

Cisco 7206 Series Router-PBX Interoperability: Ericsson MD-110 PBX and PA-VXC-2TE1+ Card with E1 ISDN PRI QSIG

This document describes the interoperability and configuration of a Cisco 7200 series router with an Ericsson MD-110 PBX using E1 ISDN PRI QSIG. It includes the following sections:

- System Components
- Configuration Tasks
- Caveats

System Components

PBX Model	Ericsson MD-110 PBX
PBX Release	ASB50104-R6-SES-R9-BC90D/CNI80
Telephony Signaling	E1 QSIG
Voice Gateway	Cisco 7206 Series Routers
Gateway Release	Cisco IOS™ (C7200-JS-M), Version 12.2(1)
VoX Protocol	H.323

Configuration Tasks

See the following sections for configuration tasks for this feature:

- Set Up
- Ericsson MD-110 PBX Configuration
- Cisco 7206 Series Router Configuration

Set Up

This section includes the following information:

- Connectivity Diagrams
- Set Up Notes

Connectivity Diagrams

Figure 1: Test Configuration

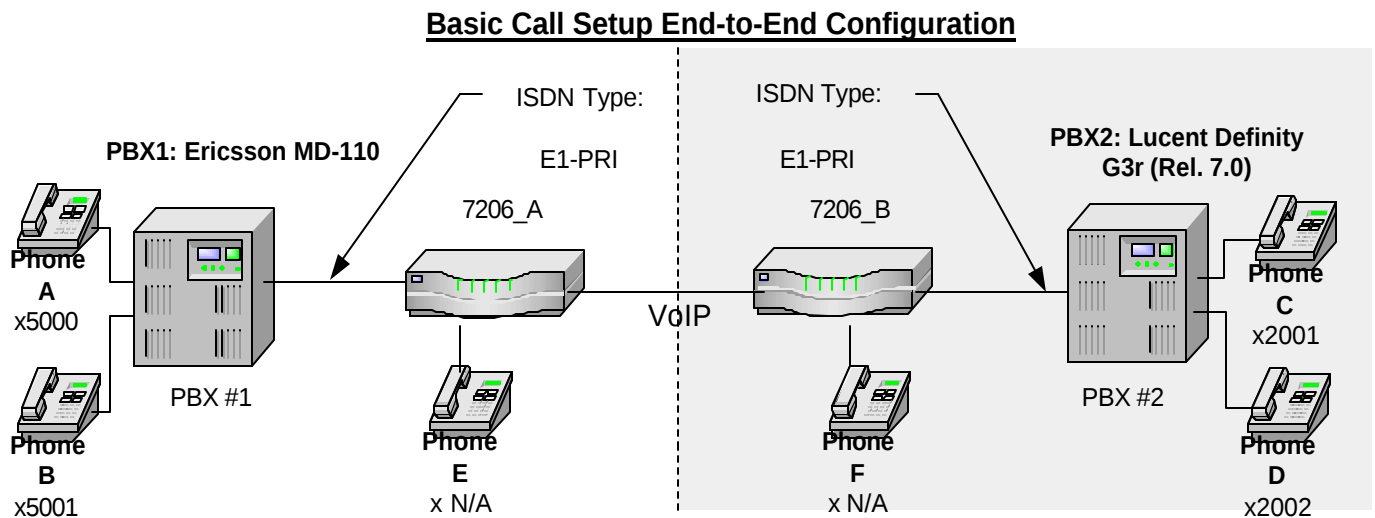


Figure 1 represents the configuration used for testing: a Cisco 7206 series router was connected to an Ericsson MD-110 PBX via ISDN E1 link.

Set Up Notes

- The Cisco 7206 series router with ISDN switch type setting of **primary-net5** supports both protocol sides by using the “isdn protocol-emulate network/user” command.
- Configuring the Ericsson operation to be Master (or Network) side sets the Layers 2 & 3 protocol side setting to master as well. Therefore, the Cisco 7206_A router should be set to Slave protocol side by issuing the command: “isdn protocol-emulate user”.
- Similarly, if the Ericsson operation is set for Slave (or user) side, layers 2 & 3 protocol side are set for slave side. The Cisco 7206_A router is set to Master protocol side by issuing the command: “isdn protocol-emulate network”.
- The Ericsson MD-110 supports both “USER” (peer-slave) and “NETWORK” (peer-master) protocol sides by using **RODI** command.
- The Ericsson MD-110 uses a command line interface where many switch features are changed with a single command. The Ericsson MD-110 PBX documentation must be consulted to make changes. Physical layer parameters (along with many other features) are controlled by using **RODI** command (**RODAI** command to display only).

QSIG Channel ID Coding/Mapping

The Cisco 7206 series router uses the ECMA QSIG standard. ECMA QSIG uses channel numbers 1-15 and 17-31 as B-channels, while channel 16 is allocated for the D-channel. Since both PBXs are using the ECMA standard, logical channels 16-30 are mapped correctly to the Cisco 7206 series routers channel 17-31 timeslots. Therefore, ISDN command **isdn contiguous-bchan** is not needed on the Cisco 7206 series router. It may be necessary in the Cisco 7206 to use this command to allow the Cisco 7206 series router to support ETSI QSIG channel mapping standard, depending on the configuration of the PBX side.

Ericsson MD-110 PBX Configuration

Ericsson MD-110 PBX Version Information

- Software: Version ASB50104-R6-SES-R9-BC90D/CNI80
- Hardware: MD-110

Ericsson MD-110 PBX Sample Configuration

Note: The Ericsson MD-110 PBX user interface has all parameters and options mapped to position-dependent numeric fields within the various commands listed below. The user must have the correct revision of the Ericsson MD-110 PBX Administration manual to be able to decipher each field position to determine its meaning. We advise not making changes to an Ericsson MD-110 PBX unless you are experienced. A single number out of place in a command string can cause unusual behavior on the PBX.

See the following sections for sample configuration information on the Ericsson MD-110 PBX:

- Ericsson PBX Switch Version
- Class of Service and Class of Restriction
- E1-QSIG D-Channel Signaling Parameters
- E1-QSIG B-Channel Physical Parameters
- E1-QSIG Trunk Status
- Telephone COS, Restrictions, and Naming Conventions
- Telephone Key Mapping Table
- E1-QSIG Route Data Block, Protocol Side “User”
- E1-QSIG Route Data Block, Protocol Side “Network”
- List of Board/Equipment in Ericsson MD-110 PBX

Ericsson PBX Switch Version

```
< CADAP;  
CALENDAR DATA  
  
IDENTITY=CISCO-SYSTEMS  
VERSION=ASB50104 -R6-SES -R9 -BC90D/CNI80  
  
CALENDAR TIME NOT VALID  
03:32:31  
TUE 15 MAY 2001  
END
```

Class of Service and Class of Restriction

Route Information- Note QSIG uses Route 9.

```
< RODDP:DEST=ALL;
EXTERNAL DESTINATION ROUTE DATA
```

DEST	DRN	ROU	CHO	CUST	ADC	TRC	SRT	NUMACK	PRE
2		9			1005000000000025000	0	1	0	
30		1			1005000000000025000	0	3	0	
31		2			1005000000000025000	0	3	0	
32		3			1005000000000025000	0	3	0	
33		4			1005000000000025000	0	3	0	
34		5			1005000000000025000	0	3	0	
35		6			0005000000000025000	0	3	0	
36		7			0005000000000025000	0	3	0	
37		8			0005000000000025000	0	3	0	
39		10			1005000000000025000	0	3	0	
40		11			1005000000000025000	0	3	0	

END

E1-QSIG D-Channel Signaling Parameters

Route Category Data

```
< ROCAP:ROU=9;
ROUTE CATEGORY DATA
```

ROU	SEL	TRM	SERV	NODG	DIST	DISL	TRAF	SIG	BCAP
9	711000000000	7	3110000010	0	5	20	03151515	211100000031	111111

END

E1-QSIG B-Channel Physical Parameters

```
< ROEDP:ROU=9, TRU=ALL;
ROUTE EQUIPMENT DATA
```

ROU	TRU	EQU	SQU	INDDAT
9	001-1	001-1-40-01		H'000000000000
9	001-2	001-1-40-02		H'000000000000
9	001-3	001-1-40-03		H'000000000000
9	001-4	001-1-40-04		H'000000000000
9	001-5	001-1-40-05		H'000000000000
9	001-6	001-1-40-06		H'000000000000
9	001-7	001-1-40-07		H'000000000000
9	001-8	001-1-40-08		H'000000000000
9	001-9	001-1-40-09		H'000000000000
9	001-10	001-1-40-10		H'000000000000
9	001-11	001-1-40-11		H'000000000000
9	001-12	001-1-40-12		H'000000000000
9	001-13	001-1-40-13		H'000000000000
9	001-14	001-1-40-14		H'000000000000
9	001-15	001-1-40-15		H'000000000000
9	001-17	001-1-40-17		H'000000000000
9	001-18	001-1-40-18		H'000000000000
9	001-19	001-1-40-19		H'000000000000
9	001-20	001-1-40-20		H'000000000000
9	001-21	001-1-40-21		H'000000000000
9	001-22	001-1-40-22		H'000000000000
9	001-23	001-1-40-23		H'000000000000

```

9          001-24          001-1-40-24          H'000000000000
9          001-25          001-1-40-25          H'000000000000
9          001-26          001-1-40-26          H'000000000000
9          001-27          001-1-40-27          H'000000000000
9          001-28          001-1-40-28          H'000000000000
9          001-29          001-1-40-29          H'000000000000
9          001-30          001-1-40-30          H'000000000000
9          001-31          001-1-40-31          H'000000000000

```

END

E1-QSIG Trunk Status

```

< SUSIP:ROU=9, TRU=ALL;
STATUS INFORMATION AT 00:00:00 01JAN00

```

ROU	TRU	TYPE	TRAFFIC	STATE/PTR	LINE	STATE/PTR	ADD INFO
9	001-1	TL60	IDLE	#009B	FREE	#0061	
9	001-2	TL60	IDLE	#009A	FREE	#0060	
9	001-3	TL60	IDLE	#0099	FREE	#005F	
9	001-4	TL60	IDLE	#0098	FREE	#005E	
9	001-5	TL60	IDLE	#0097	FREE	#005D	
9	001-6	TL60	IDLE	#0096	FREE	#005C	
9	001-7	TL60	IDLE	#0095	FREE	#005B	
9	001-8	TL60	IDLE	#0094	FREE	#005A	
9	001-9	TL60	IDLE	#0093	FREE	#0059	
9	001-10	TL60	IDLE	#0092	FREE	#0058	
9	001-11	TL60	IDLE	#0091	FREE	#0057	
9	001-12	TL60	IDLE	#0090	FREE	#0056	
9	001-13	TL60	IDLE	#008F	FREE	#0055	
9	001-14	TL60	IDLE	#008E	FREE	#0054	
9	001-15	TL60	IDLE	#008D	FREE	#0053	
9	001-17	TL60	IDLE	#007D	FREE	#0070	
9	001-18	TL60	IDLE	#007C	FREE	#006F	
9	001-19	TL60	IDLE	#007B	FREE	#006E	
9	001-20	TL60	IDLE	#007A	FREE	#006D	
9	001-21	TL60	IDLE	#0079	FREE	#006C	
9	001-22	TL60	IDLE	#0078	FREE	#006B	
9	001-23	TL60	IDLE	#0077	FREE	#006A	
9	001-24	TL60	IDLE	#0076	FREE	#0069	
9	001-25	TL60	IDLE	#0075	FREE	#0068	
9	001-26	TL60	IDLE	#0074	FREE	#0067	
9	001-27	TL60	IDLE	#0073	FREE	#0066	
9	001-28	TL60	IDLE	#0072	FREE	#0065	
9	001-29	TL60	IDLE	#0071	FREE	#0064	
9	001-30	TL60	IDLE	#0070	FREE	#0063	
9	001-31	TL60	IDLE	#006F	FREE	#0062	

END

Telephone COS, Restrictions, and Naming Conventions

```

< KSCAP:DIR=ALL;
KEY SYSTEM CATEGORY PRINT

```

DIR	TRAF	SERV	CDIV	ROC	ITYPE	TRM	ADC
5000	03151515	02001207	011151111	7237	21	1	00100013010
5001	03151515	02001207	011151111	7237	21	1	00100013010
5002	03151515	02001207	011151111	7237	21	1	00100013010
5003	03151515	02001207	011151111	7237	21	1	00100013010
5006	03151515	02001207	011151111	7237	21	1	00100013010
5007	03151515	02001207	011151111	7237	21	1	00100013010

END

Telephone Key Mapping Table

< KSFKP:DIR=ALL;
KEY SYSTEM FUNCTION KEY DATA PRINT

DIR = 5000

KEY	KTYPE	VALUE	DIG
00	PGM		
01	FCN	TNS	
02	FCN	TNS	
03	FCN	CNF	
04	SKI	F1	
05	SKI	F2	
06	SKI	F3	
07	SKI	F4	
08	SKI	MENU	
09	ODN	5000	
10	ODN	5000	
11	ODN	5000	
13	FCN	TNS	
14	FCN	CAD	
15	FCN	TNS	
16	FCN	TNS	
17	FCN	TNS	
18	FCN	TNS	
19	FCN	TNS	
20	FCN	TNS	
21	FCN	TNS	
22	FCN	TNS	
23	FCN	TNS	
24	FCN	TNS	
25	FCN	TNS	
26	FCN	TNS	
27	FCN	TNS	
28	FCN	TNS	
29	FCN	TNS	
30	FCN	TNS	
31	FCN	TNS	
32	FCN	TNS	
33	FCN	TNS	
34	FCN	TNS	
35	FCN	TNS	
36	FCN	TNS	
37	FCN	TNS	
38	FCN	TNS	
39	FCN	TNS	
40	FCN	TNS	

DIR = 5001

KEY	KTYPE	VALUE	DIG
00	PGM		
01	FCN	TNS	
02	FCN	TNS	
03	FCN	CNF	
04	SKI	F1	
05	SKI	F2	
06	SKI	F3	
07	SKI	F4	
08	SKI	MENU	
09	ODN	5001	
10	ODN	5001	
11	ODN	5001	
13	FCN	TNS	
14	FCN	CAD	

15	FCN	TNS
16	FCN	TNS
17	FCN	TNS
18	FCN	TNS
19	FCN	TNS
20	FCN	TNS
21	FCN	TNS
22	FCN	TNS
23	FCN	TNS
24	FCN	TNS
25	FCN	TNS
26	FCN	TNS
27	FCN	TNS
28	FCN	TNS
29	FCN	TNS
30	FCN	TNS
31	FCN	TNS
32	FCN	TNS
33	FCN	TNS
34	FCN	TNS
35	FCN	TNS
36	FCN	TNS
37	FCN	TNS
38	FCN	TNS
39	FCN	TNS
40	FCN	TNS

DIR = 5002

KEY	KTYPE	VALUE	DIG
00	PGM		
01	FCN	TNS	
02	FCN	TNS	
03	FCN	CNF	
04	SKI	F1	
05	SKI	F2	
06	SKI	F3	
07	SKI	F4	
08	SKI	MENU	
09	ODN	5002	
10	ODN	5002	
11	ODN	5002	
13	FCN	TNS	
14	FCN	CAD	
15	FCN	TNS	
16	FCN	TNS	
17	FCN	TNS	
18	FCN	TNS	
19	FCN	TNS	
20	FCN	TNS	
21	FCN	TNS	
22	FCN	TNS	
23	FCN	TNS	
24	FCN	TNS	
25	FCN	TNS	
26	FCN	TNS	
27	FCN	TNS	
28	FCN	TNS	
29	FCN	TNS	
30	FCN	TNS	
31	FCN	TNS	
32	FCN	TNS	
33	FCN	TNS	
34	FCN	TNS	
35	FCN	TNS	
36	FCN	TNS	
37	FCN	TNS	
38	FCN	TNS	
39	FCN	TNS	
40	FCN	TNS	

END

E1-QSIG Route Data Block, Protocol Side "User"

< RODAP:ROU=9;
ROUTE DATA

ROU	TYPE	VARC	VARI	VARO	FILTER
9	SL60	H'00000010	H'15400000	H'06004010	NO

END

E1-QSIG Route Data Block, Protocol Side "Network"

< RODAP:ROU=9;
ROUTE DATA

ROU	TYPE	VARC	VARI	VARO	FILTER
9	SL60	H'00000010	H'15400000	H'06204010	NO

END

List of Board/Equipment in Ericsson MD-110 PBX

< SYEDP:LIM=1;

SYSTEM EQUIPMENT DATA

EQU	BOARDID	TYPE	DIR	ROU/TRU
001-0-00-00	71	SL 63		1/001-01
001-0-00-01	71	SL 63		1/001-02
001-0-00-02	71	SL 63		1/001-03
001-0-00-03	71	SL 63		1/001-04
001-0-00-04	71	SL 63		1/001-05
001-0-00-05	71	SL 63		1/001-06
001-0-00-06	71	SL 63		1/001-07
001-0-00-07	71	SL 63		1/001-08
001-0-00-08	71	SL 63		1/001-09
001-0-00-09	71	SL 63		1/001-10
001-0-00-10	71	SL 63		1/001-11
001-0-00-11	71	SL 63		1/001-12
001-0-00-12	71	SL 63		1/001-13
001-0-00-13	71	SL 63		1/001-14
001-0-00-14	71	SL 63		1/001-15
001-0-00-15	71	SL 63		1/001-16
001-0-00-16	71	SL 63		1/001-17
001-0-00-17	71	SL 63		1/001-18
001-0-00-18	71	SL 63		1/001-19
001-0-00-19	71	SL 63		1/001-20
001-0-00-20	71	SL 63		1/001-21
001-0-00-21	71	SL 63		1/001-22
001-0-00-22	71	SL 63		1/001-23
001-0-00-23	71	-		
001-0-10-00	102	AD 0		
001-0-10-01	102	AD 0		
001-0-10-02	102	AD 0		
001-0-10-03	102	AD 0		
001-0-10-04	102	AD 0		
001-0-10-05	102	AD 0		

001-0-10-06	102	AD 0	
001-0-10-07	102	AD 0	
001-0-10-08	102	AD 0	
001-0-10-09	102	AD 0	
001-0-10-10	102	AD 0	
001-0-10-11	102	AD 0	
001-0-10-12	102	AD 0	
001-0-10-13	102	AD 0	
001-0-10-14	102	AD 0	
001-0-10-15	102	AD 0	
001-0-10-16	102	AD 0	
001-0-10-17	102	AD 0	
001-0-10-18	102	AD 0	
001-0-10-19	102	AD 0	
001-0-10-20	102	AD 0	
001-0-10-21	102	AD 0	
001-0-10-22	102	AD 0	
001-0-10-23	102	AD 0	
001-0-10-24	102	AD 0	
001-0-10-25	102	AD 0	
001-0-10-26	102	AD 0	
001-0-10-27	102	AD 0	
001-0-10-28	102	AD 0	
001-0-10-29	102	AD 0	
001-0-10-30	102	AD 0	
001-0-10-31	102	AD 0	
001-0-20-00	71	SL 63	2/001-01
001-0-20-01	71	SL 63	2/001-02
001-0-20-02	71	SL 63	2/001-03
001-0-20-03	71	SL 63	2/001-04
001-0-20-04	71	SL 63	2/001-05
001-0-20-05	71	SL 63	2/001-06
001-0-20-06	71	SL 63	2/001-07
001-0-20-07	71	SL 63	2/001-08
001-0-20-08	71	SL 63	2/001-09
001-0-20-09	71	SL 63	2/001-10
001-0-20-10	71	SL 63	2/001-11
001-0-20-11	71	SL 63	2/001-12
001-0-20-12	71	SL 63	2/001-13
001-0-20-13	71	SL 63	2/001-14
001-0-20-14	71	SL 63	2/001-15
001-0-20-15	71	SL 63	2/001-16
001-0-20-16	71	SL 63	2/001-17
001-0-20-17	71	SL 63	2/001-18
001-0-20-18	71	SL 63	2/001-19
001-0-20-19	71	SL 63	2/001-20
001-0-20-20	71	SL 63	2/001-21
001-0-20-21	71	SL 63	2/001-22
001-0-20-22	71	SL 63	2/001-23
001-0-20-23	71	-	
001-0-30-00	71	SL 63	3/001-01
001-0-30-01	71	SL 63	3/001-02
001-0-30-02	71	SL 63	3/001-03
001-0-30-03	71	SL 63	3/001-04
001-0-30-04	71	SL 63	3/001-05
001-0-30-05	71	SL 63	3/001-06
001-0-30-06	71	SL 63	3/001-07
001-0-30-07	71	SL 63	3/001-08
001-0-30-08	71	SL 63	3/001-09
001-0-30-09	71	SL 63	3/001-10
001-0-30-10	71	SL 63	3/001-11
001-0-30-11	71	SL 63	3/001-12
001-0-30-12	71	SL 63	3/001-13
001-0-30-13	71	SL 63	3/001-14
001-0-30-14	71	SL 63	3/001-15
001-0-30-15	71	SL 63	3/001-16
001-0-30-16	71	SL 63	3/001-17
001-0-30-17	71	SL 63	3/001-18
001-0-30-18	71	SL 63	3/001-19
001-0-30-19	71	SL 63	3/001-20
001-0-30-20	71	SL 63	3/001-21
001-0-30-21	71	SL 63	3/001-22

001-0-30-22	71	SL 63	3/001-23
001-0-30-23	71	-	
001-0-40-00	52	TL 45	4/001-01
001-0-40-01	52	TL 45	4/001-02
001-0-40-02	52	TL 45	4/001-03
001-0-40-03	52	TL 45	4/001-04
001-0-40-04	52	TL 45	4/001-05
001-0-40-05	52	TL 45	4/001-06
001-0-40-06	52	TL 45	4/001-07
001-0-40-07	52	TL 45	4/001-08
001-0-40-08	52	TL 45	4/001-09
001-0-40-09	52	TL 45	4/001-10
001-0-40-10	52	TL 45	4/001-11
001-0-40-11	52	TL 45	4/001-12
001-0-40-12	52	TL 45	4/001-13
001-0-40-13	52	TL 45	4/001-14
001-0-40-14	52	TL 45	4/001-15
001-0-40-15	52	TL 45	4/001-16
001-0-40-16	52	TL 45	4/001-17
001-0-40-17	52	TL 45	4/001-18
001-0-40-18	52	TL 45	4/001-19
001-0-40-19	52	TL 45	4/001-20
001-0-40-20	52	TL 45	4/001-21
001-0-40-21	52	TL 45	4/001-22
001-0-40-22	52	TL 45	4/001-23
001-0-40-23	52	TL 45	4/001-24
001-0-50-00	31	OL 1	5011
001-0-60-00	69	-	
001-0-60-01	69	-	
001-0-60-02	69	-	
001-0-60-03	69	-	
001-0-70-00	42	-	
001-0-70-01	42	-	
001-0-70-02	42	-	
001-0-70-03	42	-	
001-0-70-04	42	-	
001-0-70-05	42	-	
001-0-70-06	42	-	
001-0-70-07	42	-	
001-0-70-08	42	-	
001-0-70-09	42	-	
001-0-70-10	42	-	
001-0-70-11	42	-	
001-0-70-12	42	-	
001-0-70-13	42	-	
001-0-70-14	42	-	
001-0-70-15	42	-	
001-0-70-16	42	-	
001-0-70-17	42	-	
001-0-70-18	42	-	
001-0-70-19	42	-	
001-0-70-20	42	-	
001-0-70-21	42	-	
001-0-70-22	42	-	
001-0-70-23	42	-	
001-0-70-24	42	-	
001-0-70-25	42	-	
001-0-70-26	42	-	
001-0-70-27	42	-	
001-0-70-28	42	-	
001-0-70-29	42	-	
001-0-70-30	42	-	
001-0-70-31	42	-	
001-1-00-00	52	TL 45	5/001-01
001-1-00-01	52	TL 45	5/001-02
001-1-00-02	52	TL 45	5/001-03
001-1-00-03	52	TL 45	5/001-04
001-1-00-04	52	TL 45	5/001-05
001-1-00-05	52	TL 45	5/001-06
001-1-00-06	52	TL 45	5/001-07
001-1-00-07	52	TL 45	5/001-08
001-1-00-08	52	TL 45	5/001-09

001-1-00-09	52	TL 45	5/001-10
001-1-00-10	52	TL 45	5/001-11
001-1-00-11	52	TL 45	5/001-12
001-1-00-12	52	TL 45	5/001-13
001-1-00-13	52	TL 45	5/001-14
001-1-00-14	52	TL 45	5/001-15
001-1-00-15	52	TL 45	5/001-16
001-1-00-16	52	TL 45	5/001-17
001-1-00-17	52	TL 45	5/001-18
001-1-00-18	52	TL 45	5/001-19
001-1-00-19	52	TL 45	5/001-20
001-1-00-20	52	TL 45	5/001-21
001-1-00-21	52	TL 45	5/001-22
001-1-00-22	52	TL 45	5/001-23
001-1-00-23	52	TL 45	5/001-24
001-1-10-00	102	AD 0	
001-1-10-01	102	AD 0	
001-1-10-02	102	AD 0	
001-1-10-03	102	AD 0	
001-1-10-04	102	AD 0	
001-1-10-05	102	AD 0	
001-1-10-06	102	AD 0	
001-1-10-07	102	AD 0	
001-1-10-08	102	AD 0	
001-1-10-09	102	AD 0	
001-1-10-10	102	AD 0	
001-1-10-11	102	AD 0	
001-1-10-12	102	AD 0	
001-1-10-13	102	AD 0	
001-1-10-14	102	AD 0	
001-1-10-15	102	AD 0	
001-1-10-16	102	AD 0	
001-1-10-17	102	AD 0	
001-1-10-18	102	AD 0	
001-1-10-19	102	AD 0	
001-1-10-20	102	AD 0	
001-1-10-21	102	AD 0	
001-1-10-22	102	AD 0	
001-1-10-23	102	AD 0	
001-1-10-24	102	AD 0	
001-1-10-25	102	AD 0	
001-1-10-26	102	AD 0	
001-1-10-27	102	AD 0	
001-1-10-28	102	AD 0	
001-1-10-29	102	AD 0	
001-1-10-30	102	AD 0	
001-1-10-31	102	AD 0	
001-1-20-00	77	KL 1	5000
001-1-20-01	77	KL 1	5001
001-1-20-02	77	KL 1	5002
001-1-20-03	77	KL 1	5003
001-1-20-04	77	KL 1	5006
001-1-20-05	77	KL 1	5007
001-1-22-00	87	EL 6	5004
001-1-22-01	87	EL 6	5005
001-1-30-00	27	-	
001-1-30-01	27	TL 30	11/001-01
001-1-30-02	27	TL 30	11/001-02
001-1-30-03	27	TL 30	11/001-03
001-1-30-04	27	TL 30	11/001-04
001-1-30-05	27	TL 30	11/001-05
001-1-30-06	27	TL 30	11/001-06
001-1-30-07	27	TL 30	11/001-07
001-1-30-08	27	TL 30	11/001-08
001-1-30-09	27	TL 30	11/001-09
001-1-30-10	27	TL 30	11/001-10
001-1-30-11	27	TL 30	11/001-11
001-1-30-12	27	TL 30	11/001-12
001-1-30-13	27	TL 30	11/001-13
001-1-30-14	27	TL 30	11/001-14
001-1-30-15	27	TL 30	11/001-15
001-1-30-17	27	TL 30	11/001-16

001-1-30-18	27	TL 30	11/001-17
001-1-30-19	27	TL 30	11/001-18
001-1-30-20	27	TL 30	11/001-19
001-1-30-21	27	TL 30	11/001-20
001-1-30-22	27	TL 30	11/001-21
001-1-30-23	27	TL 30	11/001-22
001-1-30-24	27	TL 30	11/001-23
001-1-30-25	27	TL 30	11/001-24
001-1-30-26	27	TL 30	11/001-25
001-1-30-27	27	TL 30	11/001-26
001-1-30-28	27	TL 30	11/001-27
001-1-30-29	27	TL 30	11/001-28
001-1-30-30	27	TL 30	11/001-29
001-1-30-31	27	TL 30	11/001-30
001-1-40-00	57	-	
001-1-40-01	57	SL 60	9/001-01
001-1-40-02	57	SL 60	9/001-02
001-1-40-03	57	SL 60	9/001-03
001-1-40-04	57	SL 60	9/001-04
001-1-40-05	57	SL 60	9/001-05
001-1-40-06	57	SL 60	9/001-06
001-1-40-07	57	SL 60	9/001-07
001-1-40-08	57	SL 60	9/001-08
001-1-40-09	57	SL 60	9/001-09
001-1-40-10	57	SL 60	9/001-10
001-1-40-11	57	SL 60	9/001-11
001-1-40-12	57	SL 60	9/001-12
001-1-40-13	57	SL 60	9/001-13
001-1-40-14	57	SL 60	9/001-14
001-1-40-15	57	SL 60	9/001-15
001-1-40-17	57	SL 60	9/001-17
001-1-40-18	57	SL 60	9/001-18
001-1-40-19	57	SL 60	9/001-19
001-1-40-20	57	SL 60	9/001-20
001-1-40-21	57	SL 60	9/001-21
001-1-40-22	57	SL 60	9/001-22
001-1-40-23	57	SL 60	9/001-23
001-1-40-24	57	SL 60	9/001-24
001-1-40-25	57	SL 60	9/001-25
001-1-40-26	57	SL 60	9/001-26
001-1-40-27	57	SL 60	9/001-27
001-1-40-28	57	SL 60	9/001-28
001-1-40-29	57	SL 60	9/001-29
001-1-40-30	57	SL 60	9/001-30
001-1-40-31	57	SL 60	9/001-31
001-1-50-00	57	-	
001-1-50-01	57	SL 60	10/001-01
001-1-50-02	57	SL 60	10/001-02
001-1-50-03	57	SL 60	10/001-03
001-1-50-04	57	SL 60	10/001-04
001-1-50-05	57	SL 60	10/001-05
001-1-50-06	57	SL 60	10/001-06
001-1-50-07	57	SL 60	10/001-07
001-1-50-08	57	SL 60	10/001-08
001-1-50-09	57	SL 60	10/001-09
001-1-50-10	57	SL 60	10/001-10
001-1-50-11	57	SL 60	10/001-11
001-1-50-12	57	SL 60	10/001-12
001-1-50-13	57	SL 60	10/001-13
001-1-50-14	57	SL 60	10/001-14
001-1-50-15	57	SL 60	10/001-15
001-1-50-17	57	SL 60	10/001-17
001-1-50-18	57	SL 60	10/001-18
001-1-50-19	57	SL 60	10/001-19
001-1-50-20	57	SL 60	10/001-20
001-1-50-21	57	SL 60	10/001-21
001-1-50-22	57	SL 60	10/001-22
001-1-50-23	57	SL 60	10/001-23
001-1-50-24	57	SL 60	10/001-24
001-1-50-25	57	SL 60	10/001-25
001-1-50-26	57	SL 60	10/001-26
001-1-50-27	57	SL 60	10/001-27

001-1-50-28	57	SL 60	10/001-28
001-1-50-29	57	SL 60	10/001-29
001-1-50-30	57	SL 60	10/001-30
001-1-50-31	57	SL 60	10/001-31
001-1-60-00	7	TL 1	7/001-01
001-1-60-01	7	TL 1	7/001-02
001-1-60-02	7	TL 1	7/001-03
001-1-60-03	7	TL 1	7/001-04
001-1-62-00	8	TL 12	6/001-01
001-1-62-01	8	TL 12	6/001-02
001-1-62-02	8	TL 12	6/001-03
001-1-62-03	8	TL 12	6/001-04
001-1-63-00	26	TL 22	8/001-01
001-1-63-01	26	TL 22	8/001-02
001-1-63-02	26	TL 22	8/001-03

END

Cisco 7206 Series Router Configuration

The following is the configuration of the Cisco 7206 series router connected to the Ericsson MD-110 PBX interface.

- Cisco 7206 Series Router Version Information
- Cisco 7206 Series Router Sample Configuration

Cisco 7206 Series Router Version Information

- Cisco IOS™ (C7200-JS-M), Version 12.2(1).
- Cisco 7206VXR (NPE400) processor (revision A) with 114688K/16384K bytes of memory.

7206VXR#**sho ver**

Cisco Internetwork Operating System Software
IOS (tm) 7200 Software (C7200-JS-M), Version 12.2(1), RELEASE SOFTWARE (fc2)
Copyright (c) 1986-2001 by cisco Systems, Inc.
Compiled Thu 26-Apr-01 22:10 by cmong
Image text-base: 0x60008960, data-base: 0x616B0000

ROM: System Bootstrap, Version 12.1(20000710:044039) [nlaw-121E_npeb 117], DEVEL
OPMENT SOFTWARE
BOOTFLASH: 7200 Software (C7200-KBOOT-M), Version 12.1(3a)E5, EARLY DEPLOYMENT R
LEASE SOFTWARE (fc1)

7206VXR uptime is 20 hours, 50 minutes
System returned to ROM by reload at 15:02:39 UTC Mon May 21 2001
System image file is "disk0:c7200-js-mz.122-1"

cisco 7206VXR (NPE400) processor (revision A) with 114688K/16384K bytes of memor
y.
Processor board ID 23676259
R7000 CPU at 350Mhz, Implementation 39, Rev 3.2, 256KB L2, 4096KB L3 Cache
6 slot VXR midplane, Version 2.1

Last reset from power-on
Bridging software.
X.25 software, Version 3.0.0.
SuperLAT software (copyright 1990 by Meridian Technology Corp).
TN3270 Emulation software.
Primary Rate ISDN software, Version 1.1.
Channelized E1, Version 1.0.
2 FastEthernet/IEEE 802.3 interface(s)
31 Serial network interface(s)
2 Channelized E1/PRI port(s)
1 Voice resource(s)
125K bytes of non-volatile configuration memory.

46976K bytes of ATA PCMCIA card at slot 0 (Sector size 512 bytes).
8192K bytes of Flash internal SIMM (Sector size 256K).
Configuration register is 0x102

Cisco 7206 Series Router Sample Configuration

The following is a sample configuration of the Cisco 7206 series router directly connected to Ericsson MD-110 PBX ISDN PRI interface.

7206VXR# **sho diag**

Slot 0:

Dual FastEthernet (RJ-45) I/O Card Port adapter, 2 ports
Port adapter is analyzed
Port adapter insertion time 20:50:58 ago
EEPROM contents at hardware discovery:

```

Hardware Revision      : 1.2
Top Assy. Part Number  : 800-07114-04
Part Number           : 73-5003-04
Board Revision        : A0
PCB Serial Number     : 23977869
RMA History           : 00
Fab Version           : 02
Fab Part Number       : 28-3455-02
Product Number        : C7200-I/O-2FE/E
Board Revision        :
EEPROM format version 4
EEPROM contents (hex):
0x00: 04 FF 40 02 15 41 01 02 C0 46 03 20 00 1B CA 04
0x10: 82 49 13 8B 04 42 41 30 C1 8B 32 33 39 37 37 38
0x20: 36 39 00 00 00 04 00 02 02 85 1C 0D 7F 02 CB 8F
0x30: 43 37 32 30 30 2D 49 2F 4F 2D 32 46 45 2F 45 42
0x40: 00 00 0C 02 FF FF FF FF FF FF FF FF FF FF FF FF
0x50: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
0x60: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
0x70: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF

```

Slot 1:

```

VXC-2TE1+ Port adapter, 2 ports
Port adapter is analyzed
Port adapter insertion time 20:50:58 ago
EEPROM contents at hardware discovery:
Hardware Revision      : 0.2
PCB Serial Number     : MIC05012P5Y
Part Number           : 73-5340-03
Board Revision        : A0
RMA Test History      : 00
RMA Number            : 0-0-0-0
RMA History           : 00
Deviation Number      : 0-0
Product Number        : PA-VXC-2T1E1+
Top Assy. Part Number  : 8034-08469-01
EEPROM format version 4
EEPROM contents (hex):
0x00: 04 FF 40 02 11 41 00 02 C1 8B 4D 49 43 30 35 30
0x10: 31 32 50 35 59 82 49 14 DC 03 42 41 30 03 00 81
0x20: 00 00 00 00 04 00 80 00 00 00 00 CB 94 50 41 2D
0x30: 56 58 43 2D 32 54 31 45 31 2B 20 20 20 20 20 20
0x40: 20 C0 46 1F 62 00 21 15 01 FF FF FF FF FF FF FF
0x50: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
0x60: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
0x70: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF

```

7206VXR# **sho contr e1 1/0**

```

E1 1/0 is up.
Applique type is Channelized E1 - balanced
No alarms detected.
alarm-trigger is not set
Framing is CRC4, Line Code is HDB3, Clock Source is Line.
International Bit: 1, National Bits: 11111
Active xconns: 0
Data in current interval (25 seconds elapsed):
  0 Line Code Violations, 0 Path Code Violations
  0 Slip Secs, 0 Fr Loss Secs, 0 Line Err Secs, 0 Degraded Mins
  0 Errored Secs, 0 Bursty Err Secs, 0 Severely Err Secs, 0 Unavail Secs

```

7206VXR#

7206VXR# **sho runn**

Building configuration...

Current configuration : 1503 bytes

```

!
version 12.2
no service single-slot-reload-enable
no service pad
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!

```

```

hostname 7206VXR
!
card type e1 1
logging rate-limit console 10 except errors
enable secret 5 $1$7H09$EJJLhjgBWneX/dLVaq9sb.
enable password cisco
!
dspint DSPfarm1/0
    codec med
!
ip subnet-zero
!
!
no ip finger
no ip domain-lookup
!
no ip dhcp-client network-discovery
isdn switch-type primary-qsig
call rsvp-sync
cns event-service server
!
!
!
!
!
!
controller E1 1/0
    pri-group timeslots 1-31
!
controller E1 1/1
!
!
interface FastEthernet0/0
    ip address 10.1.1.215 255.255.255.0
    duplex auto
    speed auto
!
interface FastEthernet0/1
    ip address 1.1.1.2 255.255.255.0
    duplex full
    speed auto
!
interface Serial1/0:15
    no ip address
    no logging event link-status
    isdn switch-type primary-qsig
    isdn overlap-receiving
    isdn incoming-voice voice
    isdn T203 30000
    isdn T310 60000
    isdn bchan-number-order ascending
    no cdp enable
!
router rip
    network 1.0.0.0
!
ip kerberos source-interface any
ip classless
ip http server
!
snmp-server packetsize 4096
snmp-server manager
!
!
!
voice-port 1/0:15
!
dial-peer voice 1 pots
    destination-pattern 5...
    direct-inward-dial
    port 1/0:15
    prefix 5

```

```
!  
dial-peer voice 2 voip  
  destination-pattern 2...  
  progress_ind setup enable 1  
  session target ipv4:1.1.1.1  
!  
!  
gatekeeper  
  shutdown  
!  
!  
line con 0  
  transport input none  
line aux 0  
line vty 0 4  
  password cisco  
  login  
line vty 5 15  
  login  
!  
end  
  
7206VXR#
```

Caveats

- The router must be rebooted whenever the ISDN switch-type is changed. Failure to reboot results in either no change in protocol or erratic behavior.
- The ISDN command **isdn contiguous-bchan** may be necessary in the Cisco 7206 to support ETSI QSIG channel mapping standard. This is needed if the B-channels do not match up end-to-end above channel 16. Channel 16 is used for the D-channel and there will be no trouble below 16.