

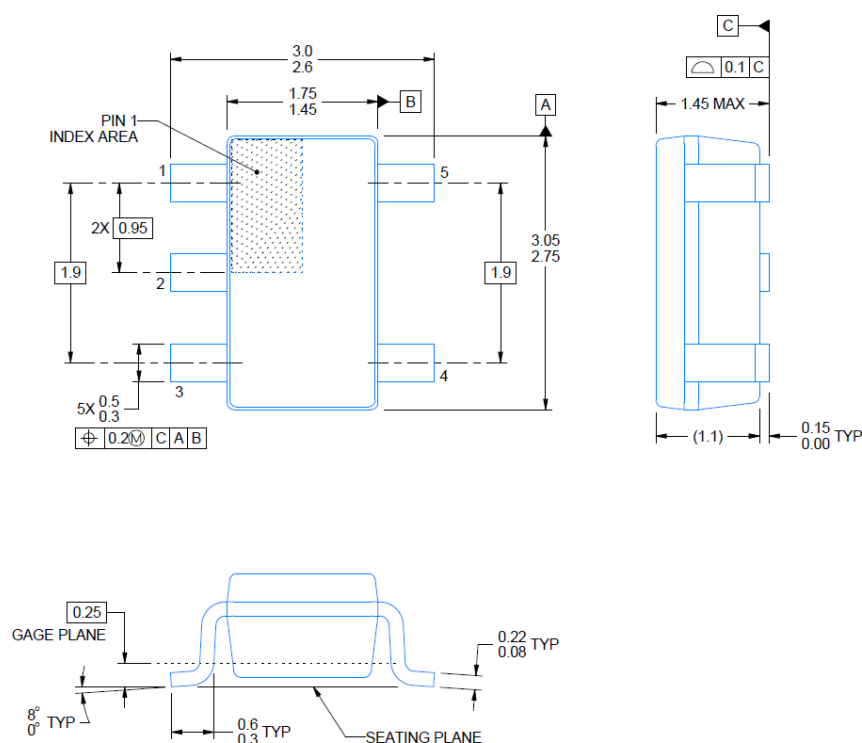
# Comparison of Main source and 2<sup>nd</sup> source

## Test Report

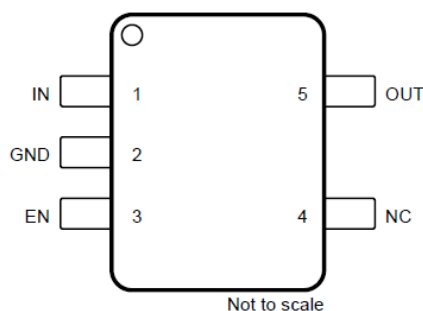
| Hardware version | FW version                              | Main source P/N | 2 <sup>ND</sup> source MFG | 2 <sup>ND</sup> source P/N |
|------------------|-----------------------------------------|-----------------|----------------------------|----------------------------|
| V025             | 4.9.113<br>#1MonFeb 1122:40:43 CST 2019 | TLV755XXPDBVR   | 3PEAK                      | TPL740FXX-5TR              |

Main Source(TLV755XXPDBVR) spec:

|           |                | MIN | NOM | MAX | UNIT |
|-----------|----------------|-----|-----|-----|------|
| $I_{OUT}$ | Output current | 0   |     | 500 | mA   |



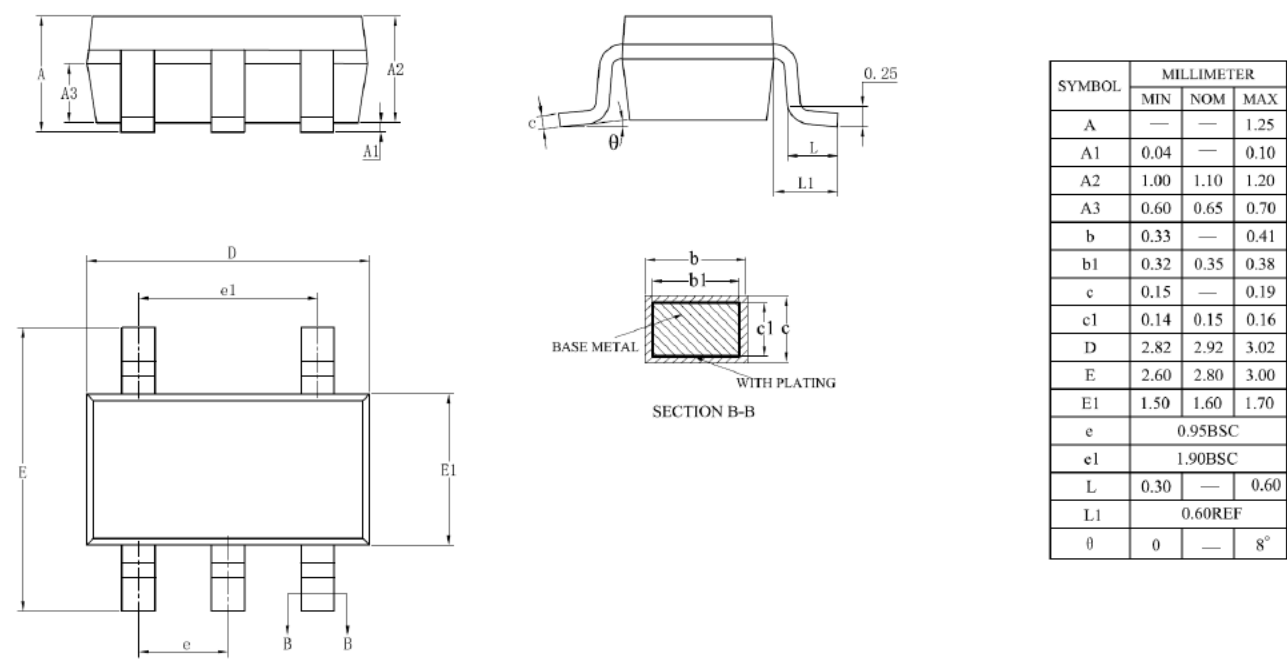
**DBV Package**  
**5-Pin SOT-23**  
**Top View**



Not to scale

2<sup>nd</sup> Source(TPL740FXX-5TR) spec:

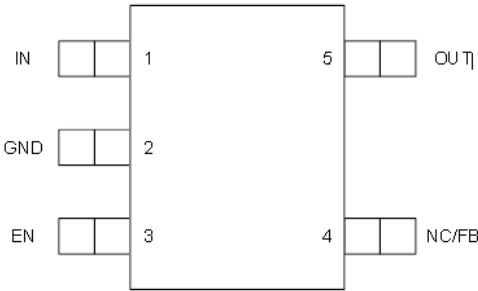
| Parameters |                | Min | Max | Unit |
|------------|----------------|-----|-----|------|
| $I_{OUT}$  | Output Current | 0   | 500 | mA   |



TPL740 Series

5-Pin SOT23 Package

Top View



T99X171T00 2nd source introduce TPL740FXX-5TR

### 1. Test Item

If want to introduce 2<sup>nd</sup> source, still need to test the following items:

- a. Vin
- b. Vout
- c. AC ripple
- d. Power on sequence
- e. Short test
- f. Power Consumption

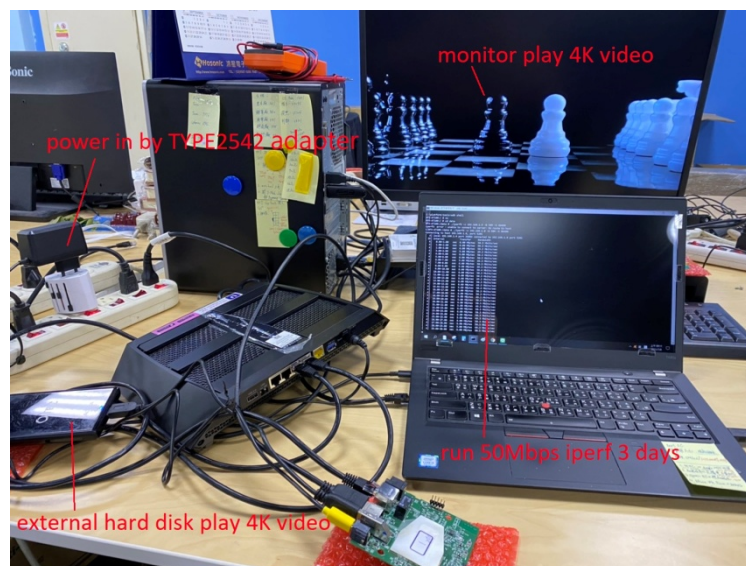
### 2. Power Test Setup

The measure test point is LDO\_P2V5 and the capacitor C334

Emmc\_VDDQ and the capacitor C322

P1V8 and the capacitor C337

### 3. Power Test Setup



#### 1.1 Test Condition

- BOX play 4K video by using external hard disk.
- Ethernet is connected to AP WIFI and run iperf base on 50Mbps to server.
- HDMI output port connects to TV through the HDMI cable.
- DC Power cable is also connected.
- The temperature is about 25 degrees. The results are meeting +/-5%.

##### a. Vin:

Measure U307 pin1(Vin), U303 pin1(Vin) and U306 pin1(Vin).

##### b. Vout:

Measure U307 pin5(Vout), U303 pin5(Vout) and U306 pin5(Vout).

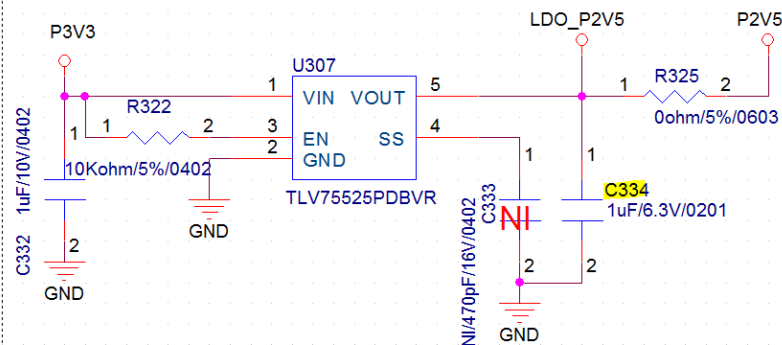
##### c. Ripple test:

Setting Oscilloscope parameter to AC, and measure C334, C322 and C337 to check ripple is under

T99X171T00 2nd source introduce TPL740FXX-5TR  
specification (+-5%)

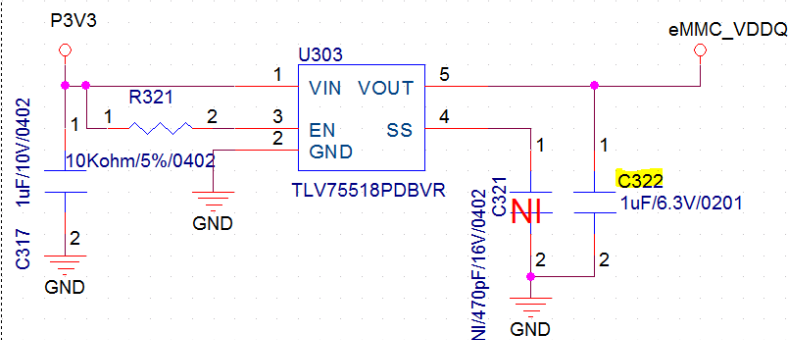
### P3V3 to P2V5

Design Max: 500mA



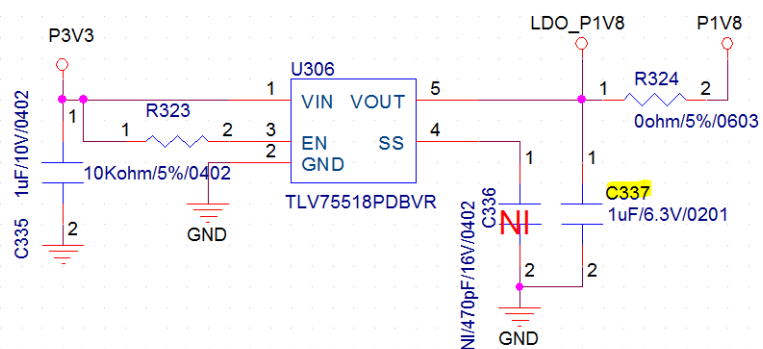
### P3V3 to eMMC\_VDDQ

Design Max: 500mA



### P3V3 to P1V8

Design Max: 500mA



#### 4. Result and Picture

| Power Rail              | Power IC / MOSFET P/N | Spec                       | Measurement point      | Result         | Picture | Result Pass/Fail |
|-------------------------|-----------------------|----------------------------|------------------------|----------------|---------|------------------|
| Main_LDO_P2V5_Vin Vout  | TLV75525PDBVR         | 3.14V-3.46V<br>2.38V-2.62V | U307 pin1<br>U307 pin5 | 3.32V<br>2.48V | Fig. 1  | Pass             |
| Main_LDO_P2V5_ripple    | TLV75525PDBVR         | <125mV                     | C334                   | 53.6mV         | Fig. 2  | Pass             |
| Main_eMMC_VDDQ_Vin Vout | TLV75518PDBVR         | 3.14V-3.46V<br>1.71V-1.89V | C303 pin1<br>C303 pin5 | 3.32V<br>1.8V  | Fig. 3  | Pass             |
| Main_eMMC_VDDQ_ripple   | TLV75518PDBVR         | <90mV                      | C322                   | 46mV           | Fig. 4  | Pass             |
| Main_LDO_P1V8_Vin Vout  | TLV75518PDBVR         | 3.14V-3.46V<br>1.71V-1.89V | U306 pin1<br>U306 pin5 | 3.32V<br>1.8V  | Fig. 5  | Pass             |
| Main_LDO_P1V8_ripple    | TLV75518PDBVR         | <90mV                      | C337                   | 43.2mV         | Fig. 6  | Pass             |

| Power Rail                          | Power IC / MOSFET P/N | Spec                       | Measurement point      | Result           | Picture | Result Pass/Fail |
|-------------------------------------|-----------------------|----------------------------|------------------------|------------------|---------|------------------|
| 2 <sup>nd</sup> _LDO_P2V5_Vin Vout  | TPL740F25-5TR         | 3.14V-3.46V<br>2.38V-2.62V | U307 pin1<br>U307 pin5 | 3.323V<br>2.514V | Fig. 7  | Pass             |
| 2 <sup>nd</sup> _LDO_P2V5_ripple    | TPL740F25-5TR         | <125mV                     | C334                   | 37.48mV          | Fig. 8  | Pass             |
| 2 <sup>nd</sup> _eMMC_VDDQ_Vin Vout | TPL740F18-5TR         | 3.14V-3.46V<br>1.71V-1.89V | C303 pin1<br>C303 pin5 | 3.33V<br>1.822V  | Fig. 9  | Pass             |
| 2 <sup>nd</sup> _eMMC_VDDQ_ripple   | TPL740F18-5TR         | <90mV                      | C322                   | 24.46mV          | Fig. 10 | Pass             |
| 2 <sup>nd</sup> _LDO_P1V8_Vin Vout  | TPL740F18-5TR         | 3.14V-3.46V<br>1.71V-1.89V | U306 pin1<br>U306 pin5 | 3.328V<br>1.814V | Fig. 11 | Pass             |
| 2 <sup>nd</sup> _LDO_P1V8_ripple    | TPL740F18-5TR         | <90mV                      | C337                   | 28.95mV          | Fig. 12 | Pass             |

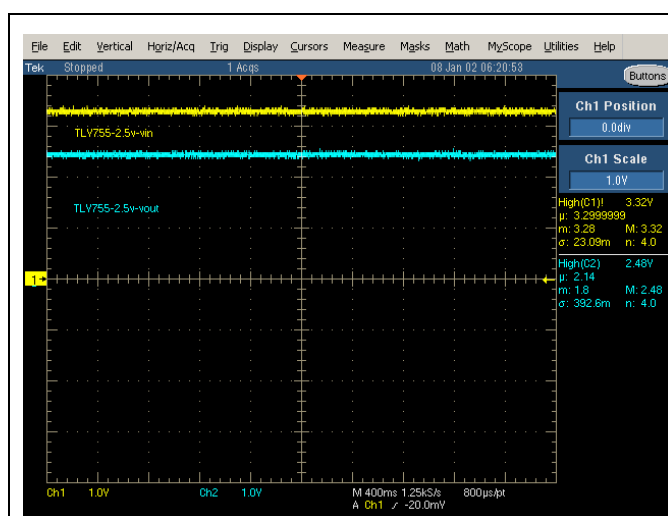


Fig. 1: Main\_LDO\_P2V5\_Vin Vout

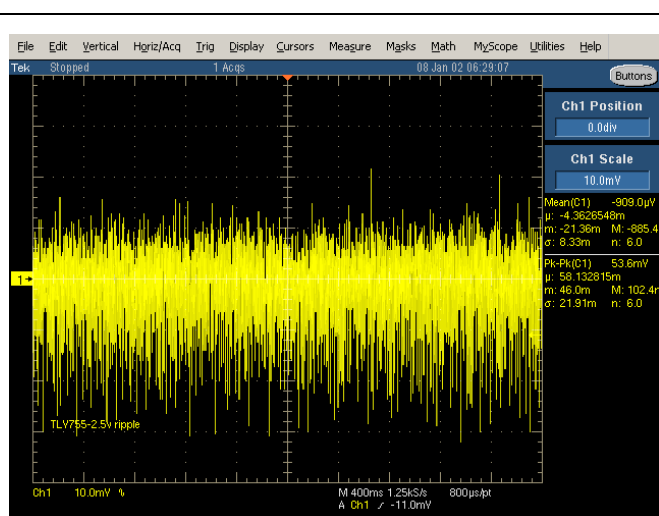


Fig. 2: Main\_LDO\_P2V5\_ripple

## T99X171T00 2nd source introduce TPL740FXX-5TR

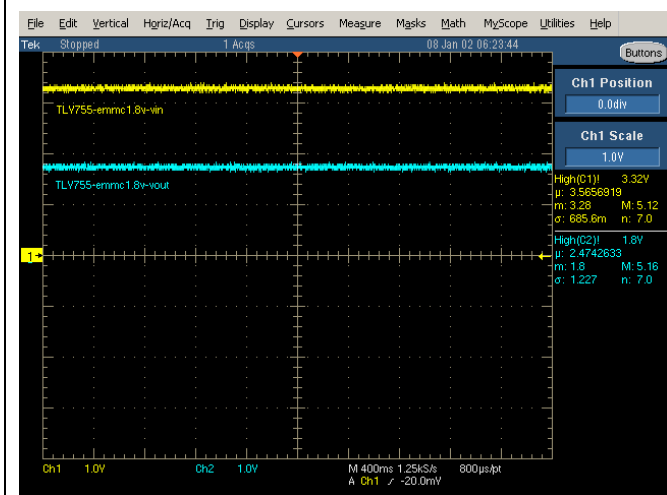


Fig. 3: Main\_eMMC\_VDDQ\_Vin Vout

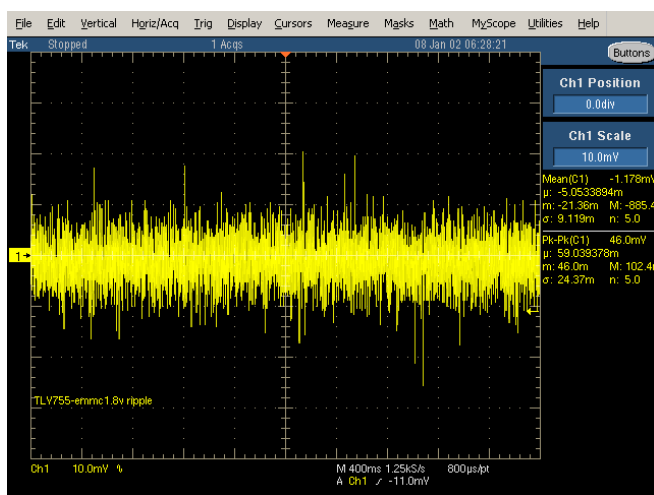


Fig. 4: Main\_eMMC\_VDDQ\_ripple

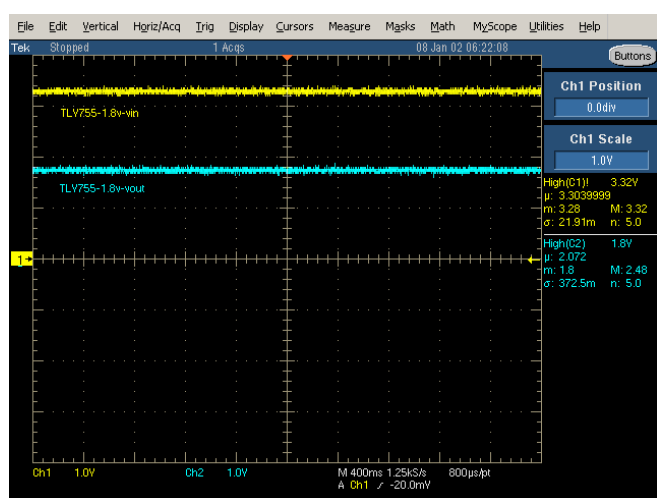


Fig. 5: Main\_LDO\_P1V8\_Vin Vout

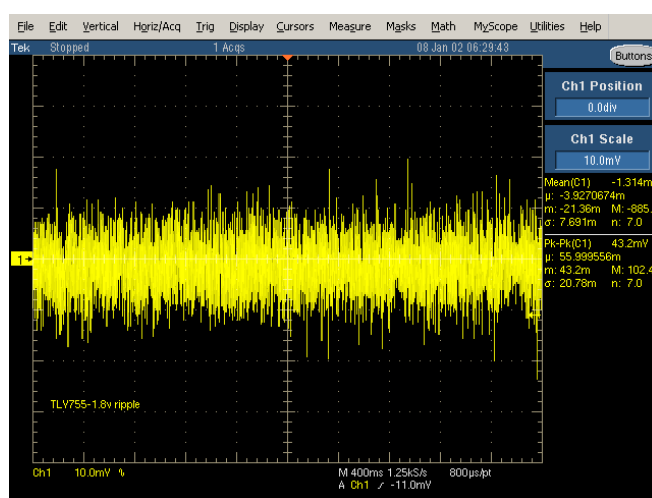


Fig. 6: Main\_LDO\_P1V8\_ripple

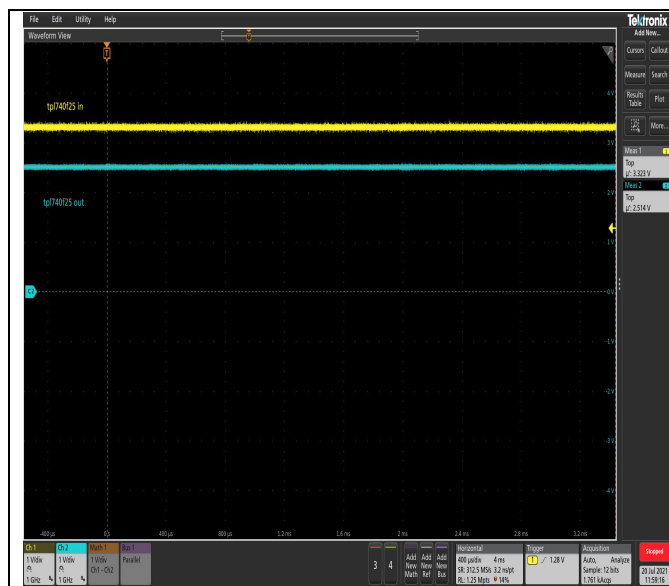


Fig. 7: 2<sup>nd</sup>\_LDO\_P2V5\_Vin Vout

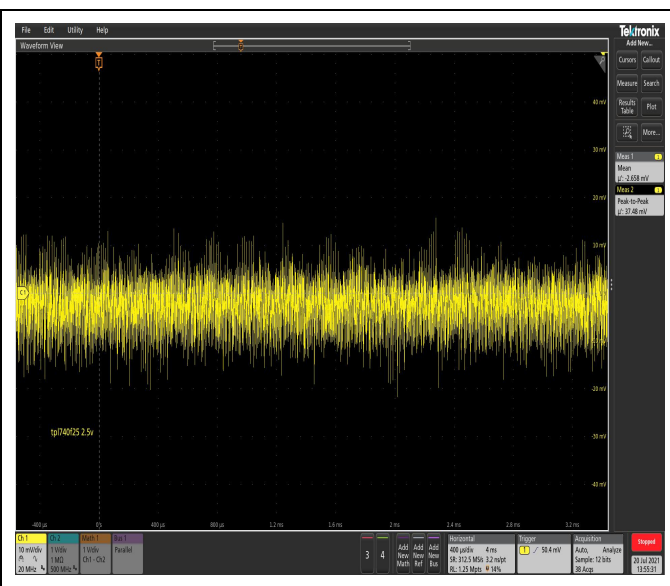


Fig. 8: 2nd\_LDO\_P2V5\_ripple

T99X171T00 2nd source introduce TPL740FXX-5TR

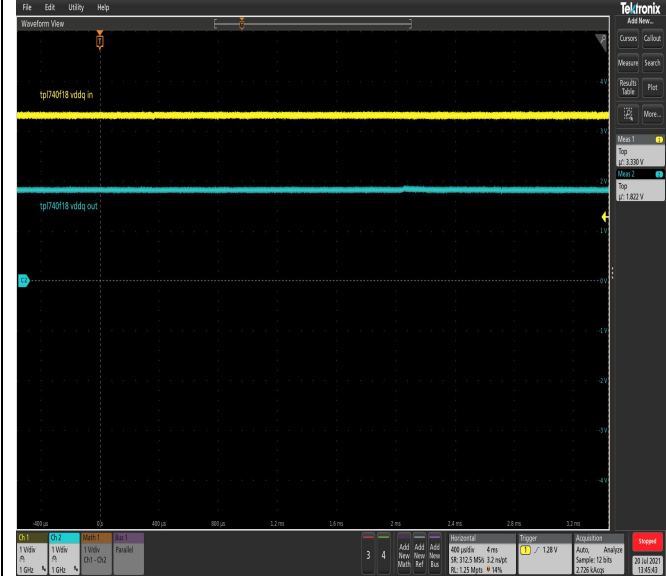


Fig. 9: 2nd\_eMMC\_VDDQ\_Vin Vout

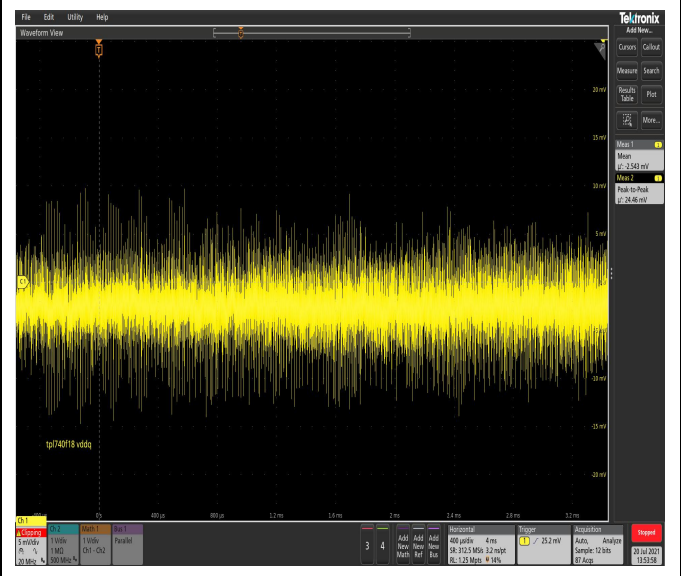


Fig. 10: 2nd\_eMMC\_VDDQ\_ripple



Fig. 11: 2nd\_LDO\_P1V8\_Vin Vout

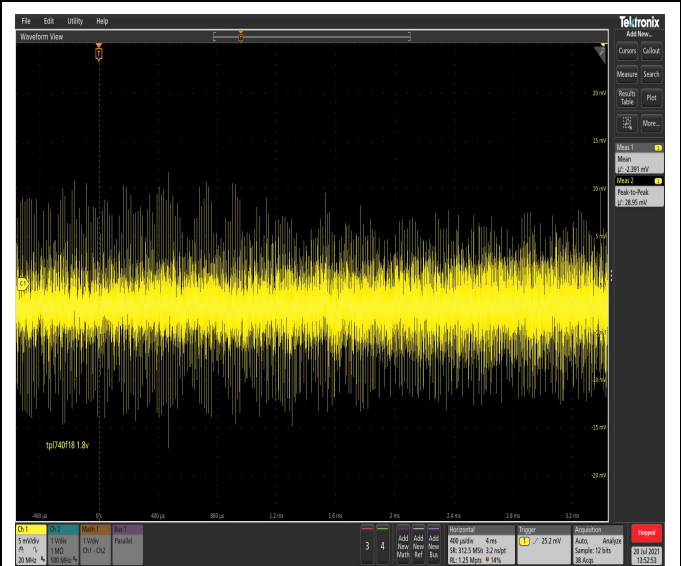
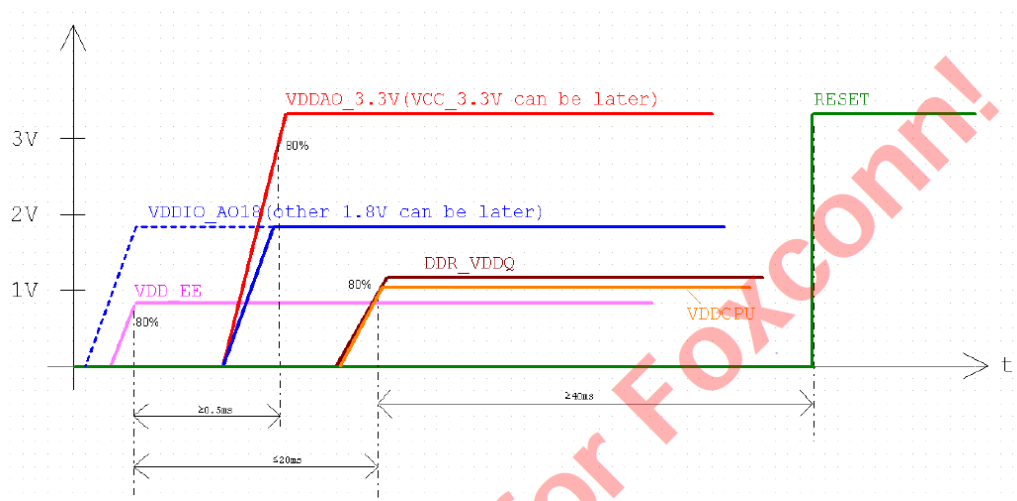


Fig. 12: 2nd\_LDO\_P1V8\_ripple

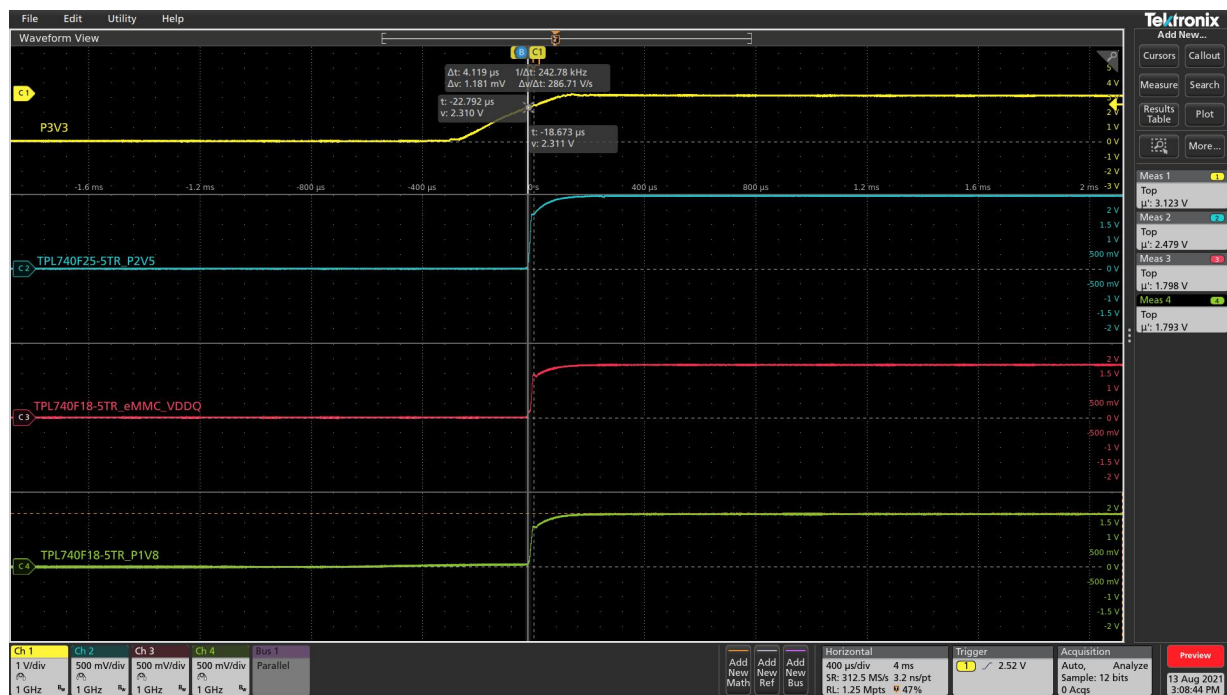
T99X171T00 2nd source introduce TPL740FXX-5TR

## 5. Power on sequence

Amlogic S905X2 datasheet:

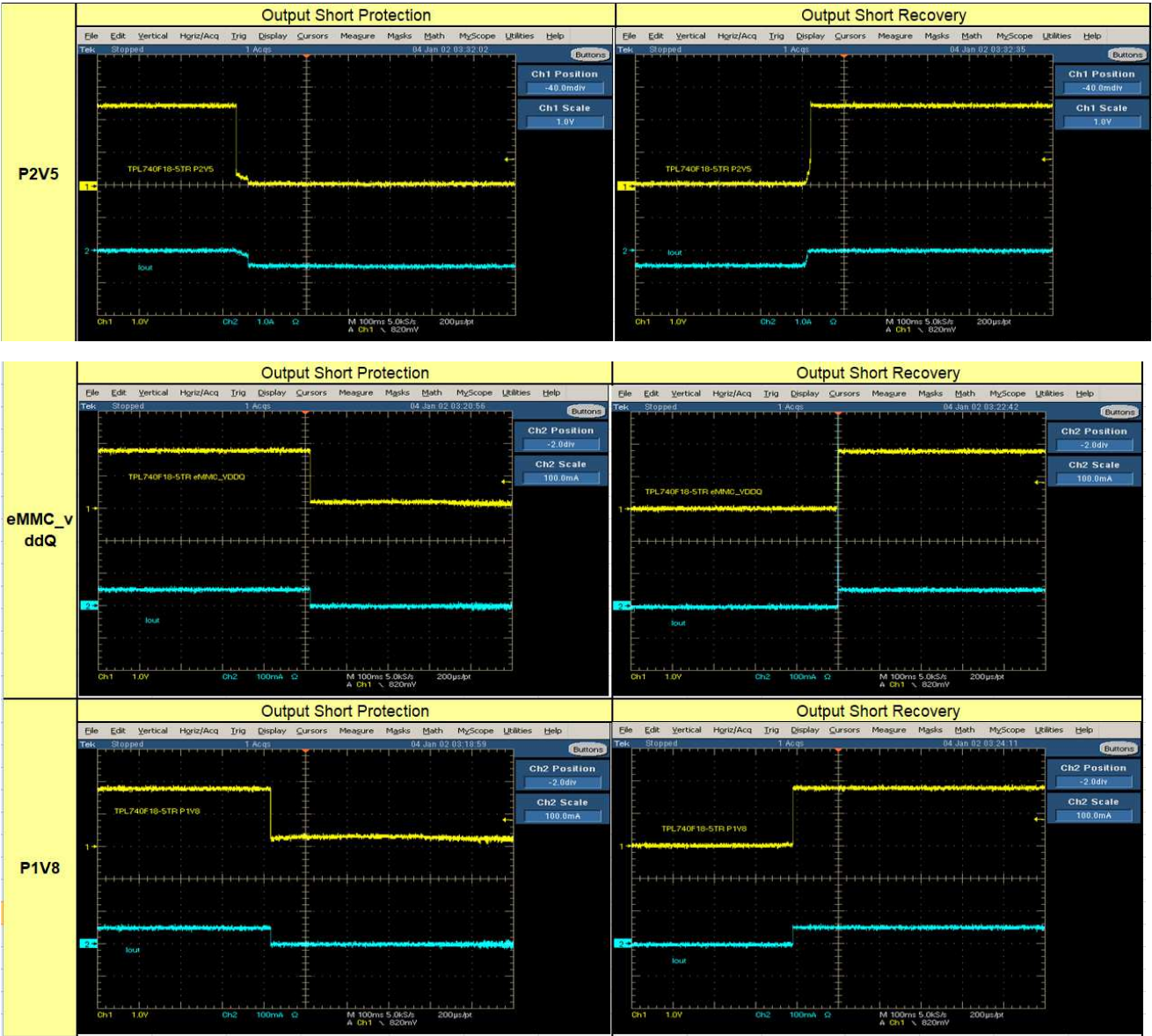


### 5-1. Power on sequence test result:

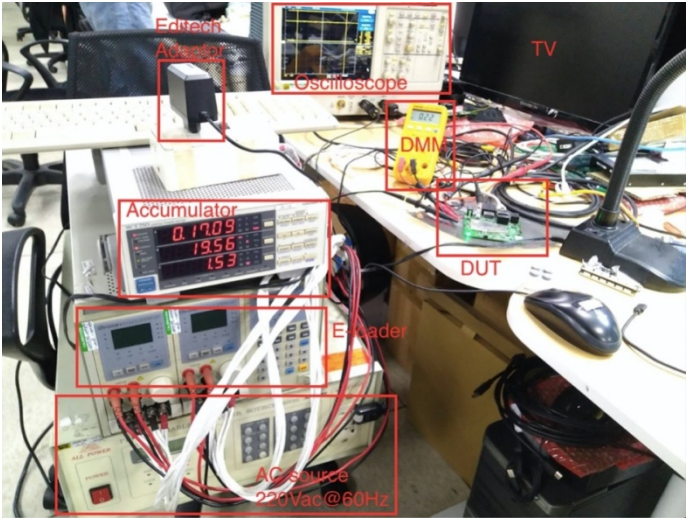


6. Short test

|                |    |               |     |      |      |    |             |                           |
|----------------|----|---------------|-----|------|------|----|-------------|---------------------------|
| Specification: | IC | TPL740FXX-5TR | Vin | 3.3V | L    | NA | Conclusion: | Pass<br>(function normal) |
|                |    |               | Cin | 1uF  | Cout |    |             |                           |



7. Power Consumption



T99X171T00 2nd source introduce TPL740FXX-5TR

6-1. [Adaptor: Editech TYPE2541 5V/2A]: Operation mode (4KP60 on USB hard disk + iperf 50Mbps)

| Test Results of power consumption:<br>F/W version: 4.9.113 #1MonFeb 1122:40:43 CST 2019<br>H/W version: V025 |                            |                       |        |
|--------------------------------------------------------------------------------------------------------------|----------------------------|-----------------------|--------|
| Item No.                                                                                                     | AC port                    | DC port               | Remark |
| TPL740FXX-5TR                                                                                                | 220Vac/36.4mA @60Hz, 2.95W | 5.05Vdc/454mA, 2.292W |        |

6-2. [Adaptor: Editech TYPE2541 5V/2A]: Active standby mode(log in SKB UI and power of by RCU)

| Test Results of power consumption:<br>F/W version: 4.9.113 #1MonFeb 1122:40:43 CST 2019<br>H/W version: V025 |                              |                        |        |
|--------------------------------------------------------------------------------------------------------------|------------------------------|------------------------|--------|
| Item No.                                                                                                     | AC port                      | DC port                | Remark |
| TPL740FXX-5TR                                                                                                | 220Vac/25.60mA @60Hz, 1.956W | 5.08Vdc/283mA, 1.4376W |        |

8. Conclusion

|                                 |                      |                                  |
|---------------------------------|----------------------|----------------------------------|
|                                 | TLV75518PDBVR (main) | TPL740F18-5TR (2 <sup>nd</sup> ) |
| Total test Results              | PASS                 |                                  |
| Can be introduce to 2nd source? | Yes                  |                                  |

|                                 |                      |                                  |
|---------------------------------|----------------------|----------------------------------|
|                                 | TLV75525PDBVR (main) | TPL740F25-5TR (2 <sup>nd</sup> ) |
| Total test Results              | PASS                 |                                  |
| Can be introduce to 2nd source? | Yes                  |                                  |