SIEMENS

ICs for Communications

Enhanced ISDN Data Access Controller ISAR

PSB 7110 Version 1.0

Errata Sheet 10.97

DS 3

PSB 7110 Revision History: Current Version: 10.97		
Previous Version: 07.97		
Page (in previous Version)	Page (in new Version)	Subjects (major changes since last revision)
	6	Fax Mode V.17
	6	DC Characteristics
	7	Software Version #7

Edition 10.97

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1 General

The functions of the ISAR PSB 7110 V1.0 are those described in the Data Sheet 07.96 and the Delta Sheet 11.96 (both related to Software Version #4) with the erratas described below. The Software Version #7 is based on the previous version #4, however some erratas are fixed, therefore both versions are described in separate chapters.

2 ISAR V1.0 - Software Version #4

2.1 MSB CTRL Register

This errata occurs with the SART status events from the ISAR to the host, only when the pump is configured to V.110 mode.

Certain status event bits in SART modes HDLC and ASYNC (V.14) may be active in the subsequent mailbox messages from the ISAR to the host as the respective bit in the MSB CTRL register is not reset after the first mailbox message.

In SART HDLC mode the FSD (frame start detected) bit indicates the beginning of a HDLC frame. This bit may not be reset with the following mailbox messages and should be ignored by the host. Instead the host has to monitor the occurrence of an FED bit (frame end indication) to recognize the end of a valid HDLC frame, or in case of an error condition FAD (frame abort), RER (residue error) or CER (CRC error detected). After the indication of frame end or error condition the following FSD bit is valid again, so for short frames, where FSD and FED is set within one message, the FSD in the subsequent message is valid.

In SART ASYNC mode the BRE (break signal end detected) indicates the end of a break sequence and the first character in the mailbox is not valid. In subsequent messages the BRE bit may stay active as the MSB CTRL register may not be reset. However, BRE is not valid and therefore the first character in the mailbox message is not invalid. Instead of monitoring subsequent BRE bits, the host should only check for the occurrence of a BRS (break signal start detected), DSD (deleted stopbit detected) and PER (parity error). After detection of BRS, DSD or PER, a BRE indication in the next message is valid again.

2.2 Configuration Setup

To setup a connection the complete datapath must be configured, which is buffer, pump, SART and IOM-2 interface.

For configuration setup of the pump, SART and the IOM-2 interface a certain timing has to be met by the host, otherwise the configuration may fail. After configuration of each block the host must wait at least 1 ms before any further message for the same data path can be written to the ISAR.

For concurrent configuration of both data paths, the host must wait at least 1 ms between SART configuration for data path 1 and 2.

2.3 SART Mode - ASYNC (V.14)

In SART Mode ASYNC (V.14) one certain configuration setting does not ensure proper operation.

If the SART in ASYNC mode is configured to character size 5 (parameter CHS = 00_B) and concurrently the pump is configured to transparent mode (parameter PMOD = 111_B) or similarly to V.110/64 kbit/s mode (parameter PMOD = 100_B, VDR = 48_D), receive data from the ISAR may be corrupted.
Therefore this mode should not be used.

2.4 Pump Mode - DTMF Transmission

In this pump mode DTMF tones can be generated.

If the host wants to transmit a series of DTMF tones it must be ensured that a certain timing between the control commands for each DTMF digit is met. If these messages are issued without considering this timing, some DTMF tones might not be generated by the pump, i.e. DTMF tones are lost.

The host issues the control command “Transmit DTMF Digit“ (chapter 3.6.2.6 in ISAR V1.0 Data Sheet 07.96). As soon as this command is executed, i.e. the DTMF tone is generated, the ISAR returns the following pump status event message to indicate that further control commands for DTMF transmission may follow.

Pump Status Event - DTMF Transmission (ISAR → Host)

	7	6	5	4	3	2	1	0
	DPS		MSC				MDS	
IIS	0	1	1	0	1	0	1	0

	15	14	13	12	11	10	9	8
CTRL MSB	DTEVT							

	7	6	5	4	3	2	1	0
CTRL LSB	0							

DTEVT DTMF Transmission Event
5Ch: DTMF digit transmitted
all other codes are not supported in pump mode DTMF Transmission.
A new control command for DTMF transmission may be issued by the host.

2.5 Fax Mode V.17

The ISAR V1.0 Software Version #4 contains a weakness in fax mode. When the ISAR is configured to V.17 fax (short train) receive mode the demodulated receive data may be corrupted for some connections especially when error correction mode ECM is not incorporated, therefore parts of the received document page may be lost.

Note: This errata is corrected in ISAR V1.0 Software Version #7 (see next chapter).

2.6 DC Characteristics

The following two parameters for DC characteristics are different in ISAR V1.0 compared to the original Data Sheet.

Parameter	Symbol	Limit Values		Unit	Test Condition
		min.	max.		
High-Level Input Voltage	V_{IH}	2.2		V	
Input leakage current	I_{LI}	– 12	12	µA	0 V < V_{IN} < V_{DDA} (XTAL1)

3 ISAR V1.0 - Software Version #7

The new version number can be read by the host on request. The message “Software Version Response“ is described in chapter 3.9.4 of the ISAR V1.0 Data Sheet 07.96. The parameter contains the additional new software version number:

SVN ... Software Version Number

Contains the version number of the DSP software on the device
04h: Download firmware V1.0, #4
07h: Download firmware V1.0, #7

all other codes currently not supported.

3.1 Existing Erratas

The five erratas from Software Version #4 described in the **chapters 2.1, 2.2, 2.3, 2.4** and **2.6** are still contained in the Software Version #7.

3.2 Fixed Erratas

The fax mode V.17 errata from Software Version #4 (described in **chapter 2.5**) is not contained in the Software Version #7.