

## **Appendix B Ordering ISDN**

### **GENERAL**

There are two ways to order an ISDN telephone line from your service provider. The easiest way is to use an ISDN Ordering Code. If your service provider does not recognize ISDN Ordering Codes, then you will be required to specify the ISDN line configuration using the alternate method. Motorola has provided forms for both methods in the following sections.

### **ISDN ORDERING CODES**

An ISDN Ordering Code is a simple way to refer to a complex ISDN Telco switch line configuration or translation. Because of the complexity of an ISDN switch translation, equipment manufacturers (like Motorola) have teamed with service providers to test their equipment in advance with standard translations. Once verified, the translation is registered with the ISDN modem at Bellcore, who makes this information available to the various service providers. This provides a way for you to request an ISDN line with a configuration that is known to function correctly with your ISDN modem.

### **CHOOSING AN ISDN ORDERING CODE**

Several Ordering Codes are available for use with the BitSURFR Pro. Table B-1 outlines the different features provided by each code. Generally speaking, the more features an ISDN Ordering Code supports, the more it will cost. This is not always true, so it is best to inquire about the price for each of the codes that meets your needs.

**Table B-1. National ISDN-1 Ordering Codes**

Ordering Code	Simultaneous Voice & Data Calls	Data Rates to 128 Kbps	Caller ID	Flexible Calling (3 Way Calling, Transfer, Hold)	Message Waiting
Capability S	Yes	Yes	Yes	No	No
Capability P	Yes	Yes	Yes	Yes	No
Capability U*	Yes	Yes	Yes	Yes	No
Capability V**	Yes	Yes	Yes	Yes	Yes

\* Also referred to as *EasyISDN 1* or *Capability 1* (may not yet be available in all areas)

\*\* Also referred to as *EasyISDN 2* or *Capability 1A* (may not yet be available in all areas)



### Note

Internet access using the *BitSURFR Pro* is typically accomplished by using either *PPP* or *Multi-link PPP* protocols. *Multi-link PPP* is capable of using both *B*-channels for data transfer, but will drop one of the *B*-channels if an incoming call is answered or an outgoing voice call is initiated. This transfer of bandwidth between data and voice calls during *Multi-link PPP* is known as *Dynamic Channel Allocation (DCA)*. Early versions of AT&T's 5ESS switch called *Custom* (also known as *Point-to-Point* or *Multipoint*) do not support *DCA* on incoming voice calls. If you are planning to use the *Multi-link DCA* feature, ask your service provider to provide you with a *National ISDN-1* line configuration rather than an AT&T *Custom ISDN* line.

## ORDERING ISDN USING ORDERING CODES

To order your ISDN line using an ISDN Ordering Code, simply call your phone company's ISDN Support Center (their number may be under the Optional Services section of your phone book) and request an ISDN basic rate line provisioned with the ISDN Ordering Code of your choice. They will supply the information you need to complete the configuration of your *BitSURFR Pro* (SPIDs and DNs). If you prefer, fill out the **ISDN Line Configuration Faxback Request Form #1** (located in this section) and mail or fax it to your service provider.



**Note**

*When using the ISDN Ordering Codes method, you will need to configure your BitSURFR Pro Switch Type to National ISDN-1.*

**ORDERING ISDN USING ALTERNATE METHOD**

If your service provider does not support the ISDN Ordering Codes method of ordering, then you must specify the configuration of your line. To help you, Motorola has provided a form specifying the required options for the service provider. This information is found in the **ISDN Line Configuration Faxback Request Form #2** (located in this section). Follow the instructions below to order your service.

1. Fill out the **Consumer Information** on pages one and two.
2. Fax, or in some other way deliver, all four pages of the request form to your ISDN service provider.
3. Use the information returned to you by your service provider to configure your BitSURFR Pro.

After the BitSURFR Pro is configured, you must save the configuration and re-start the BitSURFR Pro before the setup will take effect.

If you ordered your ISDN service using the ISDN Ordering Codes (Faxback Form #1), use Table B-2 on the following page as a guide for setting the BitSURFR Pro switch options. If you ordered your ISDN service using the alternate method (Faxback Form #2), then use Table B-3 as a guide for setting the BitSURFR Pro switch options.

**Table B-2. Switch Configuration According to Ordering Codes**

<b>ISDN Ordering Code</b>	<b>Provider Supplied Information</b>	<b>BitSURFR Pro Switch Options</b>
CAPABILITY P	1 SPID 1 DN	1) Set Switch Type to National ISDN-1 2) Set Data SPID and DN to provider supplied SPID and DN 3) Set Voice 1 SPID and DN to provider supplied SPID and DN 4) Set Voice 2 SPID and DN to provider supplied SPID and DN
CAPABILITY P CAPABILITY S CAPABILITY U CAPABILITY V	2 SPIDs 2 DNs	1) Set Switch Type to National ISDN-1 2) Set Data SPID and DN to provider supplied Data/Voice 2 SPID and DN 3) Set Voice 1 SPID and DN to provider supplied Voice 1 SPID and DN 4) Set Voice 2 SPID and DN to provider supplied Data/Voice 2 SPID and DN

**Table B-3. Switch Configuration According to Switch Type**

<b>Provider Switch Type</b>	<b>Provider Supplied Information</b>	<b>BitSURFR Pro Switch Options</b>
AT&T Multi-Point	1 SPID 1 DN	1) Set Switch Type to AT&T 2) Set Switch Version to AT&T Multi-Point 3) Set Data SPID and DN to provider supplied SPID and DN 4) Set Voice 1 SPID and DN to provider supplied SPID and DN 5) Set Voice 2 SPID and DN to provider supplied SPID and DN
AT&T Multi-Point	2 SPIDs 2 DNs	1) Set Switch Type to AT&T 2) Set Switch Version to AT&T Multi-Point 3) Set Data SPID and DN to provider supplied Data/Voice 2 SPID and DN 4) Set Voice 1 SPID and DN to provider supplied Voice 1 SPID and DN 5) Set Voice 2 SPID and DN to provider supplied Data/Voice 2 SPID and DN
AT&T Point-to-Point	1 DN	1) Set Switch Type to AT&T 2) Set Switch Version to AT&T Point-to-Point 3) Set Data DN to provider supplied DN
Northern Telecom DMS100 PVC IC-0 DMS100 PVC IC1 (simultaneous voice and data)	2 SPIDs 2 DNs	1) Set Switch Type to Northern Telecom DMS100 2) Set Switch Version to PVC IC-0 or PVC IC-1 (depending on information supplied to you) 3) Set Data SPID and DN to provider supplied Data/Voice 2 SPID and DN 4) Set Voice 1 SPID and DN to provider supplied Voice 1 SPID and DN 5) Set Voice 2 SPID and DN to provider supplied Data/Voice 2 SPID and DN

**Table B-3. Switch Configuration According to Switch Type (Cont.)**

<b>Provider Switch Type</b>	<b>Provider Supplied Information</b>	<b>BitSURFR Pro Switch Options</b>
Northern Telecom DMS100 PVC IC-0 DMS100 PVC IC-1 (voice or data, not simultaneous)	1 SPID 1 DN	1) Set Switch Type to Northern Telecom DMS100 2) Set Switch Version to PVC IC-0 or PVC IC-1 (depending on information supplied to you) 3) Set Data SPID and DN to provider supplied SPID and DN 4) Set Voice 1 SPID and DN to provider supplied SPID and DN 5) Set Voice 2 SPID and DN to provider supplied SPID and DN
National ISDN-1	-----	Same as Table B-2

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**FAXBACK REQUEST FORM #1**

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**CONSUMER:** Please complete the section below, then fax or otherwise deliver this page to your ISDN service provider. Configure your BitSURFR Pro with the information returned to you.

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NAME

TITLE

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COMPANY NAME

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ADDRESS

---

CITY

STATE

ZIP

---

TELEPHONE NUMBER

FAX NUMBER

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**Please check the ISDN Ordering Code desired:**

- ☐ Capability P      ☐ Capability S      ☐ Capability U  
☐ Capability V      ☐ Other \_\_\_\_\_

**Please check the preferred long distance carrier**

- ☐ AT&T      ☐ MCI      ☐ Sprint      ☐ Other \_\_\_\_\_

**ISDN SERVICE PROVIDER:** *Please fax, or otherwise return, this sheet with the requested configuration to the person listed above.*

National ISDN-1:

Voice 1 SPID \_\_\_\_\_ Data/Voice 2 SPID \_\_\_\_\_

Voice 1 DN \_\_\_\_\_ Data/Voice 2 DN \_\_\_\_\_

## FAXBACK REQUEST FORM #2

**CONSUMER:** Please complete the section below and the top of page 2, then fax, or otherwise deliver, all four pages to your ISDN service provider. Configure your BitSURFR Pro with the information returned to you.

NAME	TITLE	
COMPANY NAME		
ADDRESS		
CITY	STATE	ZIP
TELEPHONE NUMBER	FAX NUMBER	

**ISDN SERVICE PROVIDER:** Listed on the following pages are the line configuration requirements for the **Motorola BitSURFR Pro**. Fax, or otherwise return, this sheet with the requested configuration to the person listed above.

**Check one answer for each of the following questions. If your line is set for NI-1, check *Not Applicable* in items 2 and 3:**

1. Is the line set for CUSTOM (e.g. switch specific) or NI-1 (e.g. AT&T standard, NT1 PVCIC-2, or Siemens EWSD NI-1)? ☐ Custom ☐ NI-1
2. Switch Type? ☐ AT&T 5ESS ☐ NTI DMS 100 ☐ Not Applicable
3. Switch Version? (DMS100 only) ☐ PVC IC-0 ☐ PVC IC-1 ☐ Not Applicable  
(AT&T 5ESS) ☐ Point-to-Point ☐ Multipoint ☐ Not Applicable
4. Long Distance Carrier? ☐ AT&T ☐ MCI ☐ Sprint ☐ Other \_\_\_\_\_

**List the applicable ISDN line information:**

- 5a. Voice 1 SPID \_\_\_\_\_ 5b. Data/Voice 2 SPID \_\_\_\_\_
- 5c. Voice 1 DN \_\_\_\_\_ 5d. Data/Voice 2 DN \_\_\_\_\_



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**CONSUMER:** Select the following optional services desired for this line.

**Feature Requirements (check only one box in each category):**

1. Preferred Long Distance Carrier\* ☐ AT&T ☐ MCI  
☐ SPRINT ☐ OTHER\_\_\_\_\_
2. NI-1 Signaling (Recommended) ☐ Yes ☐ No
3. Caller ID\*\* ☐ Yes: both Voice ports ☐ Yes: Data/Voice 2 only  
☐ Yes: Voice 1 only ☐ No
4. Hold, Conference, Drop\*\* ☐ Yes: both Voice ports ☐ Yes: Data/Voice 2 only  
☐ Yes: Voice 1 only ☐ No
5. Message Waiting\*\* ☐ Yes: both Voice ports ☐ Yes: Data/Voice 2 only  
☐ Yes: Voice 1 only ☐ No

*\* Some long distance carriers do not provide ISDN data service. If you choose a long distance carrier that supports ISDN data service, you must contact the carrier and request ISDN data service. You should also provide the long distance carrier with the directory number(s) you will be using.*

*\*\* There may be additional charges for these services.*

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**ISDN SERVICE PROVIDER:** The following is a list of ISDN line configuration requirements for the **MOTOROLA BitSURFR Pro**. In addition to the basic requirements, the optional features listed above should also be incorporated into the line setup.

**ISDN Physical Line Requirements:**

- 2B+D Basic Rate Interface (BRI), 2B1Q U interface (ANSI T1.601)
- NIUF Standard Line Configuration Line Set (NIIG) 17

**ISDN Line Configuration Requirements:**

The BitSURFR Pro supports the following switch types and versions:

- AT&T 5ESS E4.2 and later, Custom or Standard (NI-1)
- Northern Telecom DMS100 BCS-29 and later, PVC0 - PVC1 or PVC2 (NI-1)
- Siemens EWSD 10.0 and later NI-1
- Other NI-1 Compliant NI-1

The following bearer capabilities are required:

- Circuit mode voice (circuit-switched voice, CSV) service for speech and 3.1 kHz audio
- Circuit mode data (circuit-switched data, CSD) for 56 kbps and 64 kbps unrestricted data
- Simultaneous circuit switched voice (CSV) and circuit switched data (CSD) calls

## AT&T

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### General:

Line Set (NIIG)..... 17  
B1 Service..... On Demand (DMD)  
B1 Long Distance Access Rate ..... 64kbps (desired)  
B2 Service..... On Demand (DMD)  
B2 Long Distance Access Rate ..... 64kbps (desired)  
Data Line Class..... Point-to-Point (PP) or Multi-Point  
(MP), (MP desired)  
Maximum B-Channels..... 2  
Circuit Switched Voice Bearer  
(CSV) Channels ..... Any

### Voice 1

### Voice 2/Data

Number of CSV Calls.....	See Consumer answer #4 on page 2	
Number of CSD Calls.....	1	1
Terminal Type.....	Type A	Type A
Hold, Conference, Drop.....	See Consumer answer #4 on page 2	
Caller ID .....	See Consumer answer #3 on page 2	
Electronic Key Telephone Sets (EKTS)*	No	No
Intercom Groups.....	No	No
Hunting/Multiline Hunt .....	No	No
Message Waiting.....	See Consumer answer #5 on page 2	
Shared Directory Numbers .....	No	No
D-Channel Packet .....	No	No
Additional Call Offering.....	Yes (if MP desired)	No

### NI-1 Specific:

Line Type\*\* ..... Standard

**\*Note:** PacBell DMS100 NI-1 switches may have EKTS set on.

**\*\*Note:** See the Northern Telecom DMS100 *General* options (page 4) when the Line Type is set for standard (NI-1).

## **NORTHERN TELECOM DMS100**

### **General:**

Line Type..... ISDN Basic Rate, Functional  
Line Set (NIIG) ..... 17  
B1 Long Distance Access Rate ..... 64kbps (desired)  
B2 Long Distance Access Rate ..... 64kbps (desired)  
Bearer Service ..... Circuit Switch Voice and Data on any  
B-Channel

### **Voice 1**

### **Voice 2/Data**

Circuit Switched Service .....	Yes	Yes
TEI .....	Dynamic	Dynamic
Non Initializing Terminal.....	No	No
Electronic Key Telephone Sets (EKTS)* ..	No	No
Call Appearance Handling (CACH).....	No	No
Hold, Conference, Drop.....	See Consumer answer #4 on page 2	No
Caller ID .....	See Consumer answer #3 on page 2	No
Intercom Groups .....	No	No
Hunting/Multiline Hunt .....	No	No
Message Waiting .....	See Consumer answer 5# on page 2	No
Shared Directory Numbers .....	No	No
D-Channel Packet .....	No	No
Additional Call Offering .....	Yes (if MP desired)	No

### **NI-1 Specific:**

Version.....PVC IC-2

**\*Note:** PacBell DMS100 NI-1 switches may have EKTS set on.

### **COMMENTS AND SUGGESTIONS:**

**Motorola** welcomes any suggestions on how to improve this document to help make ordering ISDN lines easier. If you have any suggestions or comments, please let us know. You may fax all comments to: **Motorola, Attention: ISDN Product Manager, Fax (205) 837-1484**

