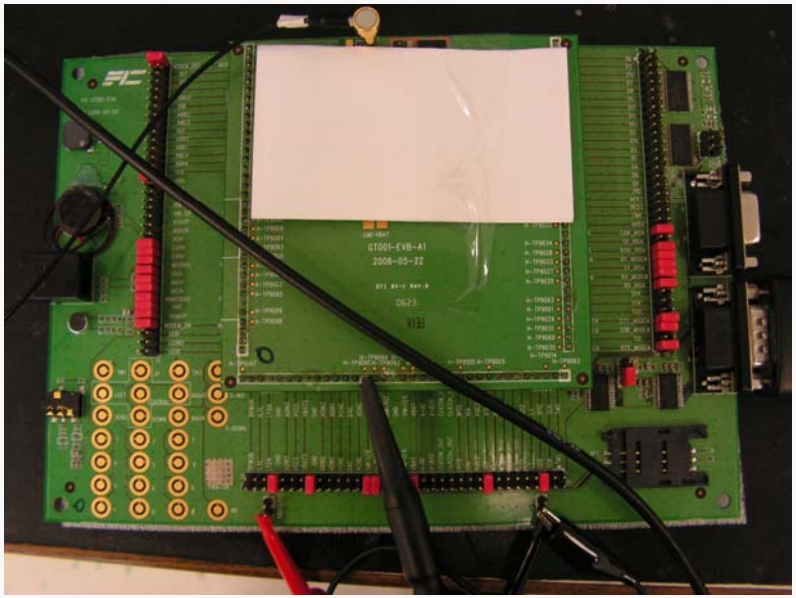
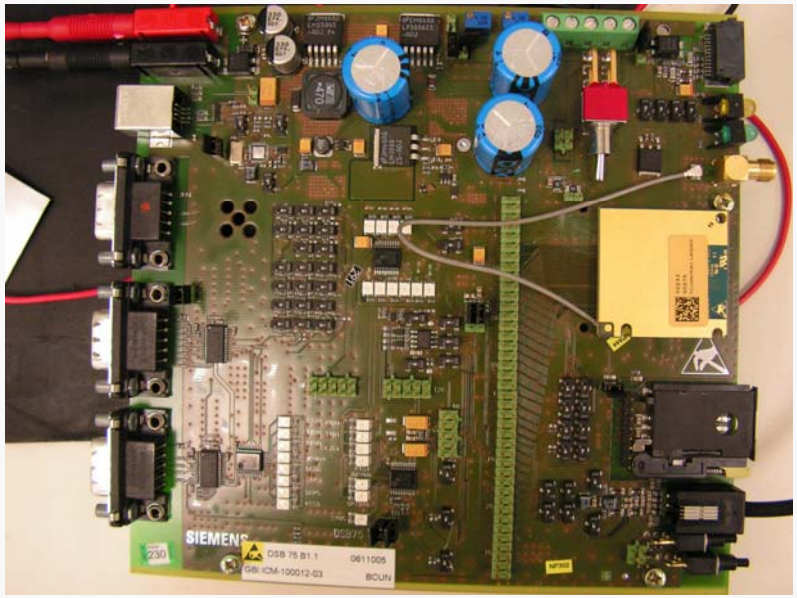
TI Calypso SIM Card Tests

Tested Platform



TI Calypso Platform (GPRS) EVB



Siemens MC75i (DEGE) Platform EVB

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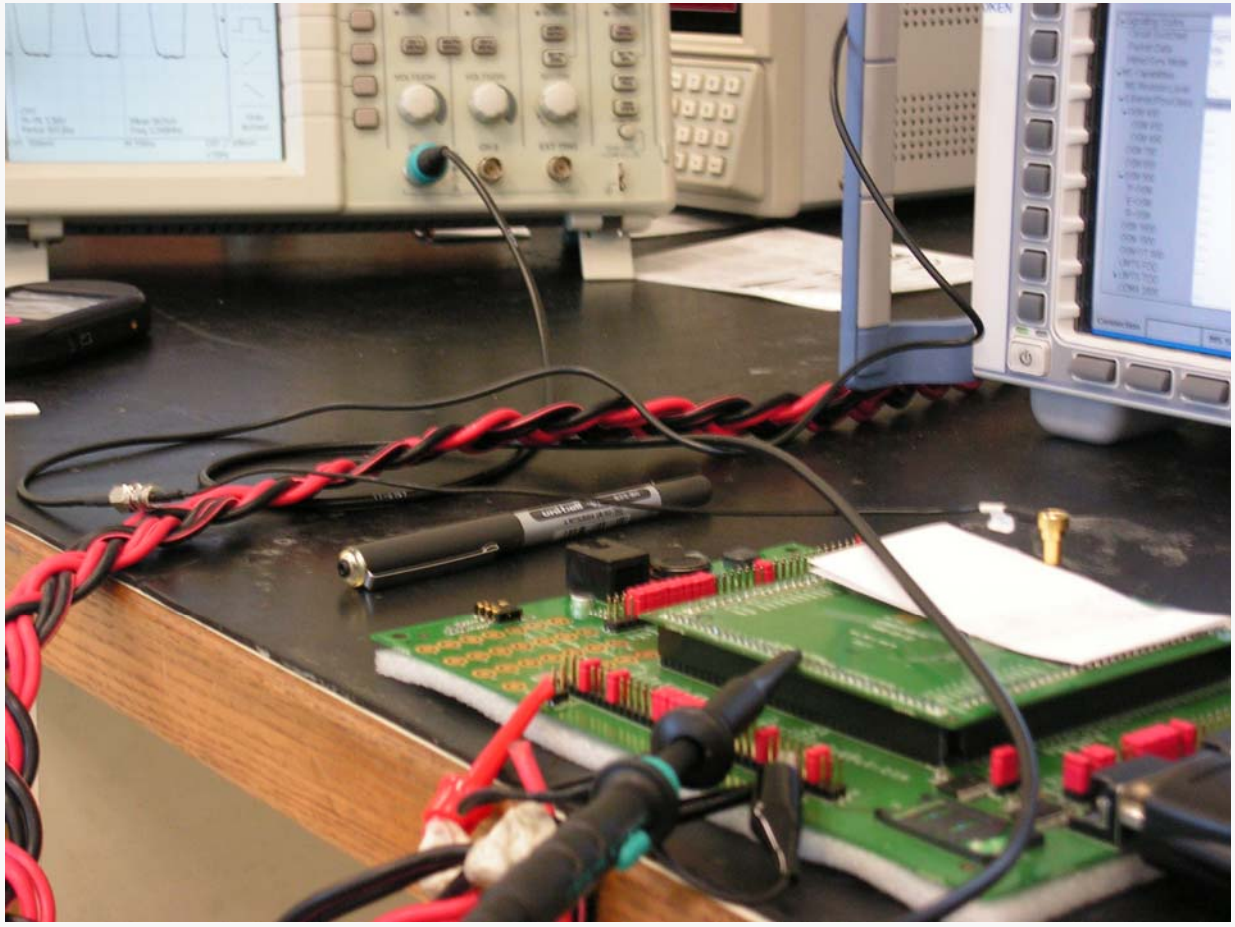
Tested SIM Cards

Operator	Support data rate	SIM Supply Voltage
(A)Chunghwa Telecom	2.5G(GPRS)	3V
(B)Taiwan Mobile	3G(WCDMA)	3V
(C)Chunghwa Telecom	3G(WCDMA)	1.8V

Test set-up



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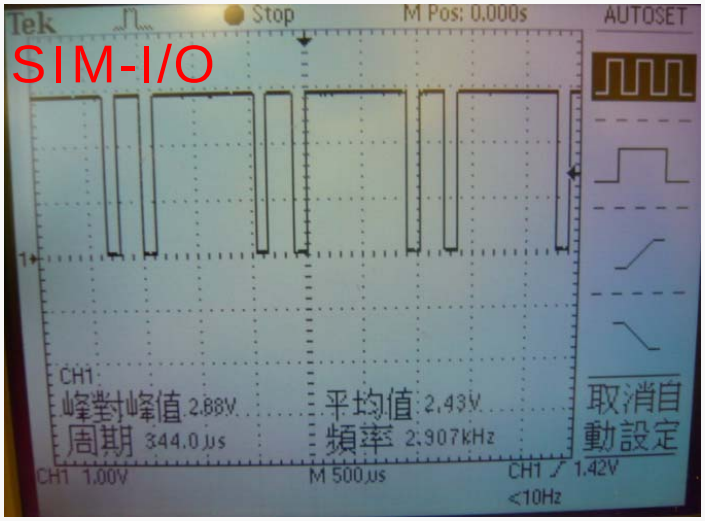
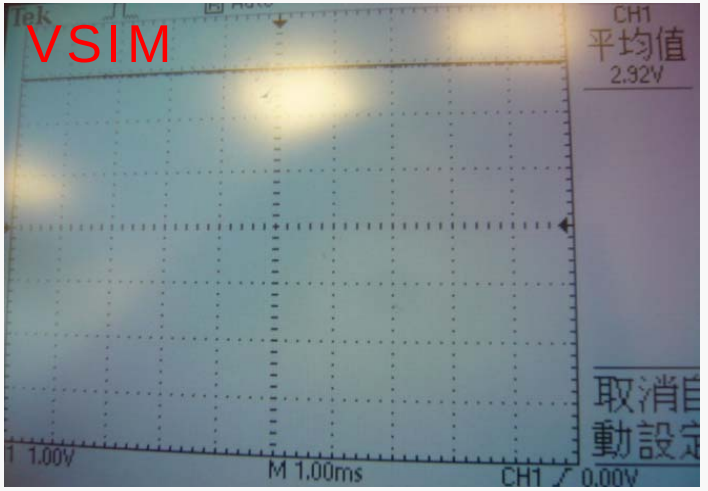
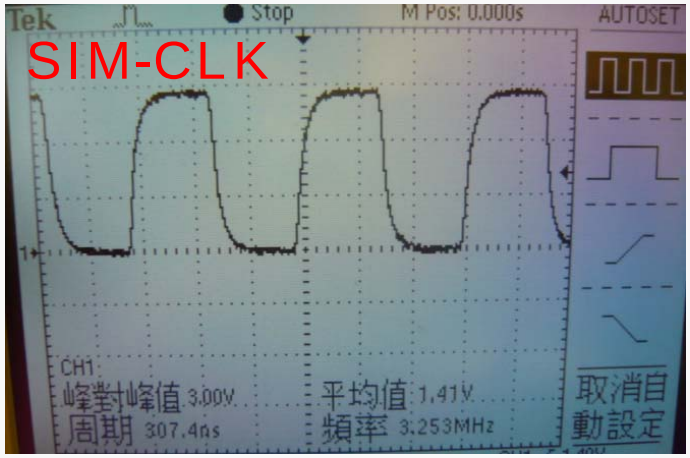
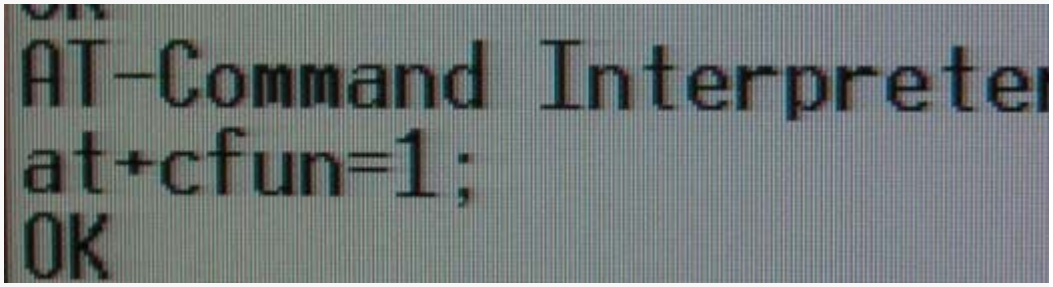
Test I

- Test Case: Calypso+(A) SIM card@4.0V power supply









The data from SIM can be accessed successfully.

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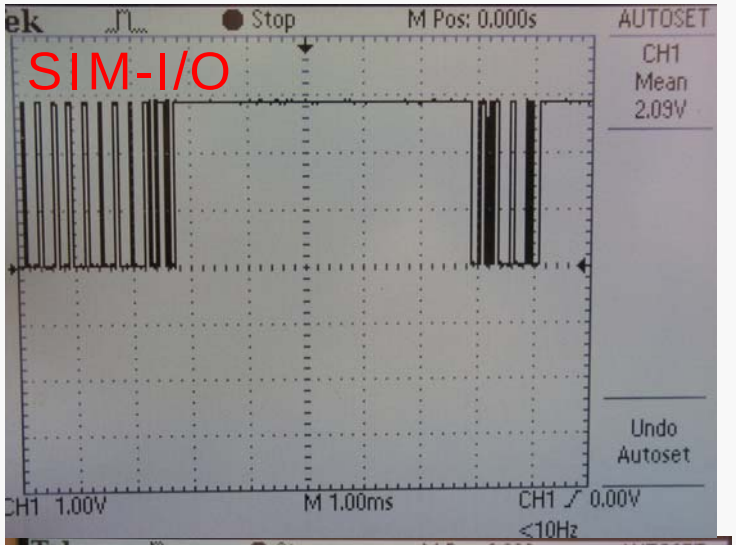
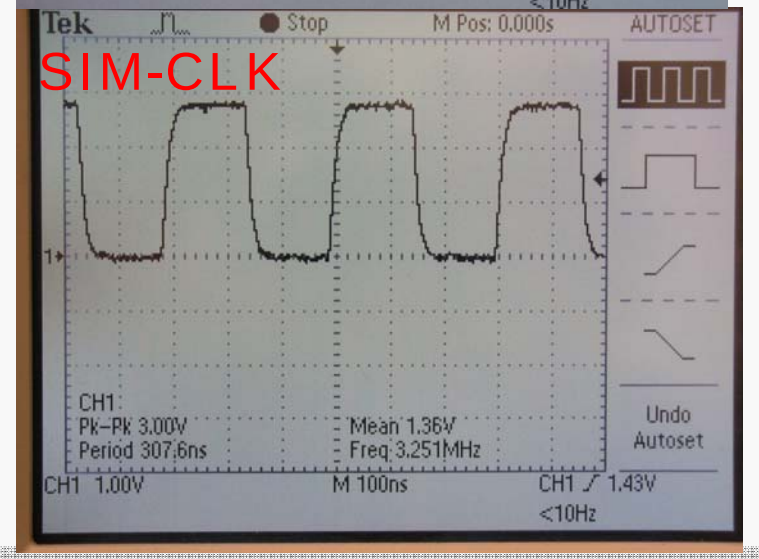
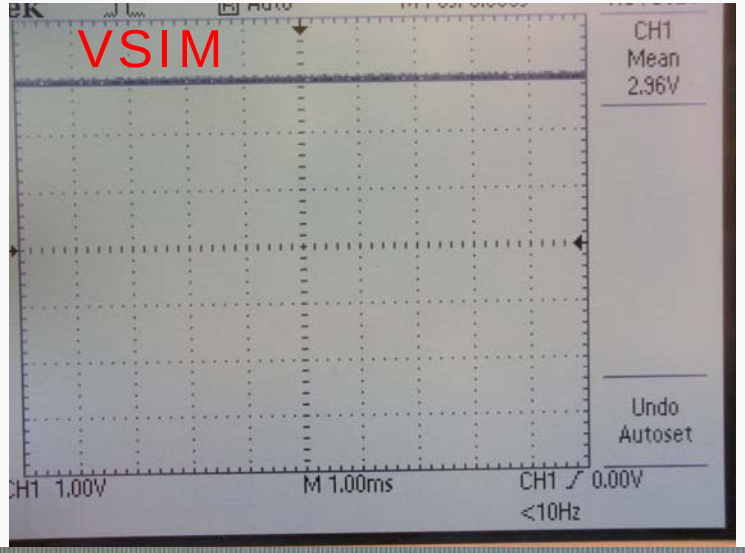
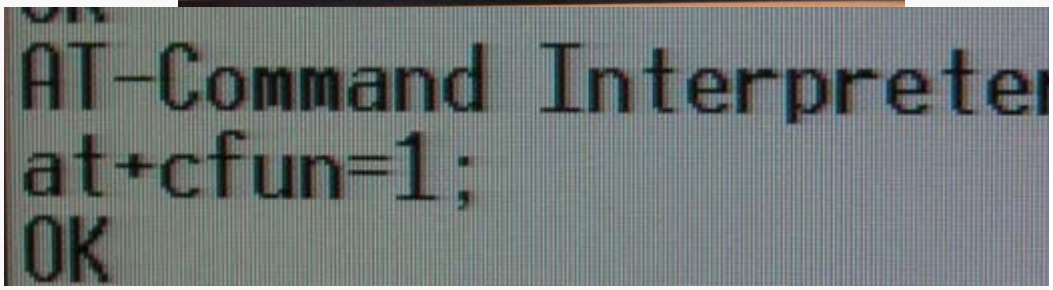
Test II

- Test Case: Calypso+(B) SIM card@4.0V power supply









The data from SIM can be accessed successfully.

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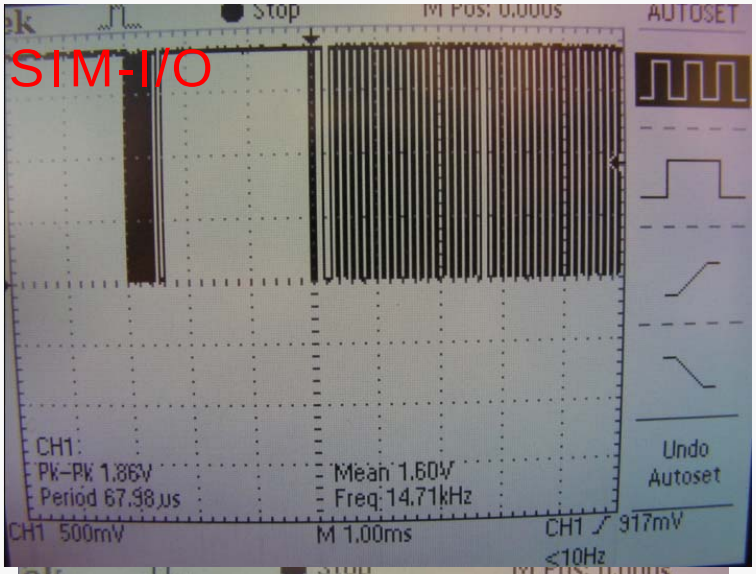
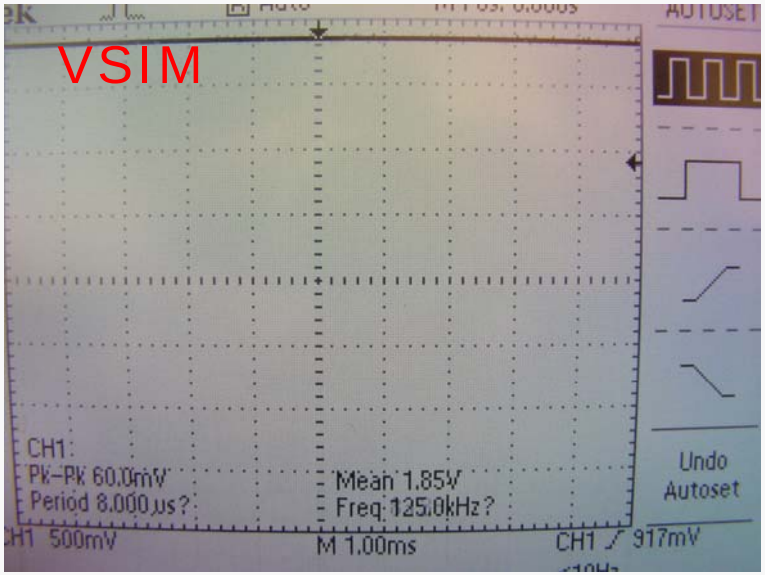
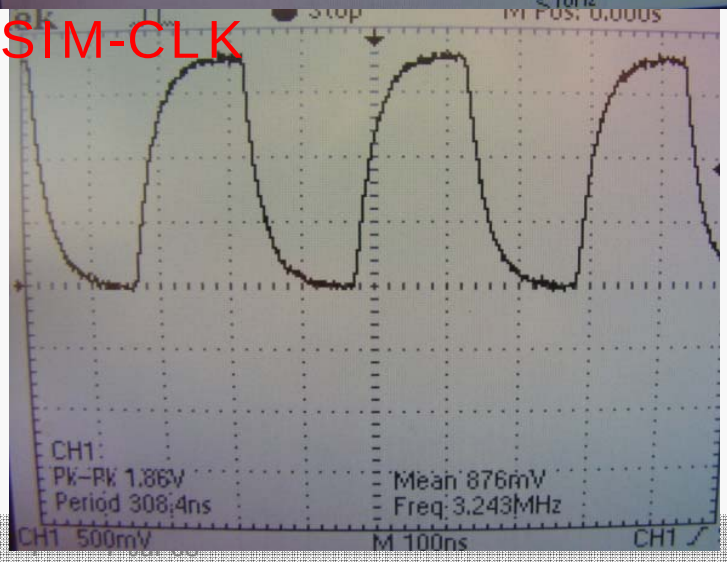
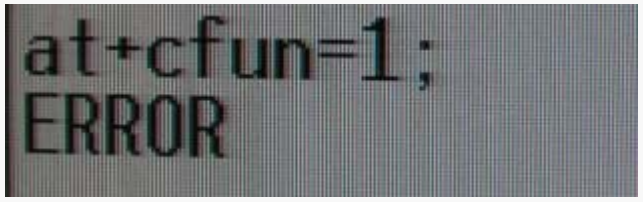
Test III

- Test Case: Calypso+(C) SIM card@4.0V power supply









The data from SIM can **NOT** be accessed.

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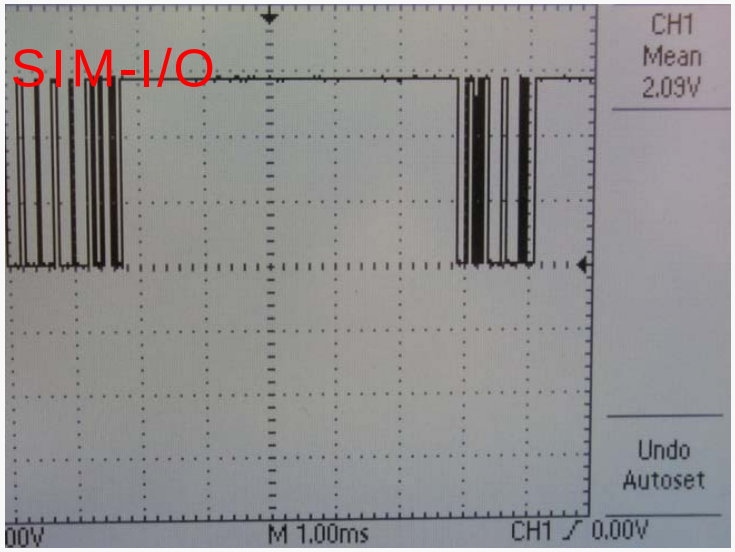
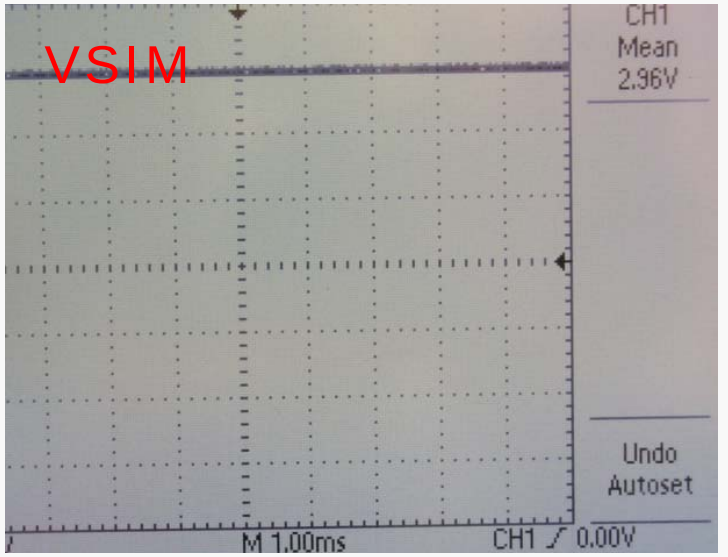
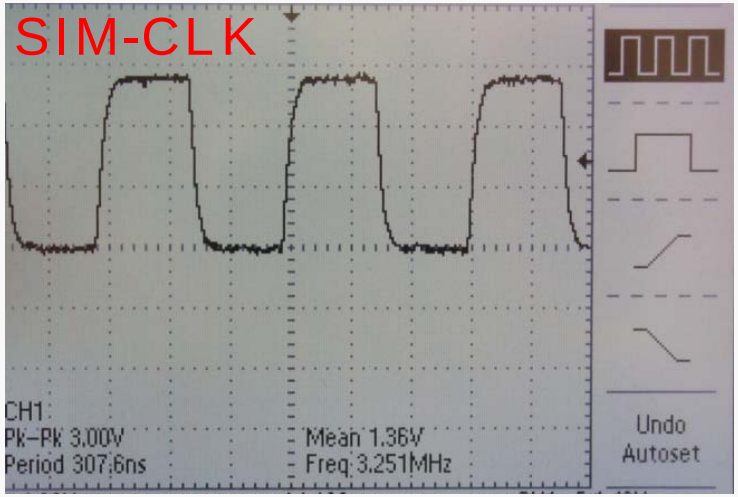
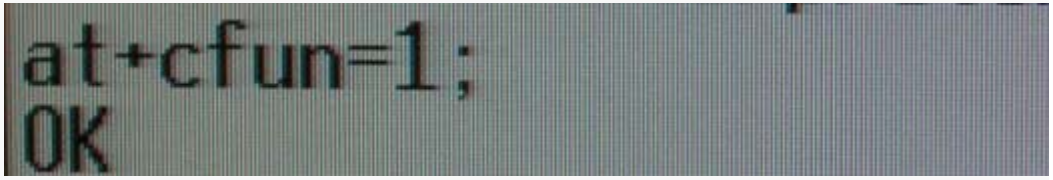
Test IV

- Test Case: Siemens MC75i +(A) SIM card@9.0V power supply









The data from SIM can be accessed successfully.

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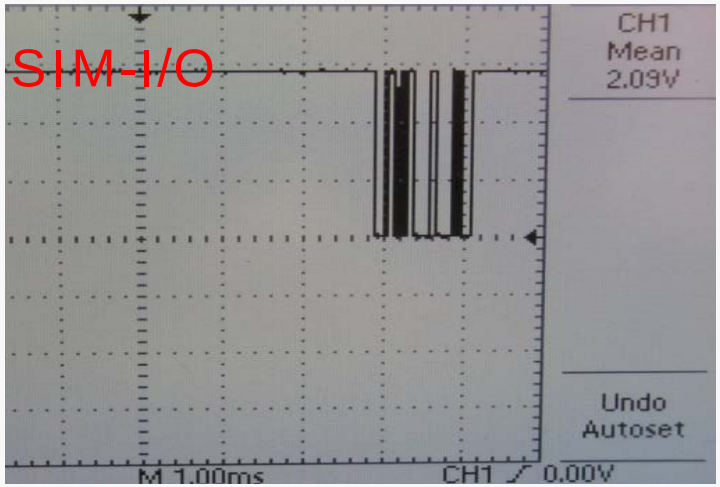
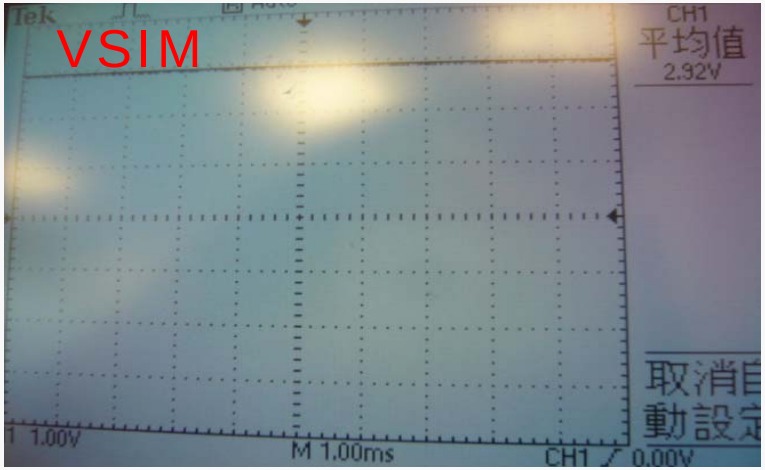
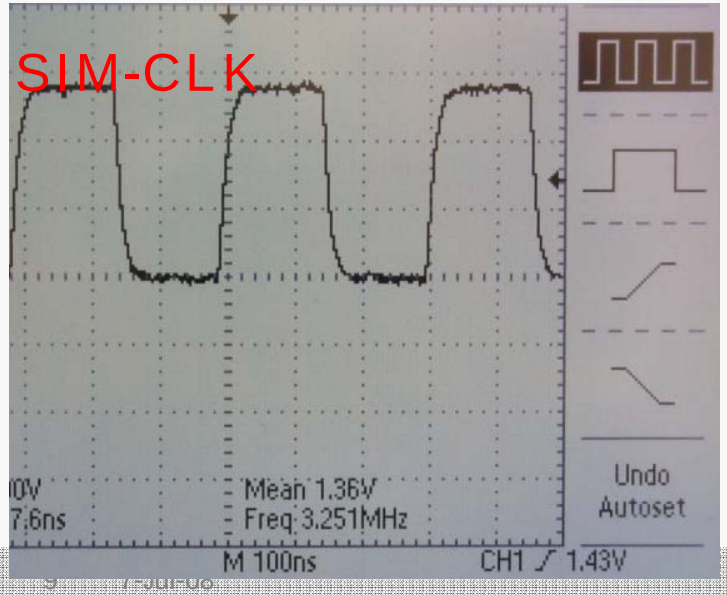
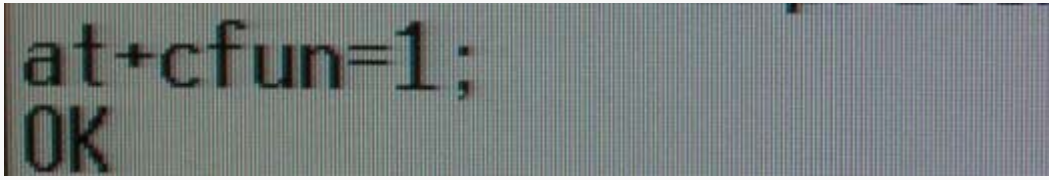
Test V

- Test Case: Siemens MC75i +(B) SIM card@9.0V power supply









The data from SIM can be accessed successfully.

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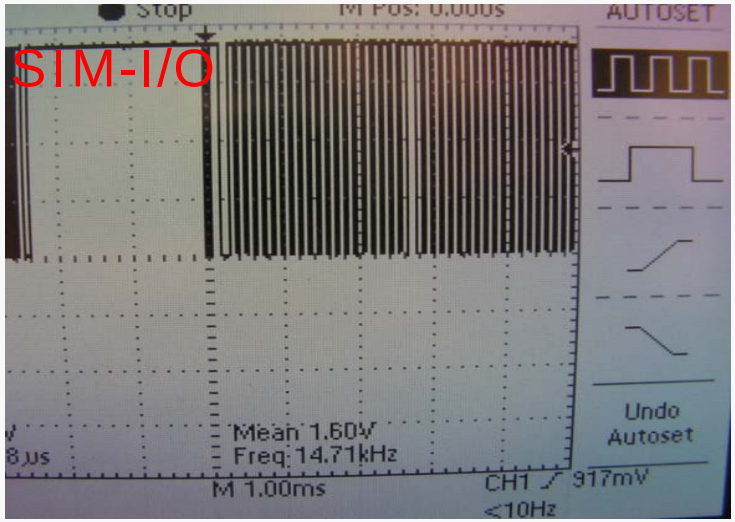
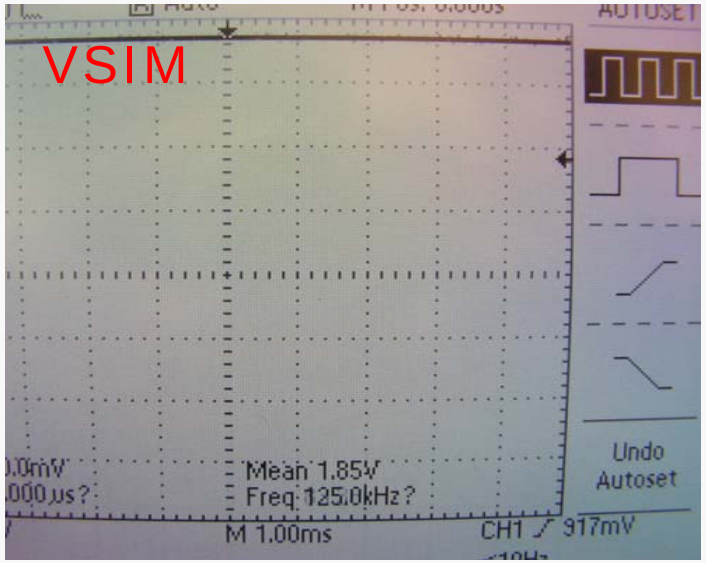
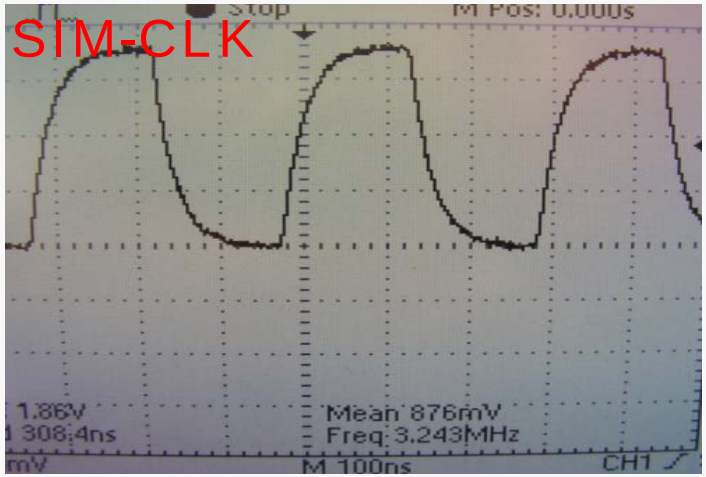
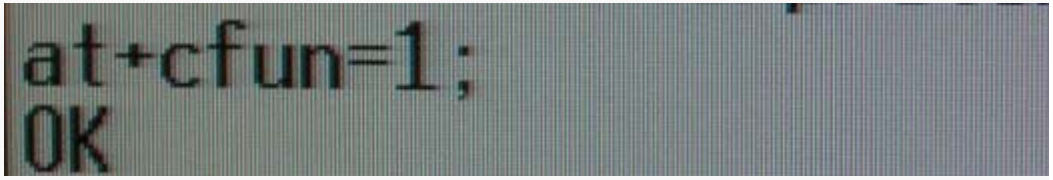
Test VI

- Test Case: Siemens MC75i +(C) SIM card@9.0V power supply









The data from SIM can be accessed successfully.

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Test Results Matrix

	TI Calypso Platform (GPRS) EVB	Siemens MC75i (DEGE) Platform EVB
(A) Chunghwa Telecom 2.5G@ 3V	◯	◯
(B) Taiwan Mobile 3G@ 3V	◯	◯
(C) Chunghwa Telecom 3G@1.8V	X	◯

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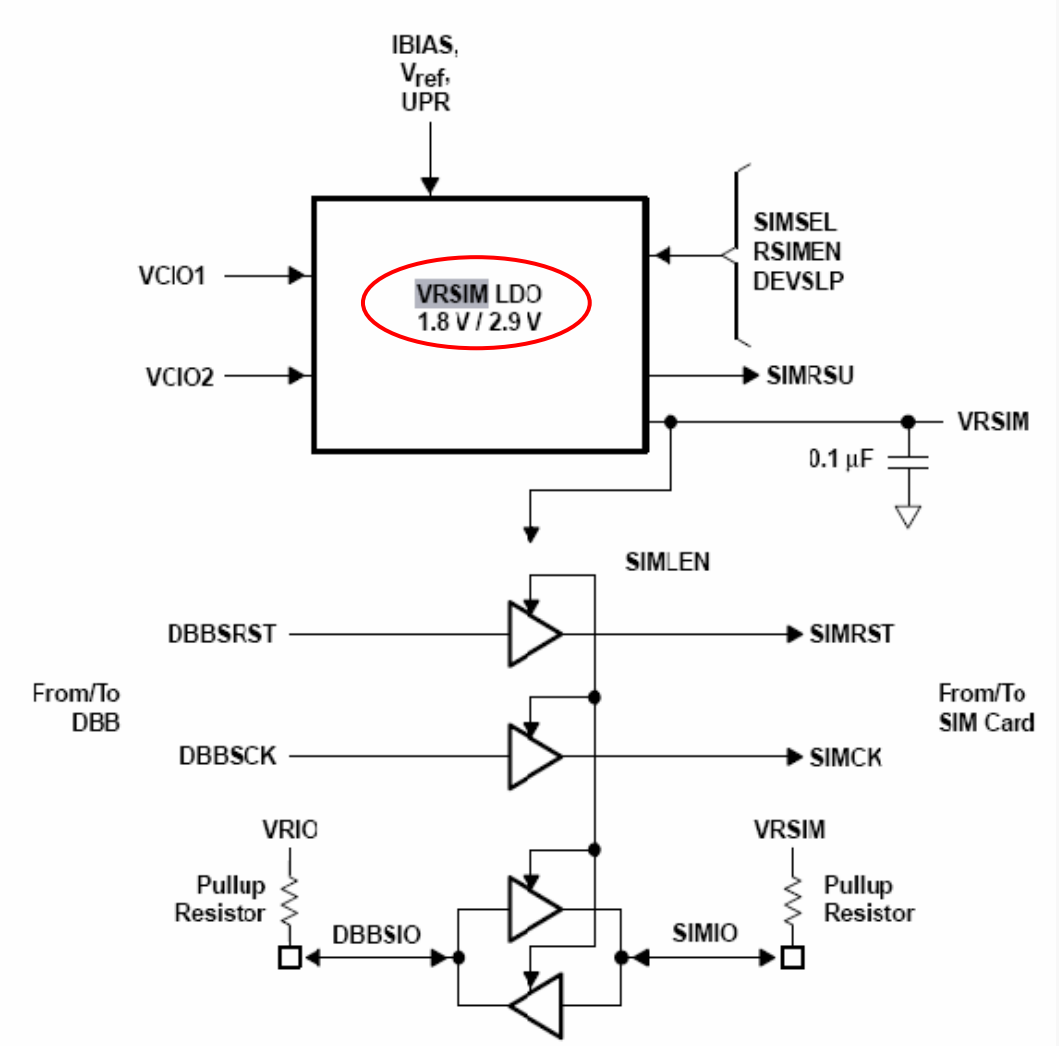
SIM Interface Block Diagram



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SimCard Control Register

5.3.8 SimCard Control Register

Register: **VRPCSIM**
Page: 1
Address: 23 (10111b)
Read/Write: 1/0

Data Bit	9	8	7	6	5	4	3	2	1	0
Name	RSVD						SIMLEN	SIMRSU	RSIMEN	SIMSEL
Access Type	R	R	R	R	R	R	R/W	R	R/W	R/W
Value at Reset	0	0	0	0	0	0	0	0	0	0

Table 5–33. SimCard Control Register Description

DATA BIT	FIELD NAME	DESCRIPTION
9–4	RSVD	Reserved
3	SIMLEN	When this bit is set to 1, the SimCard level shifter is enabled (SIMCK, SIMIO, and SIMRST are enabled).
2	SIMRSU	VRSIM voltage regulator output status: 0 = The voltage regulator is not in regulation mode. 1 = The regulation is on, the SIM card is correctly supplied.
1	RSIMEN	When this bit is set to 1, the VRSIM voltage regulator is enabled.
0	SIMSEL	Select the VRSIM output voltage: 1 = 2.9 V 0 = 1.8 V

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Conclusions

- The test results show the access of SIM depends on the SIM supply voltage, not 2G SIM or 3G SIM (or called USIM).
- The calypso platform can recognize the type of input SIM and give the corresponding voltage. The SIM@1.8V interface seems working according to the measured data. However, MODEM doesn't accept the data from SIM@1.8V.
- 3G SIM@3V seems working on Calypso platform.
- From TI Taiwan FAE oral statement, Calypso doesn't support 1.8V SIM access even thought LDO could generate 1.8V (I will ask them to do double-check and give me an official announce)
- Siemens solution can accept both 1.8V/3V SIMs.
- If I can get a 2G SIM@1.8V, the test would be complete.