BoSL Board SIM Communications Issue Report **2019/11/21**

Summary of Issue:

Some BoSL boards are unable to communicate with the inserted SIM card. Issue specifically with communication between SIM7000 module and SIM card.

Replication:

To replicate the issue have a SIM card inserted in to the BoSL board and issue the AT command sequence to the SIM7000 module.

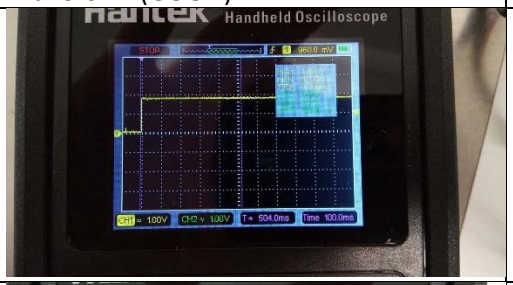
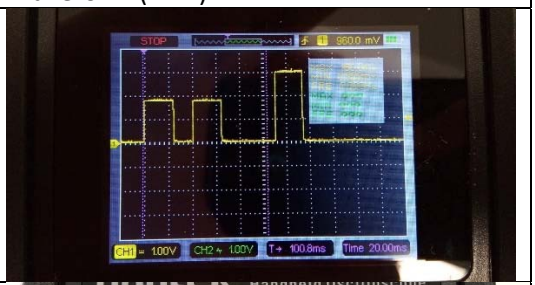
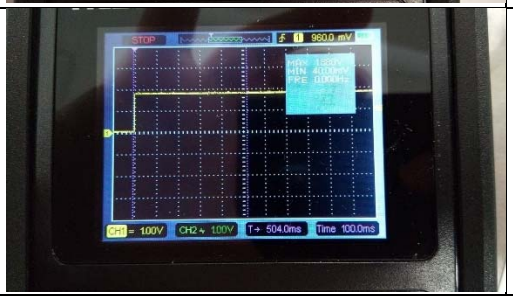
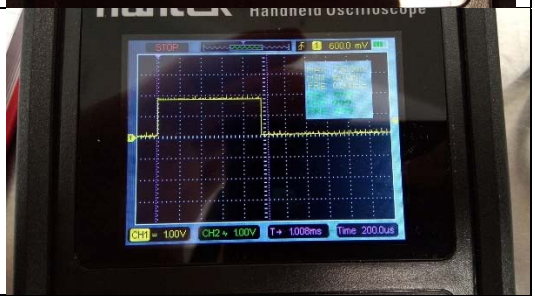
Command	Response (GOOD)	Response (BAD)
AT+CFUN=0		
	+CPIN: NOT Ready	+CPIN: NOT Ready
	OK	OK
AT+CFUN=1		
	OK	OK
	+CPIN = Ready	+CPIN: NOT INSERTED
	SIM READY	

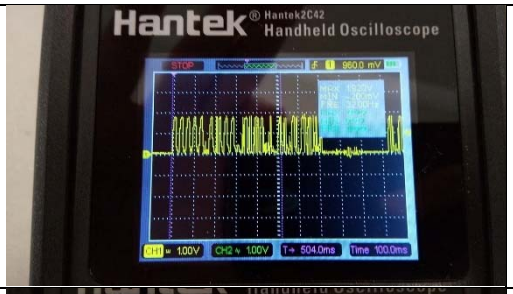
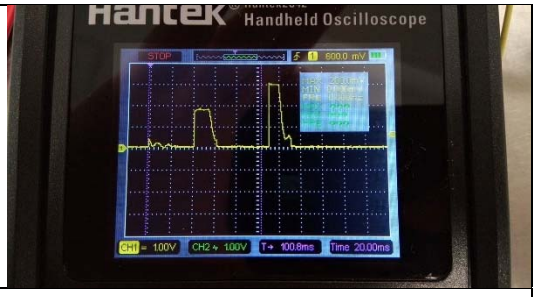
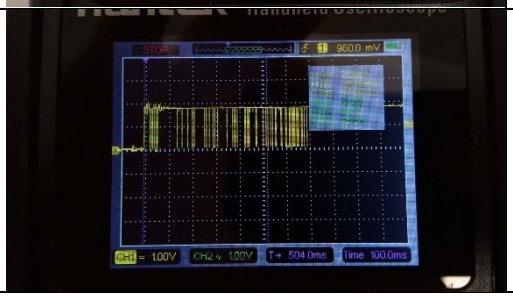
Diagnostics Data:

Measurement	Value (GOOD)	Value (BAD)
ATmega Crystal Frequency	7.9 – 8.1 MHz	7.9 – 8.1 MHz
SIM7000 – Atmega baud rate	9540	9540

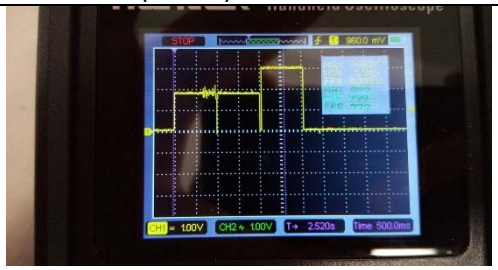
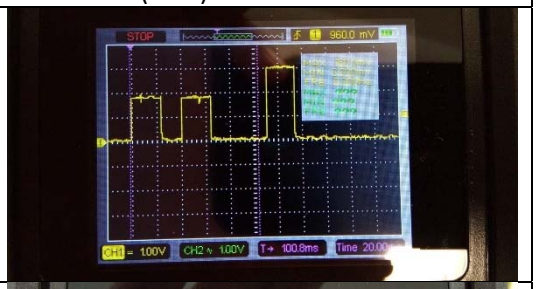
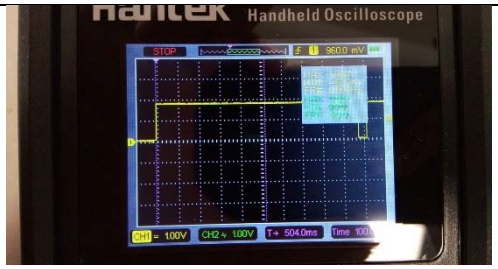
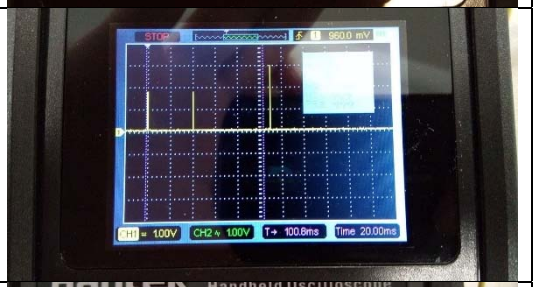
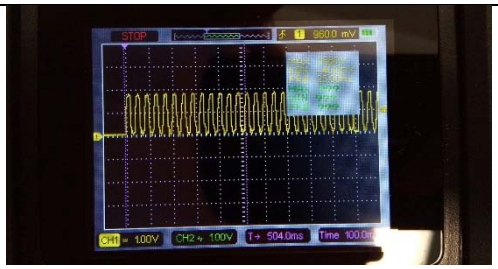
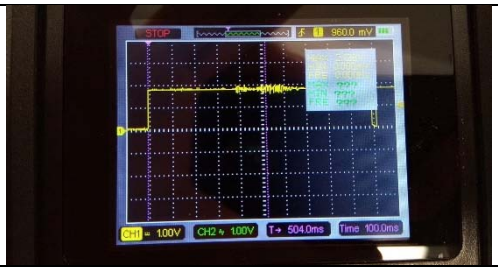
Probe of SIM7000 SIM card lines after issuing AT+CFUN=1 in the above replication command sequence.

(SIM Inserted)

PIN	Waveform (GOOD)	Waveform (BAD)
SIM_VDD		
SIM_RST		

SIM_CLK		
SIM_DATA		No Reading

(SIM Not Inserted)

PIN	Waveform (GOOD)	Waveform (BAD)
SIM_VDD		
SIM_RST		
SIM_CLK		
SIM_DATA		No Reading

Likely Explanation:

The issue and readings found is very similar to the issue faced in this stack exchange question: https://arduino.stackexchange.com/questions/40043/sim800c-developer-board-sim-not-inserted

From discussion with SimCOM engineers they concluded that it is likely a soldering issue either on the PCB or inside the SimCOM module. As the behaviour observed in this case is very similar it is likely that a similar explanation is valid.