

# Application Note 52

## D1 Data In and Out of the TMC22x5y

The 'D1 data in and out of the TMC22x5y' application note explains how to input a D1 data stream, use the embedded TRS words to lock the TMC22x5y internal horizontal and vertical state machines, demultiplex the Y and CbCr data streams, comb the chroma signal through a two line comb filter, and produce a D1 output data stream on the R/Cr output.

The table shows how to configure the register map to produce a combed D1 output from a D1 input signal using the revision D silicon. The table makes the following assumptions:

- a) The D1 data stream is fed to VIDEOA[9:0]
- b) Unity gain is required in the output proc

525 line: 2 line chroma comb of the CbCr data

**Table 1**

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0-	C0	1F	37	E3	20	00	00	0C	40	40	34	60	09	04	F8	02
1-	5A	47	35	D2	23	00	0A	00	00	00	00	49	40	00	00	00
2-	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
3-	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00

625 line: 2 line chroma comb of the CbCr data

**Table2**

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0-	C3	1F	37	E3	20	00	00	0C	40	40	34	60	09	04	F8	02
1-	60	47	41	D2	23	00	0A	00	00	00	00	49	40	00	00	00
2-	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
3-	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00

For a '525' or '625' 2 line comb of the Y data, make the following changes to the appropriate table:

*change reg. 01h to 0Ch, reg. 0Ch to 1Dh, and reg. 0Eh to C2h*

To bypass the comb filter use the register map in either the '525' or '625' table above, depending upon the line rate of the D1 data stream, and make the following tables:

*change reg. 0Fh to 00h, and reg. 0Eh to FEh*

**Note:** In this applications note, the term D1 is used to describe a multiplexed YCbY'Cr component data stream with embedded TRS words, conforming to ANSI/SMPTE 125M and/or CCIR rec 656.

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