

How to avoid non-working assembled boards

Every now and then, we are asked why assembled boards don't work as expected after testing. Although faults are rarely caused by manufacturing processes at Quick-teck, we think it's worth offering this guide to what you can do to help avoid assembly defects.

Quick-teck always tries to provide industrial level products with the best possible service. Our Quality Control department monitors each process during assembly to avoid problems such as dry joints, missing parts, or inaccurate placement of components etc. Each assembled board should pass our final QC process before it is sent to the customer. Obviously, there will always be outliers but our manufacturing tolerances are as tight as we can make them so they will be very rare. What's more, we can confirm that all the components are ordered from our certified suppliers and will have been based on your BOM information. Therefore, it will be very seldom that issues originate from Quick-teck.

For these manufacturing service only orders, we don't design your items so we won't know how they are supposed to work in any detail. This can make it difficult for us to establish the exact problem if disputes are submitted due to functional issues. Additionally, if you notice any issues on the assembled boards, or they don't function after you have tested them, returning them is a lengthy and costly process.

To avoid this, we suggest our customers provide test instructions so that we can check and find any potential issues in our factory, before items are shipped. We know the programming data or design function is highly confidential, and we would never disclose those details. Quick-teck also never, ever share our customer information with third parties and we keep the customer database securely, with only need-to-know access available.

If you are concerned about the security of your intellectual property, we suggest at least a simple guide for pre-testing is submitted. This allows us to check for shorts and continuity issues and lets us ensure the integrity of the circuits. The follow is a pre-testing guide sample for your reference.

We welcome suggestions or comments about our assembly service, and always appreciate customer input and constructive feedback.



Quick—teck

Address: Suite 4, Intech House
34-35 Wilbury Way
Hitchin, Herts, UK
SG4 0TW

Email: info@quick-teck.co.uk

Web: www.quick-teck.co.uk

Suggested test Procedure for xxx Board.

The following pre-testing procedure are suggested to be performed before shipping.

Step	STEP / TEST/EXPECTED RESULT	IF FAILED THEN CHECK
	START OF TEST	
1	Power on the item(the input power should be 9VDC,±10%)	
	The overall current should be no higher than 15mA	IC1,IC7,J1
	LED1 on, LED2 flashes every 1 second, LED3 turns on after 5 seconds(indicating initialization process successes).	R4,R28,R34,C33,C46-C58,IC2,IC4,IC9,J2,L4,L5,L6
	Voltmeter D5 should show between 4.9 and 5.1VDC	D5,D8,R4,C39,C78,S8,S9
	Voltmeter PV2 should show between 3.2V and 3.5Vdc	U1 3v3 Regulator, D3,D7,T4,T9,IC8, R7, R8, D3
2	Make sure all switches are OPEN	
	Voltmeter PV3 should show between 7.5V and 7.8Vdc	U3,U5,R7-R37,R76,D4,D5,IC1,IC8,L17-22
3	CLOSE switch SW2	R45,R57,R48,C85,C33,T4,T9,T17
	Voltmeter PV3 should show between 4.5V and 4.8Vdc.	R34-R46,L5-L8,C58,IC2,IC9,J2,J9, R7, R8, D3
	The overall current should be not higher than 25mA	
5	CLOSE switch SW1	
	Voltmeter PV1 should show between 1.8V and 2.2Vdc	R7, R8, D3,S4,D7,IC7,IC9
	Voltmeter PV2 should show between 3.2V and 3.5Vdc	U1 3v3 Regulator, D3, T1, D1,D2,D5,D6
	Voltmeter PV3 should show between 4.2V and 4.4Vdc	U7 7.5v Regulator, D4, T1, D1,D2,D5,D6
6	OPEN switch SW2	
	Voltmeter PV1 should show 0Vdc	D3
	Voltmeter PV2 should show between 3.2V and 3.5Vdc	U1 3v3 Regulator, D3, T1, D1,D2,D5,D6
	Voltmeter PV3 should show between 5.5V and 5.8Vdc	U7 10v Regulator, D4, T1, D1,D2,D5,D6
	LED2 should be ON	Relay4, Q4, R4, R5, D7
	LED3 should be OFF	Relay3, Q3, R2
	LED4 should be flash	Relay1, Q1, R1
7	Press & hold PB4	
	Relay1 should operate,LED6should be ON	Relay1, Q1, R1



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8	Press & hold PB3	
	Relay2 should operate,LED7 should be ON	Relay2, Q2, R3,R5,L4-L7,D8,D12
9	Connect USB to a PC(Windows 8 or higher system), install the driver provided	
	Device manager on Windows shows a new device plugged. A new driver shows on system	IC7,D4,J8,IC8, R35-R48.
10	Copy the provided '.bin'file to the new driver and then restart the board	
	LED1 on, LED2 turns on after about 5 seconds and then flashes every 1 second, LED3 turns on after about 15 seconds(indicating communication process successes).	IC23,IC26,J4,J8,D84,D34,D23,Q3,Q8,W1,W8.
	END OF PRE-TEST	