ISD APPLICATIONS BRIEF 31—PROGRAMMING THE ISD2532/40/48/64 PRODUCTS IN THE ISD-SD101 PROGRAMMER

OVERVIEW

The recent release of the ISD2532/40/48/64 devices brought to our attention that the ISD-SD101 Programmer Software Versions 5.00 and 5.01 **do not** provide options on the menu for these new devices. In addition, because the array is one half the size of the original ISD2560/75/90/120 devices, there is one less address pin to control. The ISD-SD101 can only correctly address the first 128 rows of the 320 available. After 320, the addressing goes invalid. But there is way to work around these issues.

BACKGROUND

The ISD-SD101 Programmer was designed and completed long before the ISD2532/40/48/64 devices were contemplated. Thus the ISD2500 series products are not on the table of available devices that select the correct clock rates and addressing combinations. Selecting devices of the same clock rate still does not completely address the address line situation.

CLOCK RATES

The clock rate (and the sample rate) can be resolved by selecting the larger ISD2560/75/90/120 device of the same clock rate. Table 14 below illustrates those choices. They are also explained in Section 2.11 of the *ISD-SD101 User's Guide*, Version 5.00, on page 19.

Table 14: ISD2500 Series Device Types and Sample Rates

Type Select	Sample Rate	Device Type	New Device	Notes
Type 1	10.6 KHz	ISD1012A		
Type 2	8 KHz	ISD1016A		disconnected
Type 3	6.4 KHz	ISD1020A		disconnected
Type 4	10.6 KHz	ISD2545		
Type 5	8 KHz	ISD2560	ISD2532	Requires socket adapter
Type 6	6.4 KHz	ISD2575	ISD2540	Requires socket adapter
Type 7	5.33 KHz	ISD2590	ISD2548	Requires socket adapter
Type 8	4 KHz	ISD25120	ISD2564	Requires socket adapter
Type 9	8 KHz	ISD1108		
Type 10	6.4 KHz	ISD1110		
Type 11	5.33 KHz	ISD1112		
Type 12	8 KHz	ISD1208		
Type 13	6.4 KHz	ISD1210		
Type 14	5.33 KHz	ISD1212		
Type 15	8 KHz	ISD1416		
Type 16	6.4 KHz	ISD1420		

Address Lines

Because the ISD-SD101 was designed for devices with eight or ten address lines, the ISD2532/40/48/64 product with its nine address lines does not directly program above address 128. This is because the ISD2532/40/48/64 product has a gap at pin 8 (A7 on an ISD2560/75/90/120 products) in the address pins. An adapter must be constructed that translates the correct pins from the ISD-SD101 socket (selected for an ISD2560/75/90/120 device) to the socket of the ISD2532/40/48/64 device. Fortunately, this only involves three pins that are modified. All the other pins are straight through and directly compatible. The mechanical assembly is easy with a 28-pin ZIF socket soldered down on top of a 28-pin header that will plug into the ISD-SD101 socket. Pins 8, 9, and 10 on the ZIF socket are trimmed so they **do not** contact the header pins. Then the other 25 pins are soldered directly through to each other. Pin 8 on the top ZIF socket is left with no connection. Pin 9 is connected to pin 8 on the header (A7) and pin 10 of the ZIF socket is connected to pin 9 on the header (A8) with jumper wires. Now the ISD2532/40/48/64 product can be programmed correctly over its entire 320 row array.

Creating the Program

When making up the sound files on the ISD-SD101 the translation of the Device Types should be as the chart:

Table 15: ISD2500 Series Device Types and Sample Rates

Type Select	Sample Rate	Device Type	New Device	Notes
Type 5	8 KHz	ISD2560	ISD2532	Requires socket adapter
Type 6	6.4 KHz	ISD2575	ISD2540	Requires socket adapter
Type 7	5.33 KHz	ISD2590	ISD2548	Requires socket adapter
Type 8	4 KHz	ISD25120	ISD2564	Requires socket adapter

This is for creating the .isd individual sound files under the F1 software selection, as well as when making the .chp files under F2. No other changes are required under F1 but under F2 the software will not warn if the .chp file is too long for the ISD2532/40/48/64 chip selected. The user must manually keep track to be sure that no messages extend beyond address 319. Otherwise messages will be lost and the chips will fail the EOM Check function.

Programming the Parts

To actually program the ISD2532/40/48/64 Parts in the ISD-SD101 one must make enough adapters for the desired number of parts to be programmed at one time. The ISD-SD101 can do a maximum of eight parts at a time. Then insert the devices into the adapter sockets that are inserted into the ISD-SD101 ZIF sockets. Under F3 select the name of the previously created .chp file and follow the usual steps described in the manual.