



Intel[®] StrongARM[®] SA-1100 Reference Design for web phone Applications

Specification Update

March 1999

Notice: The SA-1100 reference design for web phone applications may contain design defects or errors known as errata. Characterized errata that may cause the product to deviate from published specifications are documented in this specification update.

Order Number: 278247-002



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The Intel® StrongARM® SA-1100 reference design for web phone applications may contain design defects or errors known as errata which may cause the product to deviate from published specifications. Current characterized errata are available on request.

Contact your local Intel sales office or your distributor to obtain the latest specifications and before placing your product order.

Copies of documents which have an ordering number and are referenced in this document, or other Intel literature may be obtained by calling 1-800-548-4725 or by visiting Intel's website at <http://www.intel.com>.

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Revision History

Date	Version	Description
02/16/99	001	This is the new Specification Update document. It contains all identified errata published prior to this date.
03/19/99	002	Unresolved hardware or software problems result in modem test failures for reference designs with serial numbers 152, 153, 158, 160, 161, 162, 163, 165, 166, 167, 171, 172, and 173.

Preface

As of July, 1996, Intel's Computing Enhancement Group has consolidated available historical device and documentation errata into this new document type called the Specification Update. We have endeavored to include all documented errata in the consolidation process, however, we make no representations or warranties concerning the completeness of the Specification Update.

This document is an update to the specifications contained in the Affected Documents/Related Documents table below. This document is a compilation of device and documentation errata, specification clarifications and changes. It is intended for hardware system manufacturers and software developers of applications, operating systems, or tools.

Information types defined in Nomenclature are consolidated into the specification update and are no longer published in other documents.

This document may also contain information that was not previously published.

Affected Documents/Related Documents

Title	Order
StrongARM** SA-1100 WebPhone Reference Design User's Guide	278180-001

Nomenclature

Errata are design defects or errors. These may cause the SA-1100's behavior to deviate from published specifications. Hardware and software designed to be used with any given stepping must assume that all errata documented for that stepping are present on all devices.

Specification Changes are modifications to the current published specifications. These changes will be incorporated in any new release of the specification.

Specification Clarifications describe a specification in greater detail or further highlight a specification's impact to a complex design situation. These clarifications will be incorporated in any new release of the specification.

Documentation Changes include typos, errors, or omissions from the current published specifications. These will be incorporated in any new release of the specification.

Note: Errata remain in the specification update throughout the product's lifecycle, or until a particular stepping is no longer commercially available. Under these circumstances, errata removed from the specification update are archived and available upon request. Specification changes, specification clarifications and documentation changes are removed from the specification update when the appropriate changes are made to the appropriate product specification or user documentation (datasheets, manuals, etc.).



Summary Table of Changes

The following table indicates the errata, specification changes, specification clarifications, or documentation changes which apply to the Intel® StrongARM® SA-1100 (SA-1100) reference design for web phone applications. Intel may fix some of the errata in a future stepping of the component, and account for the other outstanding issues through documentation or specification changes as noted. This table uses the following notations:

Codes Used in Summary Table

Stepping

- X: Errata exists in the stepping indicated. Specification Change or Clarification that applies to this stepping.
- (No mark)
- or (Blank box): This erratum is fixed in listed stepping or specification change does not apply to listed stepping.

Page

- (Page): Page location of item in this document.

Status

- Doc: Document change or update will be implemented.
- Fix: This erratum is intended to be fixed in a future step of the component.
- Fixed: This erratum has been previously fixed.
- NoFix: There are no plans to fix this erratum.
- Eval: Plans to fix this erratum are under evaluation.

Row



Change bar to left of table row indicates this erratum is either new or modified from the previous version of the document.

Errata

No.	Steppings			Page	Status	ERRATA
	E	#	#			
1	X			11	Fix	DAA U1 Caller ID Function Problem
2	X			11	Fix	Keypad Interface Problem
3	X			11	Fix	DAA CID On-Hook problem
4	X			11	Fix	DTMF Tone Dialing and Call Waiting Problems
5	X			12	Not Fixed	Failed Modem Test Results

Specification Changes

No.	Steppings		Page	Status	SPECIFICATION CHANGES
	E	#			
1			13		None

Specification Clarifications

No.	Steppings			Page	Status	SPECIFICATION CLARIFICATIONS
	#	#	#			
1				14		None

Documentation Changes

No.	Document Revision	Page	Status	DOCUMENTATION CHANGES
1		15		Keyboard: Section 1.4.7

Identification Information

Markings

This document contains errata for the SA-1100. The revision of the reference design that is affected by this errata is revision B. The serial numbers of the reference design that are affected by the modem tests are 152, 153, 158, 160, 161, 162, 163, 165, 166, 167, 171, 172, and 173.

Errata

1. DAA U1 Caller ID Function Problem

Problem: When GPIO pin 2 (SPKDAA_CID) is set high, the relay switch K1 does not close, which prevents the DAA U1 CR and CT pins from collecting the caller ID information.

Implication: The DAA U1 caller ID function may not collect caller ID information.

Workaround: Use the following instructions to enable the caller ID function to work properly:

1. Lift U28 pin 84 (SA01100)
2. Insert a jumper wire from U28 pin 84 to U47 pin 5 (74LVC125A)
3. Insert a jumper wire from U47 pin 5 to U47 pin 9 (74LVC125A)
4. Insert a jumper wire from U47 pin 5 to U47 pin 12 (74LVC125A)
5. Insert a jumper wire from U47 pin 6 to D16 pin 1
6. Insert a jumper wire from U47 pin 8 to D16 pin 1
7. Insert a jumper wire from U47 pin 11 to D16 pin 1
8. Insert a jumper wire from U47 pin 4 to U47 pin 1 (74LVC125A)
9. Insert a jumper wire from U47 pin 10 to U47 pin 1 (74LVC125A)
10. Insert a jumper wire from U47 pin 13 to U47 pin 1 (74LVC125A)

This rework adds three parallel buffers between the SA-1100 GPIO pin 2 and the caller ID relay switch. The buffers generate 3.16 Volts DC, which closes the relay switch K1 allowing the caller ID information to be collected.

Status: Fix.

2. Keypad Interface Problem

Problem: The inputs that are connected to the SA-1100 GPIO pins on the keypad interface are lacking pull-up or pull-down resistors. The PAL must also be marked “PAL B” for the address decoding of the keypad latch to function properly.

Implication: The keypad may not function properly.

Workaround: Add four 10KΩ resistors from pins 5, 6, 7, and 8 of JP27 to ground, which is located near C151.

Status: Fix.

3. DAA CID On-Hook problem

Problem: Some of the SA-1100 reference designs were manufactured with a DAA that does not support on-hook Caller ID information gathering

Implication: Caller ID information may not be collected while in on-hook mode with some SA-1100 reference designs.

Workaround: Verify that U1 is a component that supports on-hook CID, such as the CH1837 726C.

4. DTMF Tone Dialing and Call Waiting Problems

Problem: The audio inputs and outputs on the CODEC ports for the TAD components are improperly connected. The current workaround for dialing a number plays the DTMF tone at full volume out of the phone speaker, which is then detected by a microphone on the handset. The microphone then transmits these tones down the line to the PABX. However, dialing problems can occur when the DTMF volume is not at maximum, or when a handset is not connected, or when the handset does not have enough coupling to the phone speaker.

Implication: Telephone dialing and call waiting will not function properly.

Workaround: Use the following procedure to swap the audio inputs with the outputs on the CODECS (U39 and U40):

1. Disconnect R106 and R109 from the input of the CODECS.
2. Disconnect R113 and R116 from the output side of the CODECS.
3. Connect R106 and R109 to the output side of the CODECS.
4. Connect R113 and R116 to the input side of the CODECS.

Status: Fix.

5. Failed Modem Test Results

Problem: Failed test results for the modem occur when using web phone evaluation boards with serial numbers 152, 153,158, 160, 161, 162, 163, 165, 166, 167, 171, 172, and 173. The modem test result message usually states “Status connected to XXX XXX-XXXX ” but due to an unresolved hardware or software error, the error message states “no dial tone.”

Implication: Error message correctly identifies lack of dial tone problem but this problem has not been resolved to the hardware or software.

Workaround: No workaround at this time.

Status: Not fixed.

Specification Changes

1. None

No specification changes for this revision of the specification update.

Specification Clarifications

1. None

No specification clarifications for this revision of the specification update.

Documentation Changes

1. **Keyboard: Section 1.4.7**

Changed the order number for the keyboard controller to UR5HCSPi-SA-FB. The section now contains the following description:

The Fujitsu Microelectronics FKB1406* keyboard is controlled through the serial peripheral interface (SPI). The SA-1100 SPI protocol interfaces to a USAR Systems UR5HCSPi-SA-FB* keyboard controller. The controller interprets input from the keyboard.



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