Technical Support
TECHNICAL NOTE

TECHNICAL NOTE TN-1015

Problems with IC306 used in TBA10C0 (TB8100 Isolated E&M SIF)

6 May 2005

Applicability

TBA10C0 Isolated E&M SIF. This SIF is used in the following reciters

- TBA40B2-0C00
- TBA40B3-0C00
- TBA40C1-0C00
- TBA40C2-0C00
- TBA40H1-0C00
- TBA40H2-0C00
- TBA40H3-0C00
- TBA40K4-0C00

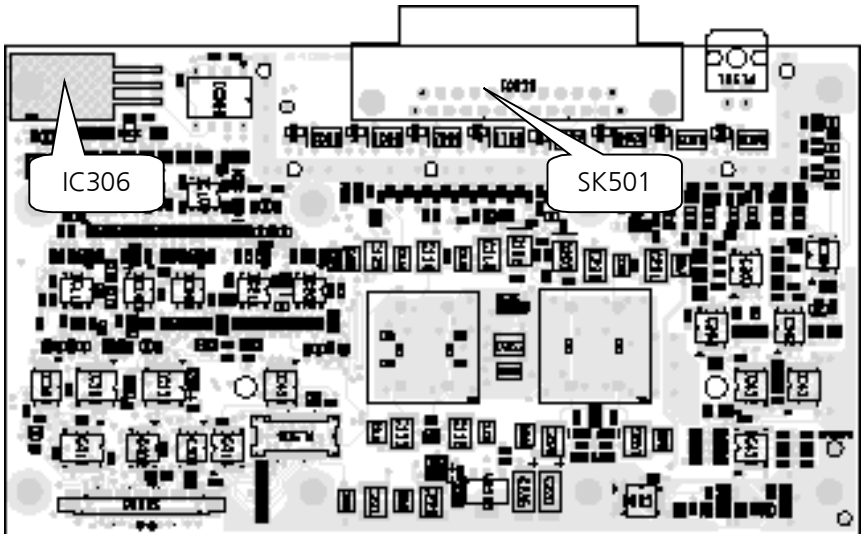
1. Introduction

There have been reports from two customers that the opto keying inputs on the TBA10C0 SIF did not work. Investigation showed that in one case, the part that was fitted was incorrect.
The correct part is IXCP10M45A, a bi-directional current limiter. At some time IXCP10M45 parts were purchased which are not bi-directional and will not provide the intended opto keying operation.
In addition, the insulating washer on the top of IC306 may have been omitted as it was not included in all required BOMs. The manufacturing work instruction did include the fitting of the washer so the number of cases where this has been omitted should be small.

2. Test Method

There are 2 methods of finding if there is a problem with the SIF. The first is to remove the reciter cover on the SIF (digital board) side and inspect the SIF board.

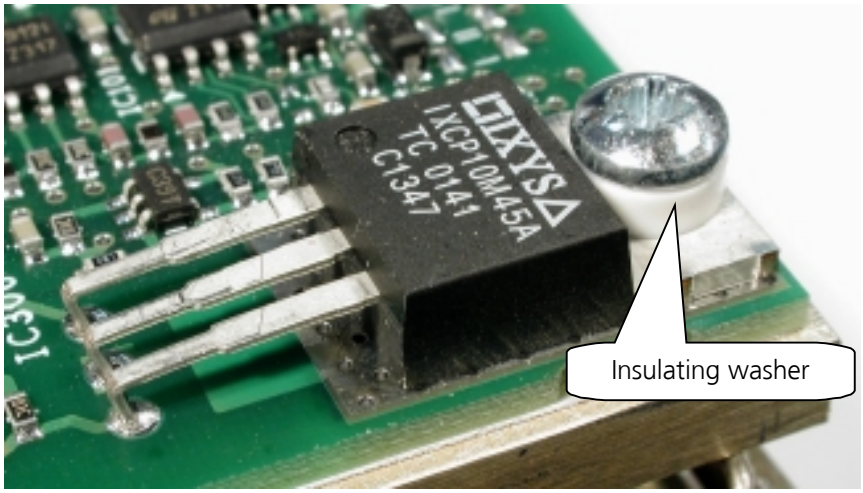
Location of IC306 on the SIF.



This layout drawing of the SIF shows the location of IC306. It may be necessary to remove the end plate to see the device clearly.

The device has its part number clearly marked as IXCP10M45A. It should have a plastic insulating washer under the screw holding the device down but does not have an insulator between the device and the PCB. This part of the PCB is isolated from ground.

IC306 with insulating washer fitted and the correct part number. Note there is no insulating washer under the device.



Testing the opto-keying with the reciter fitted to a base station.

To test to detect a defective opto keying circuit without opening the Reciter.
With the reciter in a base station rack:

1. Power up the base station and connect a RF load and/or power meter to the PA.
2. With a D25 plug, ground pin 21 and 25 of SK501 on the SIF.
3. Connect +12V through a 1k2 resistor on pin 20 of SK501. The transmitter should key on as indicated by a power meter, front panel LED or the service kit software in Monitor > Monitoring > Reciter, the TX Key input should change status from Inactive to Active.
   - No further action is required if this test passes.
4. If the transmitter does not key, this indicates that the opto key input is defective. To determine the defect, perform step 5 to 8.
5. Ground pin 20 and 25 of SK501.
6. Connect +12V through a 1k2 resistor on pin 21 of SK501. Detect the TX keying activity as in 3 above.
7. If the transmitter **does not activate**, this indicates that the incorrect part has been fitted. Replace IC306 with a IXCP10M45A (IPN 002-01045-00)
   - Remove the reciters cover and confirm the part number on IC306. Replace IC306 with the correct part.
8. If the transmitter **does activate**, this indicates that the insulating washer from the screw is missing and IC306 has a connection to ground.
   - Remove the reciters cover and confirm the insulating washer is missing. Replace IC306 as it may have been damaged. Fit missing insulating washer (IPN 353-00010-18)

Testing the opto-keying of a reciter without a base station.

To test a reciter without a base station.

1. Power up the Reciter
2. With a D25 plug, ground pin 21 and 25 of SK501.
3. Connect +12V through a 1k2 resistor on pin 20 of SK501.
4. There are 2 ways to check the TX key operation
   - Option 1) If the TX key input (pin 10) goes low (from ~7.6V to ~0.2V) the opto keying input is working.
   - No further action required if this test passes.
   - Option 2) Connect the service kit and go to Monitor > Monitoring > Reciter, the TX Key input should change status from Inactive to Active, the opto keying input is working.

- No further action required if this test passes.

5. If the TX does not key, this indicates that the opto key input is defective. To determine which defect, perform step 6 to 9.
6. Ground pin 20 and 25 of SK501.
7. Connect +12V through a 1k2 resistor on pin 21 of SK501. Detect the TX keying activity as in 4 above.
8. If TX key **does not activate**, this indicates that the incorrect part has been fitted. Replace IC306 with a IXCP10M45A (IPN 002-01045-00)
   - Remove the reciters cover and confirm the part number on IC306. Replace IC306 with the correct part.
9. If TX key **does activate**, this indicates that the insulating washer from the screw is missing and IC306 has a connection to ground.
   - Remove the reciters cover and confirm the insulating washer is missing. Replace IC306 as it may have been damaged. Fit missing insulating washer (IPN 353-00010-18)

CSO Instruction

Quantities of IXCP10M45A (IPN 002-01045-00) and insulating washers (IPN 353-00010-18) have been sent to CSO's that have received affected product. Warranty Remedy 042 provides information for warranty claims.

3. Issuing Authority

Name and Position of Issuing Officer

Jeff Northcott
Senior Technical Support Engineer

Confidentiality

Distribution Level

Tait Only

Document History

Original Release	6 May 2005	JN