

	1	2	3	4	5	6	7	8
A								
B								
C								
D								
E								
F								

Channel 1



File: channel1.kicad\_sch

Channel 2



File: channel2.kicad\_sch

CSI



File: csi.kicad\_sch

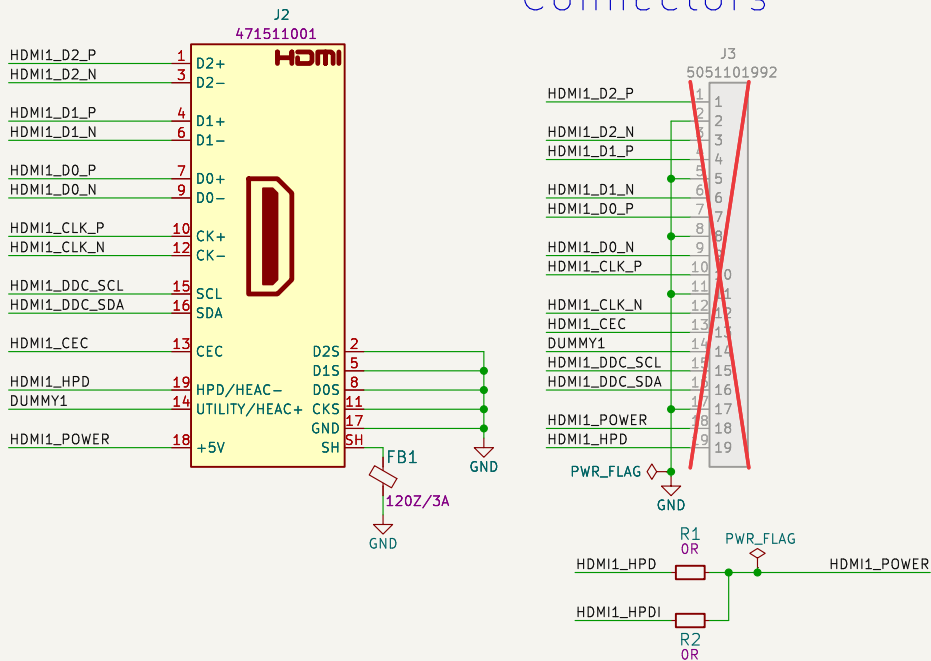


open source  
hardware

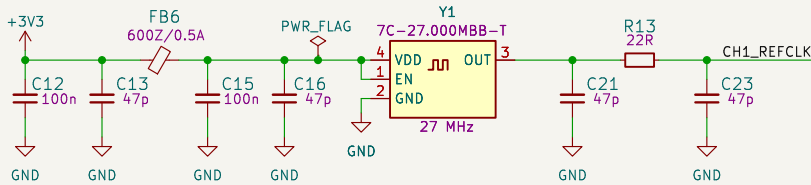


Sheet: / File: antmicro-hdmi-mipi-bridge-hw.kicad_sch		
<b>Title: HDMI-MIPI Bridge</b>		
Size: A3	Date: 2024-04-24	Rev: 1.3.2:bc600
KiCad E.D.A. kicad-cli 7.0.11	Id: 1/4	

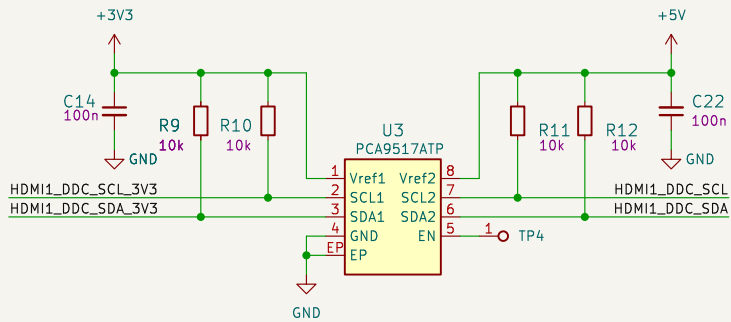
## Connectors



## 27MHz Oscillator

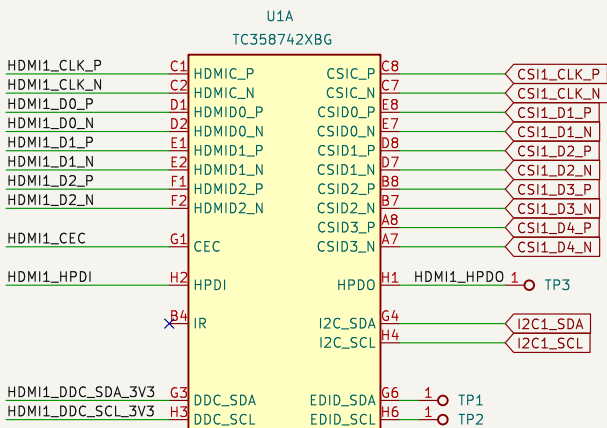


## I2C Level Shifter

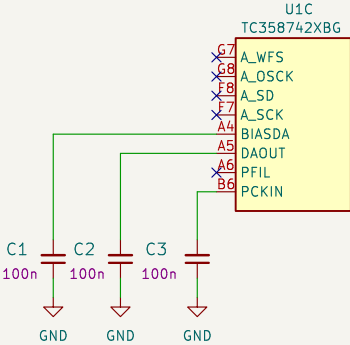


## Converter IC

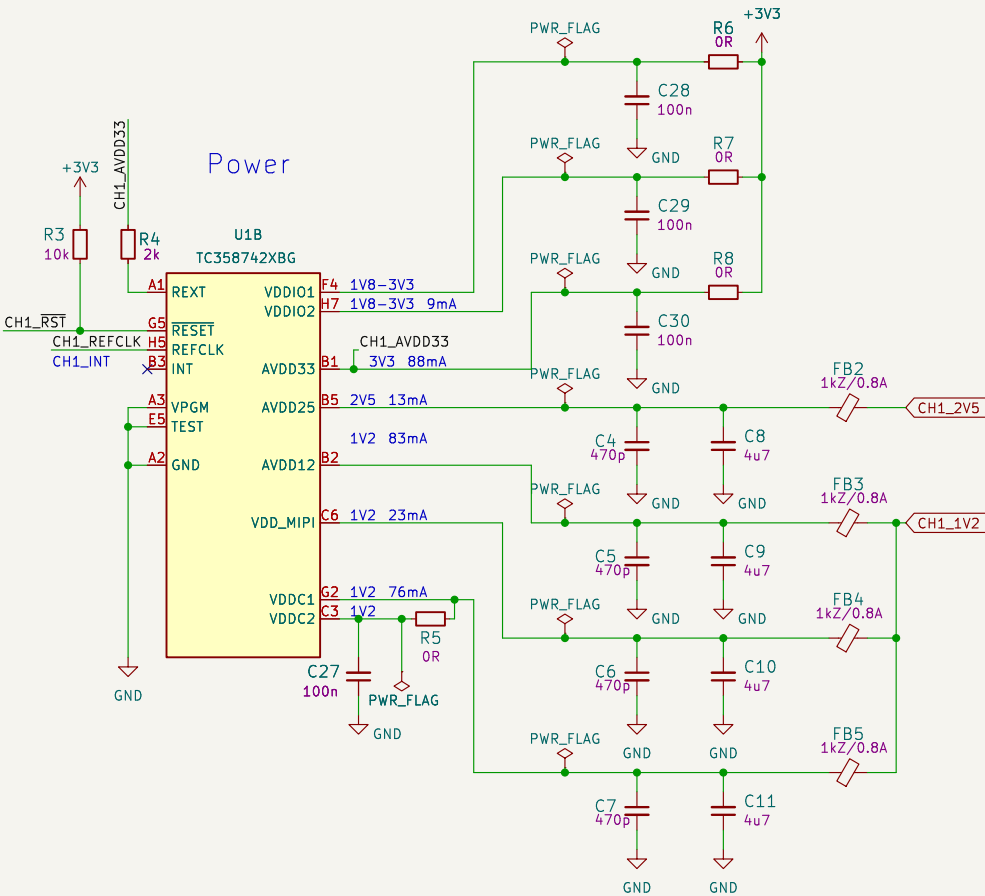
### Video Interfaces



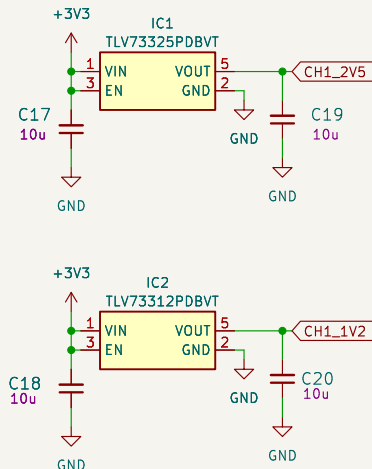
### Misc



### Power

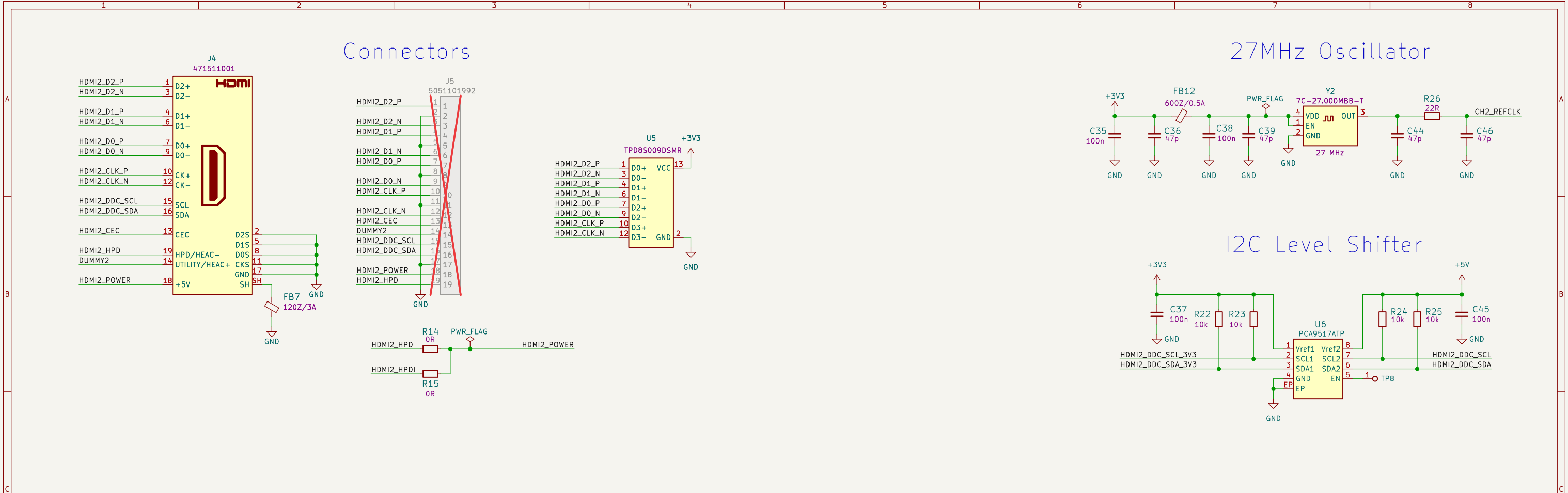


## Voltage Regulators



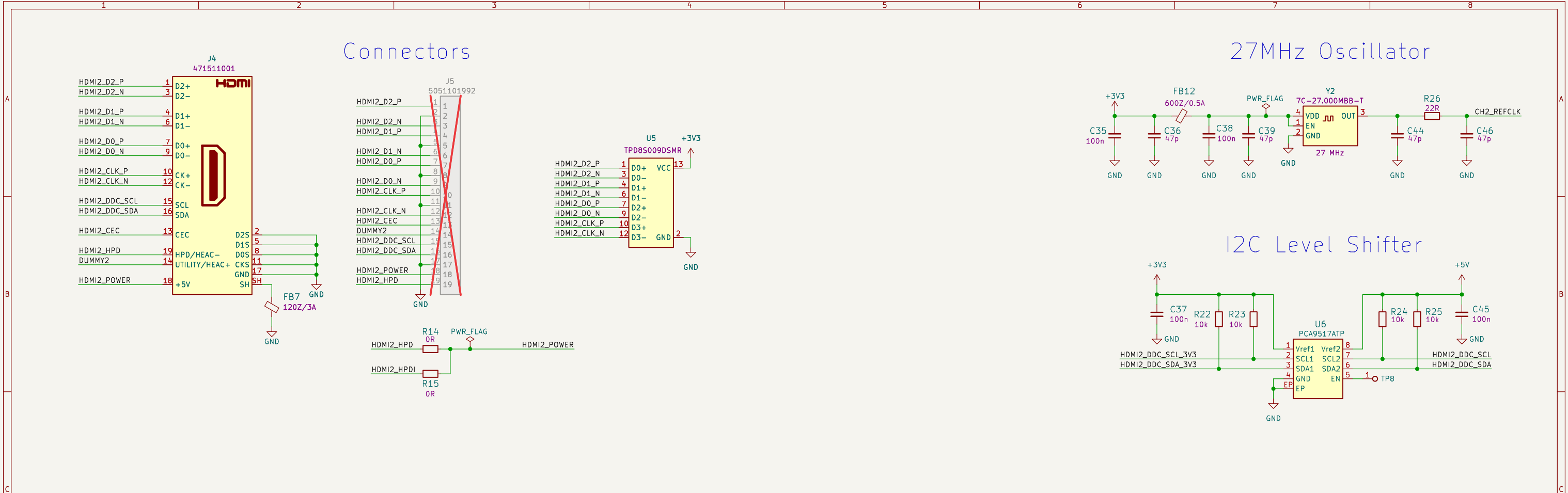
The schematic diagram illustrates the internal components and connections of the HDMI2 connector. It features a yellow rectangular component labeled 'HDMI' with pins 1 through 19. The pins are connected to various signals and components:

- Pins 1-12:** HDMI2\_D2\_P, HDMI2\_D2\_N, HDMI2\_D1\_P, HDMI2\_D1\_N, HDMI2\_D0\_P, HDMI2\_D0\_N, HDMI2\_CLK\_P, HDMI2\_CLK\_N, HDMI2\_DDC\_SCL, HDMI2\_DDC\_SDA, HDMI2\_CEC, HDMI2\_HPD, DUMMY2, HDMI2\_POWER, and HDMI2\_HPD.
- Pins 13-19:** CEC, D2S, D1S, D0S, CKS, SH, and +5V.
- Internal Components:** A yellow component labeled 'HDMI' is connected to pins 1-12. A yellow component labeled 'TPD8S009DSMR' is connected to pins 13-19. A yellow component labeled '7C-27.000MBB-T' is connected to pins 13-19.
- External Components:** A yellow component labeled 'TPD8S009DSMR' is connected to pins 13-19. A yellow component labeled '7C-27.000MBB-T' is connected to pins 13-19.



The schematic diagram illustrates the internal components and connections of the HDMI2 connector. It features a yellow rectangular component labeled 'HDMI' with pins 1 through 19. The pins are connected to various signals and components:

- Pins 1-12:** HDMI2\_D2\_P, HDMI2\_D2\_N, HDMI2\_D1\_P, HDMI2\_D1\_N, HDMI2\_D0\_P, HDMI2\_D0\_N, HDMI2\_CLK\_P, HDMI2\_CLK\_N, HDMI2\_DDC\_SCL, HDMI2\_DDC\_SDA, HDMI2\_CEC, HDMI2\_HPD, DUMMY2, HDMI2\_POWER, and HDMI2\_HPD.
- Pins 13-19:** HDMI2\_CEC, HDMI2\_HPD, DUMMY2, HDMI2\_POWER, and HDMI2\_HPD.
- Internal Components:** A yellow component labeled 'HDMI' is connected to pins 1-12. A yellow component labeled 'HDMI' is connected to pins 13-19. A yellow component labeled 'HDMI' is connected to pins 13-19.
- External Components:** A yellow component labeled 'HDMI' is connected to pins 13-19. A yellow component labeled 'HDMI' is connected to pins 13-19.



The diagram shows the Video Interfaces Converter IC (U4A, TC358742XBG) connected to Video Interfaces and Voltage Regulators. The IC is a yellow rectangle with pins on all four sides. The connections are as follows:

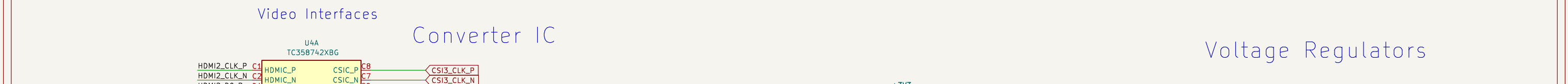
- Video Interfaces:**
  - HDMI2\_CLK\_P (C1) to HDMIC\_P
  - HDMI2\_CLK\_N (C2) to HDMIC\_N
  - CSIC\_P (C8) to CS13\_CLK\_P
  - CSIC\_N (C7) to CS13\_CLK\_N
- Voltage Regulators:**
  - U4A is connected to U4B (TPS63070) and U4C (TPS63070).

Video Interfaces

Converter IC

Voltage Regulators

The diagram shows the Video Interfaces section of the system. It includes a block for the Converter IC, specifically the TC358742XBG (U4A). This IC is connected to video inputs (HDMI2\_CLK\_P, HDMI2\_CLK\_N, HDMI2\_CLK\_P, HDMI2\_CLK\_N) and outputs (CS13\_CLK\_P, CS13\_CLK\_N). It also interfaces with voltage regulators (U10, U11, U12, U13, U14, U15, U16, U17, U18, U19, U20, U21, U22, U23, U24, U25, U26, U27, U28, U29, U30, U31, U32, U33, U34, U35, U36, U37, U38, U39, U40, U41, U42, U43, U44, U45, U46, U47, U48, U49, U50, U51, U52, U53, U54, U55, U56, U57, U58, U59, U60, U61, U62, U63, U64, U65, U66, U67, U68, U69, U70, U71, U72, U73, U74, U75, U76, U77, U78, U79, U80, U81, U82, U83, U84, U85, U86, U87, U88, U89, U90, U91, U92, U93, U94, U95, U96, U97, U98, U99, U100, U101, U102, U103, U104, U105, U106, U107, U108, U109, U110, U111, U112, U113, U114, U115, U116, U117, U118, U119, U120, U121, U122, U123, U124, U125, U126, U127, U128, U129, U130, U131, U132, U133, U134, U135, U136, U137, U138, U139, U140, U141, U142, U143, U144, U145, U146, U147, U148, U149, U150, U151, U152, U153, U154, U155, U156, U157, U158, U159, U160, U161, U162, U163, U164, U165, U166, U167, U168, U169, U170, U171, U172, U173, U174, U175, U176, U177, U178, U179, U180, U181, U182, U183, U184, U185, U186, U187, U188, U189, U190, U191, U192, U193, U194, U195, U196, U197, U198, U199, U200, U201, U202, U203, U204, U205, U206, U207, U208, U209, U210, U211, U212, U213, U214, U215, U216, U217, U218, U219, U220, U221, U222, U223, U224, U225, U226, U227, U228, U229, U230, U231, U232, U233, U234, U235, U236, U237, U238, U239, U240, U241, U242, U243, U244, U245, U246, U247, U248, U249, U250, U251, U252, U253, U254, U255, U256, U257, U258, U259, U260, U261, U262, U263, U264, U265, U266, U267, U268, U269, U270, U271, U272, U273, U274, U275, U276, U277, U278, U279, U280, U281, U282, U283, U284, U285, U286, U287, U288, U289, U290, U291, U292, U293, U294, U295, U296, U297, U298, U299, U300, U301, U302, U303, U304, U305, U306, U307, U308, U309, U310, U311, U312, U313, U314, U315, U316, U317, U318, U319, U320, U321, U322, U323, U324, U325, U326, U327, U328, U329, U330, U331, U332, U333, U334, U335, U336, U337, U338, U339, U340, U341, U342, U343, U344, U345, U346, U347, U348, U349, U350, U351, U352, U353, U354, U355, U356, U357, U358, U359, U360, U361, U362, U363, U364, U365, U366, U367, U368, U369, U370, U371, U372, U373, U374, U375, U376, U377, U378, U379, U380, U381, U382, U383, U384, U385, U386, U387, U388, U389, U390, U391, U392, U393, U394, U395, U396, U397, U398, U399, U400, U401, U402, U403, U404, U405, U406, U407, U408, U409, U410, U411, U412, U413, U414, U415, U416, U417, U418, U419, U420, U421, U422, U423, U424, U425, U426, U427, U428, U429, U430, U431, U432, U433, U434, U435, U436, U437, U438, U439, U440, U441, U442, U443, U444, U445, U446, U447, U448, U449, U450, U451, U452, U453, U454, U455, U456, U457, U458, U459, U460, U461, U462, U463, U464, U465, U466, U467, U468, U469, U470, U471, U472, U473, U474, U475, U476, U477, U478, U479, U480, U481, U482, U483, U484, U485, U486, U487, U488, U489, U490, U491, U492, U493, U494, U495, U496, U497, U498, U499, U500, U501, U502, U503, U504, U505, U506, U507, U508, U509, U510, U511, U512, U513, U514, U515, U516, U517, U518, U519, U520, U521, U522, U523, U524, U525, U526, U527, U528, U529, U530, U531, U532, U533, U534, U535, U536, U537, U538, U539, U540, U541, U542, U543, U544, U545, U546, U547, U548, U549, U550, U551, U552, U553, U554, U555, U556, U557, U558, U559, U560, U561, U562, U563, U564, U565, U566, U567, U568, U569, U570, U571, U572, U573, U574, U575, U576, U577, U578, U579, U580, U581, U582, U583, U584, U585, U586, U587, U588, U589, U590, U591, U592, U593, U594, U595, U596, U597, U598, U599, U600, U601, U602, U603, U604, U605, U606, U607, U608, U609, U610, U611, U612, U613, U614, U615, U616, U617, U618, U619, U620, U621, U622, U623, U624, U625, U626, U627, U628, U629, U630, U631, U632, U633, U634, U635, U636, U637, U638, U639, U640, U641, U642, U643, U644, U645, U646, U647, U648, U649, U650, U651, U652, U653, U654, U655, U656, U657, U658, U659, U660, U661, U662, U663, U664, U665, U666, U667, U668, U669, U670, U671, U672, U673, U674, U675, U676, U677, U678, U679, U680, U681, U682, U683, U684, U685, U686, U687, U688, U689, U690, U691, U692, U693, U694, U695, U696, U697, U698, U699, U700, U701, U702, U703, U704, U705, U706, U707, U708, U709, U710, U711, U712, U713, U714, U715, U716, U717, U718, U719, U720, U721, U722, U723, U724, U725, U726, U727, U728, U729, U730, U731, U732, U733, U734, U735, U736, U737, U738, U739, U740, U741, U742, U743, U744, U745, U746, U747, U748, U749, U750, U751, U752, U753, U754, U755, U756, U757, U758, U759, U760, U761, U762, U763, U764, U765, U766, U767, U768, U769, U770, U771, U772, U773, U774, U775, U776, U777, U778, U779, U780, U781, U782, U783, U784, U785, U786, U787, U788, U789, U790, U791, U792, U793, U794, U795, U796, U797, U798, U799, U800, U801, U802, U803, U804, U805, U806, U807, U808, U809, U810, U811, U812, U813, U814, U815, U816, U



The schematic diagram illustrates an HDMI-MIPI Bridge circuit. It features a central bridge IC (U4B, TC358742XBG) that interfaces between an HDMI input (left) and a MIPI output (right). The power management section includes a 3.3V regulator (U4C, TLV73312PDBVT) and a 1.2V regulator (U4D, TLV73312PDBVT). Various capacitors (C24-C54) and resistors (R16-R21, FB8-FB11) are used for decoupling and signal conditioning. The schematic is labeled with 'Power' and 'Misc' sections.

**Power Section:**

- U4B: TC358742XBG
- U4C: TLV73312PDBVT
- U4D: TLV73312PDBVT
- Resistors: R16, R17, R18, R19, R20, R21
- Capacitors: C24, C25, C26, C31, C32, C33, C34, C47, C48, C49, C50, C51, C52, C53, C54

**Misc Section:**

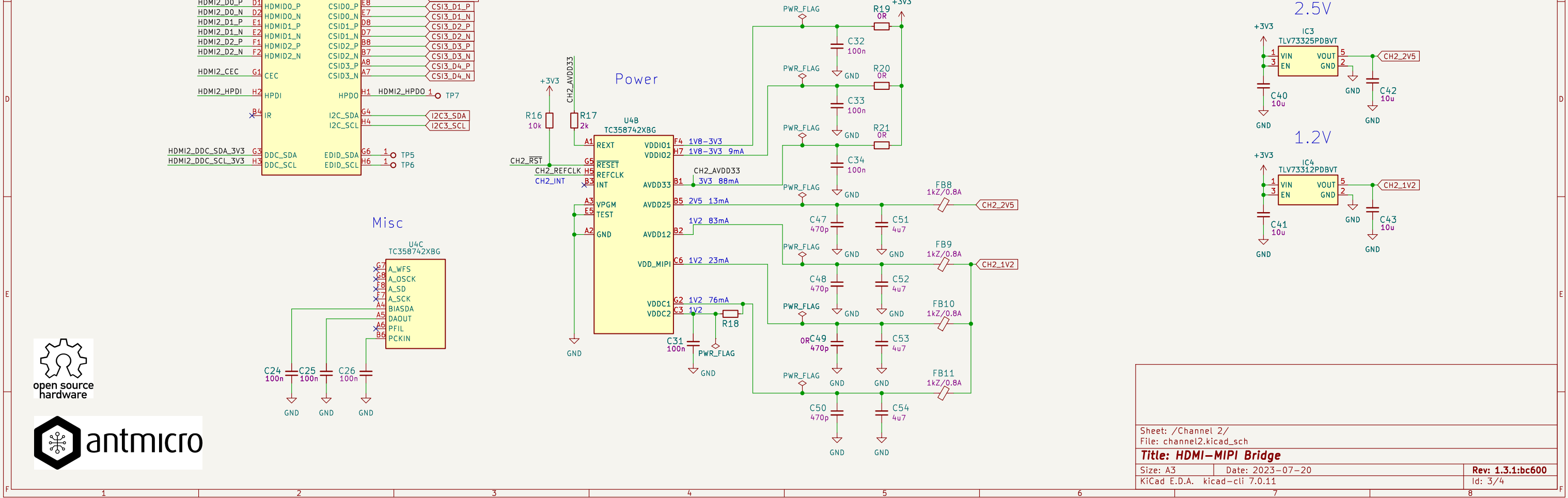
- U4C: TC358742XBG
- Resistors: R16, R17, R18, R19, R20, R21
- Capacitors: C24, C25, C26, C31, C32, C33, C34, C47, C48, C49, C50, C51, C52, C53, C54

**Legend:**

- Power
- Misc

**Sheet Information:**

- Sheet: /Channel 2/
- File: channel2.kicad\_sch
- Title: HDMI-MIPI Bridge
- Size: A3
- Date: 2023-07-20
- Rev: 1.3.1:bc600
- KiCad E.D.A. kicad-cli 7.0.11
- Id: 3/4



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- U4C: TLV73312PDBVT
- U4D: TLV73312PDBVT
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- Capacitors: C24, C25, C26, C31, C32, C33, C34, C47, C48, C49, C50, C51, C52, C53, C54

**Misc Section:**

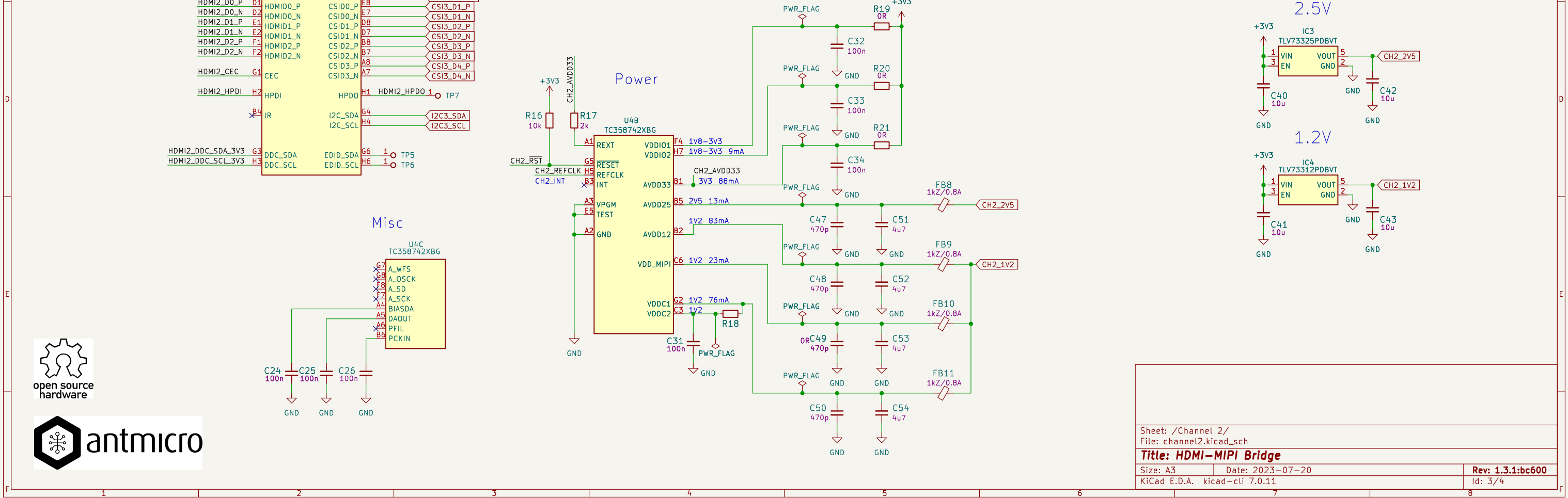
- U4C: TC358742XBG
- Resistors: R16, R17, R18, R19, R20, R21
- Capacitors: C24, C25, C26, C31, C32, C33, C34, C47, C48, C49, C50, C51, C52, C53, C54

**Legend:**

- Power
- Misc

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Camera board connector

