Memo: TLSR921x Errata

From: Telink Semiconductor

Data: 2022/06/30

1.　Introduction

This document presents Errata information for the TLSR921x chip A1 version engineering sample (ES) and A2 version mass production (MP). This document applies to the chip with marking shown below.

Product Series	Lot.　No.	Version ID
TLSR921x A1 Version	EP9044.12& EP9044.13	0xFE
TLSR921x A2 Version	EP9327.14	0xFA

Note: Version ID can be read from register 0x140e02[1:0].

The SoC is marked as following (take TLSR9218 as an example),
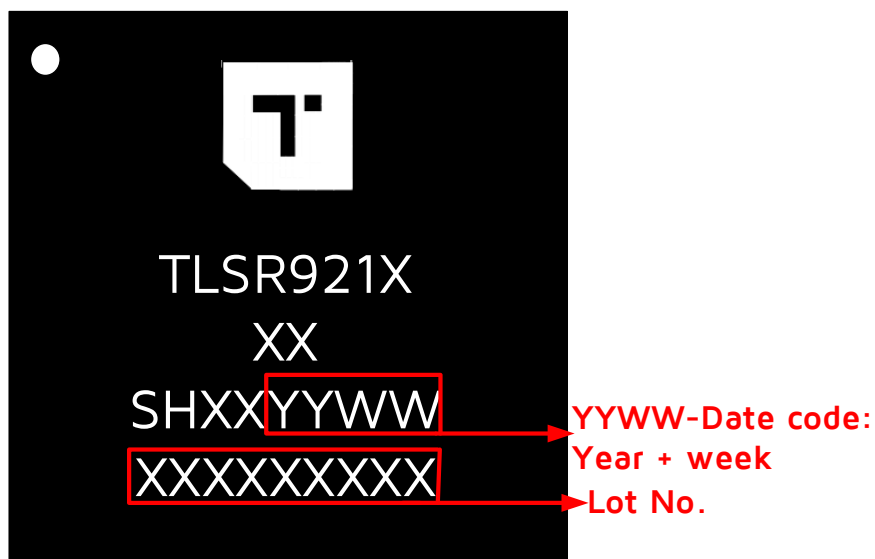
2. Change Log

Version	Major Changes	Date	Author
1.0.0	Initial release	2020/09	SY, SGJ
1.0.1	Update document format	2020/09	SY, YH
1.0.2	Update A1 related information	2020/10	SY, YH
1.0.3	Updated A2 related information	2021/01	SY, YH
1.0.4	Updated silkscreen format	2022/06	YHL, LC

3. Anomaly History

Item	Description	Chip Version	
		0x01(A1)	0x02(A2)
Power on failed	Chip cannot power on when Vbat is above 2.8V	New	Fixed
32KHz Crystal function failed	32KHz Crystal cannot work	New	Fixed
PD[0] function failed	PD[0] cannot work	New	Fixed
SDP Function Failed	Only JTAG and SWS could be used for debug function	New	New

Please check Lot No. and Version ID for chip version.

4. Anomalies of Version 0x02(A2)

4.1 Overview

Item	Description	Reference
SDP Function Failed	Only JTAG and SWS can be used for debug function	4.2

4.2 SDP Function Failed

Issue symptom:

A1/A2 version is only able to be debug via JTAG and SWS interface. The SDP mode in PE[6]/PE[7] could not work. Other function in PE[6]/PE[7] could work.

Consequence:

SDP Function Failed

Workaround:

Only JTAG and SWS can be used for debug function

5. Anomalies of Version 0x01(A1)

5.1 Overview

Item	Description	Reference
Power on failed	Chip cannot power on when Vbat is above 2.8V	5.2
32KHz Crystal function failed	32KHz Crystal cannot work	5.3
PD[0] function failed	PD[0] cannot work	5.4

5.2 Power on failed

Issue symptom:

A1 version is only able to start with battery supply lower than 2.8V or directly supply from USB 5.0V. For battery voltage above 2.8V, it is not working. After power on with battery supply lower than 2.8V or directly supply from USB 5.0V, A1 version can work under battery supply between 1.8V to 4.2V.

Consequence:

Cannot power on with battery voltage above 2.8V.

Workaround:

Selecting one way as below,

1. Can power on and work directly supply from USB 5.0V(a battery need to be connected to VBAT);

2. Can work under battery supply lower than 2.8V;

3. Using external LDO or DCDC to generate the 2.8V supply from batter supply.

Fixed in the A2 version.

5.3 32KHz Crystal function failed

Issue symptom:

One analog control register is changed in A1 version, causing 32KHz crystal Oscillator not working.

Consequence:

32KHz crystal Oscillator cannot work.

Workaround:

Use 32KHz RC Oscillator as the low power timer.

Fixed in the A2 version.

5.4 PD[0] function fails

Issue symptom:

One analog control register is changed in A1 version causing the PD[0] not working.

Consequence:

PD[0] cannot work.

Workaround:

Trying to use other GPIO.

Fixed in the A2 version.