



VTECH ENGINEERING CANADA LTD.

TITLE	Changes to VTECH ADL Platform
MODEL	ADL MK2B – Analog 900MHz Cordless Telephone (VT9111)

1 Introduction

The following is a summary of the changes between the ADL MK2A and the ADL MK2B analog cordless telephone platforms. The purpose of the ADL MK2B is to perform a cost as well as component count reduction. This document describes the changes that were made to the ADL MK2A handset and the base unit.

2 Changes

The changes made in the ADL MK2B are exclusively in the RF section; the audio section remains identical to the ADL MK2A. The ADL MK2A employs a discrete mixer, the Siemens CF739R, to down-convert the received 900 MHz signal to a 10.7 MHz IF signal which is then fed into the Motorola MC13156 FM demodulator to be demodulated. In the ADL MK2B, the Temic U2765B IC replaces both of these ICs to provide the mixer and FM demodulator function on a single chip.

The other area of change involves the Tx and Rx phase locked-loop (PLL). The Toshiba TB31202FN IC used in the ADL MK2A will be replaced by the Toshiba TB31202BFN IC. With the TB31202FN, external buffer transistors are required for amplifying the RF signal into the PLL. In the ADL MK2B, the TB31202BFN provides internal buffers so the external buffers are no longer required.

The Tx and Rx oscillator circuitry remains the same as the ADL MK2A, but the layouts and shield cans in both the handset and base unit PCBs have been modified to accommodate the new Temic IC.

2.1 Handset Circuit Changes

The following table identifies all the changes made to the RF circuit in the handset. Additional details can be found by referring to the attached ADL MK2A and ADL MK2B schematics (42960001.sch and 43310001.sch, respectively). The item designator indicated in the table can be found on the schematics for ease of reference.

Item	Change	Reason for Change
1	Receiver LNA transistor <i>Q2</i> and gain circuitry is changed to use the higher gain Temic BFP67W transistor	Additional gain required for Temic IC
2	FM demodulator IC <i>U1</i> and mixer circuitry changed to use the Temic U2765B IC	Cost and component count reduction
3	PLL IC <i>U2</i> changed to TB31202BFN and external Tx and Rx buffers <i>Q10</i> and <i>Q9</i> and associated circuitry removed	Cost and component count reduction
4	Matching circuitry changed	Modifications for Temic IC

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Item	Change	Reason for Change
-	Component value changes: • change C12 to 2.7 pF • change C7 to 1.5 pF • change C5 to 4.7 pF • change C15 to 3.3 pF • change C52 to 9.1 pF • change C54 to 1.2 pF • change C67 to 1.8 pF • change R120 to 10 kΩ • change R33 & R35 to 91 Ω	

2.2 Base Unit Circuit Changes

The following table identifies all the changes made to the RF circuit in the base unit. Additional details can be found by referring to the attached ADL MK2A and ADL MK2B schematics (42980001.sch and 43320001.sch, respectively). The item designator indicated in the table can be found on the schematics for ease of reference.

Item	Change	Reason for Change
5	Receiver LNA transistor <i>Q2</i> and gain circuitry is changed to use the higher gain Temic BFP67W transistor	Additional gain required for Temic IC
6	FM demodulator IC <i>U1</i> and mixer circuitry changed to use the Temic U2765B IC	Cost and component count reduction
7	PLL IC <i>U10</i> changed to TB31202BFN and external Tx and Rx buffers <i>Q2</i> and <i>Q3</i> and associated circuitry removed	Cost and component count reduction
8	Matching circuitry changed	Modifications for Temic IC
-	Component value changes: • change C12 to 3 pF • change C5 to 3.6 pF • change C54 to 1.5 pF • change C67 to 2.4 pF • change R134 to 110 Ω • change R33 & R35 to 82 Ω	