

SunSet E20 Application Series:

ISDN Auto Service Scan



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... a step ahead

1. ISDN Services

Unlike traditional analogue phone services, there are many possible different types of service available with an ISDN circuit. ISDN services are generally categorized into:

- Bearer services
- Teleservices
- Supplementary Services

In each of the service categories, there are also a number of different possible services. It

would be a laborious job to verify during line turn up all these service provision to a customer manually. The Automatic Test is a group of test features available with the SunSet E20 to enable service verification in an easy and timely manner during line turn up and also circuit trouble shooting.

2. Service Scan Feature

The SunSet E20 is available with two service scan features: Auto Scan and Supplementary Services Scan. The first scan function covers the validation of Bearer Services and Teleservices. The later, as its name suggests, covers the verification of provision for Supplementary Services on the line under test.

The Auto Scan and Supplementary Service Scan are available for ETSI and Aussie protocols. Both service scan features are supported by the SunSet E20 when emulating a TE (Terminal Equipment).

This application note outlines the steps to perform an Auto Scan.

3. Setup

3.1 Layer 1 Configuration

Since the SunSet E20 supports both 75 Ohm BNC unbalance interface and also 120 Ohm balanced banana interface. The appropriate connection shall be made in accordance with the actual application. However, both interfaces can not be used at the same time.

Enter from the Main Menu the Test Configuration screen to set up Layer 1 configuration. Assuming only one E1 is to be tested therefore Line 1 of the two E1 interfaces of the SunSet E20 shall be used. Simply configure the

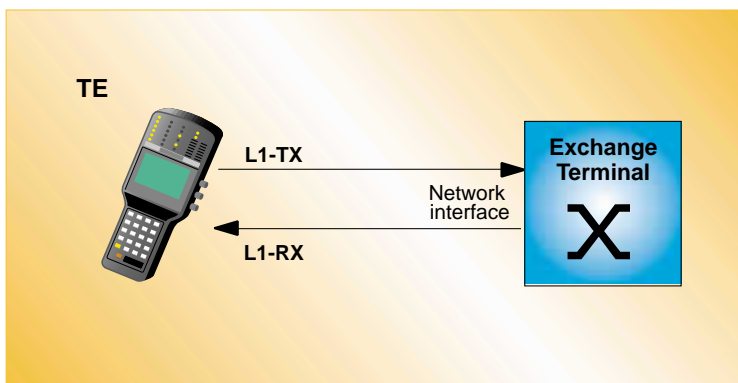


Figure 1 Test Setup

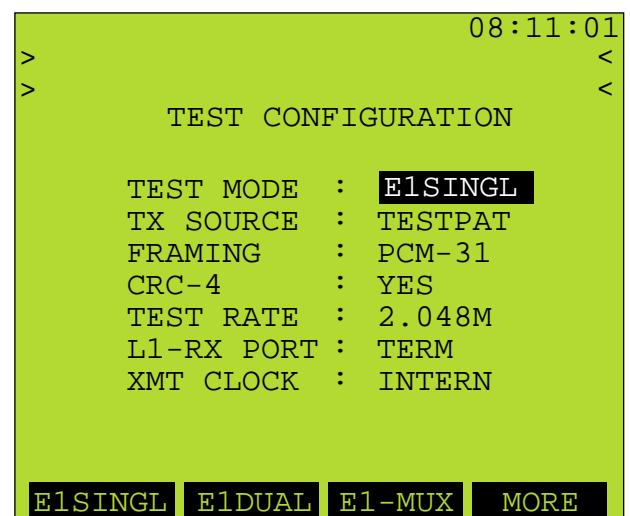


Figure 2 Configuring Layer 1

test set to E1SINGL mode so that redundant indication can be disabled. ISDN employs common channel signalling and normally time slot 16 is used to carry the signalling channel therefore PCM-31 framing should be selected. The SunSet E20 features framing detection function to ensure that the proper PCM-31 framing is configured for ISDN testing. The other settings can be configured under the ISDN Analysis ISDN Configuration screen.

3.2 ISDN Test Configuration

From the Main Menu enter the Protocols menu then enter ISDN Analysis screen as shown in Figure 3.

Bring up the Test Configuration screen to complete ISDN configuration. There are two screens for ISDN configuration.

Depending on whether the PBX supports CRC-4 or not the CRC-4 setting is turned to YES or NO as appropriate. The screen shown assumes the use of CRC-4. As the test set is configured as a TE, it shall be clock-slaved by the network. Therefore the TX CLOCK shall be set to L1-RX. Enter the number of the circuit in My Phone Number.

The second screen, accessible by the Next Page selection allows TEI and Signaling Time Slot selections, etc.

After configuration is completed and the test set is connected to the network, check that the SIGNAL, PCM-31 and CRC DET (only if CRC-4 is expected) turn solid green indicating the proper Layer 1 functioning. If Layer 1 can not be established perform trouble shooting before proceeding further. Otherwise the NotRdy indication shown on the first line of the screen should read In-svc.

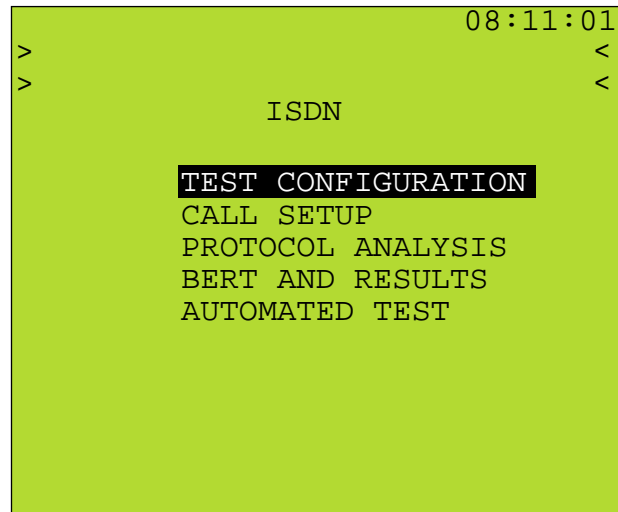


Figure 3 ISDN Analysis section

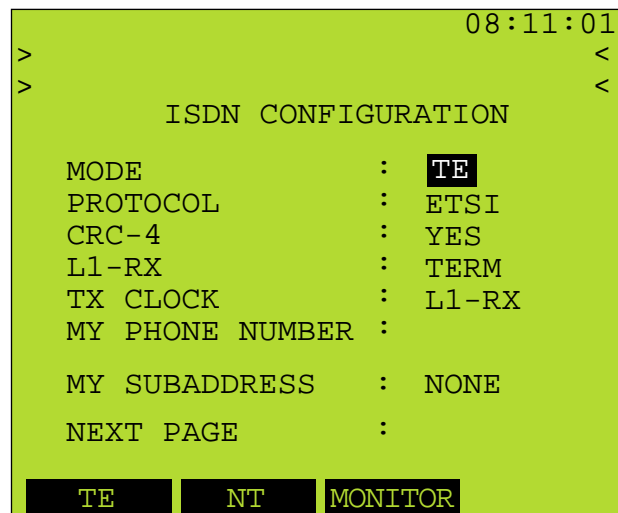


Figure 4 ISDN Configuration screen 1

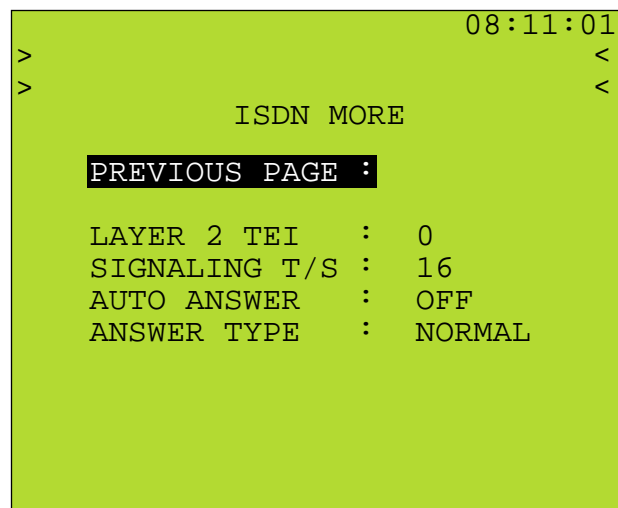


Figure 5 ISDN Configuration screen 2

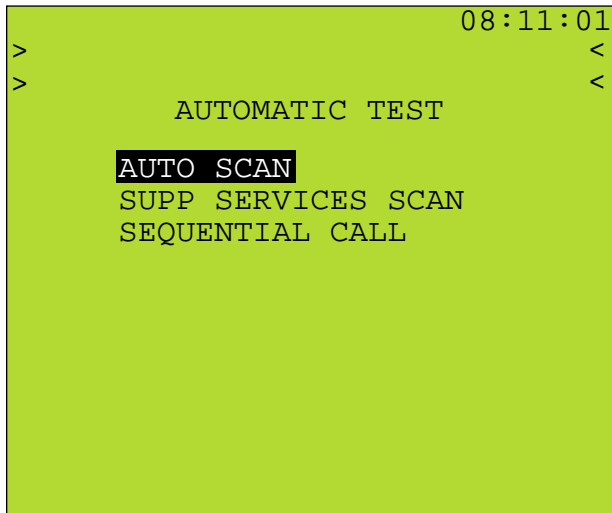


Figure 6 Automatic Test screen

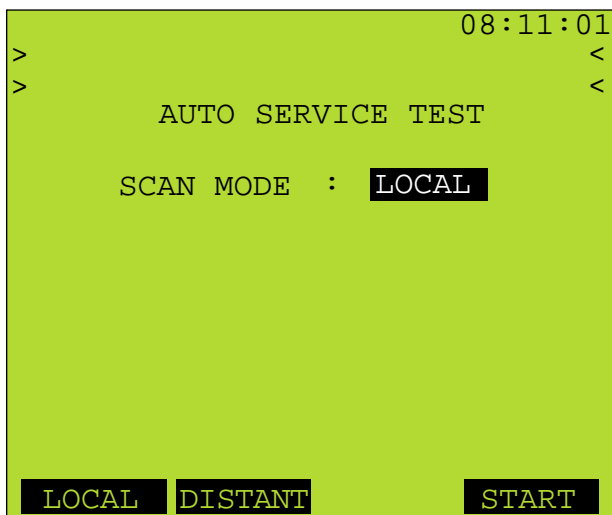


Figure 7 Auto Service Test screen

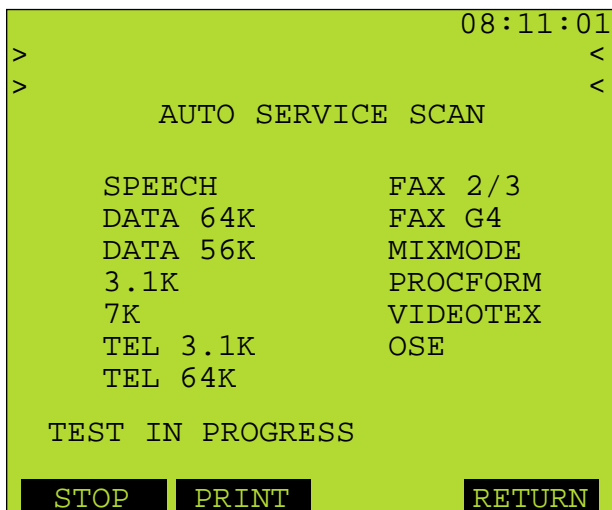


Figure 8 Auto Service Scan screen

3.2 Auto Scan

The Auto Scan is accessible from the Automatic Test selection screen as shown in Figure 6.

There are two scan modes in the AUTO SERVICE SCAN function. They are LOCAL and DISTANT. The LOCAL service scan mode identifies the bearer services and teleservices provisioned to the line the test set is plugged in. The DISTANT service scan checks the service provision of a distant ISDN line and the capability of the TE connected to the line.

No further entry is required for local scan mode selection. When Distant scan mode is selected, an additional Distant Phone Number will be displayed under the Scan Mode entry field. This is the phone number of the distant end to be tested.

Press the F-key START to begin the test.

The service scan results screen appears, showing the status of the test for each service.

"->" : The particular service type is currently being tested

"Yes" : The service type is supported or available

"No" : The service is not supported

Press the F-key STOP to halt the test in progress, as shown in Figure 8. The F-key PRINT sends the result to the serial port. The F-key RETURN will return the user to the Auto Service Scan screen.

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