SIEMENS

ICs for Communications

Quad ISDN 4B3T Echocanceller Digital Front End
Quad IEC DFE-T

PEB 24901 Version 1.2
PEF 24901 Version 1.2

Delta Sheet   06.96   T2490-112-L1-7600

PEB 24901	
Revision History: Original version 06.96	
Previous Releases:	none
Page	Subjects (changes since last revision)

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Quad ISDN 4B3T Echocanceller Digital Front End (Quad IEC DFE-T)	PEB 24901 PEF 24901

Delta Sheet   **CMOS**

This Delta Sheet refers to the PEB 24901 V1.1 as described in the "Preliminary Data Sheet 2.95" and the "Errata Sheet 01.96".

The Quad IEC DFE-T V1.2 is an enhancement of the Quad IEC DFE-T V1.1. Being compatible to the V1.1, it provides the following new features:

1. IOM-Interface clock frequencies 2048 kHz and 8192 kHz added
2. Monitor message RST corrected
3. Boundary scan functions adapted
4. Power-on reset function enhanced
5. LT Repeater mode added
6. Delay in upstream direction changed in some operation modes

1 IOM-Interface Clock Frequencies

The data clock frequency to be applied to pin DCL of the IOM interface may be 2048 kHz, 4096 kHz or 8096 kHz. Hence, either 4, 8 or 16 IOM-Channels are provided. The selection is done with two newly defined pins and the pin SLOT being renamed to SLOT0. Please refer to the Preliminary Data Sheet 2.95 of the PEB 24901 version 1.1 for a complete description of all pins. The following table lists new pins and pins with new functions only. SLOT2 is reserved for future use in order to cope with 32 IOM channels.

Pin No.	Symbol	Input (I) Output (O)	Description
55	SLOT 0	I	**IOM slot selection 0.** Least significant bit.
45	SLOT1	I	**IOM-slot selection 1.** Internal Pulldown.
32	SLOT 2	I	**IOM slot selection 2.** Most significant bit. Reserved for future use. Connect to GND or leave open. Internal Pulldown.

The IOM Channel selection is:

SLOT2	SLOT1	SLOT0	Slots of ports 0..3	minimum DCL freq. (kHz)
0	0	0	0..3	2048
0	0	1	4..7	4096
0	1	0	8..11	8192
0	1	1	12..15	
1	x	x		reserved for future use

2   Monitor Message RST

The second byte of the free running Monitor message "Report Status of ST_{i1}, ST_{i0}" is not corrupted to FF_H anymore.

3   Boundary Scan

- The pins TDI and TMS have an internal pullup resistor.
- The content of the IDCODE-register of the boundary scan has been incremented to 0010.
- The new pins SLOT2 and SLOT1 pins are included in the in the boundary scan. The table below gives the complete sequence:

Boundary Scan Number TDI —>	Pin Number	Pin Name	Type	Number of Scan Cells
1	63	TP1	I	1
2	62	TP2	I	1
3	61	CLS3	O	2
4	60	RESQ	I	1
5	56	TSP	I	1
6	55	SLOT0	I	1
7	53	LT	I	1
8	52	CLS2	O	2
9	51	D3D	I/O	3
10	50	D2D	O	2
11	49	TP3	I	1

Boundary Scan Number TDI —>	Pin Number	Pin Name	Type	Number of Scan Cells
12	48	D1D	I/O	3
13	47	D0D	I/O	3
14	46	D3C	I/O	3
15	45	**SLOT1**	I	1
16	44	D2C	I/O	3
17	43	D1C	I/O	3
18	42	D0C	I/O	3
19	40	D3B	I/O	3
20	39	D2B	O	2
21	37	D1B	O	2
22	35	D0B	O	2
23	34	D3A	O	2
24	33	D2A	O	2
25	32	**SLOT2**	I	1
26	31	D1A	O	2
27	30	D0A	O	2
28	29	CLS0	O	2
29	28	ST00	I	1
30	27	ST01	I	1
31	26	ST10	I	1
32	24	ST11	I	1
33	23	ST20	I	1
34	21	ST21	I	1
35	20	CLS1	O	2
36	19	ST30	I	1
37	18	ST31	I/O	3
38	17	SDX	O	2
39	15	DOUT	O	2
40	14	DIN	I	1
41	13	FSC	I/O	3

Boundary Scan Number TDI —>	Pin Number	Pin Name	Type	Number of Scan Cells
42	12	DCL	I/O	3
43	11	PDM0	I	1
44	10	PDM1	I/O	3
45	8	PDM2	I	1
46	7	PDM3	I	1
47	5	SDR	I/O	3
48	4	CL15	I	1

Note: I/O pins are bidirectional only for device test purpose. For the function of these pins refer to section **1.2** of the Preliminary Data Sheet 2.95.

4   Power-on Reset

Proper operation of the internal power-on-reset is now provided, if the supply voltage has been below 1.0 V before applying power again.

5   LT Repeater Mode

An LT-Repeater Mode programmable via Monitor command individually for all four ports is provided. The LT-RP Mode is enabled with the Monitor command 8150_H. It is disabled with the Monitor command 8110_H. The LT-RP Mode is disabled after power-on and reset. The state diagram of the LT-RP mode is given in fig. 1. Actication diagrams are depicted in the Preliminary Data Sheet 2.95 section 3.4.1, pages 34ff.

6   Delay in Upstream Direction

In Upstream direction there is an additional delay of 125µs (one IOM-frame) in LT Mode when a DCL frequency not equal to 4096 kHz is applied and in LT-RP Mode with all possible DCL frequencies.
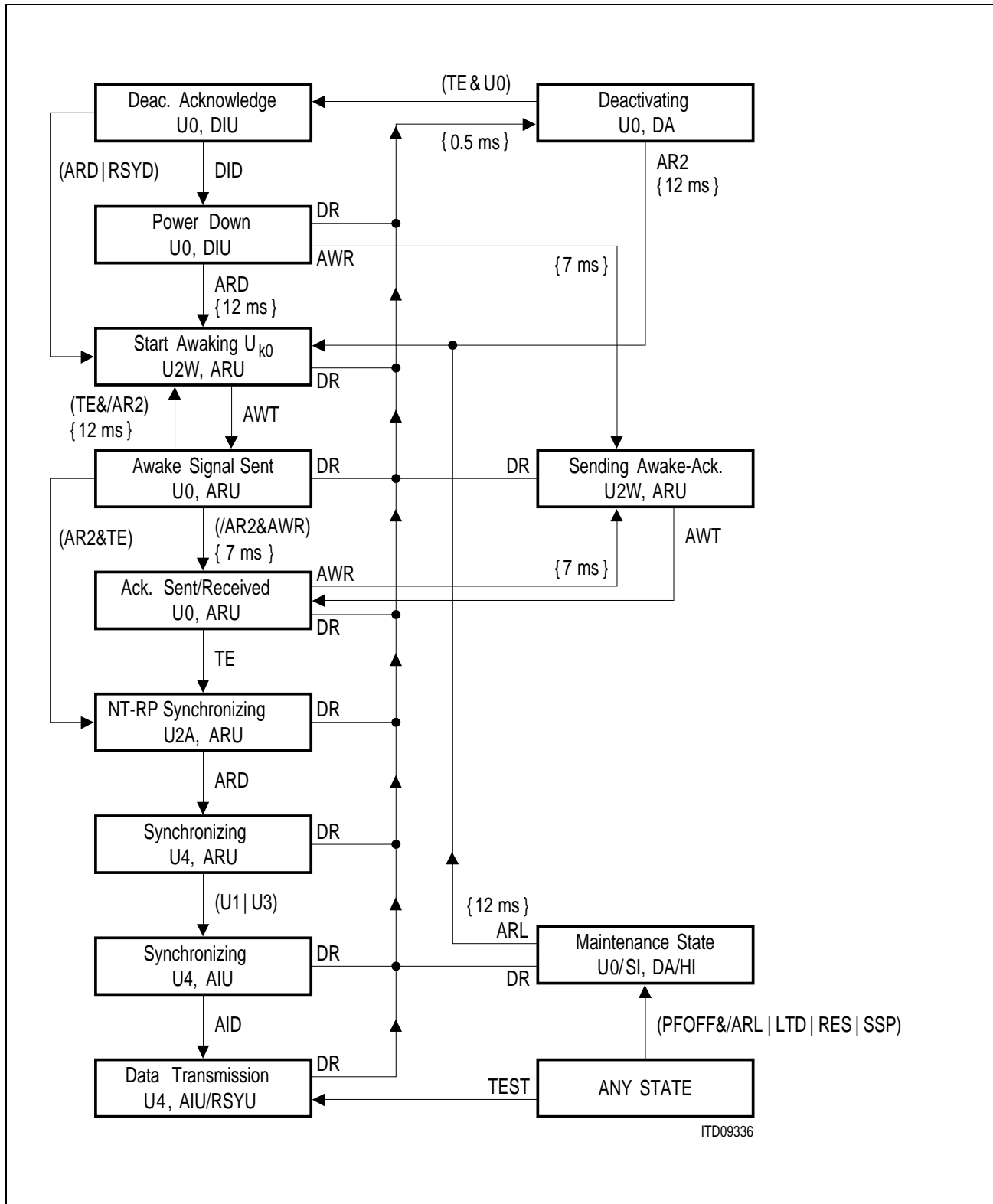
Figure 1
State Diagram of the LT Repeater Mode