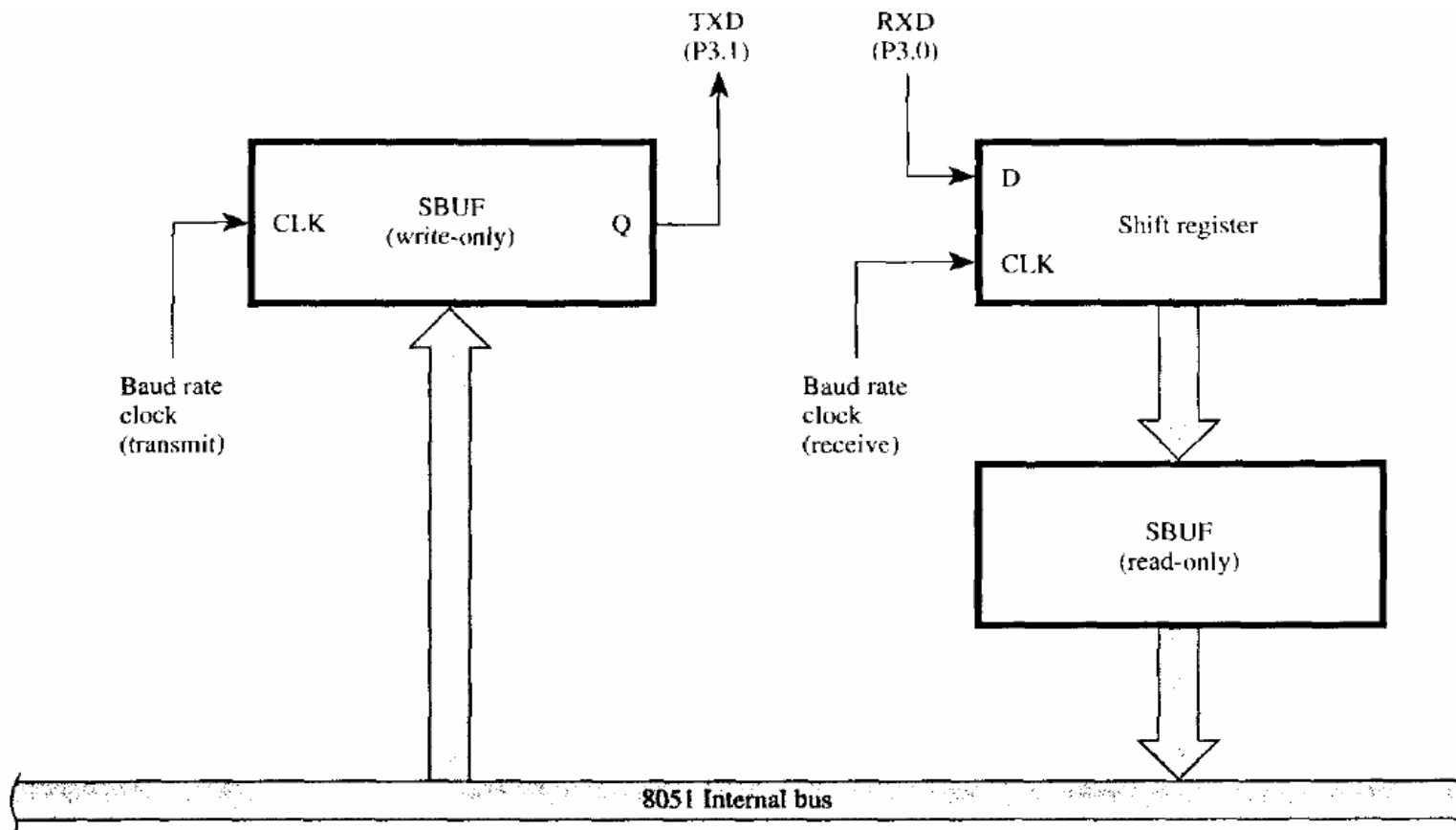


Chương 5: Hoạt động của port nối tiếp

5.1 Mở đầu



5.2 Thanh ghi điều khiển port nối tiếp

SCON (serial port control) register summary

BIT	SYMBOL	ADDRESS	DESCRIPTION
SCON.7	SM0	9FH	Serial port mode bit 0 (see Table 5–2)
SCON.6	SM1	9EH	Serial port mode bit 1 (see Table 5–2)
SCON.5	SM2	9DH	Serial port mode bit 2. Enables multiprocessor communications in modes 2 & 3; RI will not be activated if received 9th bit is 0
SCON.4	REN	9CH	Receiver enable. Must be set to receive characters
SCON.3	TB8	9BH	Transmit bit 8. 9th bit transmitted in modes and 3; set/cleared by software
SCON.2	RB8	9AH	Receive bit 8. 9th bit received
SCON.1	TI	99H	Transmit interrupt flag. Set at end of character transmission; cleared by software
SCON.0	RI	98H	Receive interrupt flag. Set at end of character reception; cleared by software

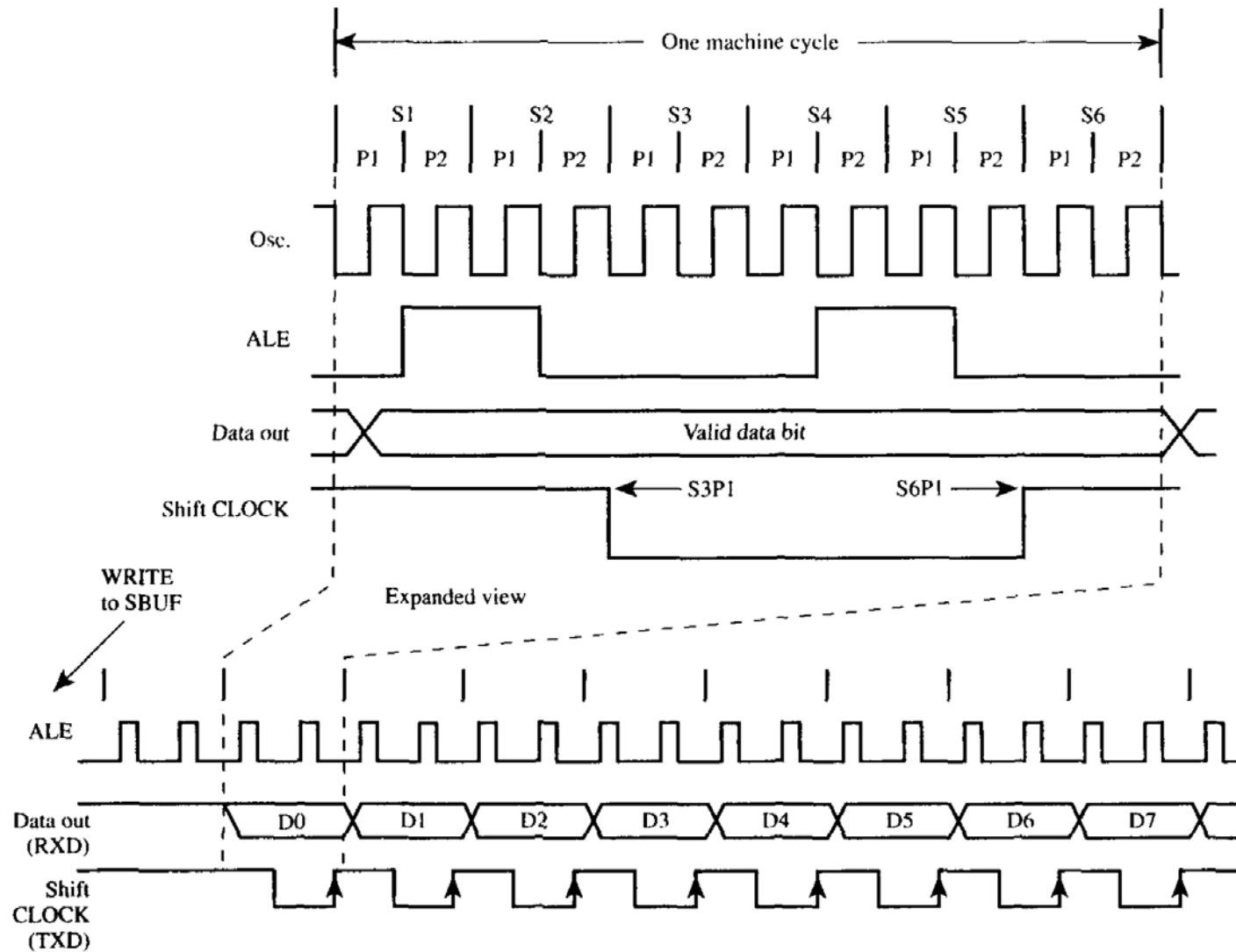
5.2 Thanh ghi điều khiển port nối tiếp

Serial port modes

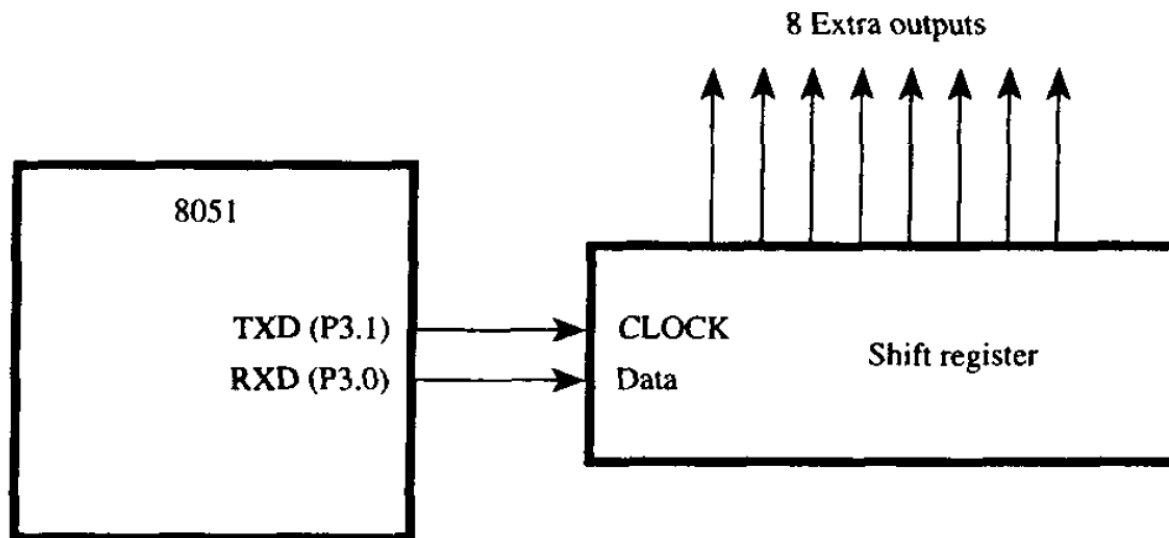
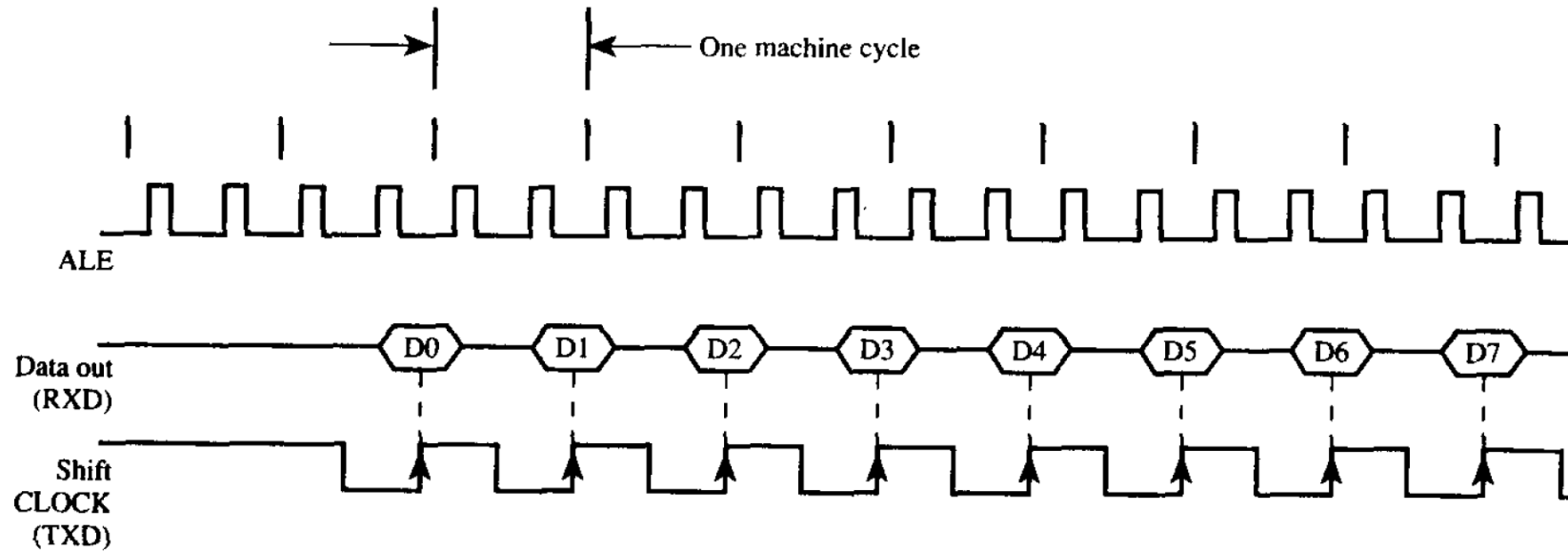
SM0	SM1	MODE	DESCRIPTION	BAUD RATE
0	0	0	Shift register	Fixed (oscillator frequency \div 12)
0	1	1	8-bit UART	Variable (set by timer)
1	0	2	9-bit UART	Fixed (oscillator frequency \div 12 or \div 64)
1	1	3	9-bit UART	Variable (set by timer)

5.3 các chế độ hoạt động

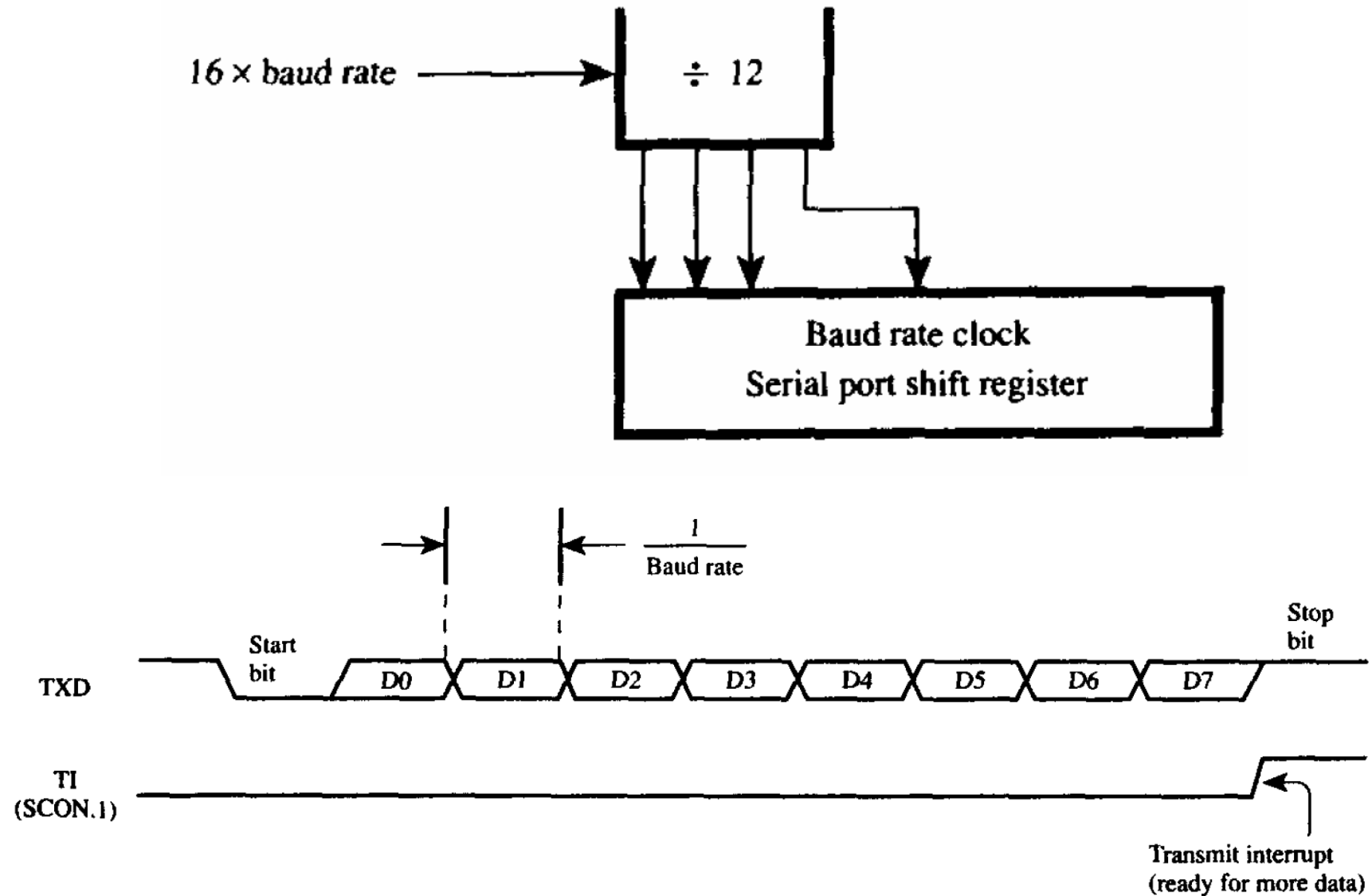
5.3.1 Thanh ghi dịch 8-bit (chế độ 0)



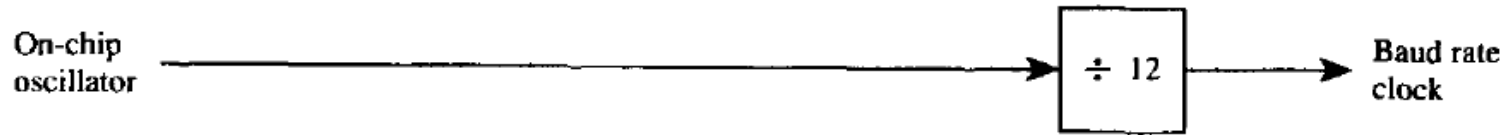
5.3.1 Thanh ghi dịch 8-bit (chế độ 0)



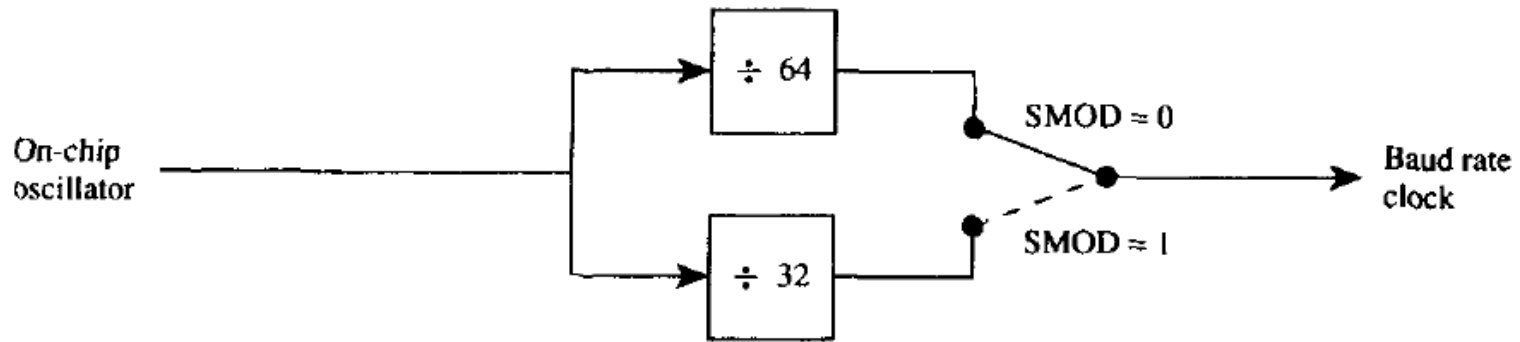
5.3.2 UART 8-bit có tốc độ baud thay đổi (chế độ 1)



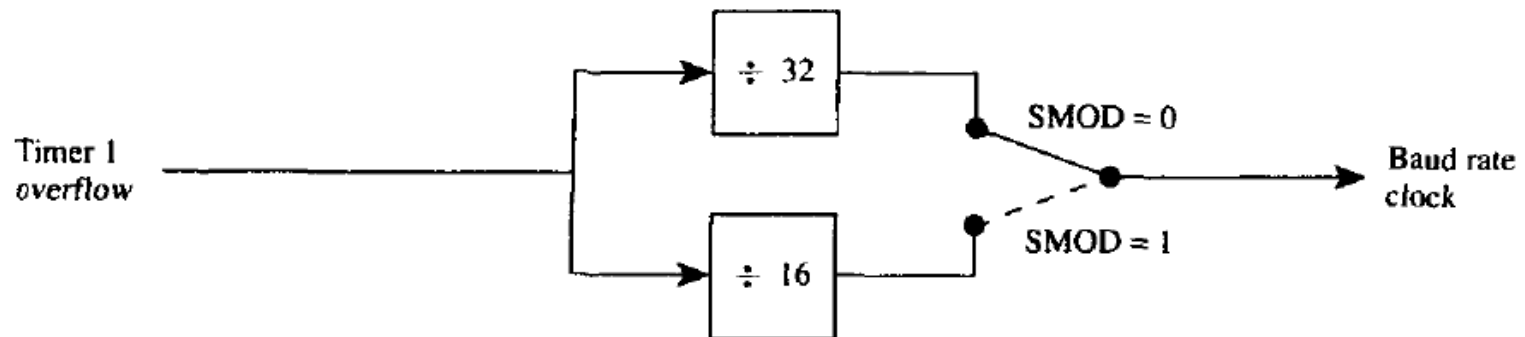
5.6 Tốc độ baud của port nối tiếp



(a) Mode 0



(b) Mode 2



Tóm tắt tốc độ baud

Baud rate summary

BAUD RATE	CRYSTAL FREQUENCY	SMOD	TH1 RELOAD VALUE	ACTUAL BAUD RATE	ERROR
9600	12.000 MHz	1	-7 (F9H)	8923	7%
2400	12.000 MHz	0	-13 (F3H)	2404	0.16%
1200	12.000 MHz	0	-26 (E6H)	1202	0.16%
19200	11.059 MHz	1	-3 (FDH)	19200	0
9600	11.059 MHz	0	-3 (FDH)	9600	0
2400	11.059 MHz	0	-12 (F4H)	2400	0
1200	11.059 MHz	0	-24 (E8H)	1200	0

Thí dụ 5.1 Khởi động port nối tiếp

	SM0	SM1	SM2	REN	TB8	RB8	TI	RI
SCON:	0	1	0	1	0	0	1	0
	GTE	C/T	M1	M0	GTE	C/T	M1	M0
TMOD:	0	0	1	0	0	0	0	0
	TF1	TR1	TF0	TR0	IE1	IT1	IE0	IT0
TCON:	0	1	0	0	0	0	0	0
TH1:	1	1	1	1	0	0	1	1

5.6 Lập trình cho port nối tiếp

