SIEMENS

ICs for Communications

Enhanced ISDN Data Access Controller
ISAR

PSB 7110 Version 1.0

Addendum / Corrections 10.97 to the Data Sheet 07.96

DS 1

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1 General

The functions of the ISAR PSB 7110 V1.0 are described in the Data Sheet 07.96.

This specification contains a number of editorial corrections to the Data Sheet, it does not affect any functionality of the device.

1.1 Command Interface

The communication between host and ISAR is message oriented. All message codings are described in the Data Sheet.

All messages which are released from the ISAR to the host but not described therein must be ignored by the host.

1.2 SART Configuration Setup - ASYNC (Chapter 3.4.2)

The description of the parameters SNP and EOP must be corrected in the following way:

	SNP = 0	**SNP = 1**
EOP = 0	Odd parity	Stick parity ’1’
EOP = 1	Even parity	Stick parity ’0’

1.3 SART Configuration Setup - Binary (Chapter 3.4.3)

The function of the parameter BSW is inverse. The correct definition is:

BSW ... Bit Swapping
0: LSB is transmitted / received first
1: MSB is transmitted / received first

1.4 Pump Configuration Setup - DTMF (Chapter 3.6.1.5)

The equation for REL must be corrected as shown below. However, the table of example values for REL given in the relevant chapter is correct.

$$REL = 253 \times 10^{\frac{LEVEL + 30}{20}}$$

1.5 IOM-2 Configuration Setup (Chapter 3.8.1)

The description of the parameter RCV must be corrected in the following way:

“Rate conversion must be enabled (RCV=1) for the pump modes PMOD = 001, 010, 011 and **110**.“

1.6 Register Description (Chapter 6.2)

The description of the ISAR Interrupt Acknowledge Bit IIA (address 58h) must be corrected in the following way:

“After reading a complete message from the ISAR mailbox, the host sets IIA to “0“ to indicate to the ISAR that the current message transfer is complete and a new message transfer may be started.“

1.7 Oscillator Circuit (Chapter 8.5)

The external capacitance C_{LD} at XTAL1 and XTAL2 recommended as 33 pF in the ISAR V1.0 Data Sheet does not ensure enough reliability for the oscillation start phase, i.e. under worst case conditions (crystal parameters, board layout) the crystal unit may not start oscillating.

To increase the oscillation margin (i.e. oscillation start safety) a lower value should be used for C_{LD}. However, the actual value depends on the crystal parameters (see **table 1**). Two examples (case 1 and 2) are given for typical parameters together with the recommended value of the external capacitors.

Table 1
Recommended Typical Crystal Parameters - 30.72 MHz

Parameter	Symbol	Limit values		Unit
		Case 1	Case 2	
Motional Capacitance	C_1	17	6	fF
Shunt	C_0	5	1.5	pF
Load	C_L	20	20	pF
Resonance resistor	R_r	≤ 50	≤ 40	Ω
External capacitance (recommended)	C_{LD}	11	22	pF

Note: Basically the crystal parameters should define a load that conforms to the equation $C_{LD} = 2 \times C_L - C_{IN}$. However this only ensures a minimum shift of the specified frequency, the oscillation margin depends very much on the individual crystal parameters. Therefore two examples are given in the table above.

1.8 Miscellaneous Typing Errors

- Chapter 3.3.2 - Page 51

The first sentence must be corrected in the following way:

“The ISAR returns status information about the buffers if requested by the host (see ~~3.2.1~~ 3.3.1).“

- Chapter 3.7.2 - Pages 90-103

In the chapters 3.7.2.1 to 3.7.2.8 the interrupt status byte “HIS“ in the message code tables must be corrected to “IIS“.

- Chapter 4 - Pages 143-145

On each of the three pages the headline of the last three columns must be corrected in the following way:

1. Parameter	2. Parameter	3. Parameter
~~6.~~ 4. Parameter	~~7.~~ 5. Parameter	... Parameter