Table 6: ISD1016A or ISD1416 Address Resolution

Address Line	No. of Address Lines	Address Resolution (sec)
A0	8	0.1
A1	7	0.2
A2	6	0.4
A3	5	0.8
A4	4	1.6
A5	3	3.2
A6	2	6.4
A7	1	12.8

By some study of the addressing scheme many different combinations of simplified addressing can be developed. Another example is to have four 2.5-second messages in an ISD1110 or ISD1210 device by using only two address lines from the controller.

Table 7: ISD1110 or ISD1210 Four Message Approach

Msg #	Addr	A7	A6	A5	A4	A3	A2	A1	A0
1	000	0	0	0	0	0	0	0	0
2	020	0	0	0	1	0	1	0	0
3	040	0	0	1	0	1	0	0	0
4	060	0	0	1	1	1	1	0	0
				L1	L0	L1	L0		

Address lines A0, A1, A6, and A7 are all tied to ground. Address line A2 is tied to A4 (this is now L0) and A3 is tied to A5 (this is now L1). Then, Table 8 becomes a simple 2-bit binary count that requires only the two port lines (L0, L1) for four 2.5-second messages.

Table 8: Two-line Select

Msg #	Addr.	L1	L0
1	000	0	0
2	020	0	1
3	040	1	0
4	060	1	1

For the ISD2560/75/90/120 series of devices there are ten address lines that can be used for the 100-msec resolution. As with the other devices, this can be greatly simplified to reduce addressing lines needed. The following table compares the tradeoffs between the number of address lines used, the number of messages possible and the size of those messages derived.

Table 9: ISD2560 Addressing

Lines Used	# of Msgs.	Msg Size (Sec.)	Notes
4	9	6.4	Last msg. = 8.8 sec.
6	7	8.0	Last msg. = 12 sec.
7	8	7.2	Last msg. = 9.6 sec.
7	6	10.0	Exact fit
8	8	7.6	Last msg. = 6.8 sec.

Similar techniques work for the ISD2575, the difference being the timing or message size.

Table 10: ISD2575 Addressing

Lines Used	# of Msgs.	Msg Size (Sec)	Notes
4	9	8.0	Last msg. = 11 sec.
5	18	4.0	Last msg. = 7 sec.
6	12	6.0	Last msg. = 9 sec.
8	10	7.5	Exact fit