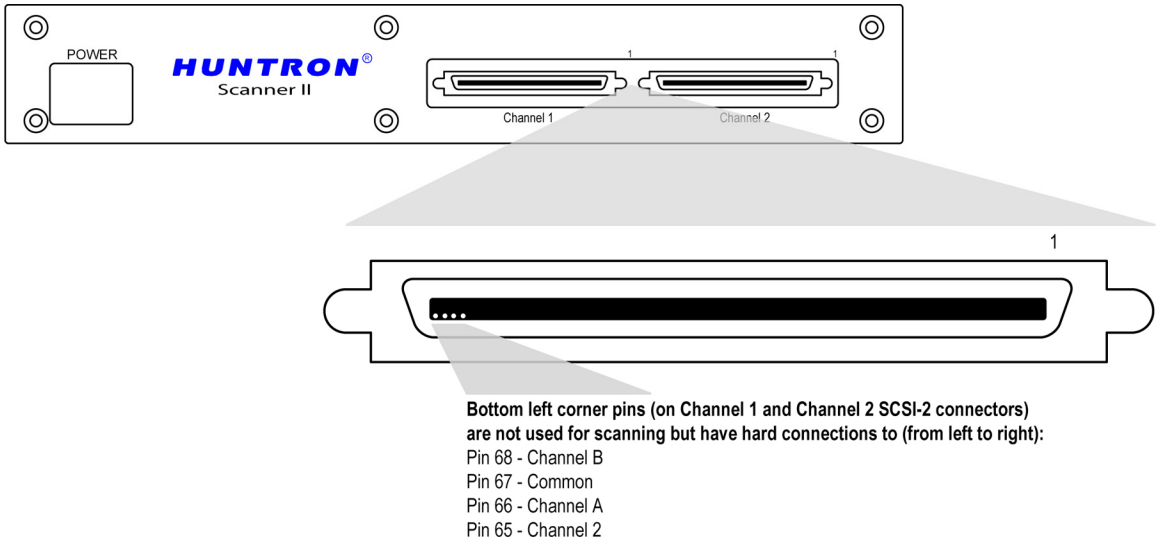


Figure 2-2 Four bottom left connector pins breakout

Huntron can supply a 68 pin breakout cable that can be used for functions such as connecting to a custom interface or a quad IC clip. **IMPORTANT NOTE:** The individual pins on the breakout cable are labeled for counting on the Scanner front panel as a DIP package.

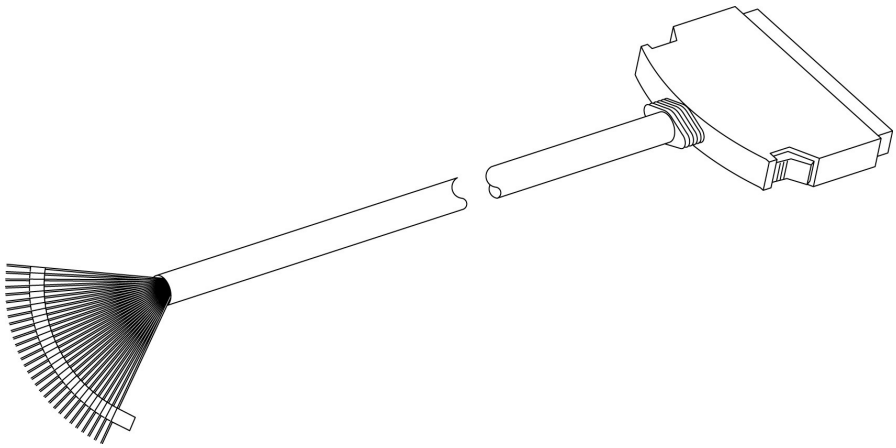


Figure 2-3 Scanner II breakout cable (part number 98-0493)

The Scanner II front panel connectors can be configured via software to count in several different orders. The orders relate to the “Package” type selected for component in Huntron Workstation. The package types available for use with the Scanner II are shown in figure 2-3. The Channel 2 switch setting refers to the switch on the Scanner II back panel that allows configure Channel 2 as either “A” or “B”. Setting Channel 2 to “A” allows for scanning more than 64 pins. Setting Channel 2 to “B” will connect the Tracker Channel B through the Channel 2 connector.

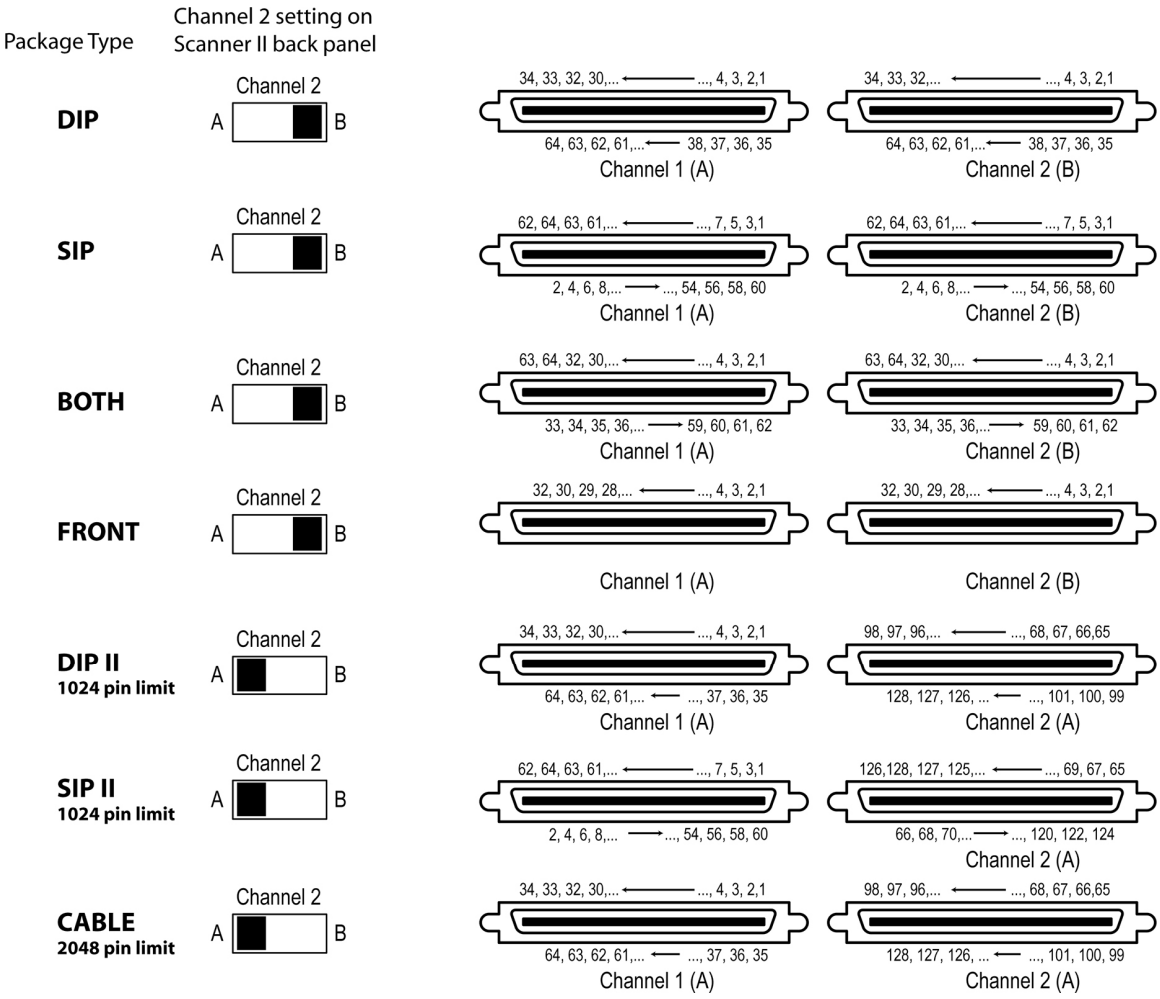


Figure 2-4 SCSI2 Front Panel pin breakout based on Package type

The Scanner Adapter accessory for the Scanner II allows for the use of standard IDC style connectors. IDC connectors are commonly used for interfacing to components with IC clips and ribbon cables.
The Scanner Adapter mounts to the front panel of the Scanner II using screws included with the Adapter. These screws replace the flathead screws used to mount the Scanner front faceplate.

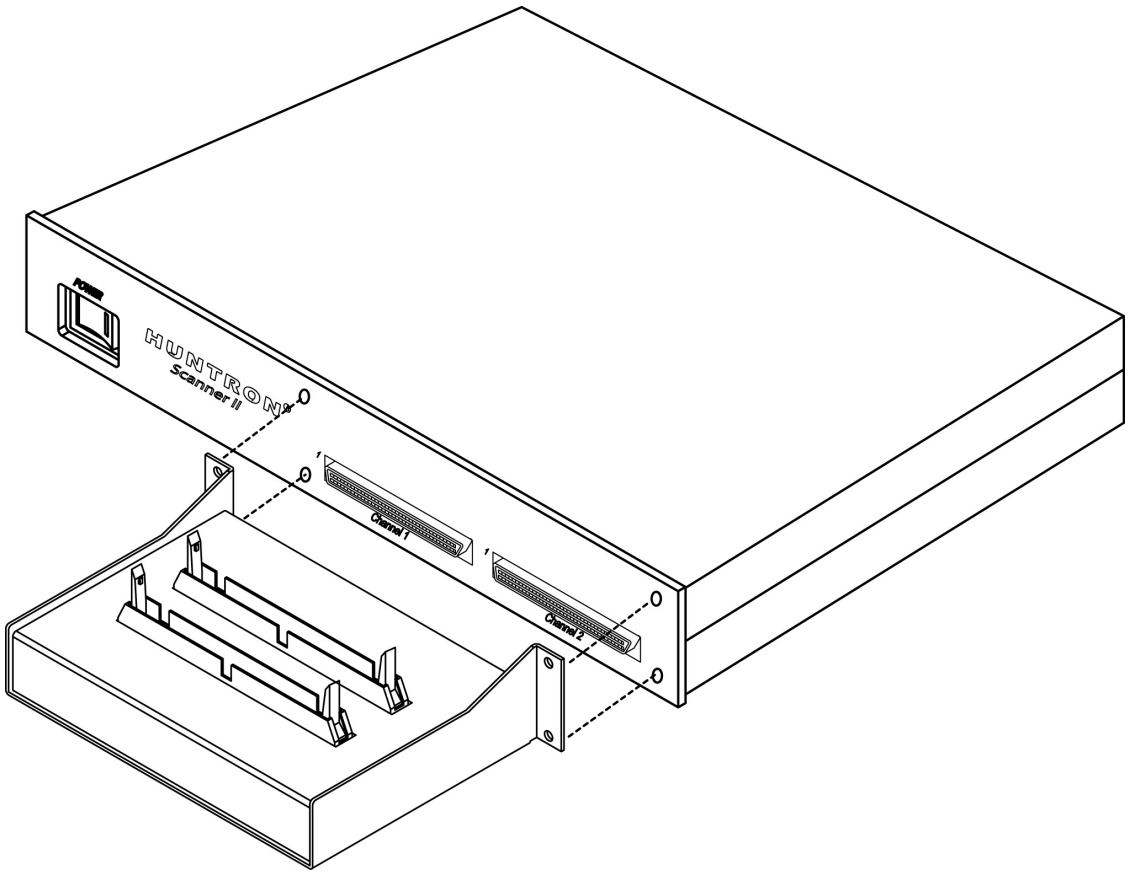


Figure 2-5 Scanner Adapter accessory and the Scanner II

The Scanner Adapter scan pin order also varies based on Package type. Figure 2-5 shows how each Scanner II packages counts through the Adapter connectors.

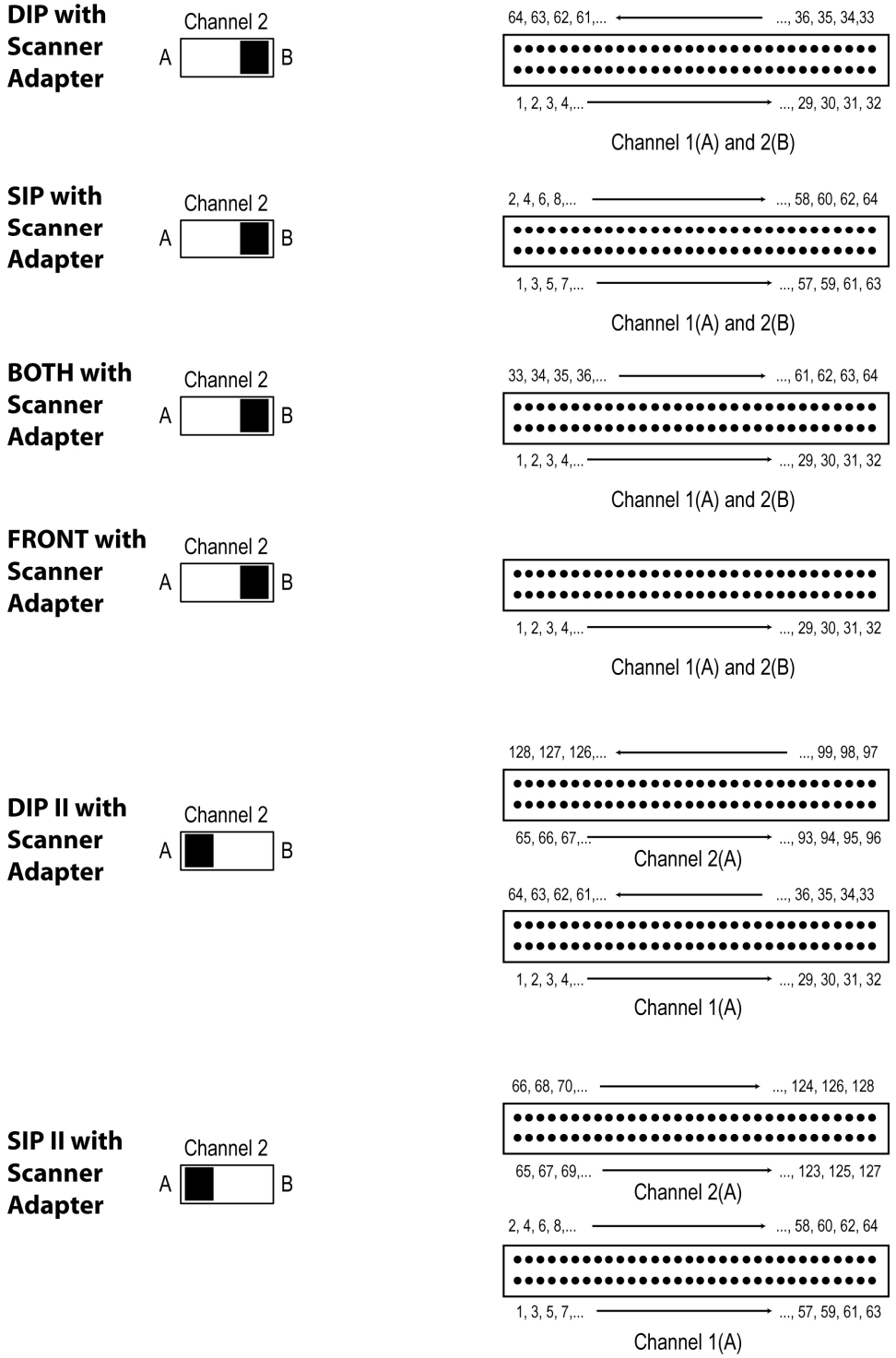


Figure 2-6 Scanner Adapter pin breakout based on Package type

2-7. EXTERNAL CLEANING

CAUTION

To avoid instrument damage, never get water inside the case or apply solvents to the instrument.

Should the Scanner II case require cleaning, wipe the instrument with a cloth that is lightly dampened with water or mild detergent solution.

2-8. STORAGE INSTRUCTIONS

For optimum protection, store unit indoors in a dry place.

Notes: