



IMB Certainty Board Specifications

1. Ethernet

- One (1) Gigabit Ethernet via LVDS edge connector.

2. Serial Port

- One (1) Serial port for output debug/status messages on DB9 connector:

Pin #	Signal Description	Pin #	Signal Description
1	Ground	2	TX- / A
3	RX+ / B	4	Ground
5	Not Connected	6	Ground
7	TX+ / B	8	RX- / A
9	Ground		

3. Power

- +12V input, 6.25A max via LVDS edge connector.

4. HD-SDI Input

- Dual HD-SDI input compliant with SMPTE 292M and SMPTE 372M.
- HD-SDI input capable of supporting 3 GHz signals per SMPTE 424M. Mapping per SMPTE 425M is not implemented yet, but it will be available via a software update.

5. HD-SDI Output

- Certainty Revision A: HD-SDI output is not available.
- Certainty Revision E: Dual HD-SDI output compliant with SMPTE 292M and SMPTE 372M. HD-SDI output capable of supporting 3 GHz signals per SMPTE 424M.
- **Currently unused with current firmware.**

6. HDMI Input

- HDMI v1.3a, HDCP 1.3, DVI 1.0 compliant input, supporting deep color video up to 12-bit 1080 @ 60Hz .

7. GPIO

- **Certainty Revision A:** 4 GPI and 12 GPO on DB 25 connector.

DB 25 Connectors

Pin #	Signal	Pin #	Signal
1	GPO 7	14	Ground
2	GPO 6	15	GPO 5
3	Ground	16	GPO 4
4	GPO 3	17	Ground
5	GPO 2	18	GPO 1
6	Ground	19	GPO 0
7	+5V	20	GPO 11
8	GPO 10	21	GPO 9
9	GPO 8	22	GPI 3+
10	GPI 3-	23	GPI 2+
11	GPI 2-	24	GPI 1+
12	GPI 1-	25	GPI 0+
13	GPI 0 -	-	-

- **Certainty Revision C:**

4 GPI on RJ45 Connectors

Pin #	Signal
1	GPI 0+
2	GPI 0-
3	GPI 1+
4	GPI 2+
5	GPI 2-
6	GPI 1-
7	GPI 3+
8	GPI 3-

8 GPO on RJ 45 Connectors

Pin #	Signal
1	GPO 0
2	GPO 1
3	GPO 2
4	GPO 4
5	GPO 5
6	GPO 3
7	GPO 6
8	GPO 7

- Certainty Rev E:

4 GPI on RJ45 Connectors

Pin #	Signal
1	GPI 0+
2	GPI 0-
3	GPI 1+
4	GPI 2+
5	GPI 2-
6	GPI 1-
7	GPI 3+
8	GPI 3-

8 GPO on RJ45 Connectors

Pin #	Signal
1	GPO 0
2	GPO 1
3	GPO 2
4	GPO 4
5	GPO 5
6	GPO 3
7	GPO 6
8	Ground

8. Audio AES

- **Certainty Rev A:** 16 channels (8 pairs) on one DB25 connector.

Pin #	Signal	Pin #	Signal
1	CH 15/16 +	14	CH 15/16 -
2	Ground	15	CH 13/14 +
3	CH 13/14 -	16	Ground
4	CH 11/12 +	17	CH 11/12 -
5	Ground	18	CH 9/10 +
6	CH 9/10 -	19	Ground
7	CH 7/8 +	20	CH 7/8 -
8	Ground	21	CH 5/6 +
9	CH 5/6 -	22	Ground
10	CH 3/4 +	23	CH 3/4 -
11	Ground	24	CH 1/2 +
12	CH 1/2 -	25	Ground
13	No Connection	-	-

- **Certainty Rev E:** 16 channels (8 pairs) on two RJ 45 connectors.

Bottom Pin #	Signal	Top Pin #	Signal
1	Channel 9 & 10 plus	1	Channel 1 & 2 plus
2	Channel 9 & 10 minus	2	Channel 1 & 2 minus
3	Channel 11 & 12 plus	3	Channel 3 & 4 plus
4	Channel 13 & 14 plus	4	Channel 5 & 6 plus
5	Channel 13 & 14 minus	5	Channel 5 & 6 minus
6	Channel 11 & 12 minus	6	Channel 3 & 4 minus
7	Channel 15 & 16 plus	7	Channel 7 & 8 plus
8	Channel 15 & 16 minus	8	Channel 7 & 8 minus