

NSC741K5L-EVB User Guide

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1 Introduction

NSC741K5L-EVB is the evaluation board (EVB) specific for NSC74(1K5 / 1K0 / 512 / 256)L. It can work with debugger via Nu-Link for application program development, verification and performance evaluation, it can also work standalone for demonstration.

This board consist of evaluation board and demo kit as Figure 1-1. The upper side is the evaluation part that include the target MCU with some application related components. The lower side is demo kit with buttons and LEDs connecting to target MCU's GPIO (General Purpose Input / Output) for the application code demonstration.

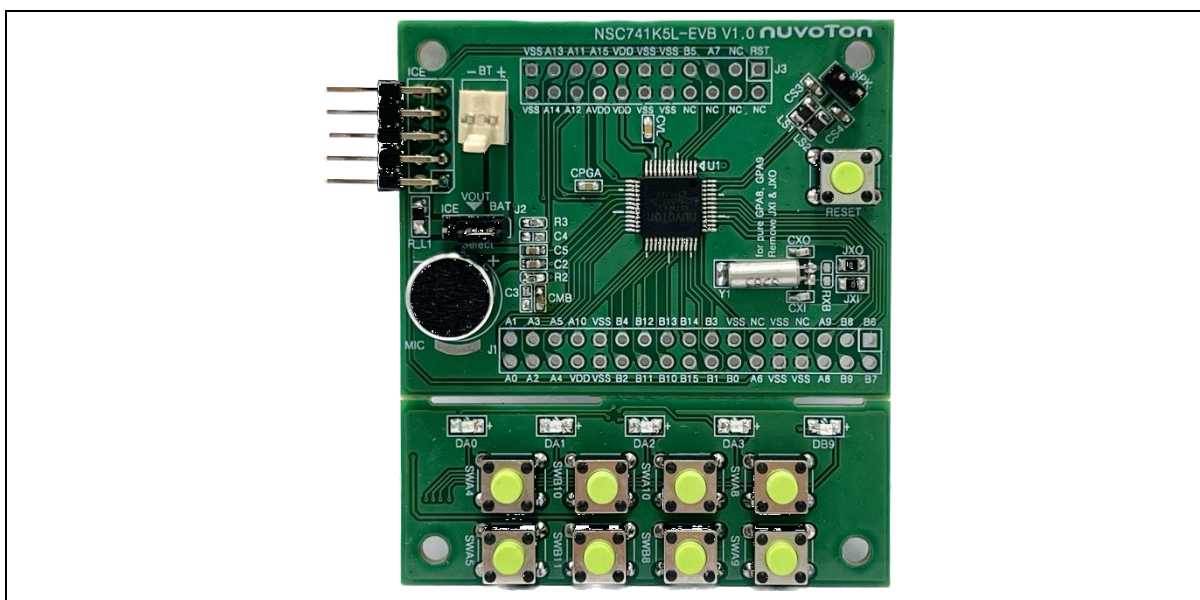


Figure 1-1 EVB Board

2 Board Overview

Figure 2-1 and Figure 2-2 show the main components and connectors from top view and bottom view of EVB board respectively.

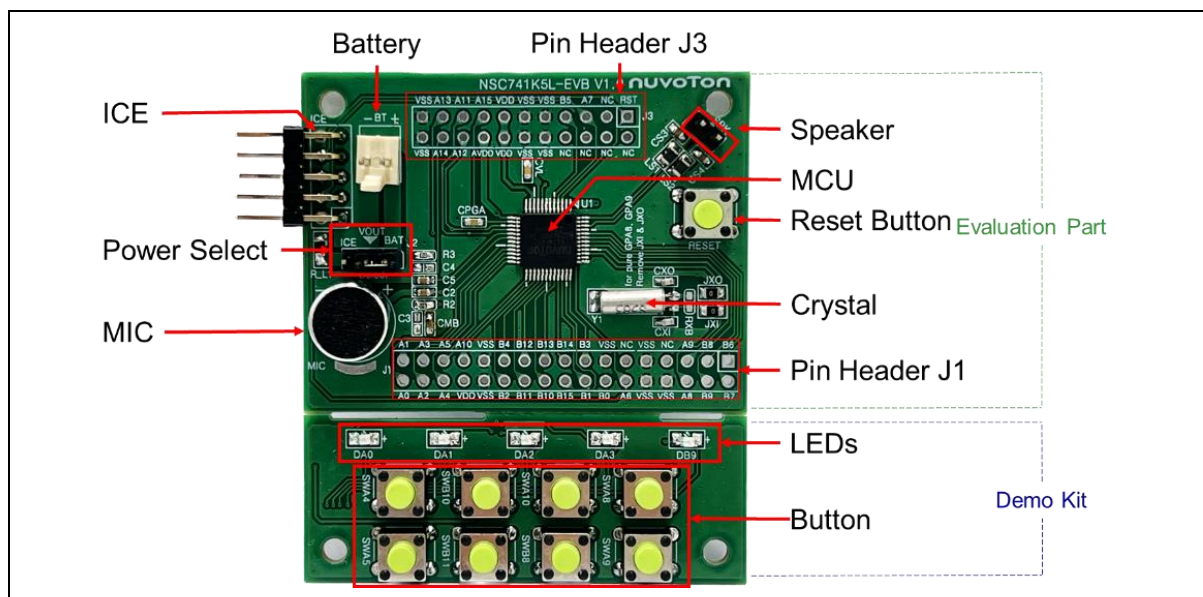


Figure 2-1 Board Top View

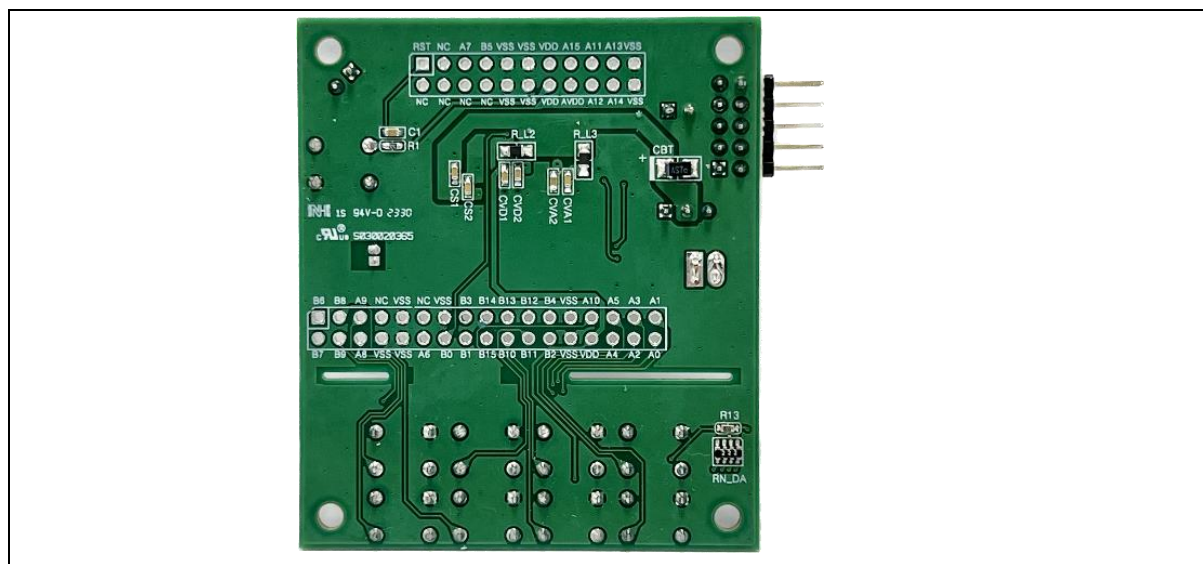


Figure 2-2 Board Bottom View

Release Date: Aug. 2023
Rev 1.0

3.1 Description

Part	Ref on PCB	Jumper Setting
MCU	U1	
Batteries	BT	BAT_VOUT
ICE (Nu-Link)	ICE	ICE_VOUT
Crystal	Y1	JXI, JXO
Speaker	SPK	
Microphone	MIC	
Pin Headers	J1,J3	
Reset-Button	RESET	
Demo Kit Buttons	SWA4, SWA5, SWA8, SWA9, SWA10, SWB8, SWB10, SWB11	
Demo Kit LEDs	DA0, DA1, DA2, DA3, DB9	

Table 3-1 Description

3.2 Components Description:

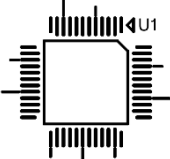
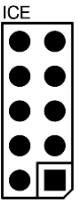
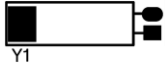
Part	Icon	Description
U1		MCU LQFP48
BT		Power supply (1.8V ~ 5.5V) connector
ICE		ICE interface is for Nu-Link's connection. When connecting with Nu-Link, please note Nu-Link's electrodes.
Y1		32.768 KHz crystal
SPK		Speaker output pins: SPKP / SPKN are DPWM output, can drive speaker directly.
MIC		Microphone input
RESET		Evaluation board has a reset button that connects to RESETB.

Table 3-2 Components Description

3.3 Jumper Settings:

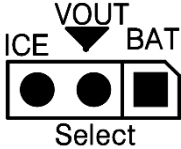
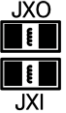
Part	Icon	Description
J2		ICE_VOUT: Powered from Nu-Link (ICE), depends on USB bus power, typical is around 4.8V.
		BAT_VOUT: Powered from connector (BT).
JXO		JXO: Connect GPA9(X32O) to crystal.
JXI		JXI: Connect GPA8(X32I) to crystal.

Table 3-3 Jumper Settings

3.4 Pin Headers:

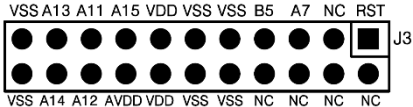
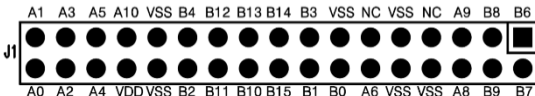
Part	Icon	Description																																	
J3		GPA12 ~ 15 share with MIC.																																	
	<table><tr><td>VSS</td><td>GPA13</td><td>GPA11</td><td>GPA15</td><td>VDD</td><td>VSS</td><td>VSS</td><td>GPB5</td><td>GPA7</td><td>NC</td><td>RESETB</td></tr><tr><td>VSS</td><td>GPA14</td><td>GPA12</td><td>AVDD</td><td>VDD</td><td>VSS</td><td>VSS</td><td>NC</td><td>NC</td><td>NC</td><td>NC</td></tr></table>	VSS	GPA13	GPA11	GPA15	VDD	VSS	VSS	GPB5	GPA7	NC	RESETB	VSS	GPA14	GPA12	AVDD	VDD	VSS	VSS	NC	NC	NC	NC												
VSS	GPA13	GPA11	GPA15	VDD	VSS	VSS	GPB5	GPA7	NC	RESETB																									
VSS	GPA14	GPA12	AVDD	VDD	VSS	VSS	NC	NC	NC	NC																									
J1		GPA0 ~ 3 and GPB9 control demo kit LEDs. GPA4 / 5 / 8 / 9 / 10 and GPB8 / 10 / 11 control demo kit buttons. GPA8 and GPA9 share with 32 KHz crystal.																																	
	<table><tr><td>GPA1</td><td>GPA3</td><td>GPA5</td><td>GPA10</td><td>VSS</td><td>GPB4</td><td>GPB12</td><td>GPB13</td><td>GPB14</td><td>GPB3</td><td>VSS</td><td>NC</td><td>VSS</td><td>NC</td><td>GPA9</td><td>GPB8</td><td>GPB6</td></tr><tr><td>GPA0</td><td>GPA2</td><td>GPA4</td><td>VDD</td><td>VSS</td><td>GPB2</td><td>GPB11</td><td>GPB10</td><td>GPB15</td><td>GPB1</td><td>GPB0</td><td>GPA6</td><td>VSS</td><td>VSS</td><td>GPA8</td><td>GPB9</td><td>GPB7</td></tr></table>	GPA1	GPA3	GPA5	GPA10	VSS	GPB4	GPB12	GPB13	GPB14	GPB3	VSS	NC	VSS	NC	GPA9	GPB8	GPB6	GPA0	GPA2	GPA4	VDD	VSS	GPB2	GPB11	GPB10	GPB15	GPB1	GPB0	GPA6	VSS	VSS	GPA8	GPB9	GPB7
GPA1	GPA3	GPA5	GPA10	VSS	GPB4	GPB12	GPB13	GPB14	GPB3	VSS	NC	VSS	NC	GPA9	GPB8	GPB6																			
GPA0	GPA2	GPA4	VDD	VSS	GPB2	GPB11	GPB10	GPB15	GPB1	GPB0	GPA6	VSS	VSS	GPA8	GPB9	GPB7																			

Table 3-4 Pin Headers

3.5 Demo Kit (Buttons / LEDs):

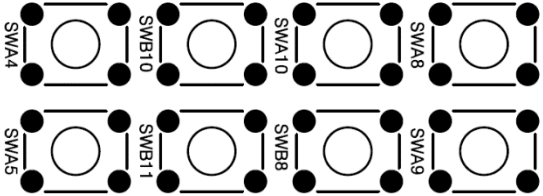
Part	Icon	Description
SWA4, SWA5, SWA8, SWA9, SWA10, SWB8, SWB10, SWB11.		Demo kit equips 8 buttons for demo purpose. The connections are SWA4 to GPA4, SWA5 to GPA5, SWA8 to GPA8, SWA9 to GPA9, SWA10 to GPA10, SWB8 to GPB8, SWB10 to GPB10 and SWB11 to GPB11.
DA0, DA1, DA2, DA3, DB9.		Demo kit equips 5 LEDs (DA0 ~ DA3 and DB9) for demo purpose, DA0 ~ DA3 and DB9 connect to GPA0 ~ GPA3 and GPB9 respectively , output low for on.

Table 3-5 Demo Kit (Buttons / LEDs)

4 Schematic

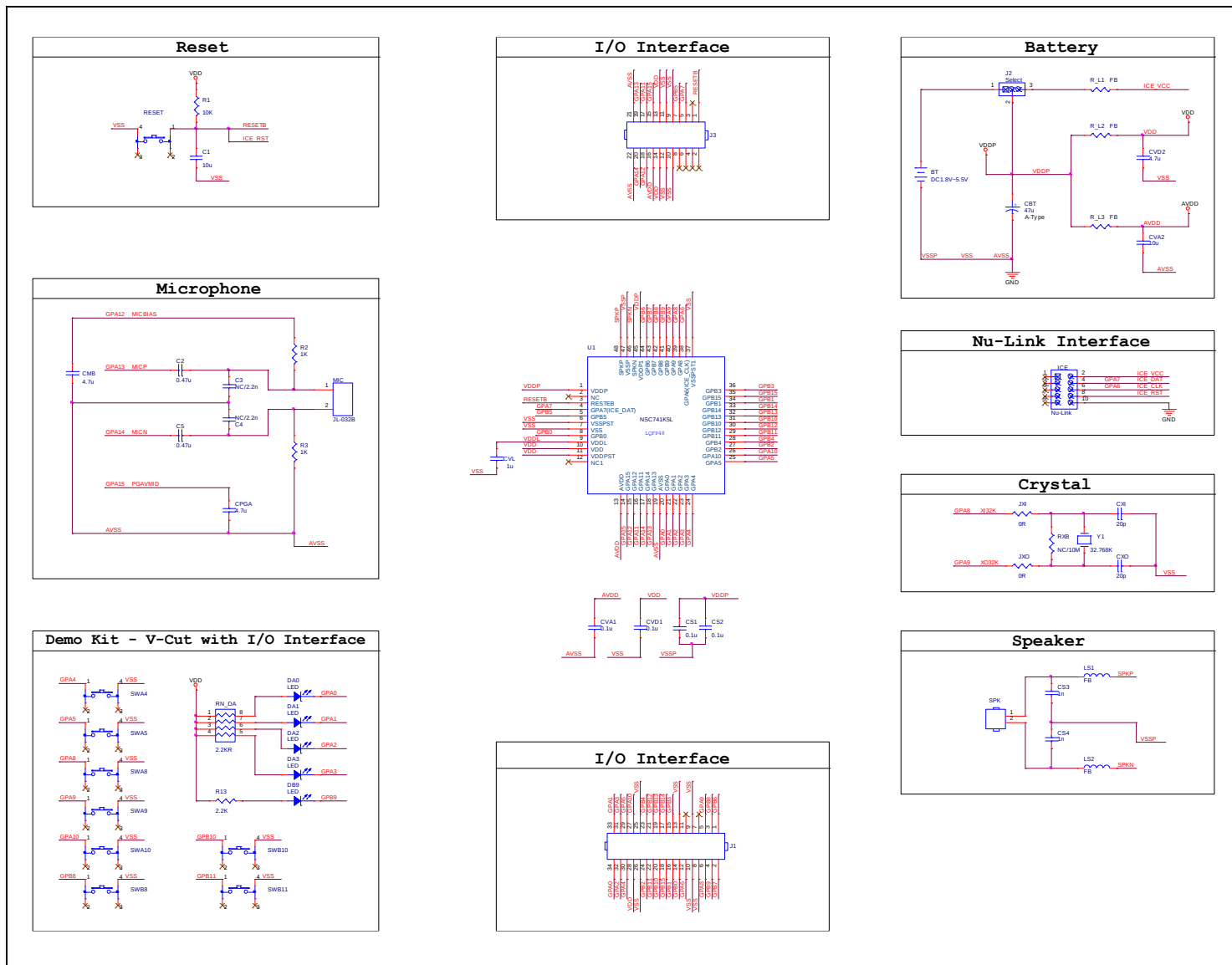


Figure 4-1 Circuit

5 Revision History

Version	Date	Substantial Changes	Page
1.0	Aug. 2023	Initial Release	All

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