

# Getting the Most from your *cdoPrima*

*This chapter discusses the different compression algorithms and modes and how to select the best combination to get the most from your **cdoPrima**. Pre-programmed Quick Configurations are also listed.*

## 6. Codec Compression Algorithms and Modes

**T**here are currently three coding algorithms used in the *cdoPrima*. Each has its advantages and disadvantages. Which algorithm you use depends on a number of factors, including desired audio quality, delay and compatibility with other codecs. This chapter serves as a guide for choosing the best algorithm and mode for your applications when a choice is available.

### 6.1 Stereo and Dual Mono

Users have expressed a great deal of confusion concerning the differences between stereo, dual mono and joint stereo. From a coding and compression standpoint, stereo and dual mono are identical. That is, half of the total bits are assigned to the left channel, and half of the total bits are assigned to the right channel. Left is always left, and right is always right...no blending, no sound stage manipulations.

### 6.2 Joint Stereo

Unlike dual mono or stereo, joint stereo employs real-time bit allocation techniques and dynamically assigns bits to the channels and frequency bands that need them the most. Bits are allocated to the channel and frequency bands that need them on a frame-by-frame basis. This dynamic bit allocation results in wider bandwidths and higher signal-

to-noise ratios than possible with the fixed bit allocation of the other modes. If the bit allocation circuitry determines that enough capacity is available for true stereo, then stereo frames will be sent.

Unlike stereo and dual mono, joint stereo may manipulate the left-right sound stage and stereo separation at high frequencies. The infinite left-right sound stage is blended into seven locations at high frequencies should the bit allocation circuitry deem it necessary. However, it has been shown that any spatial blending performed by the bit allocation is in frequency bands where the human auditory system would normally blend stereo signals. This is one of the basic premises behind psychoacoustic modeling. A detailed discussion of joint stereo bit allocation techniques can be found in the *CDQPrima* Technical Reference Manual.

After rigorous testing with trained listeners, joint stereo audio has been determined to yield higher perceived audio quality than stereo or dual mono at low bit rates, such as those encountered with single ISDN lines.

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### 6.3 ISO/MPEG Layer III

**ISO/MPEG Layer III can deliver full duplex, 15 kHz monaural audio using only one 56 or 64 kb/s ISDN 'B' channel. When using 112 or 128 kb/s, transparent 20 kHz monaural audio is possible. Near-transparent 20 kHz audio is possible in joint-stereo mode. In dual mono or stereo modes, near-transparent 15 kHz audio is obtained. Although at low bit rates, Layer III offers a wider bandwidth than other algorithms, the inherent drawbacks of this algorithm may outweigh this benefit. The disadvantages of using Layer III are the long coding delay times and poor cascading ability. In addition, audible artifacts may be noticeable when using Layer III at lower bit rates, and post-processing may further degrade the audio.**

**At 112/128 kb/s, the only advantage of using Layer III over MUSICAM is that Layer III can deliver true stereo with 15 kHz bandwidth. Other than that, at 112/128 kb/s data rates, we recommend using Layer III only when communication with Layer III-only codecs is required. Even at 112/128 kb/s, digital artifacts may be noticeable, and the delay, cascading and post-processing limitations are still present. At bit rates higher than 128 kb/s, there is no advantage to using Layer III over MUSICAM or standard Layer II. Bit rates up to 320 kb/s are included only for compatibility.**

### 6.4 MUSICAM and ISO/MPEG Layer II

The premier coding algorithm used in *CDQPrima* is MUSICAM, MUSICAM USA's enhancement to the ISO MPEG Layer II encoding algorithm. MUSICAM offers the best possible combination of fidelity,

moderate delay and excellent transcoding ability at all bit rates. MUSICAM encoding is fully compatible with all MPEG Layer II codecs, and since the enhancements are only in the encoder, any decoder will sound better when connected to a **CDQPrima**. MUSICAM can deliver full duplex, 10.2 kHz audio on one 'B' channel with 24 kHz sampling. Although a narrower bandwidth at 56 and 64 kb/s than MPEG Layer III, the advantages are higher signal-to-noise ratio, higher transparency, lower delay, less noticeable artifacts and better results when transcoding and post-processing.

When using 112 or 128 kb/s, the **CDQPrima** delivers transparent, 20 kHz monaural or joint stereo or 10.2 kHz dual mono audio. At bit rates higher than 128 kb/s the **CDQPrima** delivers transparent stereo with immunity to degradation even after up to 15 cascades (at 384 kb/s).

Please note that the CCSO and CCSN algorithms in the **CDQPrima** are all MUSICAM algorithms, but these are used when connecting to early CCS and MUSICAM USA products manufactured before MPEG Layer II was standardized.


## 6.5 G.722

G.722 is one of the earliest audio coding algorithms to be standardized. G.722 is a relatively simple algorithm based on ADPCM (adaptive pulse code modulation) offering full duplex 7.5 kHz audio over a single ISDN or Switched-56 channel. The key advantages of G.722 are its compatibility with most other codecs and very low delay times. G.722 is ideal for situations where instantaneous talkback is required, such as dial-in talk shows and distant interviews. The main disadvantages are the limited audio fidelity, poor signal-to-noise ratio and poor cascading properties. G.722 is not recommended for all music applications.




## 6.6 Algorithm, Mode, Bit and Sample Rate

Since no single algorithm/mode/sample rate/bit rate combination is ideal for all applications, the **CDQPrima** offers several different combinations, each with advantages and disadvantages. In addition, the full range of available algorithms insures that your **CDQPrima** can connect with the widest number of codecs. The tables below compares the available algorithms and bit rates. Recommended algorithm combinations are indicated with a ☐. In some instances, especially at the lower bit rates, using a lower sample rate will result in better audio, with wider bandwidths and reduced artifacts.

**56/64 Kb/s:**

Algorithm	Sample rate	Mode	Bandwidth	Delay	Cascade	
G.722	16 kHz	mono	7.5 kHz	very low	poor	
MUSICAM	24 kHz	mono	10.2 kHz	moderate	good	
MUSICAM	48 kHz	mono	8.5 kHz	moderate	fair	
MUSICAM	24 kHz	JS	10 kHz	moderate	fair	
Layer III	32 kHz	mono	15 kHz	long	fair	
Layer III	48 kHz	mono	15 kHz	long	poor	
Layer III	32 kHz	JS	14 kHz	long	poor	

**112/128 kb/s:**

Algorithm	Sample rate	Mode	Bandwidth	Delay	Cascade	
MUSICAM	48 kHz	mono	20 kHz	moderate	excellent	
MUSICAM	48 kHz	JS	20 kHz	moderate	very good	
MUSICAM	48 kHz	DM	10.2 kHz	moderate	fair	
MUSICAM	24 kHz	DM	10.2 kHz	moderate	good	
Layer III	48 kHz	mono	20 kHz	long	good	
Layer III	48 kHz	JS	20 kHz	long	fair	
Layer III	48 kHz	DM	15 kHz	long	poor	

**> 128 kb/s:**

Algorithm	Sample rate	Mode	Bandwidth	Delay	Cascade	
MUSICAM	48 kHz	JS	20 kHz	moderate	excellent	
MUSICAM	48 kHz	DM	20 kHz	moderate	excellent	
Layer III	48 kHz	JS	20 kHz	long	good	
Layer III	48 kHz	DM	20 kHz	long	good	



Other combinations of algorithm, mode, bit rate and sample rate are possible, but not *all* combinations are valid. Your **CDQPrima** will not let you set up an invalid combination. If you get an error message such as “BAD TOGGLE ON...” or “INVALID PARAMETERS”, it is because you have entered an invalid combination. Refer to the [CDQPrima Technical Reference Manual](#) for valid bit and sampling rate combinations.

Please remember that MUSICAM is a fully compatible enhancement to the ISO/MPEG Layer II standard algorithm. Since the ISO standard defines the encoded bit stream, and hence the decoder, all enhancements are to the encoder. Therefore, when connecting to a standard Layer II codec at the far end, the audio you hear will be Layer II, but the audio heard at the far-end will be MUSICAM. MUSICAM encoding makes *any* Layer II decoder sound better.

Layer III provides the widest bandwidth at low bit rates, up to 15 kHz at bit rates of 56 or 64 kb/s. Layer III may be useful at these low bit rates when wide bandwidths are required. However, even at high bit rates, Layer III has long delay, does not cascade well and is adversely affected by post-processing. There is no advantage to using Layer III over MUSICAM. In some applications, Layer III may provide better audio than *standard* Layer II, but in most applications, MUSICAM has been judged to be the superior algorithm.

### 6.7 Pre-Programmed Quick Configurations

Your **CDQPrima** is shipped pre-programmed with nearly three dozen of the most common configurations pre-loaded as Quick Configurations. These pre-loaded configurations are held in the first Speed Dial table entries. In some cases we have set the same parameters in two or more entries. We did this to enable you to use the alphanumeric description to configure to various devices without needing to know the details.



**The best way to assure trouble-free communication with another CDQPrima user is to both use the same Quick Configuration.** If both users have loaded the same configuration, and the lines have been dialed correctly, the connection *will* work. It’s as simple as that.

More Quick Configuration can be added at any time. Details on using, editing, and creating your own Quick Configurations can be found in Section 5.4.2 and elsewhere in Chapter 5. If you do not find a pre-

programmed configuration that meets your needs, simply use the one that is closest, changing the parameters that need modifying.

To use a quick-configuration, simply speed dial the entry. The following entries have been pre-programmed:

Entry	Description	Bit rate	Sample rate	Encoder algorithm	Mode	Line format	BW (kHz)	Decoder independent
0	CDQ1000_24K:QS	64	24	CCSN	M	L1	10.2	NO
1	CDQ20002LNS:QS	128	48	MPEGL2	JS	CCSL12	20	NO
2	H221_2LINES:QS	128	48	MPEGL2	JS	H221L12	20	NO
3	H221_4LINES:QS	256	48	MPEGL2	JS	H221L1234	20	NO
4	H221_6LINES:QS	384	48	MPEGL2	JS	H221L123456	20	NO
5	MICRO56:QS	56	16	G.722	M1	L1	7.5	NO
6	G.722_56K:QS	56	16	G.722	M1	L1	7.5	NO
7	G.722_64K:QS	64	16	G.722	M1	L1	7.5	NO
8	MPEGL2/64K:QS	64	48	MPEGL2	M	L1	8.5	NO
9	MPEGL2/56K:QS	56	48	MPEGL2	M	L1	8.5	NO
10	CCSN/64K:QS	64	48	CCSN	M	L1	8.5	NO
11*	CCSTEST64	64	48	MPEGL2	M	L1	8.5	NO
12*	CCSTEST128	128	48	MPEGL2	JS	CCSL12	20	NO
13*	CCSTESTH221	128	48	MPEGL2	JS	H221L12	20	NO
14*	CCSTEST56	56	48	MPEGL2	M	L1	8.5	NO
15*	CCSTEST112	112	56	MPEGL2	JS	CCSL12	20	NO
16	CDQ1000/56K:QS	56	24	CCSN	M	L1	10.2	NO
17	CDQ2000/112:QS	112	48	MPEGL2	JS	CCSL12	20	NO
18	CCSN/56K:QS	56	48	CCSN	M	L1	8.5	NO
19	G.722_H.221:QS	64	16	G.722	M1	H221L1	7.5	NO
20	CCSN/128K:QS	128	48	CCSN	JS	CCSL12	20	NO
21	CCSN/112K:QS	112	48	CCSN	JS	CCSL12	20	NO
22	CDQ2001/128:QS	128	32	MPEGL2	JS	CCSL12	15	NO
23	CDQ2001/112:QS	112	32	MPEGL2	JS	CCSL12	15	NO
24	ZEPHYR/56K:QS	56	48	MPEGL2	M	L1	8.5	YES
25	ZEPHYR/64K:QS	64	48	MPEGL2	M	L1	8.5	YES
26	ZEPHYR/112K:QS	112	48	MPEGL2	JS	CCSL12	20	YES
27	ZEPHYR/128K:QS	128	48	MPEGL2	JS	CCSL12	20	YES
28	LYR3/56K:QS	56	48	MPEGL3	M	L1	15	NO
29	LYR3/64K:QS	64	48	MPEGL3	M	L1	15	NO
30	LYR3IND56:QS	56	48	MPEGL3	M	L1	15	YES
31	LYR3IND64:QS	64	48	MPEGL3	M	L1	15	YES
32	LYR3IND56/32:QS	56	32	MPEGL3	M	L1	15	YES
33	LYR3IND64/32:QS	64	32	MPEGL3	M	L1	15	YES
34	ROADRUN112:QS	112	48	MPEGL2	M	CCSL12	20	NO
35	ROADRUN128:QS	128	48	MPEGL2	M	CCSL12	20	NO
36	ZEPH112MONO:QS	112	48	MPEGL2	M	CCSL12	20	YES

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37	ZEPH128MONO:QS	128	48	MPEGL2	M	CCSL12	20	YES
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\* — These entries dial numbers, and will not work unless an internal terminal adapter is used and an ISDN line is connected.

#### 6.7.1 Entry 0 CDQ1000\_24:QS

Recommended  
for 64 kb/s  
connections to  
**CDQPrima**,  
**RoadRunner**  
and CDQ1000

This entry is used for communications with an older MUSICAM USA and CCS Audio Products Model CDQ1000 codec or another **CDQPrima** or **RoadRunner** user. Loading this speed dial entry will automatically configure the **CDQPrima** for 64 kb/s, single line (using line 1), mono, using the CCSN algorithm, with a 24 kHz sampling rate. You can modify this entry if you will be using a line other than line 1.

#### 6.7.2 Entry 1 CDQ2002LNS:QS

Recommended  
for 128 kb/s  
connections to  
**CDQPrima** and  
CDQ2000

This entry is used to communicate with another **CDQPrima**, or the CDQ2000 series of products, and others, using a bit rate of 128 kb, with 48 kHz sampling, MUSICAM algorithm, and joint stereo. Two line format is used, using lines 1 & 2. If other lines are to be used, edit this entry accordingly.

Please note that some older CDQ2000 units will require you to use the CCSN algorithm. For these units, use 'Quick Configuration' entry number 20.

#### 6.7.3 Entry 2 H221\_2LINES:QS

All encoder parameters are the same as entry 1, except that 2 line H.221 BONDING line format is specified, using lines 1 and 2.

#### 6.7.4 Entry 3 H221\_4LINES:QS

This entry, uses 4 lines and has a bit rate of 256kb/s, H.221 BONDING. Using 4 lines delivers transparent, true stereo capable of up to 5 transcodings.

#### 6.7.5 Entry 4 H221\_6LINES:QS

This entry is used for 384kb/s communications using 6 lines, H.221 BONDING. Using 6 lines delivers transparent, true stereo capable of up to 15 transcodings.

#### 6.7.6 Entry 5 MICRO56:QS

Use this quick-configuration for communications with a MUSICAM USA Micro-56 codec or any other G.722 codec at 56 kb/s. The **CDQPrima** will be configured for 56 kb/s operation, 16 kHz sampling. The encoder algorithm is G.722 and line 1 is used. You can use other lines by editing this entry.

## 6.7.7 Entry 6 G.722\_56:QS

This entry is identical to Entry 5, but with a generic description. Use this for communications with any industry standard G.722 codec at 56kb/s.

## 6.7.8 Entry 7 G.722\_64:QS

Use this entry for communication with any industry standard G.722 codec at 64 kb/s, including the MUSICAM USA Micro-66 family of codecs.

## 6.7.9 Entry 8 MPEGL2/64K:QS

Use this entry for communications with CCS Audio Products or MUSICAM USA Layer II codecs, single line, 64 kb/s, 48 kHz sampling, mono. For other manufacturers codecs, set the decoder to independent or use Quick Configuration 25.

## 6.7.10 Entry 9 MPEGL2/56K:QS

Use this entry for communications with CCS Audio Products or MUSICAM USA Layer II codecs, single line, 56 kb/s, 48 kHz sampling, mono. For other manufacturers codecs, set the decoder to independent or use Quick Configuration 24.

Recommended  
for 64 kb/s  
connections to  
CDQ2000 and  
2001

## 6.7.11 Entry 10 CCSN/64K:QS

This entry is identical to entry 0, however, 48 kHz sampling and a generic name is used. Use this configuration for communicating with older CDQ1000 and CDQ2000 codecs.

## 6.7.12 Entry 11 CCSTEST64

Entries 11 through 15 are true Speed Dial entries, not 'Quick Configurations' since they will establish a connection to our 24 hour Music Line. You can use any of the pre-programmed test entries to test your **CDQPrima** at any time. Please note that for use outside North America you must edit these entries to add the overseas dialing codes for the United States. Also, the **CDQPrima** at our factory will automatically terminate all connections after about 15 minutes. Please be sure that your **CDQPrima** is not configured to automatically redial if the connection is dropped.

!note:

Entry 11 will call our 24-hour Music Line at 64 kb/s, 48 kHz sampling, mono. Please note that the Music Line numbers are available for anybody to call at any time, and if you cannot connect, the line may be busy.

6.7.13 Entry 12 CCSTEST128

This entry will call our 24-hour Music Line using 128 kb/s, 48 kHz sampling, joint stereo. Please refer to entry 11 for special notes. If you can connect on both lines, but your **CDQPrima** does not frame after 30 seconds, use entry number 13.

6.7.14 Entry 13 CCSTESTH221

This entry will call our 24-hour Music Line using 128 kb/s, 48 kHz sampling, joint stereo, H.221 BONDING. Allow up to 30 seconds to establish framing. Please refer to entry 11 for special notes.

6.7.15 Entry 14 CCSTEST56

This entry will call our 24-hour Music Line using 56 kb/s, 48 kHz sampling, mono. Please refer to entry 11 for special notes.

6.7.16 Entry 15 CCSTEST112

This entry will call our 24-hour Music Line using 112 kb/s, 48 kHz sampling, joint stereo. Please refer to entry 11 for special notes.

Recommended for 56 kb/s connections to **CDQPrima**, **RoadRunner** and CDQ1000

6.7.17 Entry 16 CDQ1000/56K:QS

This entry is similar to entry '0' for communications with a MUSICAM USA CDQ1000 or other codecs using 24 kHz sampling, but uses a line rate is 56 kb/s.

6.7.18 Entry 17 CDQ2000/112:QS

This entry is similar to entry '1', and is used for communications with another MUSICAM or Layer II codec, including the MUSICAM USA CDQ2000 series and all **CDQPrima** models using 112 kb/s line rate, 48 kHz sampling, joint stereo.

Recommended for 112 kb/s connections to **CDQPrima** and CDQ2000

Please note that some older CDQ2000 units will require you to use the CCSN algorithm. For these units, use 'Quick Configuration' entry number 21. For other manufacturers codecs, set the decoder to independent, or use Quick Configuration 26.

Recommended for 56 kb/s connections to CDQ2000 and 2001

6.7.19 Entry 18 CCSN/56K:QS

This configuration is used for communications with older MUSICAM USA products using a line rate of 56 kb/s, 48 kHz sampling, mono.

6.7.20 Entry 19 G.722\_H.221:QS

This entry is used for communications through some European (PKI) phone systems, using G.722 encoding and H.221 BONDING.

Recommended  
for 128 and 112  
kb/s connections  
to older CDQ2000

6.7.21 Entry 20 CCSN/128K:QS

This is identical to entry '1', only the CCSN algorithm is used. This allows connections to older MUSICAM USA products.

6.7.22 Entry 21 CCSN/112K:QS

This is identical to entry '17', only the CCSN algorithm is used to communicate with older MUSICAM USA products.

6.7.23 Entry 22 CDQ2001/128:QS

Use this entry to communicate with another **CDQPrima** or other MUSICAM USA codec, including the CDQ200x series, using 128 kb/s line rate and 32 kHz sampling. 32 kHz sampling, although yielding lower overall bandwidth, results in better transcoding capabilities.

6.7.24 Entry 23 CDQ2001/112:QS

Use this entry to communicate with another **CDQPrima** or other MUSICAM USA codec, including the CDQ200x series, using 112 kb/s line rate and 32 kHz sampling. 32 kHz sampling, although yielding lower overall bandwidth, results in better transcoding capabilities.

6.7.25 Entry 24 ZEPHYR/56K:QS

Use this configuration to communicate with a Telos Zephyr and other manufacturers codecs at 56 kb/s, 48 kHz sampling, decoder independent. This is an MPEG Layer II configuration, so if the far end codec does not support Layer II, you must use a G.722 configuration (6) or a **Layer III** configuration.

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6.7.26 Entry 25 ZEPHYR/64K:QS

Use this configuration to communicate with a Telos Zephyr and other manufacturers codecs at 64 kb/s, 48 kHz sampling, decoder independent. This is a MPEG Layer II configuration, so if the far end codec does not support Layer II, you must use a G.722 or a Layer III configuration.

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6.7.27 Entry 26 ZEPHYR/112K:QS

Use this configuration to communicate with a Telos Zephyr and other manufacturers codecs at 112 kb/s, 48 kHz sampling, 2-lines, decoder independent. This is a MPEG Layer II configuration.

6.7.28 Entry 27 ZEPHYR/128K:QS

Use this configuration to communicate with a Telos Zephyr and other manufacturers codecs at 128 kb/s, 48 kHz sampling, 2-lines, decoder independent. This is a MPEG Layer II configuration.

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6.7.29 Entry 28 LYR3/56K:QS

**Use this Layer III configuration to achieve monaural, 15 kHz frequency response using only one 56 kb/s line. This decoder dependent Quick Configuration is used to connect to other MUSICAM USA Layer III codecs.**

6.7.30 Entry 29 LYR3/64:QS

**Use this Layer III configuration to achieve monaural, 15 kHz frequency response using only one 64 kb/s line. This decoder dependent Quick Configuration is used to connect to other MUSICAM USA Layer III codecs.**

6.7.31 Entry 30 LYR3IND56:QS

**Use this Layer III configuration to achieve monaural, 15 kHz frequency response using only one 56 kb/s line. This decoder independent configuration is used to connect to other manufacturers Layer III codecs.**

6.7.32 Entry 31 LYR3IND64:QS

**Use this Layer III configuration to achieve monaural, 15 kHz frequency response using only one 64 kb/s line. This decoder independent configuration is used to connect to other manufacturers Layer III codecs.**

6.7.33 Entry 32 LYR3IND56/32:QS

**Use this Layer III configuration to achieve monaural, 15 kHz frequency response using only one 56 kb/s line. This decoder independent configuration yields the best results when connecting to other manufacturers Layer III codecs.**

Recommended for 56 and 64 kb/s connections to Telos Zephyr

6.7.34 Entry 33 LYR3IND64/32:QS

**Use this Layer III configuration to achieve monaural, 15 kHz frequency response using only one 64 kb/s line. This decoder independent configuration yields the best results when connecting to other manufacturers Layer III codecs.**

Recommended for 112 and 128 kb/s connections to **RoadRunner**

6.7.35 Entry 34 ROADRUN112:QS

Use this configuration when connecting at 112 kb/s to a **RoadRunner** or other MUSICAM USA codec in mono.

6.7.36 Entry 35 ROADRUN128:QS

Use this configuration when connecting at 128 kb/s to a **RoadRunner** or other MUSICAM USA codec in mono.

Recommended for 112 and 128 kb/s connections to Telos Zephyr

6.7.37 Entry 36 ZEPH112MONO:QS

Use this configuration when connecting at 112 kb/s to a Telos Zephyr other non-MUSICAM USA codec in mono.

6.7.38 Entry 37 ZEPH128MONO:QS

Use this configuration when connecting at 128 kb/s to a Telos Zephyr other non-MUSICAM USA codec in mono.

## 6.8 Creating Speed Dial and Quick Configuration Entries

Speed dial and Quick Configuration entries contain all information required to completely configure the **CDQPrima**'s encoder and decoder for operation. Speed dial entries differ from Quick Configurations in that they also contain ISDN numbers to dial.

All speed dial and Quick Configuration entries require the following information. The three-letter abbreviations are as shown in the **CDQPrima**'s LCD display.

Description:	Name of the entry, up to 16 characters, spaces are not allowed in the name.
EBR:	Encoder bit rate.
ESR:	Encoder sampling rate. Note: for G.722, only 16 kHz is valid.
EAL:	Encoder algorithm.
EAM	Encoder algorithm mode. Note: for G.722, only 'M1' is valid.
ELI:	Encoder line format. Note: 2-line formats are only valid with encoder bit rates of 112 and 128 kb/s.
DIN:	Decoder independent operation. Select YES for connecting to other manufacturers codecs, when using different algorithms or bit rates for send/receive audio, independent mono operation or for any broadcast mode

The following 3 parameters are required only if decoder independent YES has been selected:

DBR:	Decoder bit rate. Can be different, but must be multiple of encoder bit rate.
DAL:	Decoder algorithm.
DLI:	Decoder line format.

All speed dial and Quick Configuration entries require the last parameters:

Numb #'s:	Number of ISDN numbers or place holders to use. All entries require at least 1 number or place holder.
Num n:	ISDN number or '#' place holder character.

Although creating a Quick Configuration or speed dial entry may sound difficult or confusing, this is really not the case. The following examples show how easy it is to create table entries.

### 6.8.1 Example 1 – Save Current Configuration

There may be many instances where a pre-programmed Quick Configuration may be close to, but not exactly what you need. For example, there is no Quick Configuration for MPEG layer II at 128 kb/s mono, decoder independent. There may also be instances where you have created a custom configuration that you would like to save for future use. Both these scenarios are easy with the **CDQPrima**'s ability to save the current configuration. Here's how:

The closest configuration to 128/48 Layer II, mono, decoder independent, is Quick Configuration 36, 128/48, Layer II, mono. To create the wanted configuration, load Quick Configuration 36, change the decoder to independent yes, and save.

From the Keypad:

<b>SDIAL</b> <b>3</b> <b>6</b> <b>ENTER</b>	(load configuration 36)
<Decoder><Indep><Yes>	(decoder independent)
<b>SDSET</b> <Save Crnt> enter name <b>ENTER</b>	(save)

From a terminal or emulator:

CSD 36 return	(load configuration 36)
DIN yes return	(set decoder independent)
CSE name return	(save)

From the Widows Remote Control program:

Click on the Speed Dial menu, click on Dial ID, and dial entry 36.  
 Click on the decoder icon, change independent to YES.  
 Click on Speed Dial, click on New Entry, enter a name, Save.

In all cases, the **CDQPrima** will return an ID number. This is the ID number that is used to load the newly created entry.

In this example, a Quick Configuration entry was created since the **CDQPrima** was not connected to another codec. We could have just as easily created an actual speed dial entry, which would dial into another codec, if we had dialed into and were connected to the other codec when we saved the current configuration.

### 6.8.2 Example 2 – Different Send and Receive Algorithms

In this example, we will create an actual speed dial entry that will be used to send high quality, MPEG Layer II stereo audio to a recording studio but

receives low quality, low delay G.722 audio from the studio for cueing purposes.

From the Keypad:

<input type="text" value="SDSET"/> <input type="text" value="&lt;Add entry&gt;"/> <input type="text" value="ENTER"/>	
<i>name</i> <input type="text" value="ENTER"/>	entry name
<128> <input type="text" value="ENTER"/>	encoder bit rate
<48> <input type="text" value="ENTER"/>	encoder sample rate
<MPEGL2> <input type="text" value="ENTER"/>	encoder algorithm
<Joint Stereo> <input type="text" value="ENTER"/>	encoder algorithm mode
<CCS 2 LN> <input type="text" value="ENTER"/>	2-line mode
<input type="text" value="1"/> <input type="text" value="2"/> <input type="text" value="ENTER"/>	line 1 and 2
<YES> <input type="text" value="ENTER"/>	select decoder independent mode
<64> <input type="text" value="ENTER"/>	decoder bit rate
<G.722> <input type="text" value="ENTER"/>	decoder algorithm
<1 LN > <input type="text" value="ENTER"/>	decoder line format
<input type="text" value="1"/> <input type="text" value="ENTER"/>	line 1
<2> <input type="text" value="ENTER"/>	2 numbers are dialed
<i>first number</i> <input type="text" value="ENTER"/>	
<i>second number</i> <input type="text" value="ENTER"/>	

From a terminal or emulator:

CSE *name* 128 48 MPEGL2 JS CCSL12 YES 64 G.722 L1 *number1 number2*

From the Windows Remote Control program:

Click on Speed Dial then Add Entry.

The 'NewEntry' dialog box contains the following fields and options:

- Description:
- Encoder-Mode:
- Bitrate:
- Samplingrate:
- Encoder-Algorithm:
- Decoder-Algorithm:
- Encoder-Line-Format:
- Decoder-Line-Format:
- H221 Lines:  1  2  3  4  5  6
- Send mono right:  1  2  3  4  5  6
- Send mono left:  1  2  3  4  5  6
- Decoder independent:  Yes  No
- Phone-number 1:
- Phone-number 2:
- Phone-number 3:
- Phone-number 4:
- Phone-number 5:
- Phone-number 6:
- Speed dial number:

Buttons at the bottom:

Enter the information as shown here (use your own name and the correct ISDN numbers) and click on OK.

In all cases, the **CDQPrima** will return an ID number. This is the ID number that is used to load the newly created entry.

### 6.8.3 Example 3 - Using Place Holders

The last example will show how to create a speed dial entry for broadcasting stereo audio to three different locations. To illustrate the use of place holders, this example assumes that we will dial the first location on lines 1 and 4, but the second location will call us on lines 2 and 5 and the third locations will call us on lines 3 and 6.

Place holders are used when some, but not all lines are dialed. In this example, we will be dialing out on lines 1 and 4, but lines 2, 3, 5 and 6 will be receiving calls. We will need to use place holders on lines 2 and 3 since

the **CDQPrima** will dial all numbers in sequence, starting with line 1. We do not need place for lines 5 and 6, since there will be no numbers to dial after the forth line.

From the Keypad:

SDSET	<Add entry>	ENTER	
name	ENTER		entry name
<128>	ENTER		encoder bit rate
<48>	ENTER		encoder sample rate
<MPEGL2>	ENTER		encoder algorithm
<Joint Stereo>	ENTER		encoder algorithm mode
<CCS 2 LN>	ENTER		2-line mode
1	4	ENTER	line 1 and 4 – this configuration is required for broadcasting to three locations
<YES>	ENTER		select decoder independent mode
<128>	ENTER		decoder bit rate
<MPEGL2>	ENTER		decoder algorithm
<2 LN >	ENTER		2-line mode
1	4	ENTER	lines 1 and 4
<4>	ENTER		the number of numbers will be 4 - 2 numbers and 2 place holders
first number	ENTER		line 1 ISDN number
#	ENTER		line 2 place holder
#	ENTER		line 3 place holder
second number	ENTER		line 4 ISDN number

From a terminal or emulator:

```
CSE name 128 48 MPEG2 JS CCSL14 YES 128 MPEG2 CCSL14 number1 # #
number2
```

From the Windows Remote Control program:

Click on Speed Dial then Add Entry.

The 'NewEntry' dialog box contains the following fields and options:

- Description: BROADCAST
- Encoder-Mode: JS
- Bitrate: 128
- Samplingrate: 48
- Encoder-Algorithm: MPEGL2
- Decoder-Algorithm: MPEGL2
- Encoder-Line-Format: CCSL14
- Decoder-Line-Format: CCSL14
- H221 Lines: Radio buttons 1 through 6 (all unselected)
- Send mono right: Radio buttons 1 through 6 (all unselected)
- Send mono left: Radio buttons 1 through 6 (all unselected)
- Decoder independent: Radio buttons Yes (selected) and No
- Phone-number 1: 5551234
- Phone-number 2: #
- Phone-number 3: #
- Phone-number 4: 5554321
- Phone-number 5: (empty)
- Phone-number 6: (empty)
- Speed dial number: (empty)
- Buttons: OK, Speed Dial Group (highlighted), Close

Enter the information as shown here (use your own name and the correct ISDN numbers) and click on OK.

In all cases, the **cdoPrima** will return an ID number. This is the ID number that is used to load the newly created entry.