XR-215

Evaluation System User Manual

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GENERAL DESCRIPTION

This demo board is a blank printed circuit card that simplifies design, breadboarding, and test of circuits using the XR-215. The 5.0 by 4.75 inch board can be used to build practically all of the databook application circuits that are given for this device. The board can be configured for either single or split supply operation. Also, two separate breadboard sections with isolated power and ground busses are provided for any additional analog or digital circuitry that may be required.

BOARD SCHEMATIC DIAGRAM

The demo board schematic is a guide for locating components rather than an actual application circuit. This diagram shows all of the parts that could be placed on the board. In a real design, some of these components would not be present while others would be replaced with jumpers. The items required for a particular application should first be determined using the XR-215 diagrams and equations that are given in the EXAR databook. Then, the board schematic can be used to find their location on the circuit board.

The following general notes apply to this board:

- Jumper E1 must be present to connect the VCO Output to the Phase Comparator 2 Input unless this feedback is provided by other means.
- For single-supply operation, V_{EE} bypass capacitor C10 is replaced with a jumper and C14 is not required. The phase comparator is biased at one half of V_{CC} by the voltage divider formed by R3 and R4.
- For split-supply operation, the phase comparator is normally biased at ground potential. This is done by omitting R3, R4, and C15 and by replacing C7 with a jumper.

COMPONENT CONSIDERATIONS

The component marking, which is 1:1 scale, gives an approximate idea of component sizes.

The style of electrical components that the board accepts should be readily available. Resistors are 1/4 watt and the bypass capacitors can be 0.1µF monolithic ceramic type with radial leads spaced 0.1 inch. The electrolytic capacitors are also vertical mount units with 0.1 inch lead spacing. The board area provided for the timing capacitor, which can be two parts in parallel, should be sufficient for small mica, polystyrene, or mylar units.

Power and ground connections are made to pads that are located along the rear edge of the board. Banana jacks or binding posts may be placed in the holes next to these pads and wired to them, if desired. Except for the VCO output pad which is located near the rear of the board, the XR-215 signal input and output pads are located just behind the front breadboard area. Holes are provided for three uncommitted BNC connectors that may be used as desired.

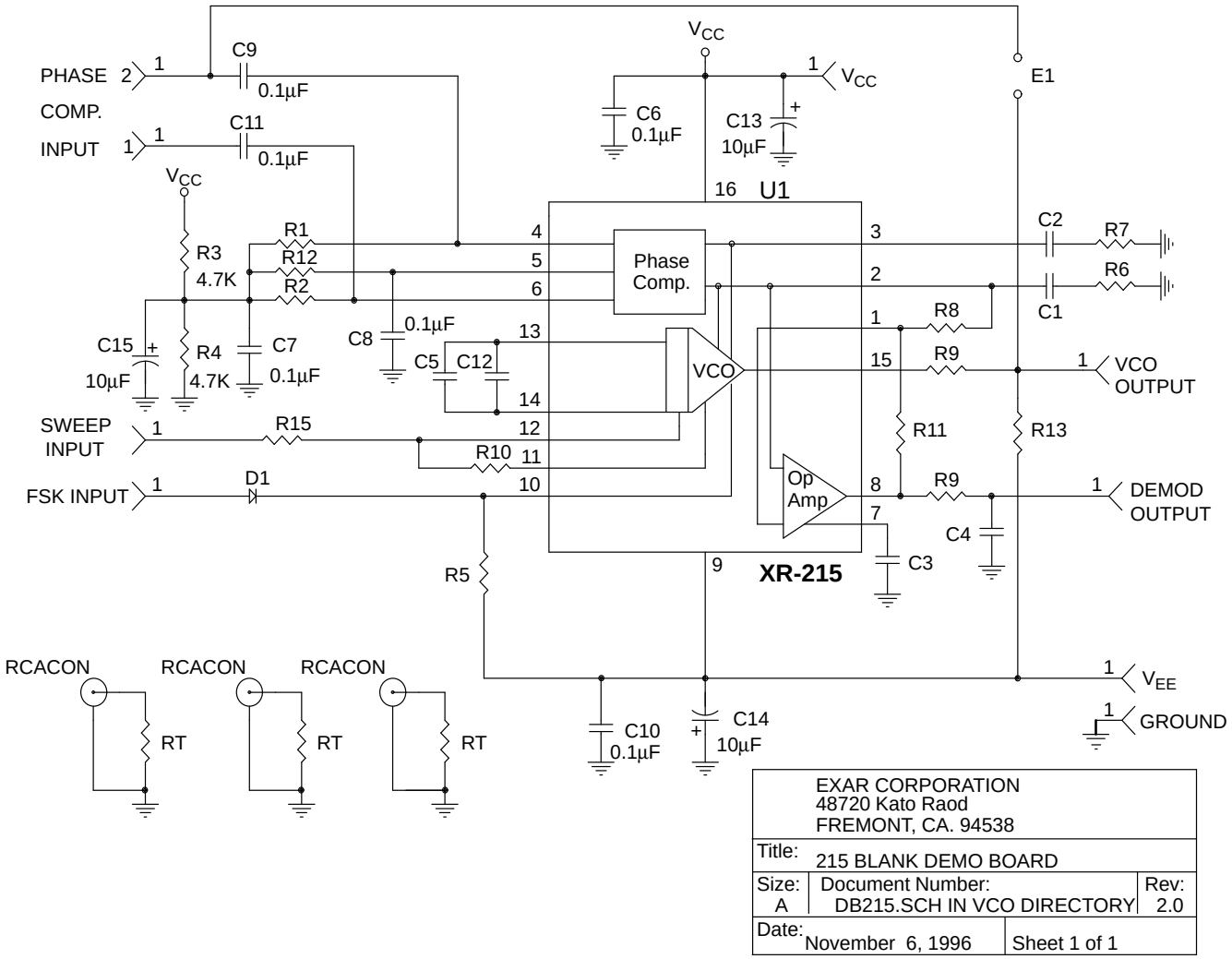
PHASE COMP. INPUT
SWEEP INPUT
FSK INPUT
RCACON
RT
C9
C11
C6
C13
C15
C7
C8
C5
C12
C10
C14
C1
C2
C3
C4
R1
R2
R3
R4
R5
R6
R7
R8
R9
R10
R11
R12
R13
R15
D1
E1
U1
Phase Comp.
VCO
Op Amp
XR-215
VCO OUTPUT
DEMOD OUTPUT
GROUND
EXAR CORPORATION
48720 Kato Raod
FREMONT, CA. 94538
Title: 215 BLANK DEMO BOARD
Size: A
Document Number: DB215.SCH IN VCO DIRECTORY
Rev: 2.0
Date: November 6, 1996
Sheet 1 of 1

Figure 1.

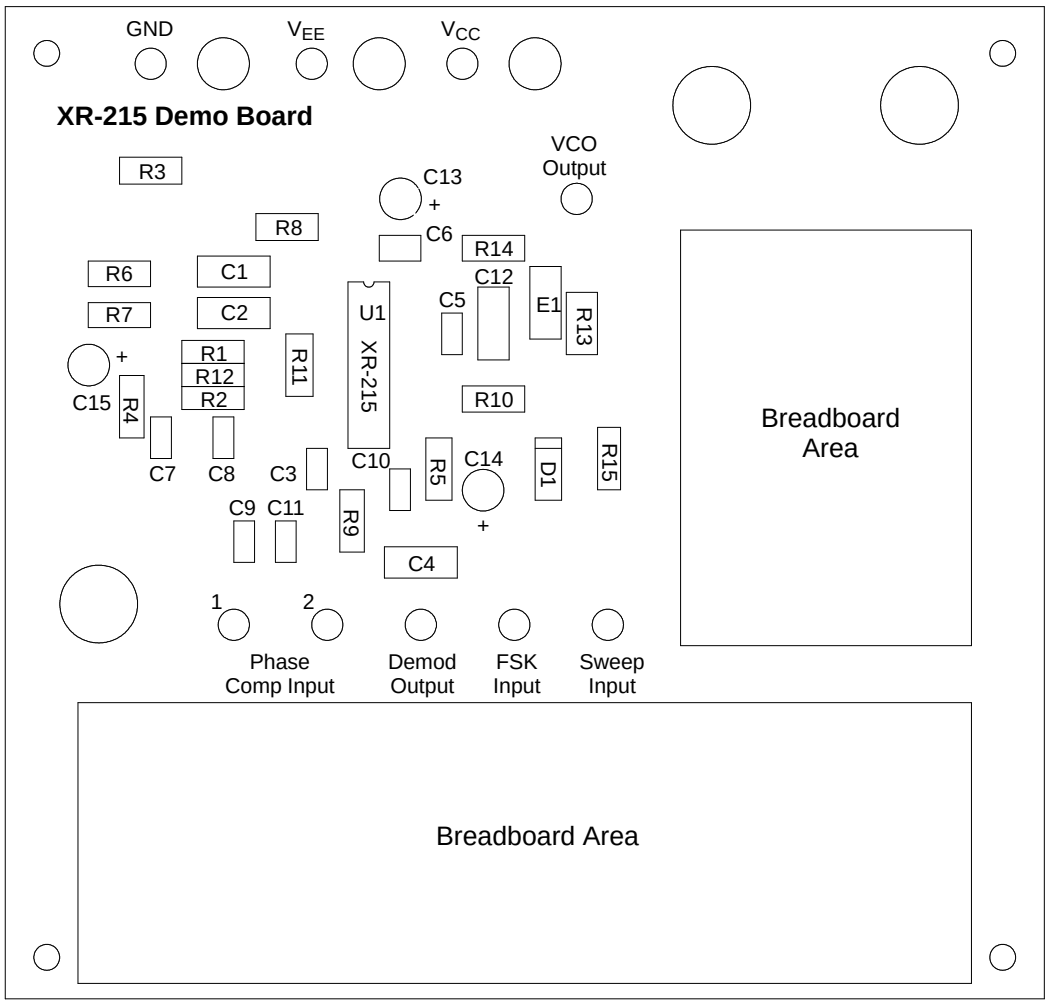

Figure 2. Demo Board Component Layout

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