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Software Version: MonteCarlo 5.6 or greater

Product(s):   All PrimeNet MM PCI cards, all PrimeNet MM cPCI 4-span cards, and PrimeNet MM cPCI 8-span cards with signaling FSB.

Purpose: The purpose of this document is to describe the setup of both the span lines and DSPs in order to use RBS or RBS with DTMF on the PrimeNet MM family of cards.

Supported Cards

The following cards from the PrimeNet MM family of digital cards that support RBS signaling:

- All of the PCI variants
- All of the 4 span versions of the cPCI card
- The 8 span variant of the cPCI card that has the signaling FSB placed on it

The only PrimeNet MM card that does not support RBS is the 8 span cPCI card without the FSB placed on it.

To summarize, the following is a list of the PIKA card ID's from pktypes.h and their support for RBS:

```
PikaOctalPCI               = 17,  // PCI PrimeNet MM 1,2, or 4 span
PikaOctal_CPCI_SIG         = 18,  // 8 span cPCI with Signaling FSB
PikaOctal_CPCI_NOSIG       = 19,  // 8 span cPCI without Signaling FSB
PikaOctal_CPCI_4SPAN       = 20,  // 4 span cPCI
```

NOTE:	In order to support RBS on the 8 span version of the cPCI card, the signaling FSB must be placed on it. The FSB takes the first and third DSPs on the card and hardwires them to the framers. These two DSPs no longer go through the switch on the card so they can only be used for RBS signaling on the digital lines.

Line Interface Setup

The following diagram illustrates the setup of the line interfaces for RBS with DTMF signaling on cards from the PrimeNet MM family of digital cards. In order to use RBS signaling, the fifth pull-down box would be changed to **Robbed Bit** from **Robbed Bit + DTMF.**
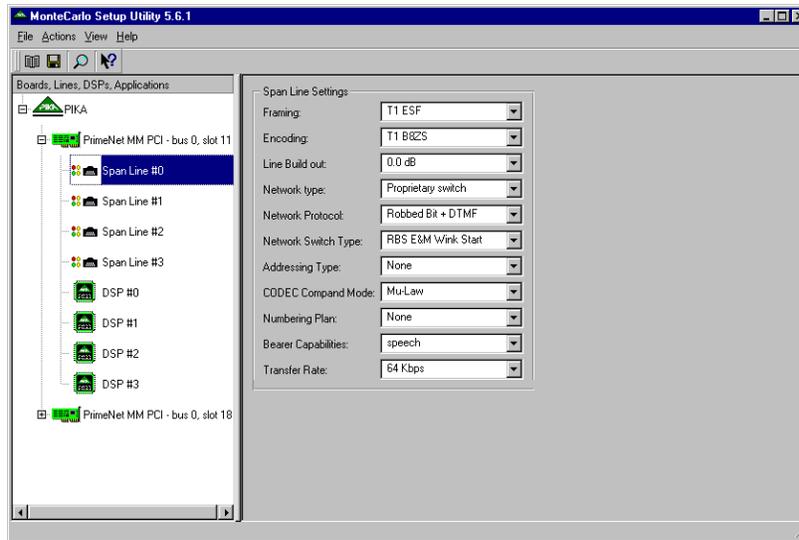
| NOTE:	These settings must be applied to every span on the card.

DSP Setup

The following diagram illustrates the setup of the DSPs in order to do RBS signaling on a 4 span PCI PrimeNet MM card. The setup for a 4 span cPCI card would be the same. Stream 0 and 1 of the DSP are shown.

Since we have 96 digital channels for the 4 spans, the pattern of DSP ports selected on DSP timeslots 0-31, on both streams, are repeated on timeslots 32-63, 64-95 and 96-127 to give us a total of one DSP timeslot per digital channel. If there were less spans on the card, one checkmark would be subtracted per group of four checkmarks on the DSP for every span less we had on the card. Stream 0 of the DSP should look as follows on timeslots 0-31. The pattern is then repeated on timeslots 32-63, 64-95 and 96-127.
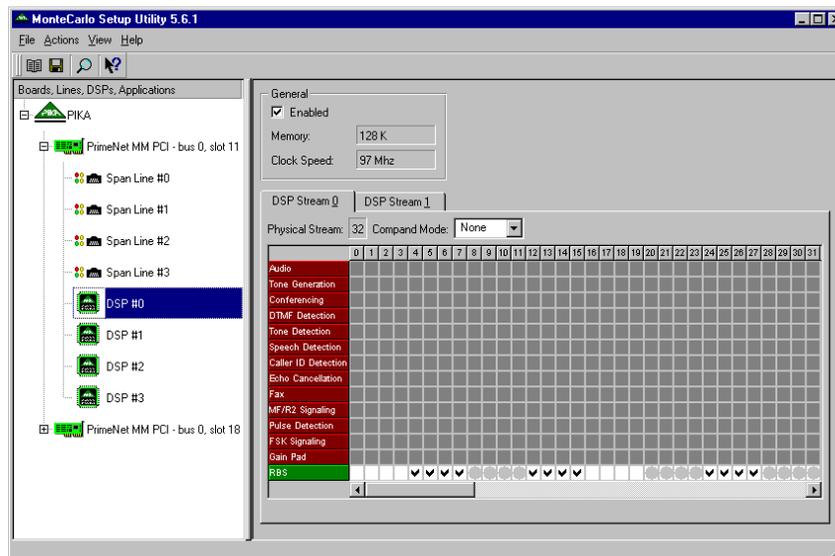
Stream 1 of the DSP should look as follows on timeslots 0-31. The pattern is then repeated on timeslots 32-63, 64-95 and 96-127.
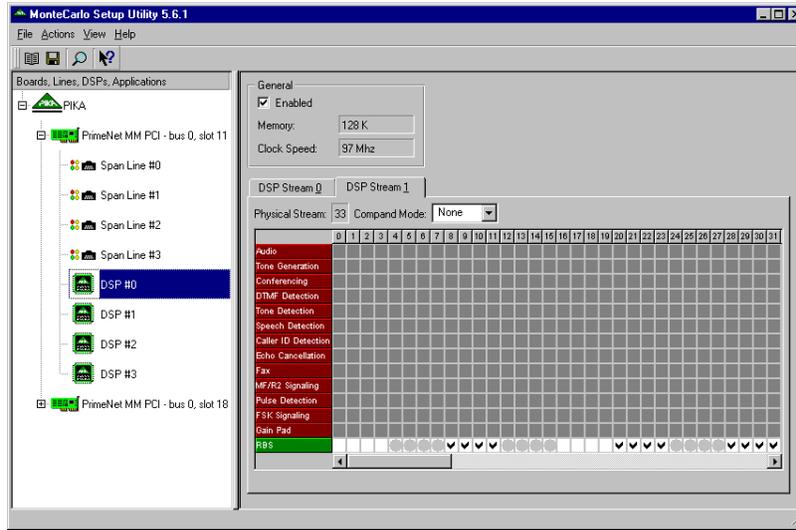
Once the DSP is set up correctly (as shown above) and the line interfaces are set to do RBS, the driver will automatically use an available RBS port to do the signaling for each digital channel. No additional setup is required.

If you wish to do RBS with DTMF signaling, you will need a DSP timeslot with tone generation and DTMF detection on it for each channel as well. A similar pattern to that shown above could be set up on DSP #2 in order to accommodate this. The user then has to connect these DSP resources to the digital channels using the functions PIKA_AssociatePort and PK_MVIP_FullDuplexConnect. For more information on these functions please consult the API Reference Guide supplied with the Montecarlo software.

Important Notes

▪ When using RBS DSP resources on a DSP, no other DSP application may be enabled on the DSP. If there are other DSP applications enabled on the DSP, RBS signaling will not function correctly. In MCSetup, the user must remove all other DSP applications before they select a RBS port on a DSP. The same is true if the user is enabling DSP applications through MCDT. It is up to the user to remove all other DSP applications before enabling RBS.

▪ There must be one DSP timeslot with RBS for each digital channel in the system. If using RBS with DTMF, there must also be a DSP timeslot with tone generation and DTMF detection for each digital channel.

▪ The 8 span PrimeNet MM cPCI card with the signaling option has the timeslots for RBS on the DSPs selected for the user. The user cannot change the RBS ports selected, nor should they.