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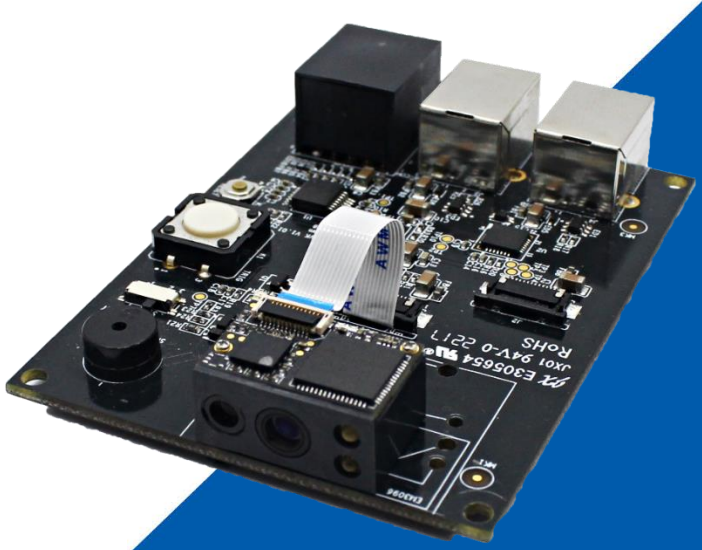


NLS-EVK3030

Software Development Board

User Guide

Revision History

Version	Description	Date
V1.0.0	Initial release.	September 12, 2016
V1.0.1	Updated the pictures and relevant texts.	October 12, 2017
V1.0.2	Added an example of cable installation (EM2096).	February 8, 2018
V1.0.3	Updated relevant texts.	February 27, 2018
V1.0.4	Updated Pinout of J1 and Pinout of J2 sections.	June 04, 2020

Table of Contents

Revision History ..... **- 2 -**

About This Guide **1**

Introduction 1

Chapter 1 Electrical Specifications **2**

EVK3030 Schematic Diagram 2

EVK3030 Block Diagram 3

Parts Placement Layout 4

Scan Engine Port Pinouts 6

Pinout of J1 7

Pinout of J2 8

12-pin FFC Cable Installation 9

EVK3030 Circuit Diagram 11

Operating Instructions 12

Connecting EVK3030 to PC via J3 12

Connecting EVK3030 to PC via J4 12

Connecting EVK3030 to PC via J5 12

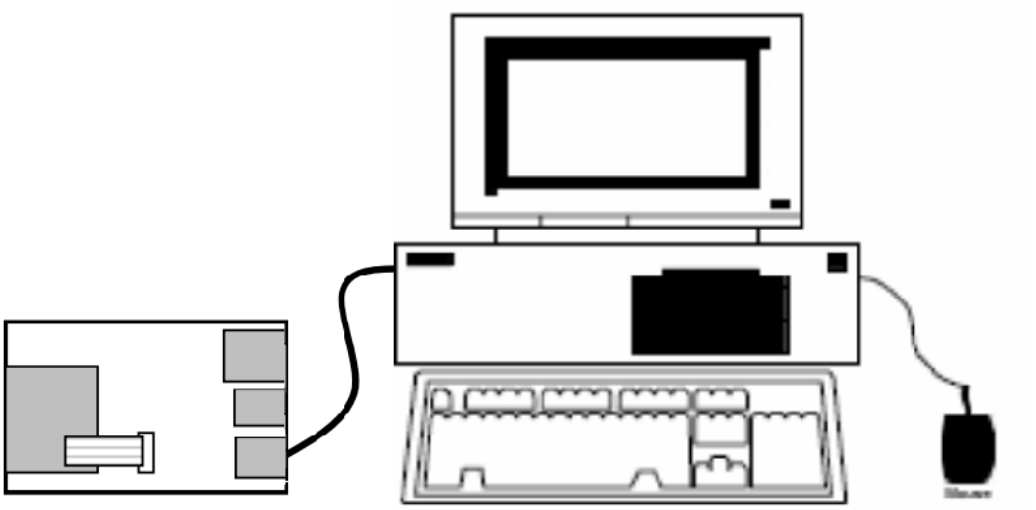
About This Guide

Introduction

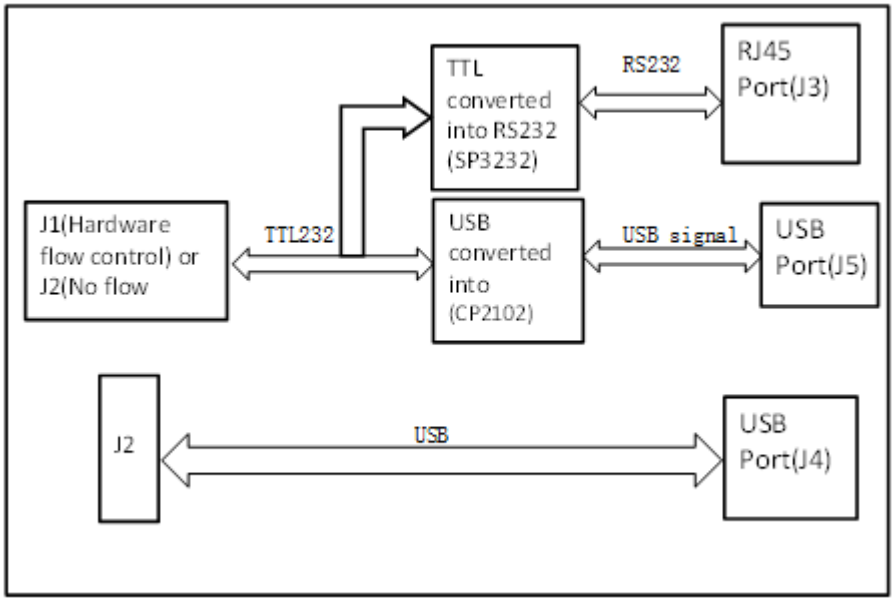
This manual provides instructions on how to use NLS-EVK3030 software development board (hereinafter referred to as “EVK3030”). EVK3030 is an upgrade of EVK3000 V2 with an additional USB port via which users can enjoy the USB feature of the scan engine connected. For more details about scan engines which EVK3030 is applicable to, please ask the technical support for the scan engine supporting table.

Chapter 1 Electrical Specifications

EVK3030 Schematic Diagram

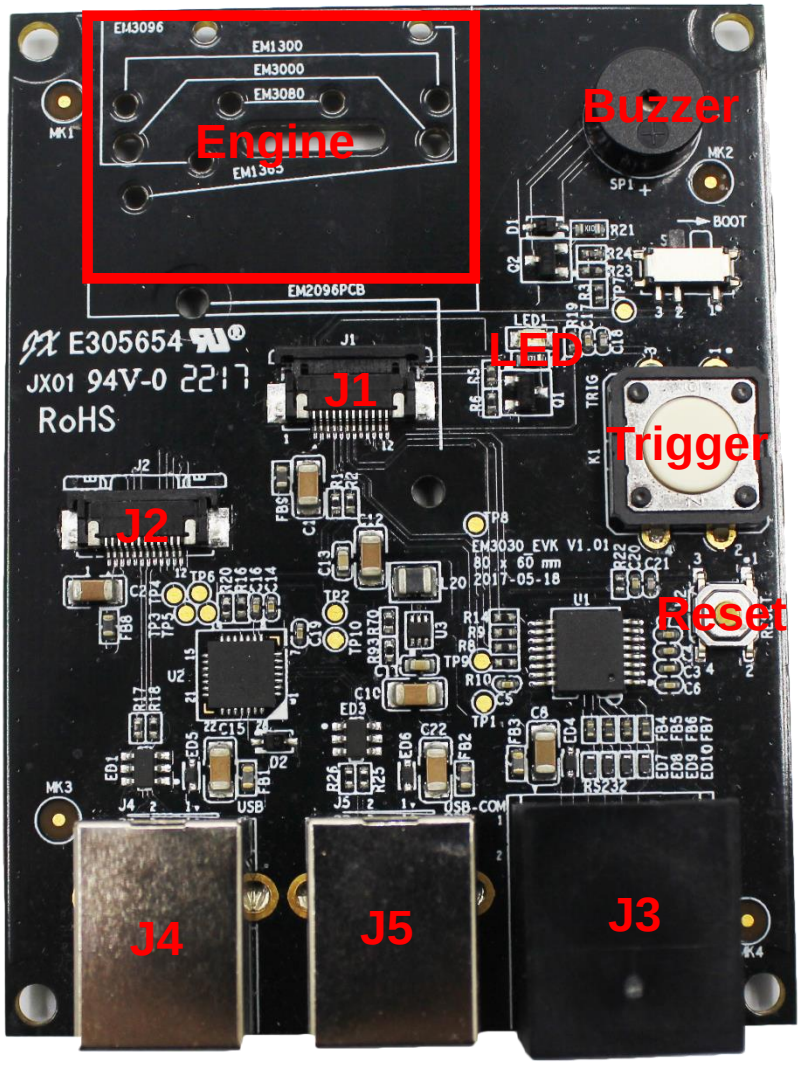


EVK3030 Block Diagram



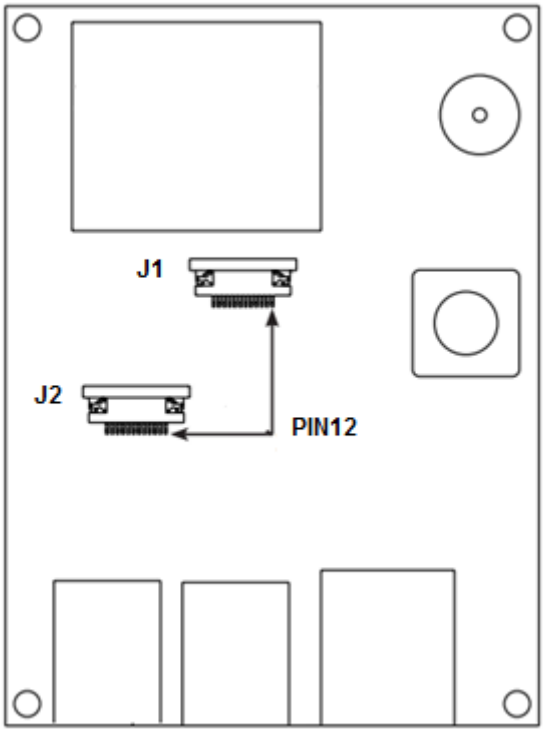
1. Place a scan engine on EVK3030.
2. Connect the scan engine to EVK3030 with a 12-pin FFC cable.
3. Connect EVK3030 to PC.

Parts Placement Layout



Part	Description	Note
J1	TTL-232 scan engine port	Connect J3 or J5 to a host device.
J2	TTL-232/USB scan engine port	Connect J3 or J4 or J5 to a host device.
J3	RJ45 port	Connect J1 or J2 to a scan engine using TTL-232 signals. EVK3030 converts TTL-232 signals of scan engine into RS-232 signals. EVK3030 only can communicate with COM tools on host device.
J4	USB-A port	Connect J2 to a scan engine using USB signals. EVK3030 can communicate with host device through USB HID port and USB COM emulation.
J5	USB-B port, TTL-232 to USB	Connect J1 or J2 to scan engine using TTL-232 signals. EVK3030 converts TTL-232 signals of scan engine into USB signals. EVK3030 only can communicate with USB virtual COM on host device.
LED	LED (Good Read LED output)	Red LED will flash when the barcode reading is done.
Buzzer	Buzzer (Good Read/Power On beeper output)	The Beep sound will occur when the scan engine is powered on or the barcode reading is done.
Trigger	Trigger (Trigger signal input)	Barcode reading can be conducted through control over the trigger signal.
Reset	Reset Button (Reset signal input)	Reset signal input. Keep the low level above 100us to reset the scan engine.
Engine	Space for placing scan engine	It is used for placing and fixing the scan engine.

Scan Engine Port Pinouts



Pinout of J1

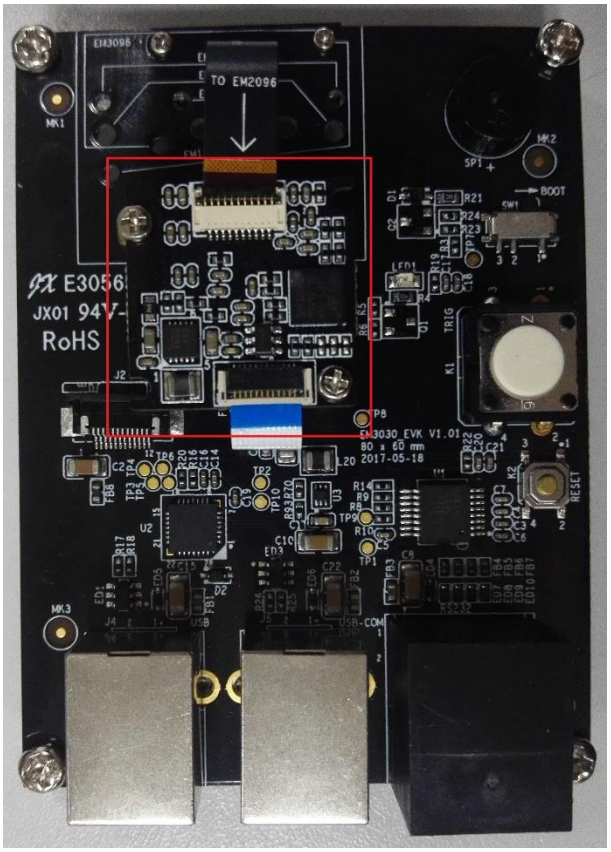
PIN	Signal	Function
1	BOOT	It is connected to the DIP Switch. Put the switch on the right where EVK3030 is set as the low level. Under such circumstance, it will enter the Boot downloading mode. If it connects to the PIN of the scan engine which is NC, there will be no such function and DIP switch will be invalid.
2	VCC	3.3V power supply.
3	GND	Power-supply ground.
4	RXD	RXD signal led out via the EVK3030 connects to the PIN (RXD) of the scan engine.
5	TXD	TXD signal led out via the EVK3030 connects to the PIN (TXD) of the scan engine.
6	CTS	Clear to send.
7	RTS	Request to send.
8	-	Not connected.
9	BUZ	Beeper output.
10	LED	Good Read LED output.
11	nWake	Reset signal input. The PIN is conneted to the Key K2 (reset). Press the Key K2 (reset), and EVK3030 will enter the low level state. Keep the low level above 100 us to reset the scan engine.
12	nTrig	Trigger signal input.

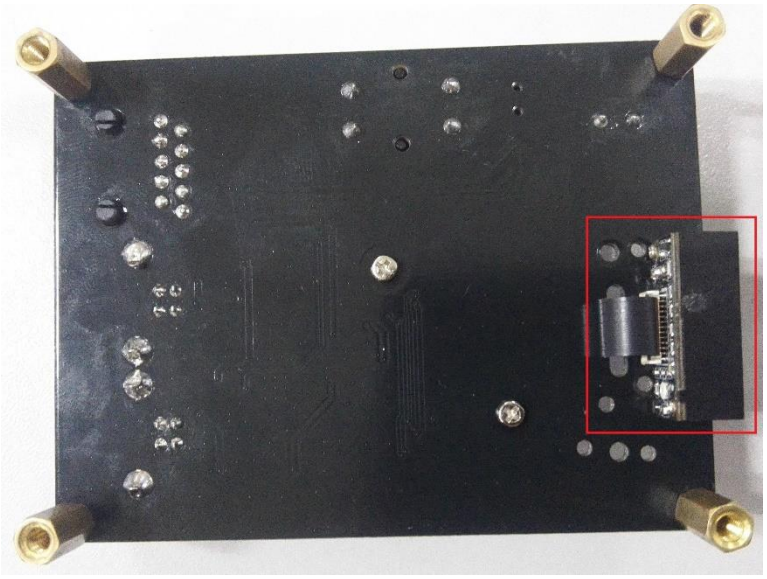
Pinout of J2

PIN	Signal	Function
1	-	Not connected.
2	VCC	3.3V power supply.
3	GND	Power-supply ground.
4	RXD	RXD signal led out via the EVK3030 connects to the PIN (RXD) of the scan engine.
5	TXD	TXD signal led out via the EVK3030 connects to the PIN (TXD) of the scan engine.
6	USB-	USB D- differential data signal.
7	USB+	USB D+ differential data signal.
8	-	Not connected.
9	BUZ	Beeper output.
10	LED	Good Read LED output.
11	nWake	Reset signal input. The PIN is conneted to the Key K2 (reset). Press the Key K2 (reset), and EVK3030 will enter the low level state. Keep the low level above 100 us to reset the scan engine.
12	nTrig	Trigger signal input.

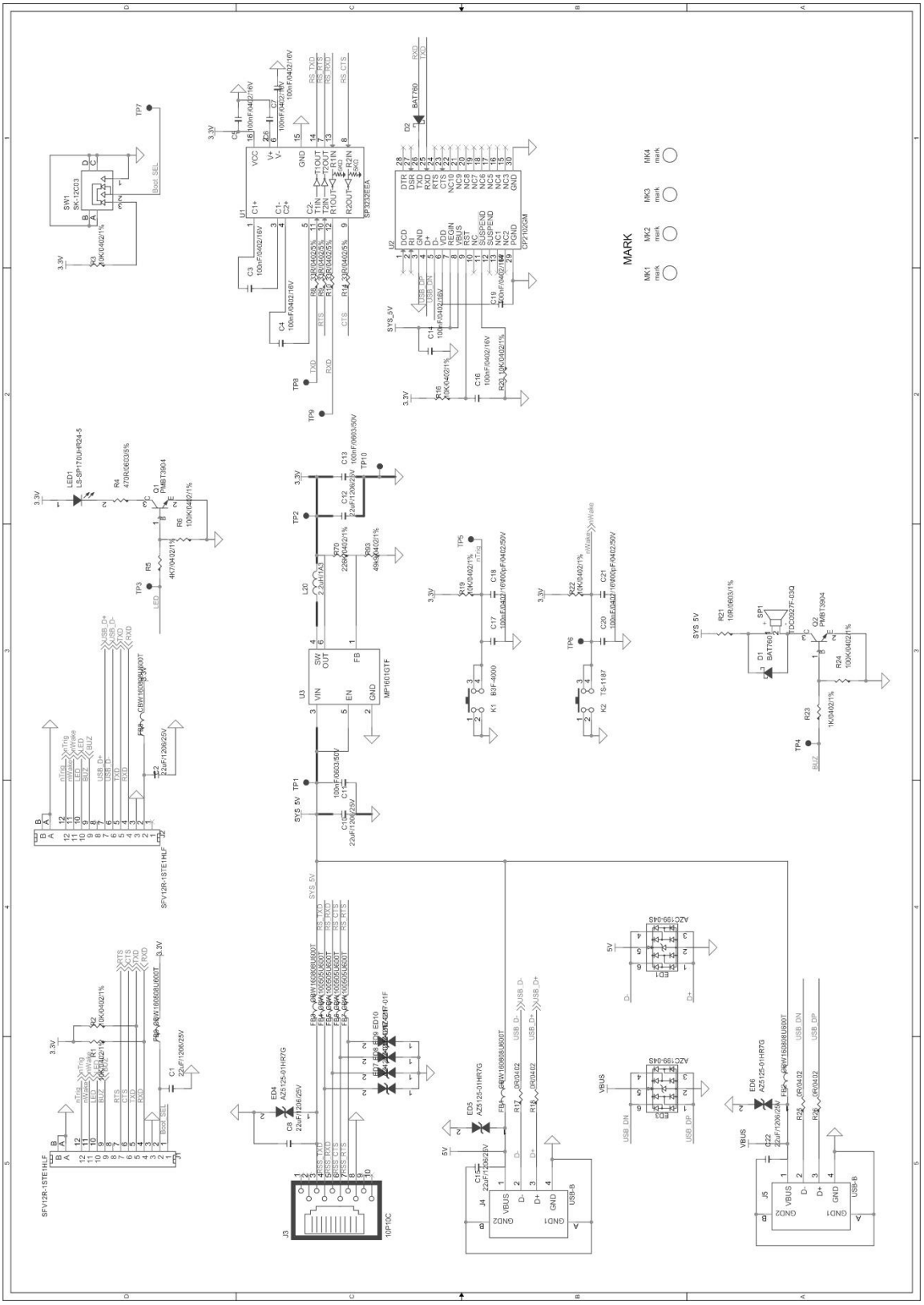
12-pin FFC Cable Installation

The example below shows how the EM2096 scan engine should be connected to the EVK3030.


TO EM2096
MK1
MK2
MK3
SP1
BOOT
RoHS
RESET
USB
USB-COM



EVK3030 Circuit Diagram



Operating Instructions

Connecting EVK3030 to PC via J3

1. Connect J1 or J2 on EVK3030 to scan engine supporting TTL-232 port.
2. Connect J3 on EVK3030 to the serial port on PC with RS-232 cable (CBL037R).
3. Plug the power adapter (KSAS0120500150D5) into the power connector on the RS-232 cable.
4. Plug the power adapter into AC outlet.
5. When EVK3030 is electrified, its buzzer will beep, which means EVK3030 is in working state.
6. Press the trigger and start to read barcodes.

Connecting EVK3030 to PC via J4

1. Connect J2 on EVK3030 to scan engine supporting USB port.
2. Connect J4 on EVK3030 to the USB port on PC with USB cable (FM300U).
3. When using USB HID-KBW, no driver is required; when using USB COM Port Emulation, install the corresponding driver (UFCOM driver) on PC.
4. When EVK3030 is electrified, its buzzer will beep, which means EVK3030 is in working state.
5. Press the trigger and start to read barcodes.

Connecting EVK3030 to PC via J5

1. Install CP210x driver on PC.
2. Connect J1 or J2 on EVK3030 to scan engine supporting TTL-232 port.
3. Connect J5 on EVK3030 to the USB port on PC.
4. When EVK3030 is electrified, its buzzer will beep, which means EVK3030 is in working state.
5. Press the trigger and start to read barcodes.

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