

16.5.2.4 Loopback Connectivity

AUDMUX ports can communicate with themselves in order to provide loopback functionality. Port x can route its TXD signal to its own RxD_{out} signal by setting RXDSELx[2:0] to its own port number. This is supported by all ports in the AUDMUX.

In addition, ports can provide loopback support in internal network mode. With internal network mode, the internal network mode master can loop its TXD signal (combined with those of other ports, if desired) back into its RxD_{out} signal. Port x's INMMASK should be set such that bit (x - 1) is clear in order to enable the loopback.

16.6 AUDMUX Memory Map/Register Definition

This section includes the block memory map and detailed descriptions of all registers. For the base address of a specific sub-block instantiation, see the system memory map in this manual.

The AUDMUX memory map is shown in the following table.

AUDMUX memory map

Absolute address (hex)	Register name	Width (in bits)	Access	Reset value	Section/page
21D_8000	Port Timing Control Register 1 (AUDMUX_PTCR1)	32	R/W	AD40_0800h	16.6.1/715
21D_8004	Port Data Control Register 1 (AUDMUX_PDCR1)	32	R/W	0000_A000h	16.6.2/717
21D_8008	Port Timing Control Register 2 (AUDMUX_PTCR2)	32	R/W	A500_0800h	16.6.3/718
21D_800C	Port Data Control Register 2 (AUDMUX_PDCR2)	32	R/W	0000_8000h	16.6.4/720
21D_8010	Port Timing Control Register 3 (AUDMUX_PTCR3)	32	R/W	9CC0_0800h	16.6.5/721
21D_8014	Port Data Control Register 3 (AUDMUX_PDCR3)	32	R/W	0000_6000h	16.6.6/723
21D_8018	Port Timing Control Register 4 (AUDMUX_PTCR4)	32	R/W	0000_0800h	16.6.7/724
21D_801C	Port Data Control Register 4 (AUDMUX_PDCR4)	32	R/W	0000_4000h	16.6.8/726
21D_8020	Port Timing Control Register 5 (AUDMUX_PTCR5)	32	R/W	0000_0800h	16.6.9/727
21D_8024	Port Data Control Register 5 (AUDMUX_PDCR5)	32	R/W	0000_2000h	16.6.10/729
21D_8028	Port Timing Control Register 6 (AUDMUX_PTCR6)	32	R/W	0000_0800h	16.6.11/730
21D_802C	Port Data Control Register 6 (AUDMUX_PDCR6)	32	R/W	0000_0000h	16.6.12/732
21D_8030	Port Timing Control Register 7 (AUDMUX_PTCR7)	32	R/W	0000_0800h	16.6.13/733

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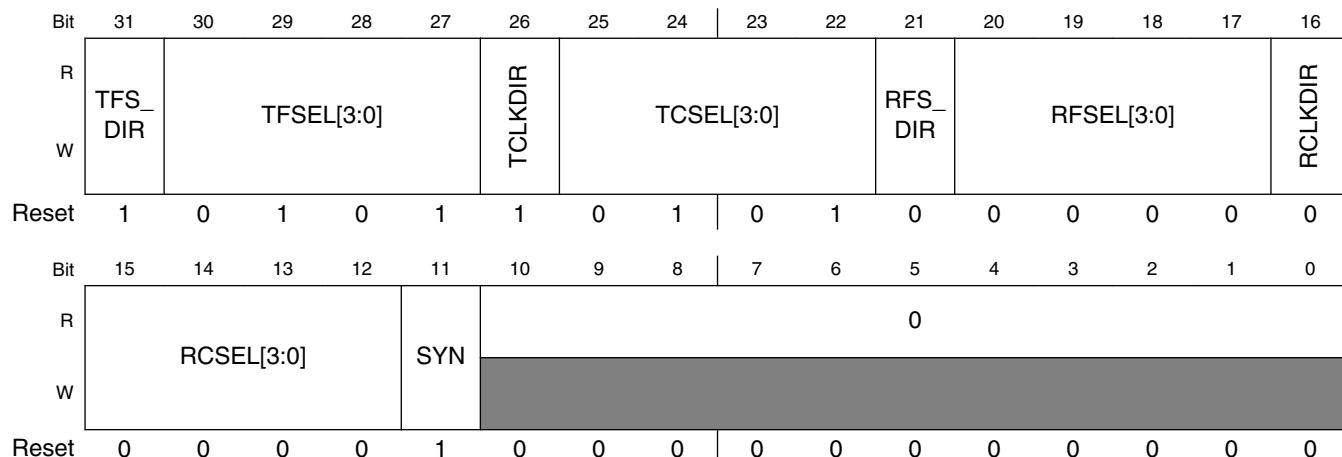
AUDMUX memory map (continued)

Absolute address (hex)	Register name	Width (in bits)	Access	Reset value	Section/page
21D_8034	Port Data Control Register 7 (AUDMUX_PDCR7)	32	R/W	0000_C000h	16.6.14/ 735

16.6.1 Port Timing Control Register 1 (AUDMUX_PTCR1)

PTCR1 is the Port Timing Control Register for Port 1.

Address: 21D_8000h base + 0h offset = 21D_8000h

**AUDMUX_PTCR1 field descriptions**

Field	Description
31 TFS_DIR	Transmit Frame Sync Direction Control. This bit sets the direction of the TXFS pin of the interface as an output or input. When set as an input, the TFSEL settings are ignored. When set as an output, the TFSEL settings determine the source port of the frame sync. 0 TXFS is an input. 1 TXFS is an output.
30–27 TFSEL[3:0]	Transmit Frame Sync Select. Selects the source port from which TXFS is sourced. 0xxx Selects TXFS from port. 1xxx Selects RXFS from port. x000 Port 1 x110 Port 7 x111 Reserved
26 TCLKDIR	Transmit Clock Direction Control. This bit sets the direction of the TXC pin of the interface as an output or input. When set as an input, the TCSEL settings are ignored. When set as an output, the TCSEL settings determine the source port of the clock.

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AUDMUX_PTCR1 field descriptions (continued)

Field	Description
	<p>0 TXC is an input. 1 TXC is an output.</p>
25–22 TCSEL[3:0]	<p>Transmit Clock Select. Selects the source port from which TXC is sourced.</p> <p>0xxx Selects TXC from port. 1xxx Selects RXC from port. x000 Port 1 x110 Port 7 x111 Reserved</p>
21 RFS_DIR	<p>Receive Frame Sync Direction Control. This bit sets the direction of the RXFS pin of the interface as an output or input. When set as an input, the RFSEL settings are ignored. When set as an output, the RFSEL settings determine the source port of the frame sync.</p> <p>0 RXFS is an input. 1 RXFS is an output.</p>
20–17 RFSEL[3:0]	<p>Receive Frame Sync Select. Selects the source port from which RXFS is sourced. RXFS can be sourced from TXFS and RXFS from other ports.</p> <p>0xxx Selects TXFS from port. 1xxx Selects RXFS from port. x000 Port 1 x110 Port 7 x111 Reserved</p>
16 RCLKDIR	<p>Receive Clock Direction Control. This bit sets the direction of the RXC pin of the interface as an output or input. When set as an input, the RCSEL settings are ignored. When set as an output, the RCSEL settings determine the source port of the clock.</p> <p>NOTE: RCLKDIR and SYN should not be changed at the same time.</p> <p>0 RXC is an input. 1 RXC is an output.</p>
15–12 RCSEL[3:0]	<p>Receive Clock Select. Selects the source port from which RXC is sourced. RXC can be sourced from TXC and RXC from other ports.</p> <p>0xxx Selects TXC from port. 1xxx Selects RXC from port. x000 Port 1 x110 Port 7 x111 Reserved</p>
11 SYN	<p>Synchronous/Asynchronous Select. When SYN is set, synchronous mode is chosen and the transmit and receive sections use common clock and frame sync signals (that is, the port is a 4-wire interface). When SYN is cleared, asynchronous mode is chosen and separate clock and frame sync signals are used for the transmit and receive sections (that is, the port is a 6-wire interface).</p> <p>NOTE: RCLKDIR and SYN should not be changed at the same time.</p> <p>0 Asynchronous mode 1 Synchronous mode (default)</p>
Reserved	This read-only field is reserved and always has the value 0.

16.6.2 Port Data Control Register 1 (AUDMUX_PDCR1)

PDCR1 is the Port Data Control Register for Port 1.

Address: 21D_8000h base + 4h offset = 21D_8004h

Bit	31	30	29	28	27	26	25	24		23	22	21	20	19	18	17	16				
R	0																				
W																					
Reset	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0				
Bit	15	14	13	12	11	10	9	8		7	6	5	4	3	2	1	0				
R	RXDSEL[2:0]				TXRXEN		0		MODE		INMMASK[7:0]										
W																					
Reset	1	0	1	0	0	0	0	0		0	0	0	0	0	0	0	0				

AUDMUX_PDCR1 field descriptions

Field	Description
31–16 Reserved	This read-only field is reserved and always has the value 0.
15–13 RXDSEL[2:0]	Receive Data Select. Selects the source port for the RXD data. RXDSEL is ignored if MODE = 1 (that is, Internal Network Mode is enabled). xxx Port number for RXD 000 Port 1 110 Port 7 111 Reserved
12 TXRXEN	Transmit/Receive Switch Enable. Swaps the transmit and receive signals. 0 No switch (Transmit Pin = Transmit, Receive Pin = Receive) 1 Switch (Transmit Pin = Receive, Receive Pin = Transmit)
11–9 Reserved	This read-only field is reserved and always has the value 0.
8 MODE	Mode Select. This field selects the mode in which the port is to operate. The modes of operation include the following: <ul style="list-style-type: none"> Normal mode, in which the RXD from the port selected by RXDSEL is routed to the port. Internal Network mode in which RXD from other ports are ANDed together. RXDSEL is ignored. INMMASK determines which RXD signals are ANDed together. 0 Normal mode 1 Internal Network mode

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AUDMUX_PDCR1 field descriptions (continued)

Field	Description
INMMASK[7:0]	Internal Network Mode Mask. Bit mask that selects the ports from which the RXD signals are to be ANDed together for internal network mode. Bit 6 represents RXD from Port 7 and bit0 represents RXD from Port 1. 0 Includes RXDn for ANDing 1 Excludes RXDn from ANDing

16.6.3 Port Timing Control Register 2 (AUDMUX_PTCR2)

PTCR2 is the Port Timing Control Register for Port 2.

Address: 21D_8000h base + 8h offset = 21D_8008h

Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16
	R	TFS_DIR		TFSEL[3:0]		TCLKDIR		TCSEL[3:0]		RFS_DIR		RFSEL[3:0]				RCLKDIR
Reset		1	0	1	0	0	1	0	1	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
	R		RCSEL[3:0]		SYN						0					
Reset		0	0	0	0	1	0	0	0	0	0	0	0	0	0	0

AUDMUX_PTCR2 field descriptions

Field	Description
31 TFS_DIR	Transmit Frame Sync Direction Control. This bit sets the direction of the TXFS pin of the interface as an output or input. When set as an input, the TFSEL settings are ignored. When set as an output, the TFSEL settings determine the source port of the frame sync. 0 TXFS is an input. 1 TXFS is an output.
30–27 TFSEL[3:0]	Transmit Frame Sync Select. Selects the source port from which TXFS is sourced. 0xxx Selects TXFS from port. 1xxx Selects RXFS from port. x000 Port 1 x110 Port 7 x111 Reserved

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AUDMUX_PTCR2 field descriptions (continued)

Field	Description
26 TCLKDIR	Transmit Clock Direction Control. This bit sets the direction of the TXC pin of the interface as an output or input. When set as an input, the TCSEL settings are ignored. When set as an output, the TCSEL settings determine the source port of the clock. 0 TXC is an input. 1 TXC is an output.
25–22 TCSEL[3:0]	Transmit Clock Select. Selects the source port from which TXC is sourced. 0xxx Selects TXC from port. 1xxx Selects RXC from port. x000 Port 1 x110 Port 7 x111 Reserved
21 RFS_DIR	Receive Frame Sync Direction Control. This bit sets the direction of the RXFS pin of the interface as an output or input. When set as an input, the RFSEL settings are ignored. When set as an output, the RFSEL settings determine the source port of the frame sync. 0 RXFS is an input. 1 RXFS is an output.
20–17 RFSEL[3:0]	Receive Frame Sync Select. Selects the source port from which RXFS is sourced. RXFS can be sourced from TXFS and RXFS from other ports. 0xxx Selects TXFS from port. 1xxx Selects RXFS from port. x000 Port 1 x110 Port 7 x111 Reserved
16 RCLKDIR	Receive Clock Direction Control. This bit sets the direction of the RXC pin of the interface as an output or input. When set as an input, the RCSEL settings are ignored. When set as an output, the RCSEL settings determine the source port of the clock. NOTE: RCLKDIR and SYN should not be changed at the same time. 0 RXC is an input. 1 RXC is an output.
15–12 RCSEL[3:0]	Receive Clock Select. Selects the source port from which RXC is sourced. RXC can be sourced from TXC and RXC from other ports. 0xxx Selects TXC from port. 1xxx Selects RXC from port. x000 Port 1 x110 Port 7 x111 Reserved
11 SYN	Synchronous/Asynchronous Select. When SYN is set, synchronous mode is chosen and the transmit and receive sections use common clock and frame sync signals (that is, the port is a 4-wire interface). When SYN is cleared, asynchronous mode is chosen and separate clock and frame sync signals are used for the transmit and receive sections (that is, the port is a 6-wire interface). NOTE: RCLKDIR and SYN should not be changed at the same time.

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AUDMUX_PTCR2 field descriptions (continued)

Field	Description
	0 Asynchronous mode 1 Synchronous mode (default)
Reserved	This read-only field is reserved and always has the value 0.

16.6.4 Port Data Control Register 2 (AUDMUX_PDCR2)

PDCR2 is the Port Data Control Register for Port 2.

Address: 21D_8000h base + Ch offset = 21D_800Ch

Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16
R	0															
W																
Reset	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
R	RXDSEL[2:0]			TXRXEN	0			MODE	INMMASK[7:0]							
W																
Reset	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AUDMUX_PDCR2 field descriptions

Field	Description
31–16 Reserved	This read-only field is reserved and always has the value 0.
15–13 RXDSEL[2:0]	Receive Data Select. Selects the source port for the RXD data. RXDSEL is ignored if MODE = 1 (that is, Internal Network Mode is enabled). xxx Port number for RXD 000 Port 1 110 Port 7 111 Reserved
12 TXRXEN	Transmit/Receive Switch Enable. Swaps the transmit and receive signals. 0 No switch (Transmit Pin = Transmit, Receive Pin = Receive) 1 Switch (Transmit Pin = Receive, Receive Pin = Transmit)
11–9 Reserved	This read-only field is reserved and always has the value 0.

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AUDMUX_PDCR2 field descriptions (continued)

Field	Description
8 MODE	<p>Mode Select. This field selects the mode in which the port is to operate. The modes of operation include the following:</p> <ul style="list-style-type: none"> Normal mode, in which the RXD from the port selected by RXDSEL is routed to the port. Internal Network mode in which RXD from other ports are ANDed together. RXDSEL is ignored. INMMASK determines which RXD signals are ANDed together. <p>0 Normal mode 1 Internal Network mode</p>
INMMASK[7:0]	<p>Internal Network Mode Mask. Bit mask that selects the ports from which the RXD signals are to be ANDed together for internal network mode. Bit 6 represents RXD from Port 7 and bit0 represents RXD from Port 1.</p> <p>0 Includes RXDn for ANDing 1 Excludes RXDn from ANDing</p>

16.6.5 Port Timing Control Register 3 (AUDMUX_PTCR3)

PTCR3 is the Port Timing Control Register for Port 3.

Address: 21D_8000h base + 10h offset = 21D_8010h

Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16
R	TFS_DIR			TFSEL[3:0]		TCLKDIR			TCSEL[3:0]		RFS_DIR		RFSEL[3:0]			RCLKDIR
W																
Reset	1	0	0	1	1	1	0	0	1	1	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
R			RCSEL[3:0]		SYN						0					
W																
Reset	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0

AUDMUX_PTCR3 field descriptions

Field	Description
31 TFS_DIR	<p>Transmit Frame Sync Direction Control. This bit sets the direction of the TXFS pin of the interface as an output or input. When set as an input, the TFSEL settings are ignored. When set as an output, the TFSEL settings determine the source port of the frame sync.</p> <p>0 TXFS is an input. 1 TXFS is an output.</p>

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AUDMUX_PTCR3 field descriptions (continued)

Field	Description
30–27 TFSEL[3:0]	<p>Transmit Frame Sync Select. Selects the source port from which TXFS is sourced.</p> <p>0xxx Selects TXFS from port. 1xxx Selects RXFS from port. x000 Port 1 x110 Port 7 x111 Reserved</p>
26 TCLKDIR	<p>Transmit Clock Direction Control. This bit sets the direction of the TXC pin of the interface as an output or input. When set as an input, the TCSEL settings are ignored. When set as an output, the TCSEL settings determine the source port of the clock.</p> <p>0 TXC is an input. 1 TXC is an output.</p>
25–22 TCSEL[3:0]	<p>Transmit Clock Select. Selects the source port from which TXC is sourced.</p> <p>0xxx Selects TXC from port. 1xxx Selects RXC from port. x000 Port 1 x110 Port 7 x111 Reserved</p>
21 RFS_DIR	<p>Receive Frame Sync Direction Control. This bit sets the direction of the RXFS pin of the interface as an output or input. When set as an input, the RFSEL settings are ignored. When set as an output, the RFSEL settings determine the source port of the frame sync.</p> <p>0 RXFS is an input. 1 RXFS is an output.</p>
20–17 RFSEL[3:0]	<p>Receive Frame Sync Select. Selects the source port from which RXFS is sourced. RXFS can be sourced from TXFS and RXFS from other ports.</p> <p>0xxx Selects TXFS from port. 1xxx Selects RXFS from port. x000 Port 1 x110 Port 7 x111 Reserved</p>
16 RCLKDIR	<p>Receive Clock Direction Control. This bit sets the direction of the RXC pin of the interface as an output or input. When set as an input, the RCSEL settings are ignored. When set as an output, the RCSEL settings determine the source port of the clock.</p> <p>NOTE: RCLKDIR and SYN should not be changed at the same time.</p> <p>0 RXC is an input. 1 RXC is an output.</p>
15–12 RCSEL[3:0]	<p>Receive Clock Select. Selects the source port from which RXC is sourced. RXC can be sourced from TXC and RXC from other ports.</p> <p>0xxx Selects TXC from port. 1xxx Selects RXC from port. x000 Port 1 x110 Port 7 x111 Reserved</p>

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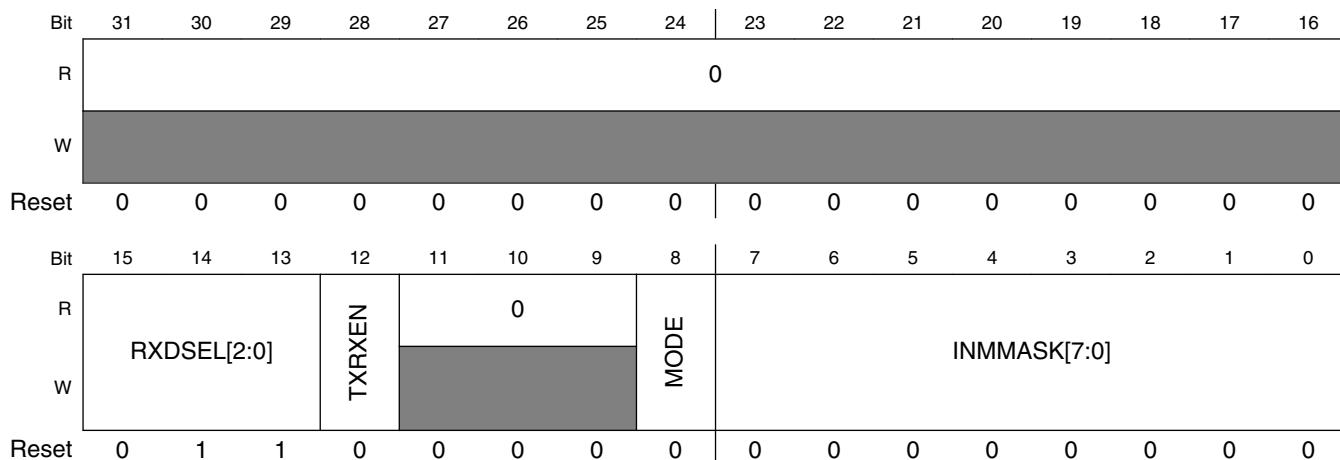
AUDMUX_PTCR3 field descriptions (continued)

Field	Description
11 SYN	Synchronous/Asynchronous Select. When SYN is set, synchronous mode is chosen and the transmit and receive sections use common clock and frame sync signals (that is, the port is a 4-wire interface). When SYN is cleared, asynchronous mode is chosen and separate clock and frame sync signals are used for the transmit and receive sections (that is, the port is a 6-wire interface). NOTE: RCLKDIR and SYN should not be changed at the same time. 0 Asynchronous mode 1 Synchronous mode (default)
Reserved	This read-only field is reserved and always has the value 0.

16.6.6 Port Data Control Register 3 (AUDMUX_PDCR3)

PDCR3 is the Port Data Control Register for Port 3.

Address: 21D_8000h base + 14h offset = 21D_8014h

**AUDMUX_PDCR3 field descriptions**

Field	Description
31–16 Reserved	This read-only field is reserved and always has the value 0.
15–13 RXDSEL[2:0]	Receive Data Select. Selects the source port for the RXD data. RXDSEL is ignored if MODE = 1 (that is, Internal Network Mode is enabled). xxx Port number for RXD 000 Port 1 110 Port 7 111 Reserved

Table continues on the next page...

AUDMUX_PDCR3 field descriptions (continued)

Field	Description
12 TXRXEN	Transmit/Receive Switch Enable. Swaps the transmit and receive signals. 0 No switch (Transmit Pin = Transmit, Receive Pin = Receive) 1 Switch (Transmit Pin = Receive, Receive Pin = Transmit)
11–9 Reserved	This read-only field is reserved and always has the value 0.
8 MODE	Mode Select. This field selects the mode in which the port is to operate. The modes of operation include the following: <ul style="list-style-type: none">• Normal mode, in which the RXD from the port selected by RXDSEL is routed to the port.• Internal Network mode in which RXD from other ports are ANDed together. RXDSEL is ignored. INMMASK determines which RXD signals are ANDed together. 0 Normal mode 1 Internal Network mode
INMMASK[7:0]	Internal Network Mode Mask. Bit mask that selects the ports from which the RXD signals are to be ANDed together for internal network mode. Bit 6 represents RXD from Port 7 and bit0 represents RXD from Port 1. 0 Includes RXDn for ANDing 1 Excludes RXDn from ANDing

16.6.7 Port Timing Control Register 4 (AUDMUX_PTCR4)

Port Timing Control Register for Port 4

Address: 21D_8000h base + 18h offset = 21D_8018h

Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16
R	TFS_DIR				TFSEL[3:0]	TCLKDIR			TCSEL[3:0]		RFS_DIR		RFSEL[3:0]			RCLKDIR
W																
Reset	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
R					RCSEL[3:0]	SYN					0					
W																
Reset	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0

AUDMUX_PTCR4 field descriptions

Field	Description
31 TFS_DIR	<p>Transmit Frame Sync Direction Control. This bit sets the direction of the TXFS pin of the interface as an output or input. When set as an input, the TFSEL settings are ignored. When set as an output, the TFSEL settings determine the source port of the frame sync.</p> <p>0 TXFS is an input. 1 TXFS is an output.</p>
30–27 TFSEL[3:0]	<p>Transmit Frame Sync Select. Selects the source port from which TXFS is sourced.</p> <p>0xxx Selects TXFS from port. 1xxx Selects RXFS from port. x000 Port 1 x110 Port 7 x111 Reserved</p>
26 TCLKDIR	<p>Transmit Clock Direction Control. This bit sets the direction of the TXC pin of the interface as an output or input. When set as an input, the TCSEL settings are ignored. When set as an output, the TCSEL settings determine the source port of the clock.</p> <p>0 TXC is an input. 1 TXC is an output.</p>
25–22 TCSEL[3:0]	<p>Transmit Clock Select. Selects the source port from which TXC is sourced.</p> <p>0xxx Selects TXC from port. 1xxx Selects RXC from port. x000 Port 1 x110 Port 7 x111 Reserved</p>
21 RFS_DIR	<p>Receive Frame Sync Direction Control. This bit sets the direction of the RXFS pin of the interface as an output or input. When set as an input, the RFSEL settings are ignored. When set as an output, the RFSEL settings determine the source port of the frame sync.</p> <p>0 RXFS is an input. 1 RXFS is an output.</p>
20–17 RFSEL[3:0]	<p>Receive Frame Sync Select. Selects the source port from which RXFS is sourced. RXFS can be sourced from TXFS and RXFS from other ports.</p> <p>0xxx Selects TXFS from port. 1xxx Selects RXFS from port. x000 Port 1 x110 Port 7 x111 Reserved</p>
16 RCLKDIR	<p>Receive Clock Direction Control. This bit sets the direction of the RXC pin of the interface as an output or input. When set as an input, the RCSEL settings are ignored. When set as an output, the RCSEL settings determine the source port of the clock.</p> <p>NOTE: RCLKDIR and SYN should not be changed at the same time.</p> <p>0 RXC is an input. 1 RXC is an output.</p>
15–12 RCSEL[3:0]	<p>Receive Clock Select. Selects the source port from which RXC is sourced. RXC can be sourced from TXC and RXC from other ports.</p>

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AUDMUX_PTCR4 field descriptions (continued)

Field	Description	
	0xxx Selects TXC from port. 1xxx Selects RXC from port. x000 Port 1 x110 Port 7 x111 Reserved	
11 SYN	Synchronous/Asynchronous Select. When SYN is set, synchronous mode is chosen and the transmit and receive sections use common clock and frame sync signals (that is, the port is a 4-wire interface). When SYN is cleared, asynchronous mode is chosen and separate clock and frame sync signals are used for the transmit and receive sections (that is, the port is a 6-wire interface). NOTE: RCLKDIR and SYN should not be changed at the same time. 0 Asynchronous mode 1 Synchronous mode (default)	
Reserved	This read-only field is reserved and always has the value 0.	

16.6.8 Port Data Control Register 4 (AUDMUX_PDCR4)

PDCR4 is the Port Data Control Register for Port 4.

Address: 21D_8000h base + 1Ch offset = 21D_801Ch

Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16
R	0															
W																
Reset	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
R	RXDSEL[2:0]			TXREN	0			MODE	INMMASK[7:0]							
W																
Reset	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AUDMUX_PDCR4 field descriptions

Field	Description	
31–16 Reserved	This read-only field is reserved and always has the value 0.	
15–13 RXDSEL[2:0]	Receive Data Select. Selects the source port for the RXD data. RXDSEL is ignored if MODE = 1 (that is, Internal Network Mode is enabled).	

Table continues on the next page...

AUDMUX_PDCR4 field descriptions (continued)

Field	Description
	xxx Port number for RXD 000 Port 1 110 Port 7 111 Reserved
12 TXRXEN	Transmit/Receive Switch Enable. Swaps the transmit and receive signals. 0 No switch (Transmit Pin = Transmit, Receive Pin = Receive) 1 Switch (Transmit Pin = Receive, Receive Pin = Transmit)
11–9 Reserved	This read-only field is reserved and always has the value 0.
8 MODE	Mode Select. This field selects the mode in which the port is to operate. The modes of operation include the following: <ul style="list-style-type: none">• Normal mode, in which the RXD from the port selected by RXDSEL is routed to the port.• Internal Network mode in which RXD from other ports are ANDed together. RXDSEL is ignored. INMMASK determines which RXD signals are ANDed together. 0 Normal mode 1 Internal Network mode
INMMASK[7:0]	Internal Network Mode Mask. Bit mask that selects the ports from which the RXD signals are to be ANDed together for internal network mode. Bit 6 represents RXD from Port 7 and bit0 represents RXD from Port 1. 0 Includes RXDn for ANDing 1 Excludes RXDn from ANDing

16.6.9 Port Timing Control Register 5 (AUDMUX_PTCR5)

Port Timing Control Register for Port 5

Address: 21D_8000h base + 20h offset = 21D_8020h

Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16
R	TFS_DIR				TFSEL[3:0]	TCLKDIR			TCSEL[3:0]		RFS_DIR		RFSEL[3:0]			RCLKDIR
W																
Reset	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
R													0			
W																
Reset	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0

AUDMUX_PTCR5 field descriptions

Field	Description
31 TFS_DIR	<p>Transmit Frame Sync Direction Control. This bit sets the direction of the TXFS pin of the interface as an output or input. When set as an input, the TFSEL settings are ignored. When set as an output, the TFSEL settings determine the source port of the frame sync.</p> <p>0 TXFS is an input. 1 TXFS is an output.</p>
30–27 TFSEL[3:0]	<p>Transmit Frame Sync Select. Selects the source port from which TXFS is sourced.</p> <p>0xxx Selects TXFS from port. 1xxx Selects RXFS from port. x000 Port 1 x110 Port 7 x111 Reserved</p>
26 TCLKDIR	<p>Transmit Clock Direction Control. This bit sets the direction of the TXC pin of the interface as an output or input. When set as an input, the TCSEL settings are ignored. When set as an output, the TCSEL settings determine the source port of the clock.</p> <p>0 TXC is an input. 1 TXC is an output.</p>
25–22 TCSEL[3:0]	<p>Transmit Clock Select. Selects the source port from which TXC is sourced.</p> <p>0xxx Selects TXC from port. 1xxx Selects RXC from port. x000 Port 1 x110 Port 7 x111 Reserved</p>
21 RFS_DIR	<p>Receive Frame Sync Direction Control. This bit sets the direction of the RXFS pin of the interface as an output or input. When set as an input, the RFSEL settings are ignored. When set as an output, the RFSEL settings determine the source port of the frame sync.</p> <p>0 RXFS is an input. 1 RXFS is an output.</p>
20–17 RFSEL[3:0]	<p>Receive Frame Sync Select. Selects the source port from which RXFS is sourced. RXFS can be sourced from TXFS and RXFS from other ports.</p> <p>0xxx Selects TXFS from port. 1xxx Selects RXFS from port. x000 Port 1 x110 Port 7 x111 Reserved</p>
16 RCLKDIR	<p>Receive Clock Direction Control. This bit sets the direction of the RXC pin of the interface as an output or input. When set as an input, the RCSEL settings are ignored. When set as an output, the RCSEL settings determine the source port of the clock.</p> <p>NOTE: RCLKDIR and SYN should not be changed at the same time.</p> <p>0 RXC is an input. 1 RXC is an output.</p>
15–12 RCSEL[3:0]	<p>Receive Clock Select. Selects the source port from which RXC is sourced. RXC can be sourced from TXC and RXC from other ports.</p>

Table continues on the next page...

AUDMUX_PTCR5 field descriptions (continued)

Field	Description
	0xxx Selects TXC from port. 1xxx Selects RXC from port. x000 Port 1 x110 Port 7 x111 Reserved
11 SYN	Synchronous/Asynchronous Select. When SYN is set, synchronous mode is chosen and the transmit and receive sections use common clock and frame sync signals (that is, the port is a 4-wire interface). When SYN is cleared, asynchronous mode is chosen and separate clock and frame sync signals are used for the transmit and receive sections (that is, the port is a 6-wire interface). NOTE: RCLKDIR and SYN should not be changed at the same time.
	0 Asynchronous mode 1 Synchronous mode (default)
Reserved	This read-only field is reserved and always has the value 0.

16.6.10 Port Data Control Register 5 (AUDMUX_PDCR5)

PDCR5 is the Port Data Control Register for Port 5.

Address: 21D_8000h base + 24h offset = 21D_8024h

Bit	31	30	29	28	27	26	25	24		23	22	21	20	19	18	17	16
R	0																
W																	
Reset	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8		7	6	5	4	3	2	1	0
R	RXDSEL[2:0]			TXREN	0			MODE		INMMASK[7:0]							
W																	
Reset	0	0	1	0	0	0	0	0		0	0	0	0	0	0	0	0

AUDMUX_PDCR5 field descriptions

Field	Description
31–16 Reserved	This read-only field is reserved and always has the value 0.
15–13 RXDSEL[2:0]	Receive Data Select. Selects the source port for the RXD data. RXDSEL is ignored if MODE = 1 (that is, Internal Network Mode is enabled).

Table continues on the next page...

AUDMUX_PDCR5 field descriptions (continued)

Field	Description
	xxx Port number for RXD 000 Port 1 110 Port 7 111 Reserved
12 TXRXEN	Transmit/Receive Switch Enable. Swaps the transmit and receive signals. 0 No switch (Transmit Pin = Transmit, Receive Pin = Receive) 1 Switch (Transmit Pin = Receive, Receive Pin = Transmit)
11–9 Reserved	This read-only field is reserved and always has the value 0.
8 MODE	Mode Select. This field selects the mode in which the port is to operate. The modes of operation include the following: <ul style="list-style-type: none"> Normal mode, in which the RXD from the port selected by RXDSEL is routed to the port. Internal Network mode in which RXD from other ports are ANDed together. RXDSEL is ignored. INMMASK determines which RXD signals are ANDed together. 0 Normal mode 1 Internal Network mode
INMMASK[7:0]	Internal Network Mode Mask. Bit mask that selects the ports from which the RXD signals are to be ANDed together for internal network mode. Bit 6 represents RXD from Port 7 and bit0 represents RXD from Port 1. 0 Includes RXDn for ANDing 1 Excludes RXDn from ANDing

16.6.11 Port Timing Control Register 6 (AUDMUX_PTCR6)**Port Timing Control Register for Port 6**

Address: 21D_8000h base + 28h offset = 21D_8028h

Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16
R	TFS_DIR				TFSEL[3:0]	TCLKDIR			TCSEL[3:0]		RFS_DIR		RFSEL[3:0]			RCLKDIR
W																
Reset	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
R													0			
W																
Reset	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0

AUDMUX_PTCR6 field descriptions

Field	Description
31 TFS_DIR	<p>Transmit Frame Sync Direction Control. This bit sets the direction of the TXFS pin of the interface as an output or input. When set as an input, the TFSEL settings are ignored. When set as an output, the TFSEL settings determine the source port of the frame sync.</p> <p>0 TXFS is an input. 1 TXFS is an output.</p>
30–27 TFSEL[3:0]	<p>Transmit Frame Sync Select. Selects the source port from which TXFS is sourced.</p> <p>0xxx Selects TXFS from port. 1xxx Selects RXFS from port. x000 Port 1 x110 Port 7 x111 Reserved</p>
26 TCLKDIR	<p>Transmit Clock Direction Control. This bit sets the direction of the TXC pin of the interface as an output or input. When set as an input, the TCSEL settings are ignored. When set as an output, the TCSEL settings determine the source port of the clock.</p> <p>0 TXC is an input. 1 TXC is an output.</p>
25–22 TCSEL[3:0]	<p>Transmit Clock Select. Selects the source port from which TXC is sourced.</p> <p>0xxx Selects TXC from port. 1xxx Selects RXC from port. x000 Port 1 x110 Port 7 x111 Reserved</p>
21 RFS_DIR	<p>Receive Frame Sync Direction Control. This bit sets the direction of the RXFS pin of the interface as an output or input. When set as an input, the RFSEL settings are ignored. When set as an output, the RFSEL settings determine the source port of the frame sync.</p> <p>0 RXFS is an input. 1 RXFS is an output.</p>
20–17 RFSEL[3:0]	<p>Receive Frame Sync Select. Selects the source port from which RXFS is sourced. RXFS can be sourced from TXFS and RXFS from other ports.</p> <p>0xxx Selects TXFS from port. 1xxx Selects RXFS from port. x000 Port 1 x110 Port 7 x111 Reserved</p>
16 RCLKDIR	<p>Receive Clock Direction Control. This bit sets the direction of the RXC pin of the interface as an output or input. When set as an input, the RCSEL settings are ignored. When set as an output, the RCSEL settings determine the source port of the clock.</p> <p>NOTE: RCLKDIR and SYN should not be changed at the same time.</p> <p>0 RXC is an input. 1 RXC is an output.</p>
15–12 RCSEL[3:0]	<p>Receive Clock Select. Selects the source port from which RXC is sourced. RXC can be sourced from TXC and RXC from other ports.</p>

Table continues on the next page...

AUDMUX_PTCR6 field descriptions (continued)

Field	Description	
	0xxx Selects TXC from port. 1xxx Selects RXC from port. x000 Port 1 x110 Port 7 x111 Reserved	
11 SYN	Synchronous/Asynchronous Select. When SYN is set, synchronous mode is chosen and the transmit and receive sections use common clock and frame sync signals (that is, the port is a 4-wire interface). When SYN is cleared, asynchronous mode is chosen and separate clock and frame sync signals are used for the transmit and receive sections (that is, the port is a 6-wire interface). NOTE: RCLKDIR and SYN should not be changed at the same time. 0 Asynchronous mode 1 Synchronous mode (default)	
Reserved	This read-only field is reserved and always has the value 0.	

16.6.12 Port Data Control Register 6 (AUDMUX_PDCR6)

PDCR6 is the Port Data Control Register for Port 6.

Address: 21D_8000h base + 2Ch offset = 21D_802Ch

Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16
R									0							
W																
Reset	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
R	RXDSEL[2:0]			TXREN	0			MODE	INMMASK[7:0]							
W																
Reset	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AUDMUX_PDCR6 field descriptions

Field	Description	
31–16 Reserved	This read-only field is reserved and always has the value 0.	
15–13 RXDSEL[2:0]	Receive Data Select. Selects the source port for the RXD data. RXDSEL is ignored if MODE = 1 (that is, Internal Network Mode is enabled).	

Table continues on the next page...

AUDMUX_PDCR6 field descriptions (continued)

Field	Description
	xxx Port number for RXD 000 Port 1 110 Port 7 111 Reserved
12 TXRXEN	Transmit/Receive Switch Enable. Swaps the transmit and receive signals. 0 No switch (Transmit Pin = Transmit, Receive Pin = Receive) 1 Switch (Transmit Pin = Receive, Receive Pin = Transmit)
11–9 Reserved	This read-only field is reserved and always has the value 0.
8 MODE	Mode Select. This field selects the mode in which the port is to operate. The modes of operation include the following: <ul style="list-style-type: none">• Normal mode, in which the RXD from the port selected by RXDSEL is routed to the port.• Internal Network mode in which RXD from other ports are ANDed together. RXDSEL is ignored. INMMASK determines which RXD signals are ANDed together. 0 Normal mode 1 Internal Network mode
INMMASK[7:0]	Internal Network Mode Mask. Bit mask that selects the ports from which the RXD signals are to be ANDed together for internal network mode. Bit 6 represents RXD from Port 7 and bit0 represents RXD from Port 1. 0 Includes RXDn for ANDing 1 Excludes RXDn from ANDing

16.6.13 Port Timing Control Register 7 (AUDMUX_PTCR7)**Port Timing Control Register for Port 7**

Address: 21D_8000h base + 30h offset = 21D_8030h

Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16
R	TFS_DIR				TFSEL[3:0]	TCLKDIR			TCSEL[3:0]		RFS_DIR		RFSEL[3:0]			RCLKDIR
W																
Reset	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
R					RCSEL[3:0]	SYN					0					
W																
Reset	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0

AUDMUX_PTCR7 field descriptions

Field	Description
31 TFS_DIR	<p>Transmit Frame Sync Direction Control. This bit sets the direction of the TXFS pin of the interface as an output or input. When set as an input, the TFSEL settings are ignored. When set as an output, the TFSEL settings determine the source port of the frame sync.</p> <p>0 TXFS is an input. 1 TXFS is an output.</p>
30–27 TFSEL[3:0]	<p>Transmit Frame Sync Select. Selects the source port from which TXFS is sourced.</p> <p>0xxx Selects TXFS from port. 1xxx Selects RXFS from port. x000 Port 1 x110 Port 7 x111 Reserved</p>
26 TCLKDIR	<p>Transmit Clock Direction Control. This bit sets the direction of the TXC pin of the interface as an output or input. When set as an input, the TCSEL settings are ignored. When set as an output, the TCSEL settings determine the source port of the clock.</p> <p>0 TXC is an input. 1 TXC is an output.</p>
25–22 TCSEL[3:0]	<p>Transmit Clock Select. Selects the source port from which TXC is sourced.</p> <p>0xxx Selects TXC from port. 1xxx Selects RXC from port. x000 Port 1 x110 Port 7 x111 Reserved</p>
21 RFS_DIR	<p>Receive Frame Sync Direction Control. This bit sets the direction of the RXFS pin of the interface as an output or input. When set as an input, the RFSEL settings are ignored. When set as an output, the RFSEL settings determine the source port of the frame sync.</p> <p>0 RXFS is an input. 1 RXFS is an output.</p>
20–17 RFSEL[3:0]	<p>Receive Frame Sync Select. Selects the source port from which RXFS is sourced. RXFS can be sourced from TXFS and RXFS from other ports.</p> <p>0xxx Selects TXFS from port. 1xxx Selects RXFS from port. x000 Port 1 x110 Port 7 x111 Reserved</p>
16 RCLKDIR	<p>Receive Clock Direction Control. This bit sets the direction of the RXC pin of the interface as an output or input. When set as an input, the RCSEL settings are ignored. When set as an output, the RCSEL settings determine the source port of the clock.</p> <p>NOTE: RCLKDIR and SYN should not be changed at the same time.</p> <p>0 RXC is an input. 1 RXC is an output.</p>
15–12 RCSEL[3:0]	<p>Receive Clock Select. Selects the source port from which RXC is sourced. RXC can be sourced from TXC and RXC from other ports.</p>

Table continues on the next page...

AUDMUX_PTCR7 field descriptions (continued)

Field	Description
	0xxx Selects TXC from port. 1xxx Selects RXC from port. x000 Port 1 x110 Port 7 x111 Reserved
11 SYN	Synchronous/Asynchronous Select. When SYN is set, synchronous mode is chosen and the transmit and receive sections use common clock and frame sync signals (that is, the port is a 4-wire interface). When SYN is cleared, asynchronous mode is chosen and separate clock and frame sync signals are used for the transmit and receive sections (that is, the port is a 6-wire interface). NOTE: RCLKDIR and SYN should not be changed at the same time.
	0 Asynchronous mode 1 Synchronous mode (default)
Reserved	This read-only field is reserved and always has the value 0.

16.6.14 Port Data Control Register 7 (AUDMUX_PDCR7)

PDCR7 is the Port Data Control Register for Port 7.

Address: 21D_8000h base + 34h offset = 21D_8034h

Bit	31	30	29	28	27	26	25	24		23	22	21	20	19	18	17	16
R	0																
W																	
Reset	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8		7	6	5	4	3	2	1	0
R	RXDSEL[2:0]			TXREN	0			MODE		INMMASK[7:0]							
W																	
Reset	1	1	0	0	0	0	0	0		0	0	0	0	0	0	0	0

AUDMUX_PDCR7 field descriptions

Field	Description
31–16 Reserved	This read-only field is reserved and always has the value 0.
15–13 RXDSEL[2:0]	Receive Data Select. Selects the source port for the RXD data. RXDSEL is ignored if MODE = 1 (that is, Internal Network Mode is enabled).

Table continues on the next page...

AUDMUX_PDCR7 field descriptions (continued)

Field	Description
	xxx Port number for RXD 000 Port 1 110 Port 7 111 Reserved
12 TXRXEN	Transmit/Receive Switch Enable. Swaps the transmit and receive signals. 0 No switch (Transmit Pin = Transmit, Receive Pin = Receive) 1 Switch (Transmit Pin = Receive, Receive Pin = Transmit)
11–9 Reserved	This read-only field is reserved and always has the value 0.
8 MODE	Mode Select. This field selects the mode in which the port is to operate. The modes of operation include the following: <ul style="list-style-type: none"> Normal mode, in which the RXD from the port selected by RXDSEL is routed to the port. Internal Network mode in which RXD from other ports are ANDed together. RXDSEL is ignored. INMMASK determines which RXD signals are ANDed together. 0 Normal mode 1 Internal Network mode
INMMASK[7:0]	Internal Network Mode Mask. Bit mask that selects the ports from which the RXD signals are to be ANDed together for internal network mode. Bit 6 represents RXD from Port 7 and bit0 represents RXD from Port 1. 0 Includes RXDn for ANDing 1 Excludes RXDn from ANDing