App Note 347: Converting the DS2151/DS2153 Demo Kits

The DS2151DK & DS2153DK are ordered and shipped for either T1 or E1 operation. However, the kits are easily converted to the other mode.

To convert from DS2151DK to DS2153DK: T1→E1

1. Place DS2153 in location marked U1.

2. Place 2.048 MHz oscillator in location marked X3.

3. Place 8.192 MHz crystal in location marked X1.

4. Remove and replace Rr.

5. Place Rt as required, see note 3 below.

To convert from DS2153DK to DS2151DK: E1→T1

1. Place DS2151 in location marked U1.

2. Place 1.544 MHz oscillator in location marked X3.

3. Place 6.176 MHz crystal in location marked X1.

4. Remove and replace Rr.

5. Place Rt as required, see note 3 below.

The table below details the required components.

Component	Description	T1	E1
U2	SCT	DS2152	DS2154
X1	PULLABLE CRYSTAL[1]	6.176 MHz	8.192 MHz
X3	OSCILLATOR[1]	1.544 MHz	2.048 MHz
R5 & R6	Rt	0Ω[2,3]	8.2Ω[2]
R7 & R8	Rr	50Ω	37.5Ω for Ohm Termination 60Ω for 120 Ohm Termination

Notes:

1. Recommended oscillators: NTH039A-1.544000 & NTH039A-2.04800.
   Recommended crystals: 6.176 MHz SRX5310(L) & 8.192 MHz SRX5469(L)

   Saronix
   151 Laura Lane
   Palo Alto, CA 94303
   Phone: (415) 856-6900
   Fax: (415) 856-4732
   http://www.saronix.com

2. The DS2151DK and DS2153DK are both shipped with a 1:1.15 transformer (PE-65388) in the transmit path. Some of the configurations in the data sheets specify a 1:1.36 transformer, PE-64937 is a 1:1.36 transformer available from Pulse Engineering.

   Pulse Engineering
   P.O. Box 12236
   San Diego, CA 92112
   Phone: (619) 674-8100
   Fax: (619) 674-8262
   http://www.pulseeng.com

3. The DS2151DK and DS2153DK are both shipped with Rt = 0Ω, R5 & R6 are shorted in the PCB. Some of the configurations in the data sheets specify non zero resistors for Rt. In order to place resistors, Rt≠0, the traces must be cut. Carefully cut the traces connecting the through holes for R5 & R6 with an X-acto knife, and solder the resistors in place.