SONY

Technical Bulletin SWEM20-001R2-TB

RANK --

Revised : March 8, 2021

Issued : December 8, 2020

Subject: How to replace OLED in ICP panel

Revised Point(s)

Corrected the figures on pages 13 and 14

Issue No.

SWEM20-001R2-TB

Target Models / Destination

Model Name	Dest
ICP-3000	CNB
ICP-6520	CNB

Model Name	Dest
ICP-3000	SYL
ICP-6520	SYL

Model Name	Dest
ICP-3016	CNB
ICP-6530	CNB

Model Name	Dest
ICP-3016	SYL
ICP-6530	SYL

【Overview】

We will release a new OLED with a longer life in conjunction with the current discontinued product.
This technical memo describes how to replace the old OLED.

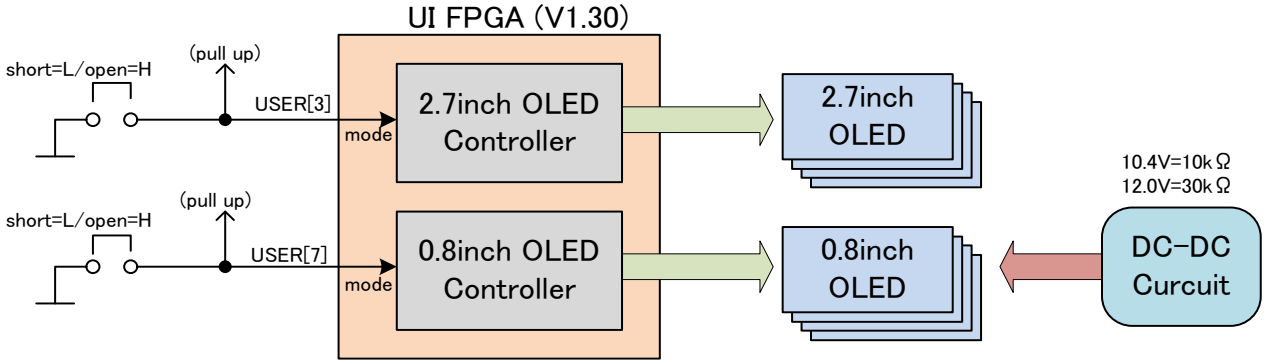
【Symptom】

Replace the old OLED that has become difficult to see due to failure, reduced brightness, or burn-in

【Cause/Background】

Technical Background

The FPGA disclosed in this technical memo adds a function to control either the new or old OLED. By setting the mode signal line connected to the FPGA to Low/High, new and old OLEDs can be supported. However, since OLEDs of the same size cannot be controlled at the same time as new and old, be sure to change all of the same size.



In addition, for the 0.8 inch OLED, a new part requires a voltage of 12.0V and a old part requires a voltage of 10.4V. Therefore, it is necessary to change the constant of the power circuit of the KY board.
(2.7 inch OLED does not require power supply voltage change.)

End of the part number of mounting board

The part number of KY board has -C at the end, mode setting and power supply constant are compatible with the new OLED.
UI FPGA also has V1.30 written.

*The KY board on which this technical memo was implemented is equivalent to the end -C.

【Target serial No.】

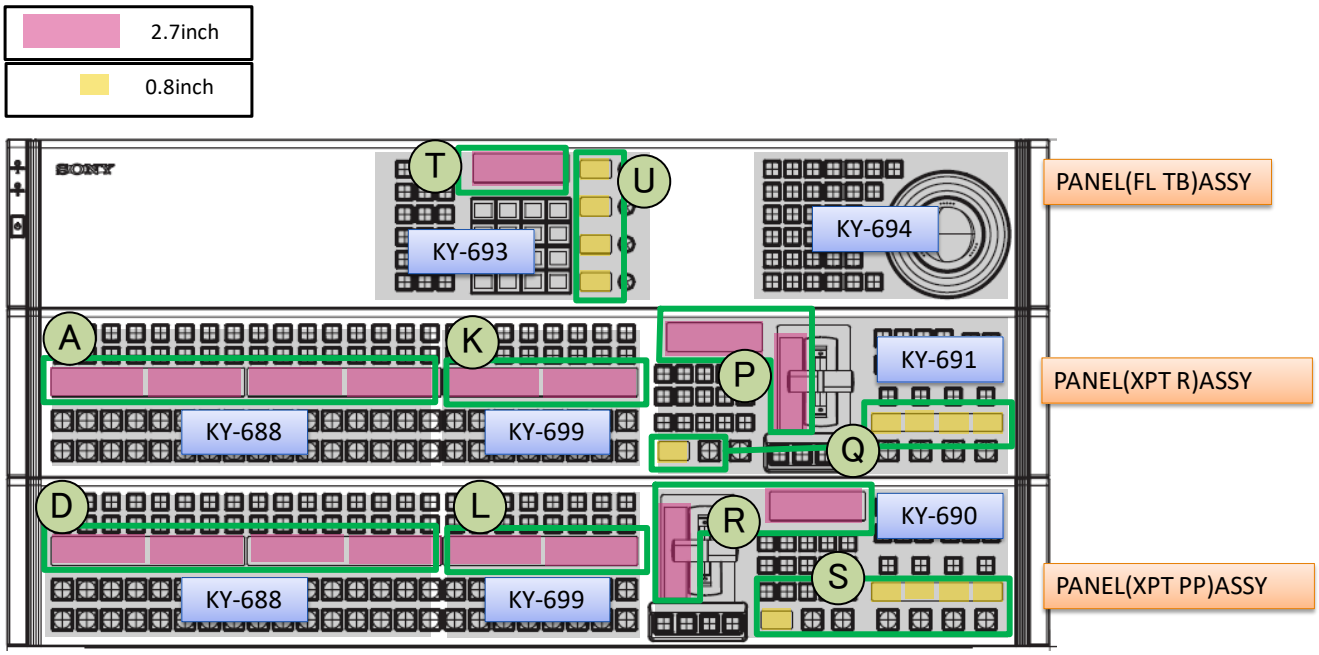
For products with old OLED and products with the KY board ending in -A or -B, please work according to this technical memo when replacing with a new OLED. If you install a new OLED without using this technical memo, it will not be displayed correctly, so be sure to obey the parts and procedure described.

Model name	Old OLED product	New OLED product
ICP-3000(SYL)	10001 – 10723 20001 – 20258	11001 or later
ICP-3000(CNB)	50001 – 50095 60001 – 60151	61001 or later
ICP-3016(SYL)	10001 – 10342	11001 or later
ICP-3016(CNB)	50001 – 50215	51001 or later
ICP-6520(SYL)	10001 – 10049 20001 – 20040	11001 or later
ICP-6520(CNB)	50001 – 50026 60001 – 60025	61001 or later
ICP-6530(SYL)	10001 – 10224 20001 – 20061	11001 or later
ICP-6530(CNB)	50001 – 50026 60001 – 60043	61001 or later

【Required part/tool】

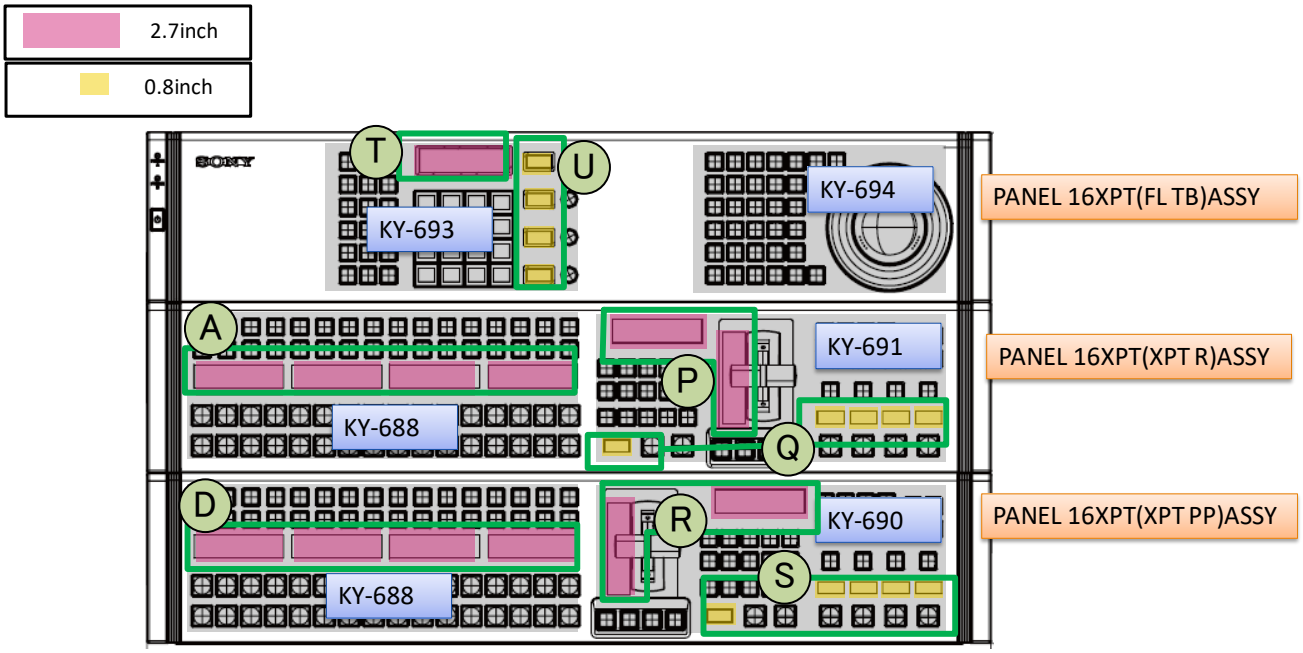
OLED replacement must be performed on a board-by-board basis. Identify the area containing the OLED to be replace in the figure below and prepare the parts for replacement area shown in the table for the total number of parts

【ICP-3000】



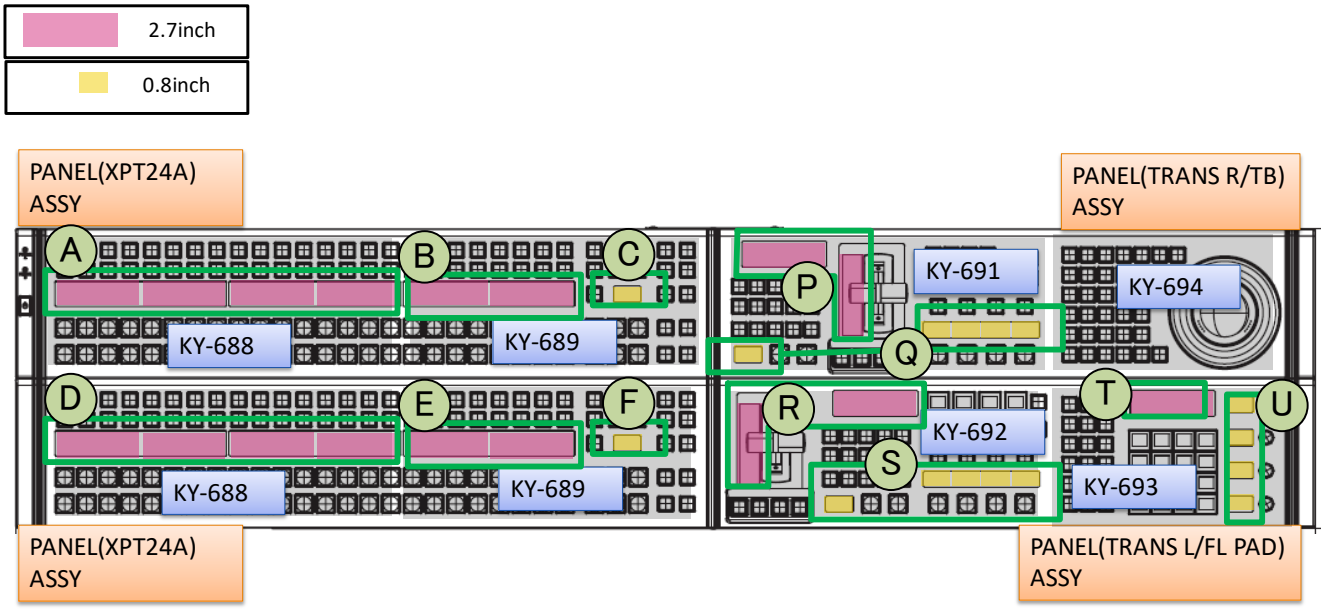
	2.7inch OLED (1-002-269-11)	0.8inch OLED (1-002-267-11)	OL Holder 2.7 (5-006-349-01)	OL Holder 0.8 (5-006-348-01)	30KΩ(1005) (1-250-530-11)	0Ω(1005) (1-218-990-81)
A	4	0	4	0	0	1(R323) Rev1
D	4	0	4	0	0	1(R323) Rev1
K	2	0	2	0	0	1(R338)
L	2	0	2	0	0	1(R338)
P	2	0	1 Rev1	0	0	1(R338)
Q	0	5	0	5	1(R1015)	1(R342)
R	2	0	1 Rev1	0	0	1(R338)
S	0	5	0	5	1(R1015)	1(R342)
T	1	0	1	0	0	1(R338)
U	0	4	0	4	1(R1015)	1(R342)

【ICP-3016】



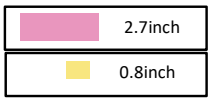
	2.7inch OLED (1-002-269-11)	0.8inch OLED (1-002-267-11)	OL Holder 2.7 (5-006-349-01)	OL Holder 0.8 (5-006-348-01)	30KΩ(1005) (1-250-530-11)	0Ω(1005) (1-218-990-81)
A	4	0	4	0	0	1(R323) Rev1
D	4	0	4	0	0	1(R323) Rev1
P	2	0	1 Rev1	0	0	1(R338)
Q	0	5	0	5	1(R1015)	1(R342)
R	2	0	1 Rev1	0	0	1(R338)
S	0	5	0	5	1(R1015)	1(R342)
T	1	0	1	0	0	1(R338)
U	0	4	0	4	1(R1015)	1(R342)

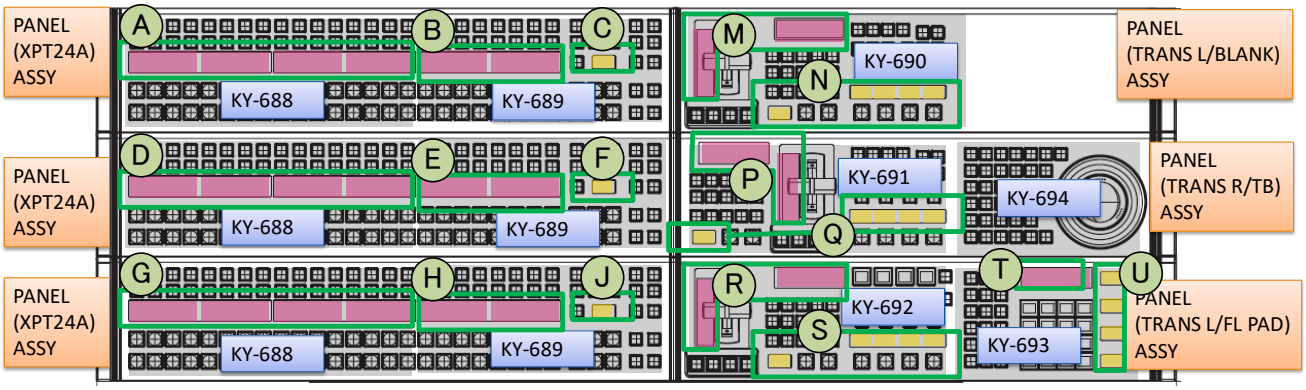
【ICP-6520】



	2.7inch OLED (1-002-269-11)	0.8inch OLED (1-002-267-11)	OL Holder 2.7 (5-006-349-01)	OL Holder 0.8 (5-006-348-01)	30KΩ(1005) (1-250-530-11)	0Ω(1005) (1-218-990-81)
A	4	0	4	0	0	1(R323) Rev1
B	2	0	2	0	0	1(R338)
C	0	1	0	1	1(R1011)	1(R342)
D	4	0	4	0	0	1(R323) Rev1
E	2	0	2	0	0	1(R338)
F	0	1	0	1	1(R1011)	1(R342)
P	2	0	1 Rev1	0	0	1(R338)
Q	0	5	0	5	1(R1015)	1(R342)
R	2	0	1 Rev1	0	0	1(R338)
S	0	5	0	5	1(R1015)	1(R342)
T	1	0	1	0	0	1(R338)
U	0	4	0	4	1(R1015)	1(R342)

【ICP-6530】





	2.7inch OLED (1-002-269-11)	0.8inch OLED (1-002-267-11)	OL Holder 2.7 (5-006-349-01)	OL Holder 0.8 (5-006-348-01)	30KΩ(1005) (1-250-530-11)	0Ω(1005) (1-218-990-81)
A	4	0	4	0	0	1(R323) Rev1
B	2	0	2	0	0	1(R338)
C	0	1	0	1	1(R1011)	1(R342)
D	4	0	4	0	0	1(R323) Rev1
E	2	0	2	0	0	1(R338)
F	0	1	0	1	1(R1011)	1(R342)
G	4	0	4	0	0	1(R323) Rev1
H	2	0	2	0	0	1(R338)
J	0	1	0	1	1(R1011)	1(R342)
M	2	0	1 Rev1	0	0	1(R338)
N	0	5	0	5	1(R1015)	1(R342)
P	2	0	1 Rev1	0	0	1(R338)
Q	0	5	0	5	1(R1015)	1(R342)
R	2	0	1 Rev1	0	0	1(R338)
S	0	5	0	5	1(R1015)	1(R342)
T	1	0	1	0	0	1(R338)
U	0	4	0	4	1(R1015)	1(R342)

In addition, the FPGA data corresponding to old and new OLED is required and unzip the zip file downloaded from the technical memo site, save it to a USB memory.

[FPGA data]
UI_FPGA.zip

【Work procedure】

1) FPGA update

Connect the memory that stores the FPGA data to the USB part and select the target data in MENU 7316.10.

Device=UI , Install=V1.30 , Title = ICP-6500/3000 FPGA(KY)

When executed, it will be completed in about 11 minutes.
After restarting, check the version in MENU 7316.1.

ICP6500/3000-KYxxx-FPGA Version 1.30

* V1.30 FPGA supports for both new and old OLEDs by judging the presence or absence of a resister ~~(R318).~~ Therefore, it is safe to update all Panel FPGAs to V1.30, including modules that do not perform OLED replacement.

Note) Updating the UI device with a software package (V1.23 or earlier) that includes Panel FPGA of V1.30 or earlier reverts to old version. In that case, please overwrite again with the FPGA data of this technical memo.

Note) For units older than V1.23, please update to V1.23 and then install. <-Rev1

2) Panel disassembly

Be sure to disconnect the AC cable before starting work.
Refer to the service manual and remove all OLEDs and holders in the corresponding area.

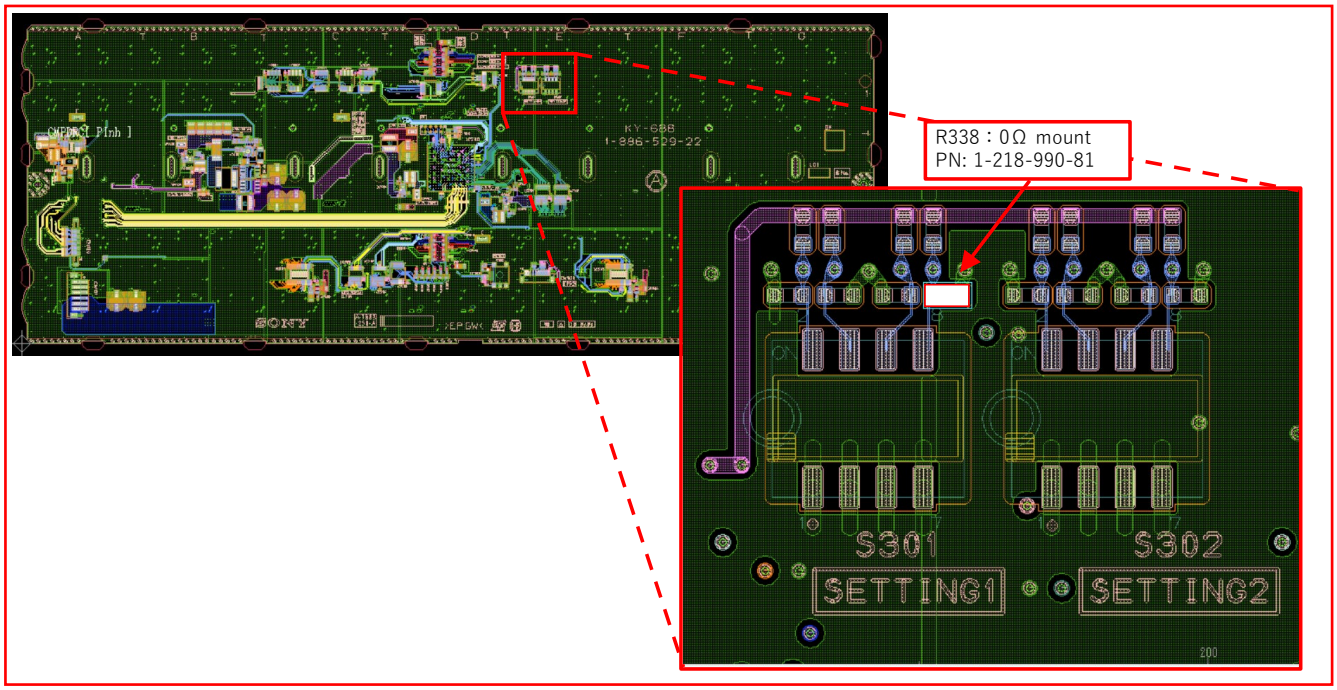
3) Addition of change of register
Instructions for each exchange area.

For areas A, D and G: KY-688

・Mount a 0Ω register on R323.（Set FPGA to new 2.7inch OLED mode.）

KY-688　A Side

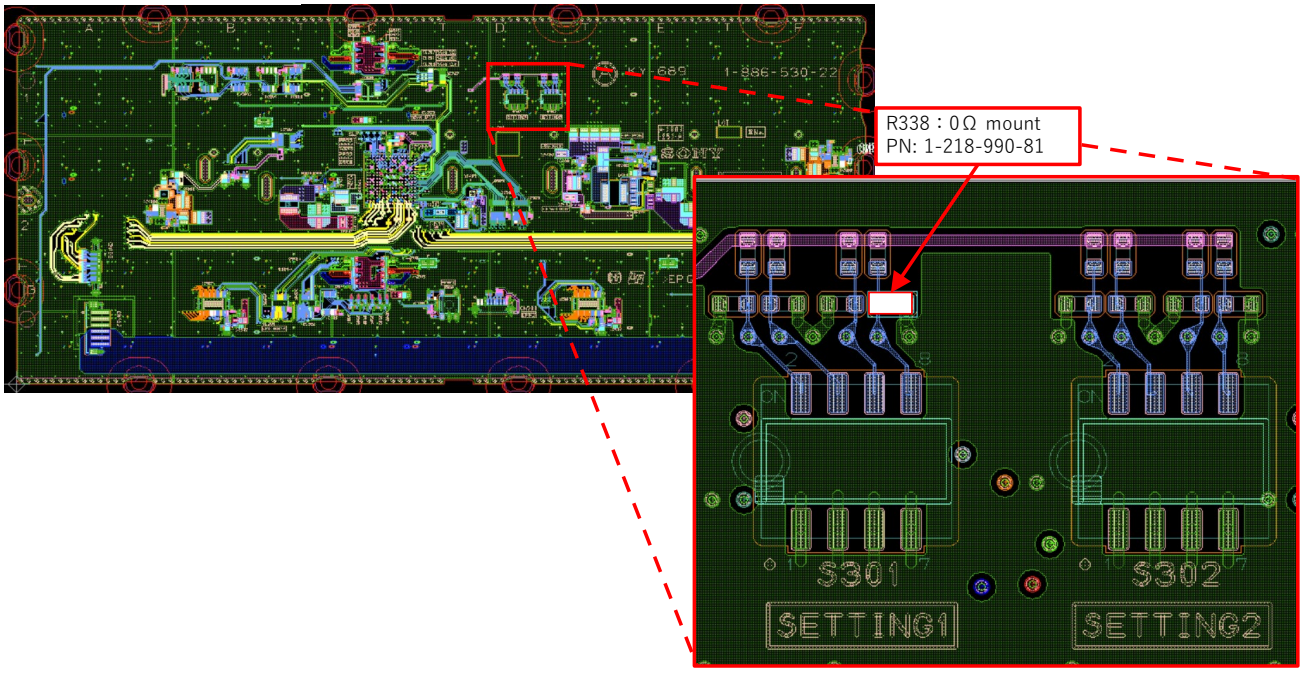
Rev1



For areas B, E and H: KY-689

・Mount a 0Ωregister on R338.（Set FPGA to new 2.7inch OLED mode.）

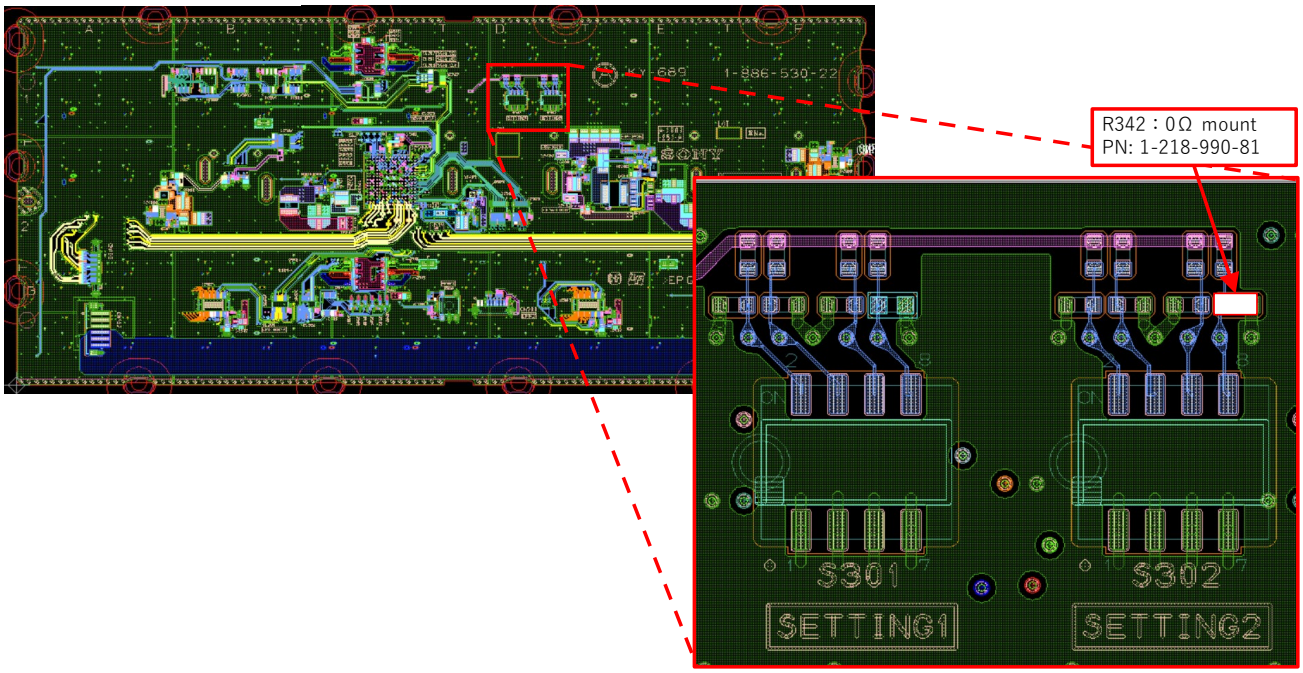
KY-689　A Side



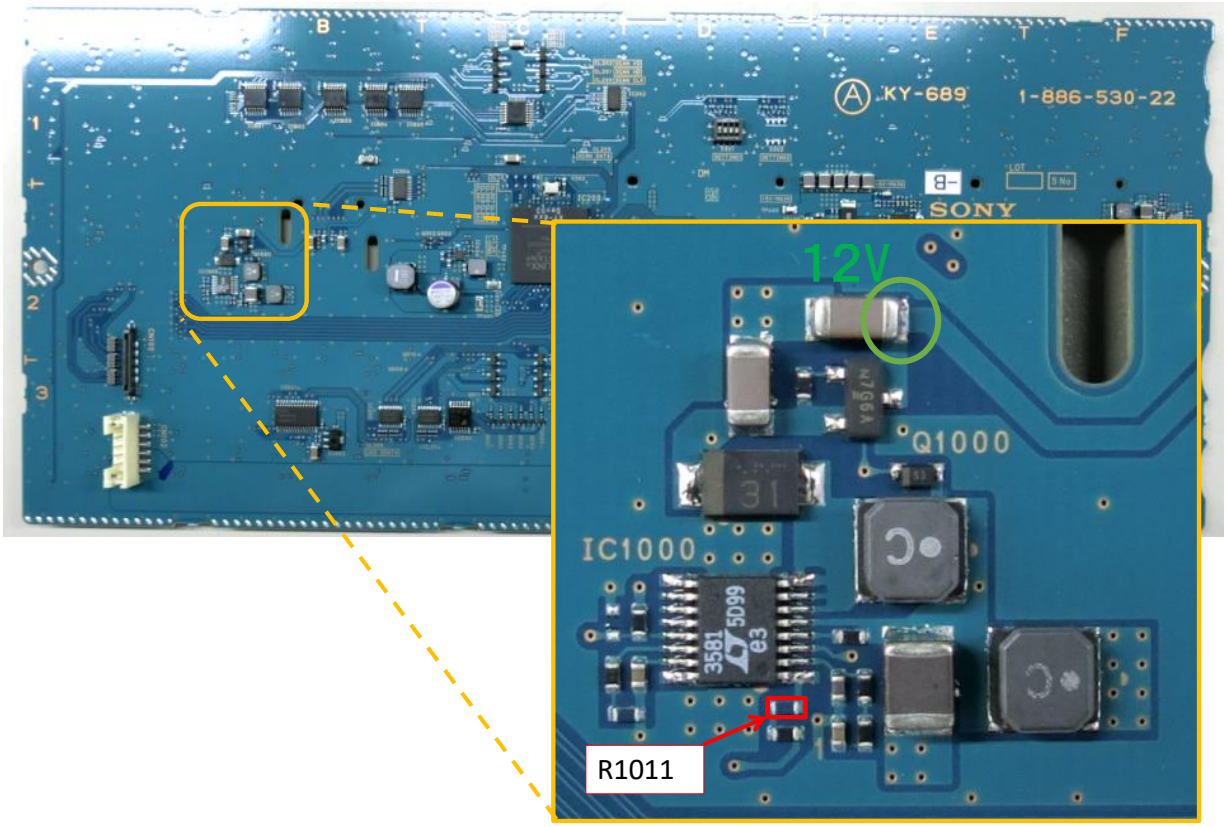
For areas C, F and J: KY-689

・Mount a 0Ω register on R342.（Set FPGA to new 0.8inch OLED mode.）

KY-689　A Side



・Remove R1011 and mount a 30kΩ register instead.（10.4V⇒12.0V）

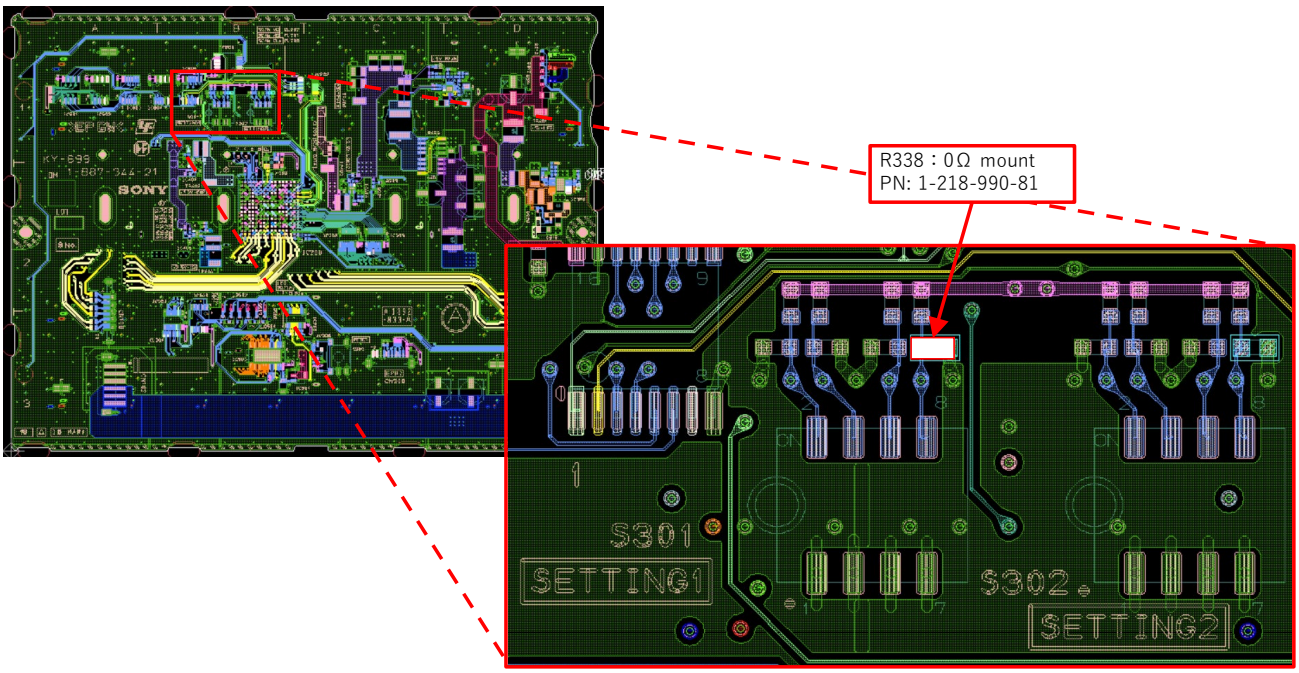


*If the repair is done correctly, the green part shows the voltage of 12V.

For areas K and L: KY-699

・Mount a 0Ω register on R338.（Set FPGA to new 2.7 inch OLED mode.）

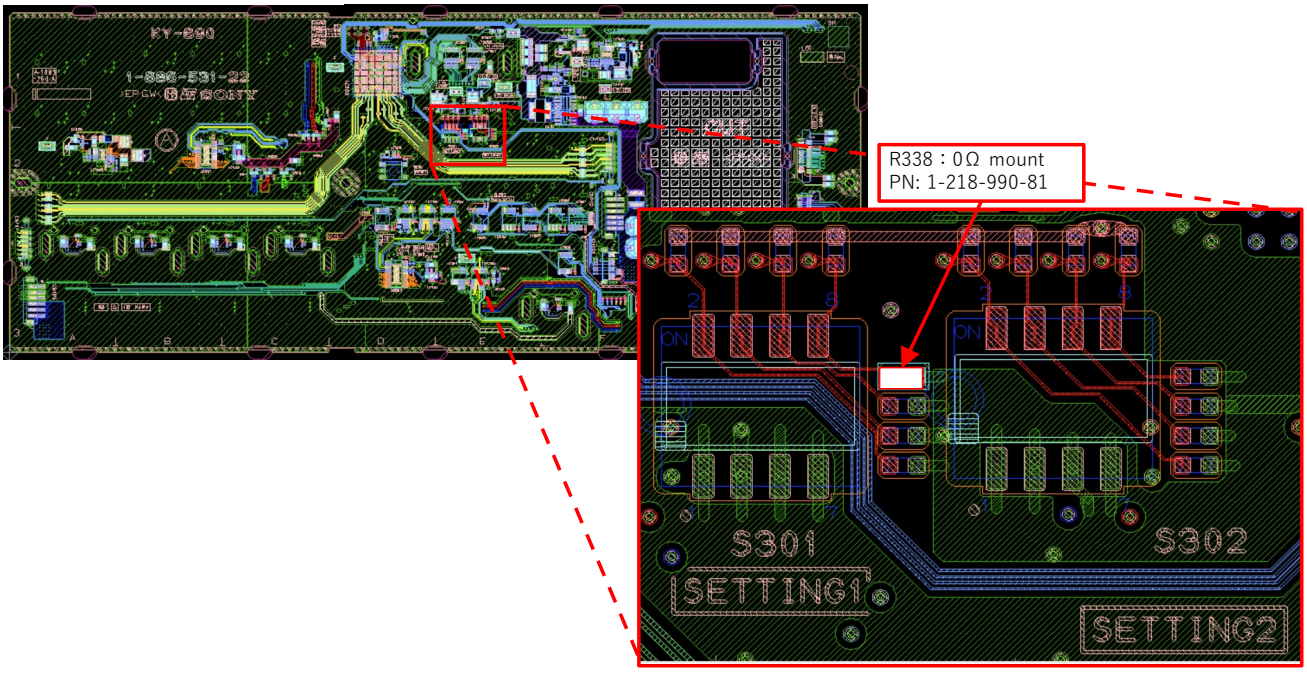
KY-699　A Side



For area M: KY-690

・Mount a 0Ω register on R338.（Set FPGA to new 2.7 inch OLED mode.）

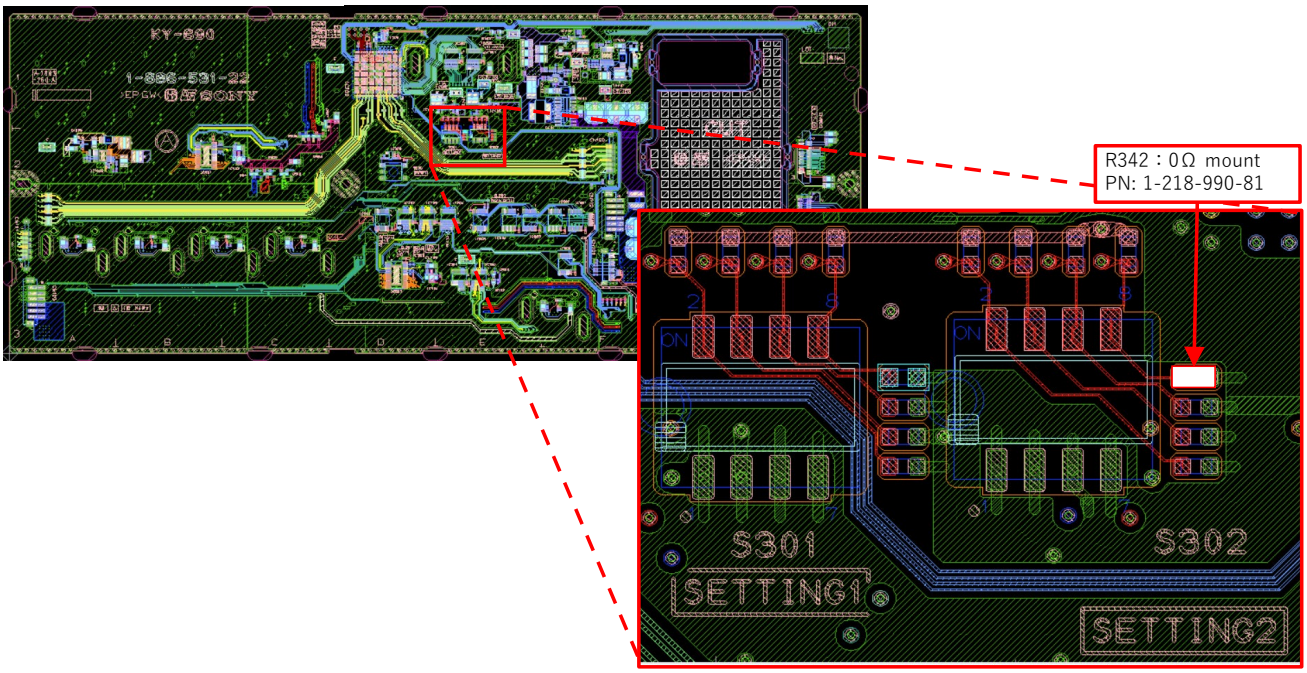
KY-690　A Side



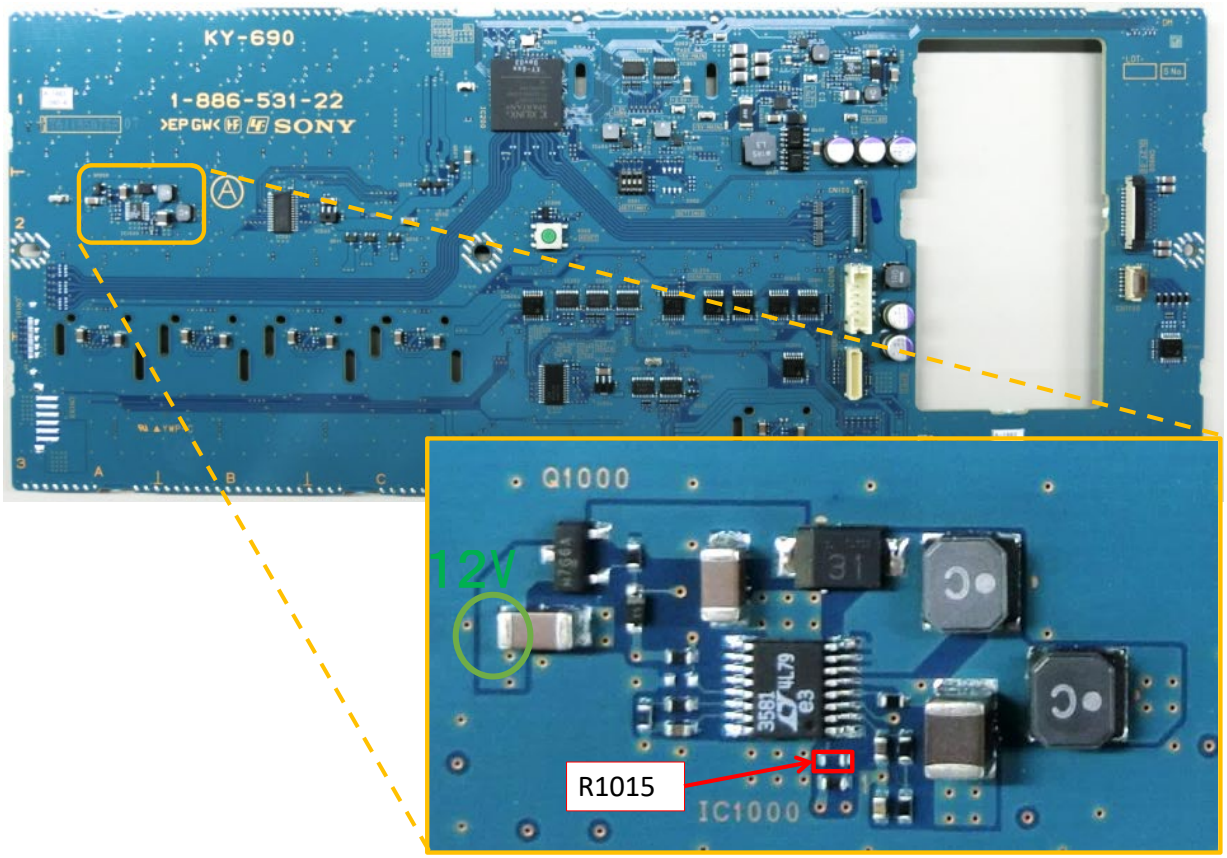
For area N: KY-690

・Mount a 0Ω register on R342.（Set FPGA to new 0.8 inch OLED.）

KY-690　A Side



・Remove R1015, Mount a 30kΩ register instead.（10.4V⇒12.0V）



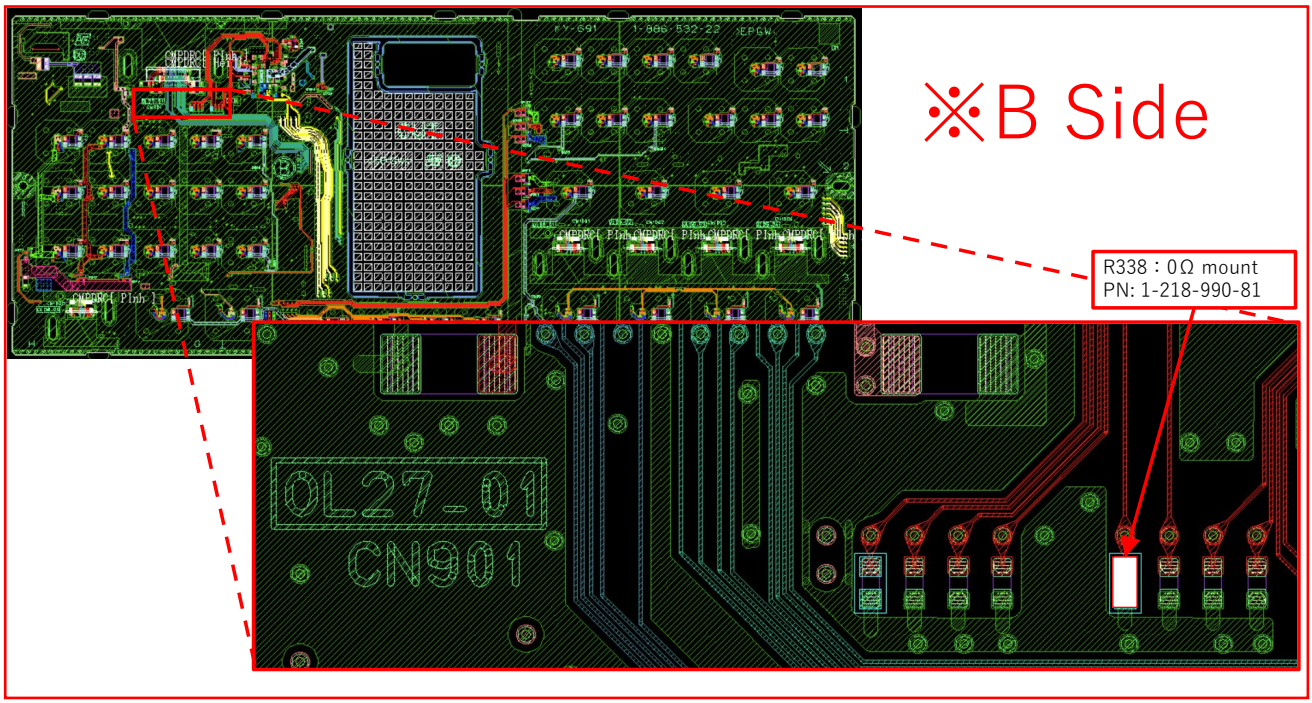
*If the repair is done correctly, the green part shows the voltage of 12V.

For area P: KY-691

- Mount a 0Ω register on R338.（Set FPGA to new 2.7 inch OLED mode.）

KY-691 B Side

Rev2

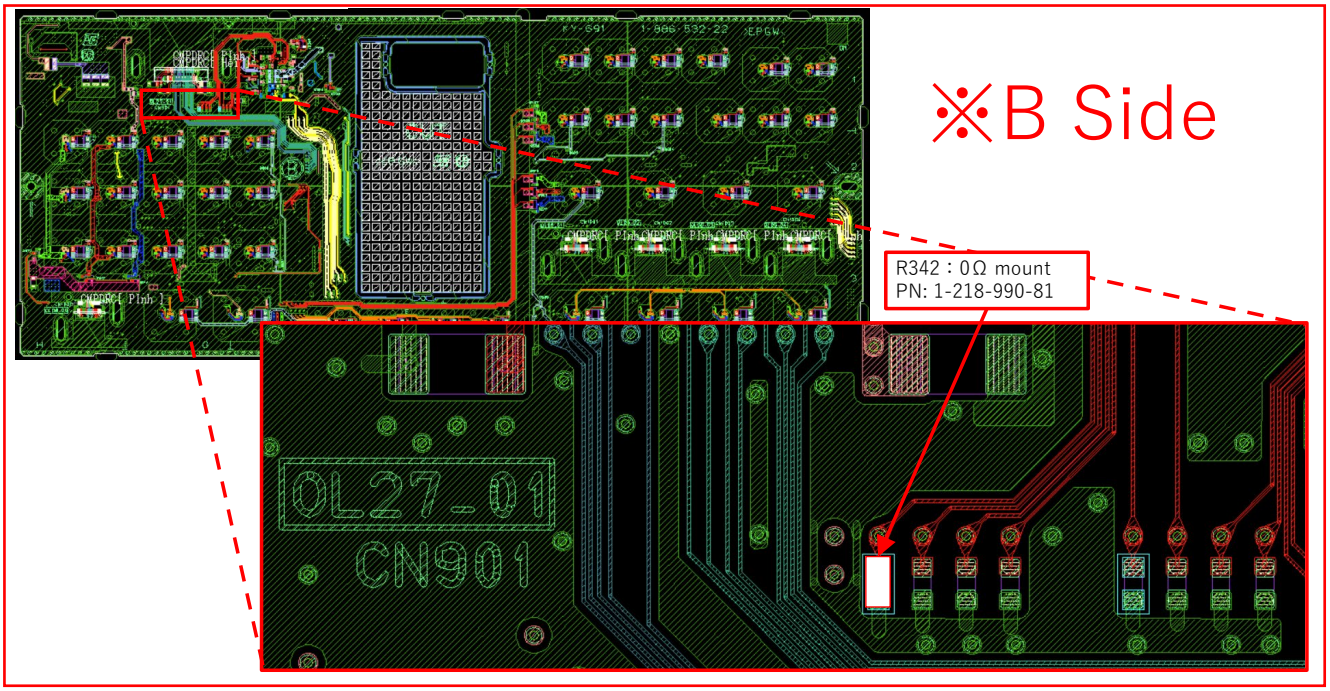


For area Q: KY-691

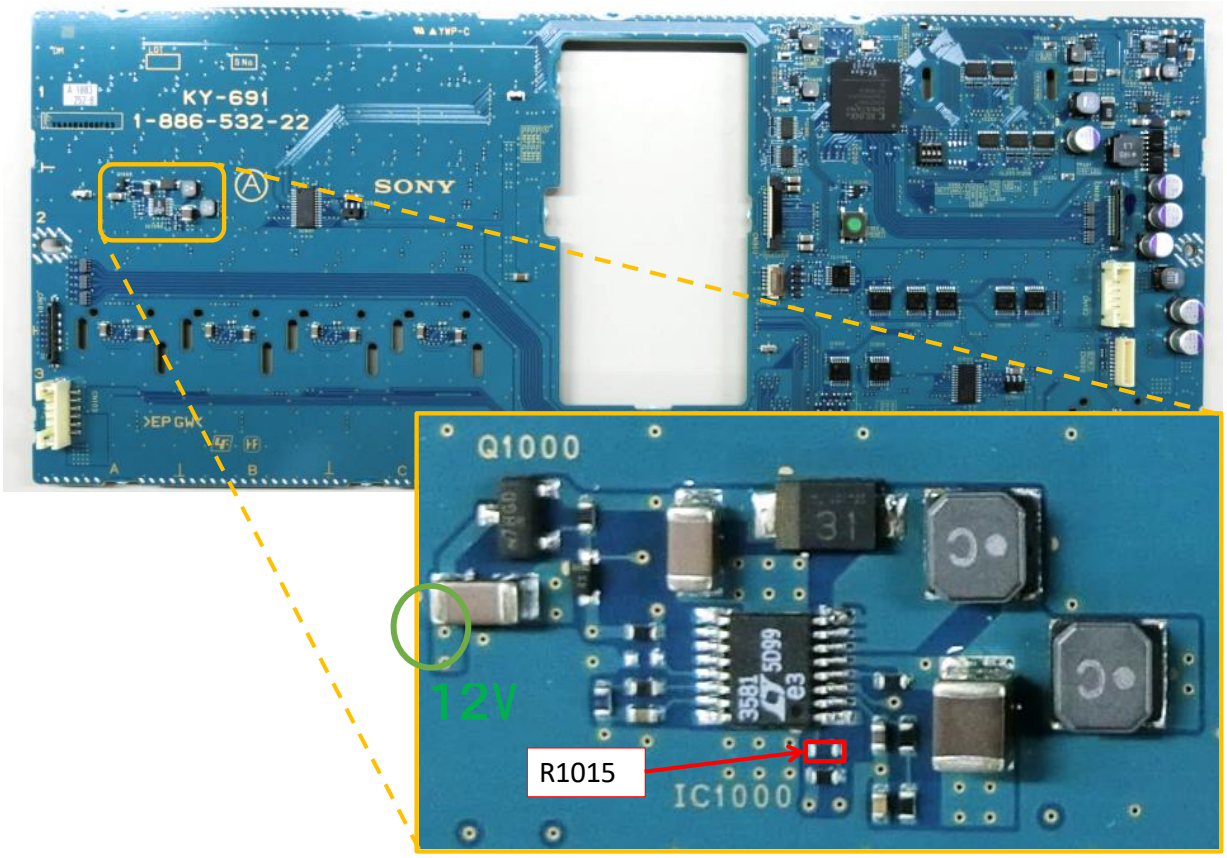
・Mount a 0Ω register on R342.（Set FPGA to new 0.8 inch OLED mode.）

KY-691　B Side

Rev2



・Remove R1015 and mount a 30kΩ register instead.（10.4V⇒12.0V）

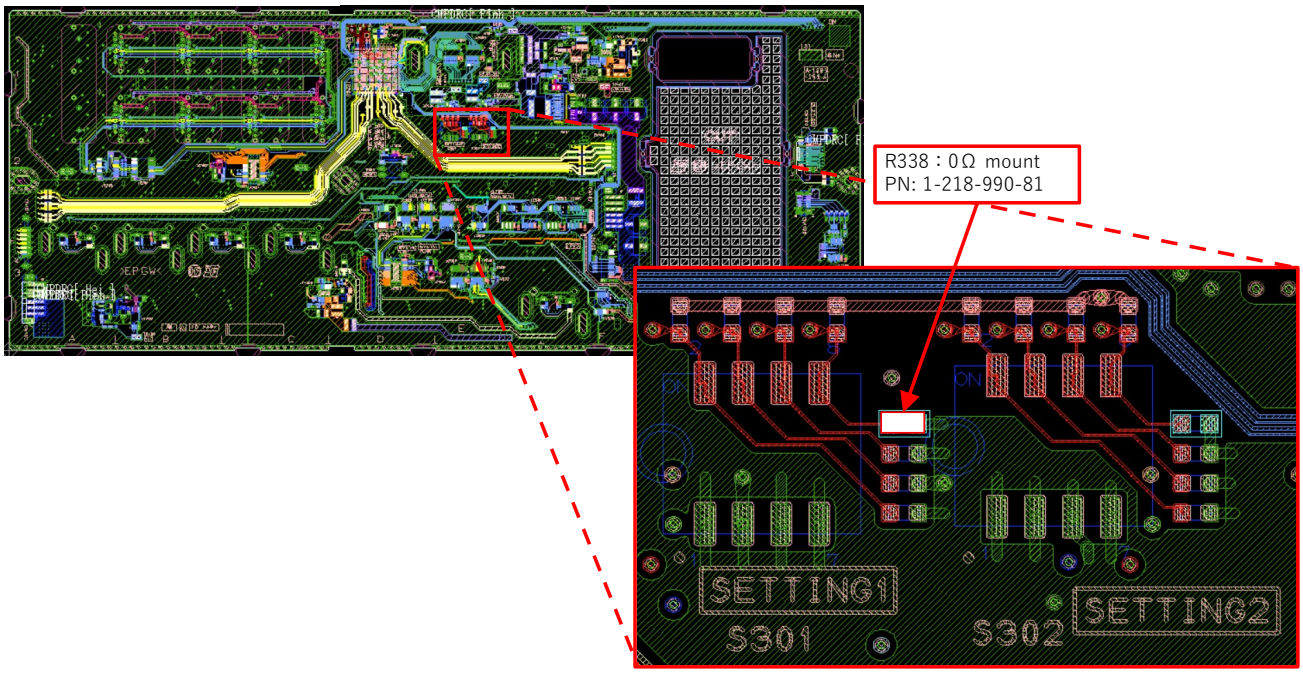


*If the repair is done correctly, the green part shows the voltage of 12V.

For area R: KY-692

- Mount a 0Ω register at R338. (Set FPGA to new 2.7 inch OLED mode.)

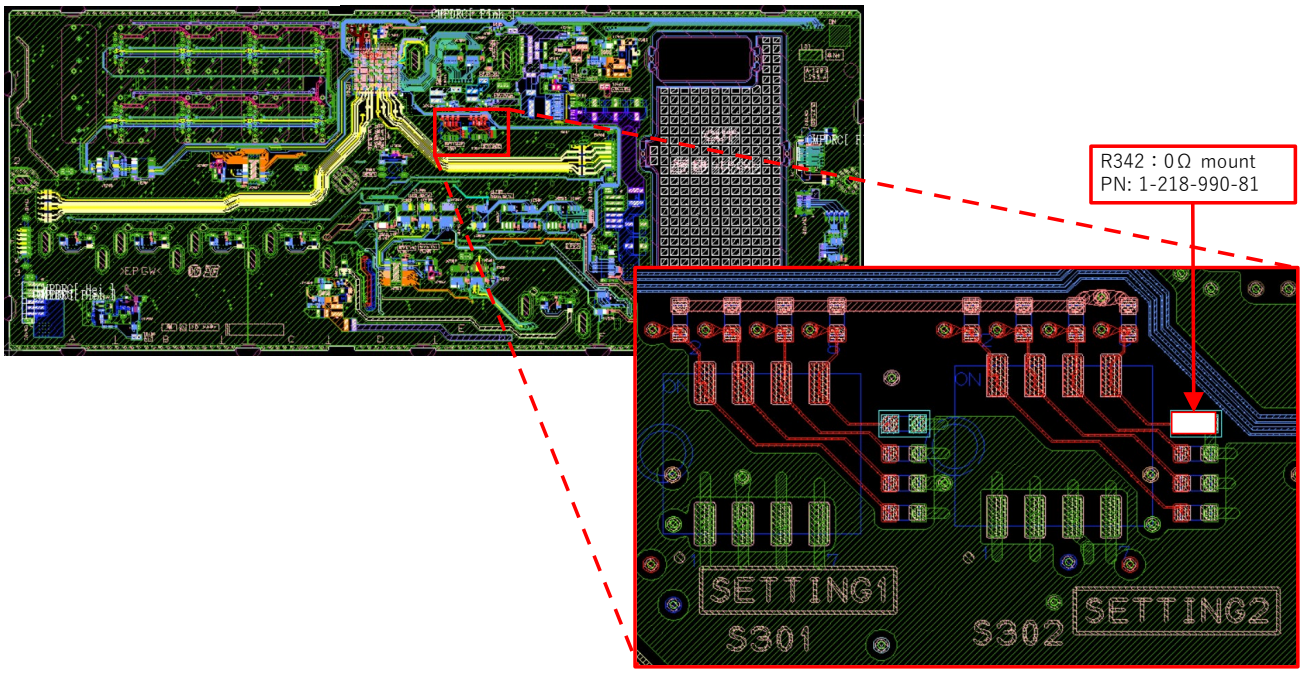
KY-692　A Side



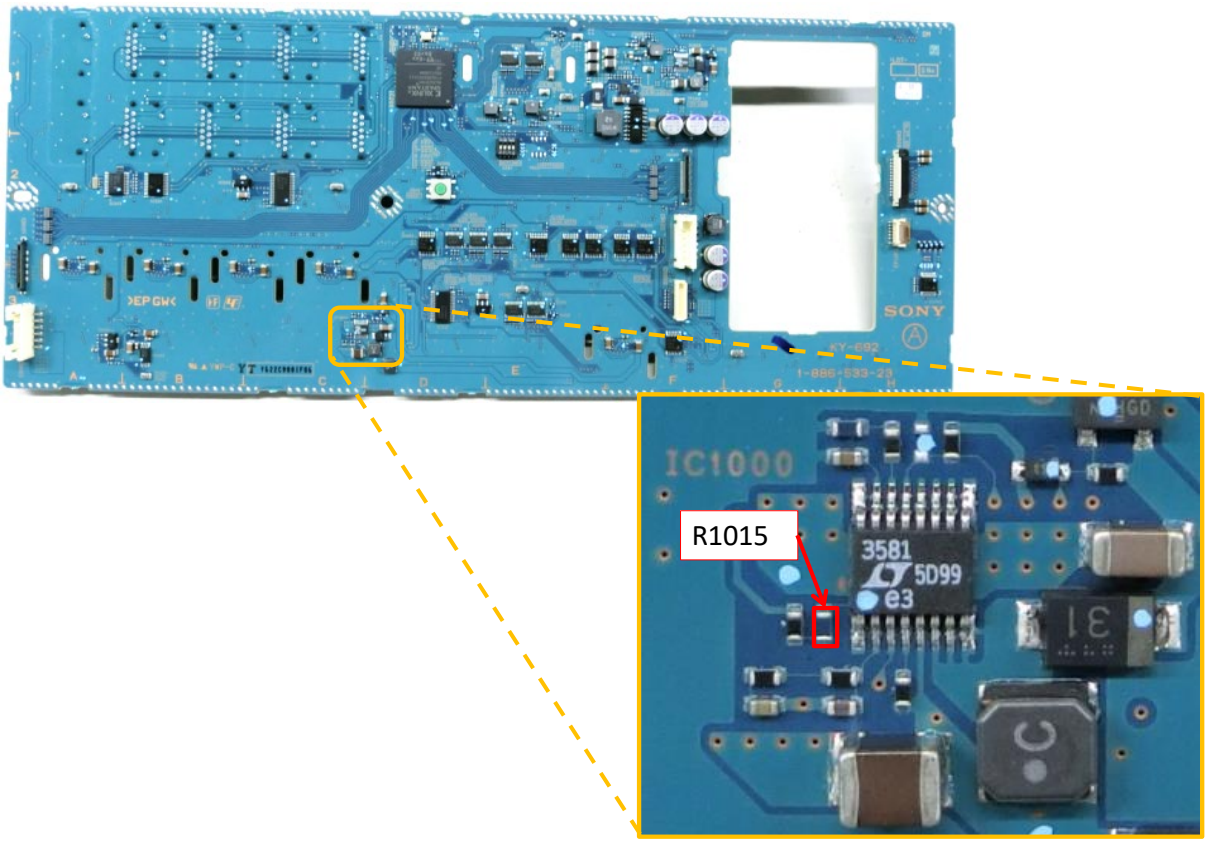
For area S: KY-692

- Mount a 0Ω register on R342.（Set FPGA to new 0.8 inch OLED mode.）

KY-692　A Side



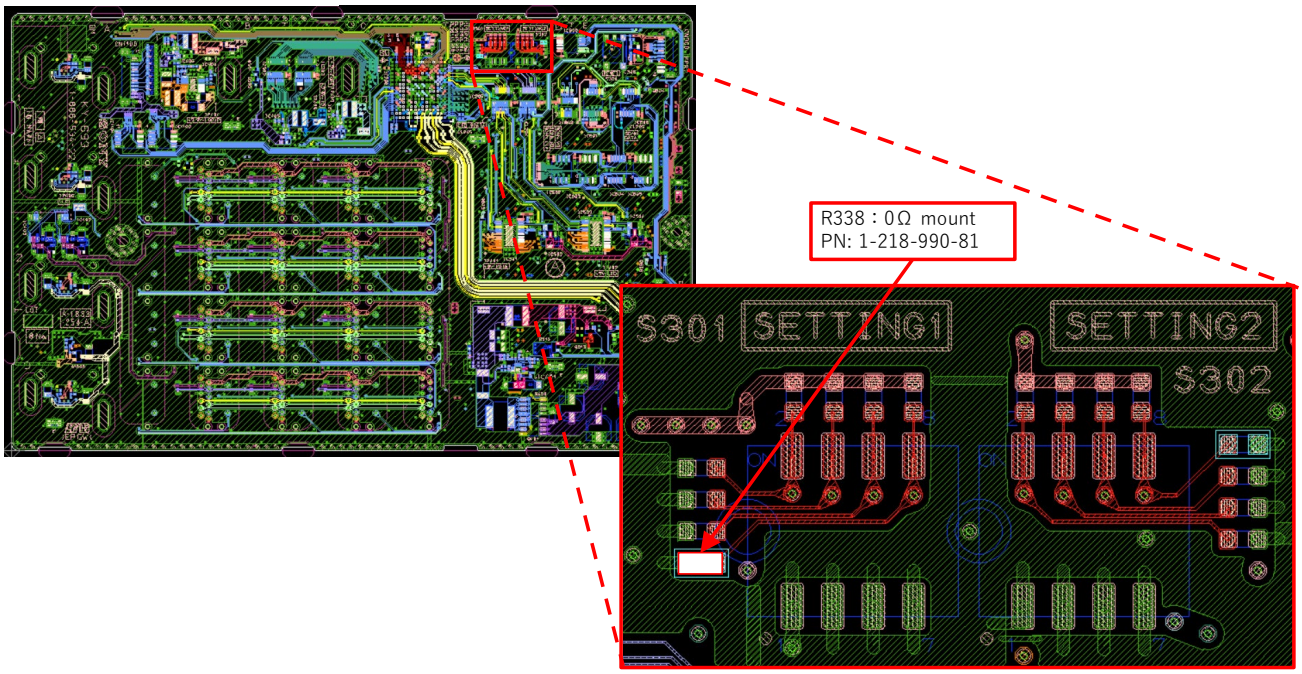
- Remove R1015 and mount a 30kΩ register instead.（10.4V⇒12.0V）



For area T: KY-693

- Mount a 0Ω register on R338.（Set FPGA to new 2.7 inch OLED mode.）

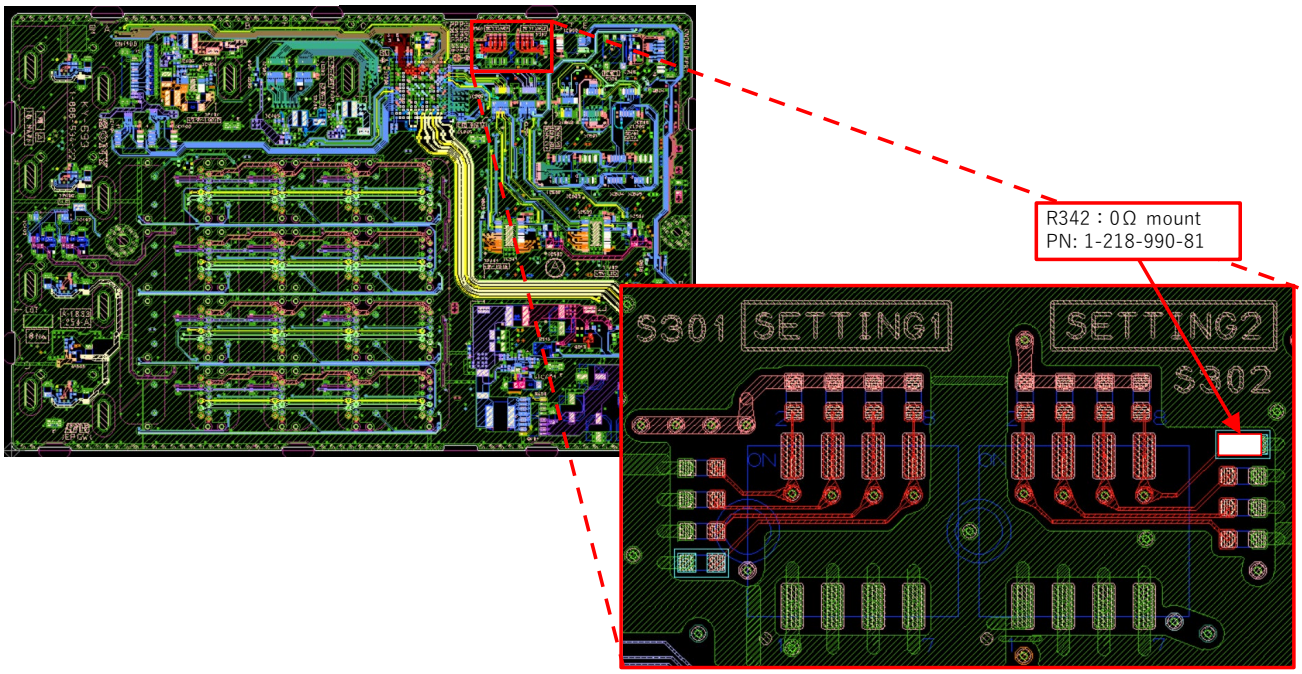
KY-693　A Side



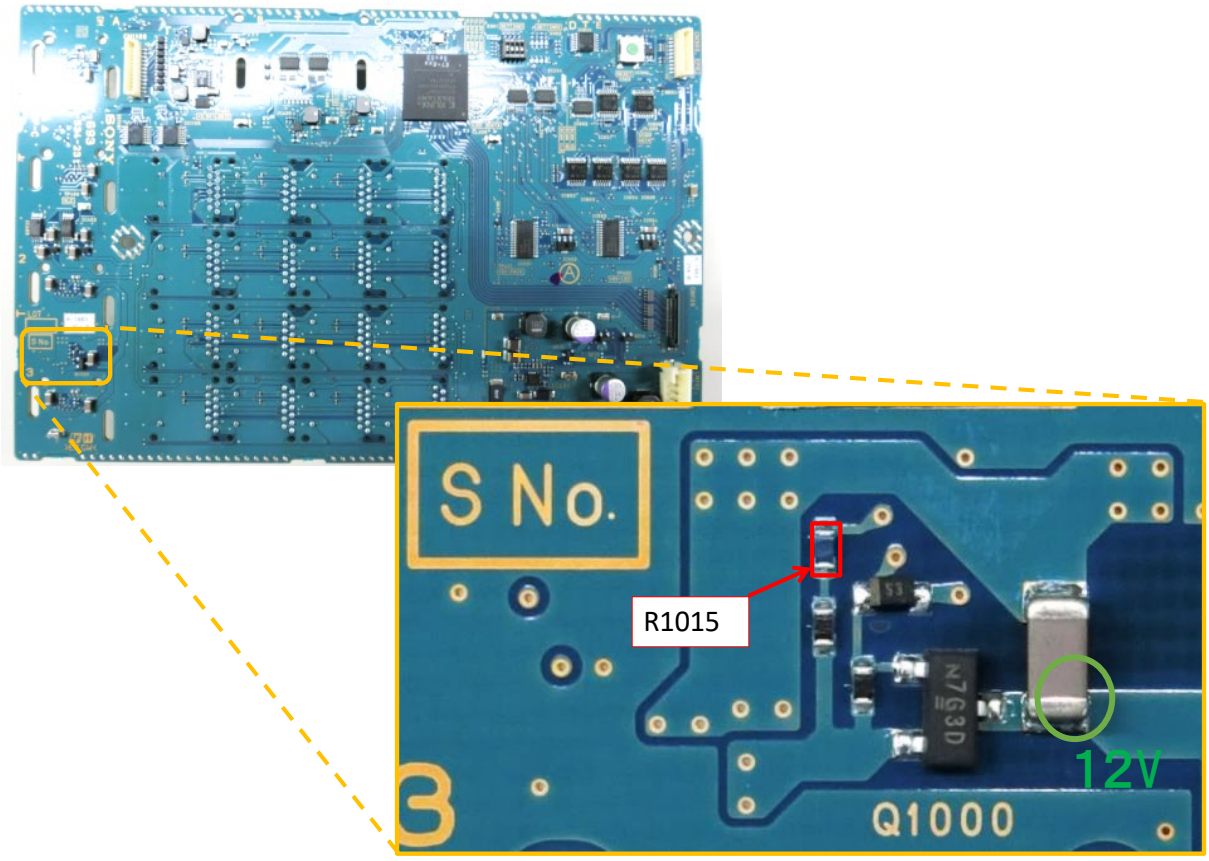
For area U: KY-693

・Mount a 0Ω register on R342.（Set FPGA to new 0.8 inch OLED mode.）

KY-693　A Side



・Remove R1015 and mount a 30kΩ register instead. (10.4V⇒12.0V)



*If the repair is done correctly, the green part shows the voltage of 12V.

4) Install new OLED and new holder.
Remove the protective sheet on the OLED surface.

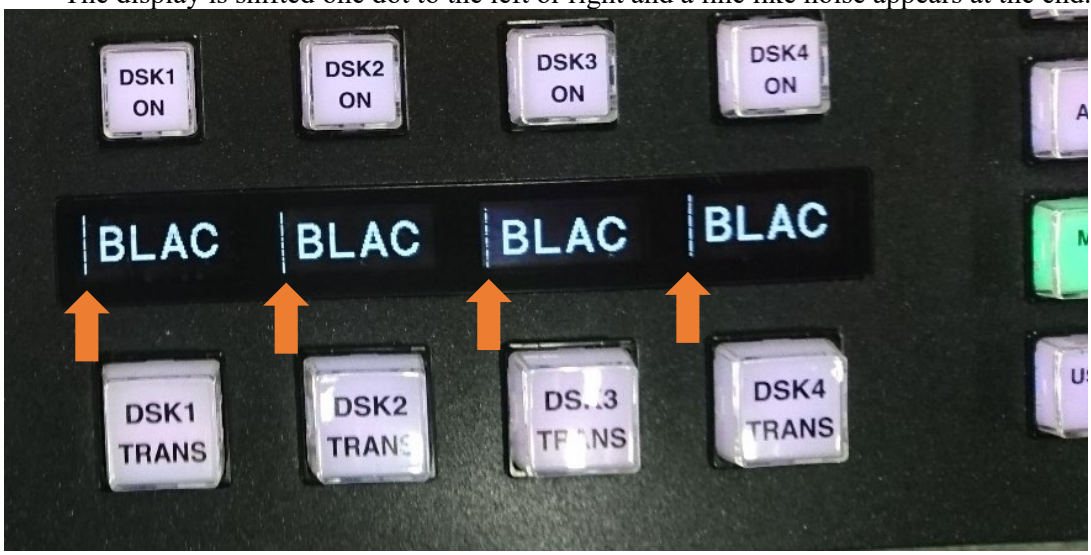
5) Assembly
Assemble to the original condition.

【Check/Adjustment】

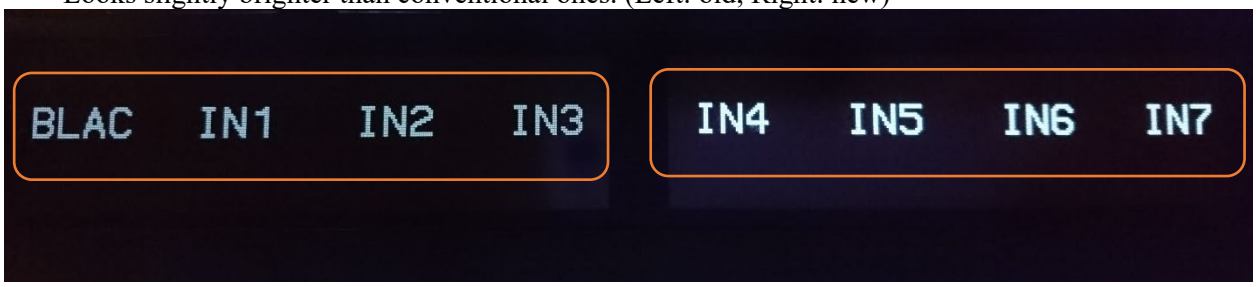
Start the system and check that the replaced OLED displays normally.

If the FPGA is old version or the 0Ω register is not mounted correctly, the following symptoms will occur.

・0.8-inch OLED
The display is shifted one dot to the left or right and a line like noise appears at the end.

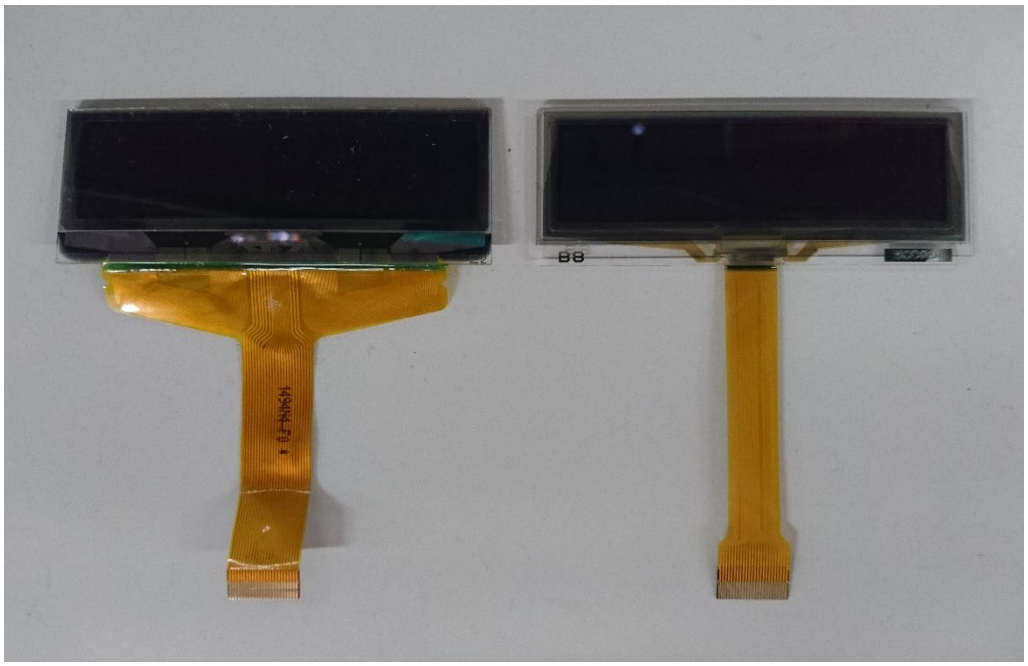


・2.7-inch OLED
Looks slightly brighter than conventional ones. (Left: old, Right: new)



【Parts Outline】

New and old 2.7-inch OLED

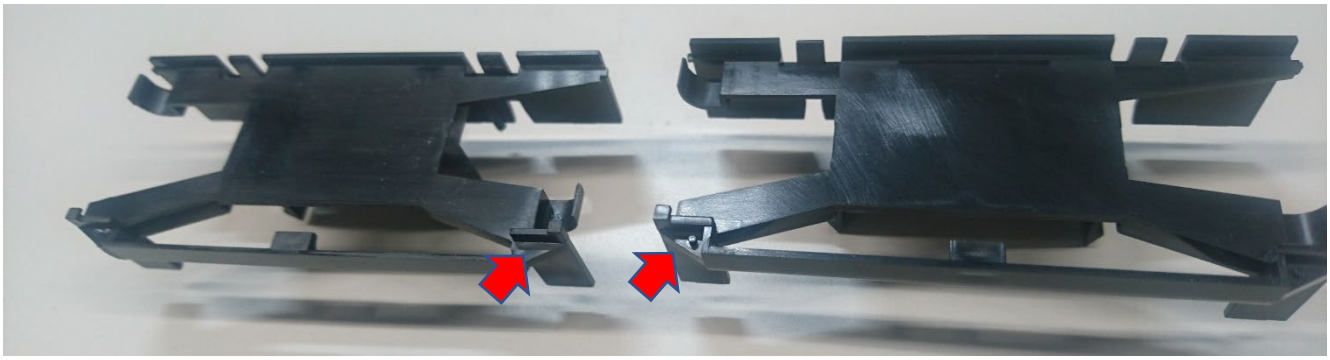


Left: old OLED　/ Right: new OLED

New and old 0.8-inch OLED

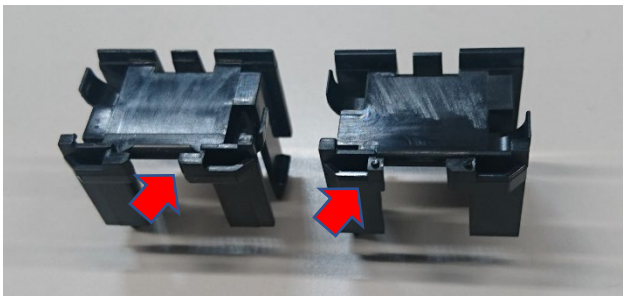
Left: old OLED　/ Right: new OLED

New and old 2.7-inch holder



Left: Old 2.7-inch holder / Right: New 2.7-inch holder

New and old 0.8-inch holder



Left: Old 0.8-inch holder / Right: new 0.8-inch holder