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April 1st, 2010
Renesas Electronics Corporation

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7542 Group, 7531 Group

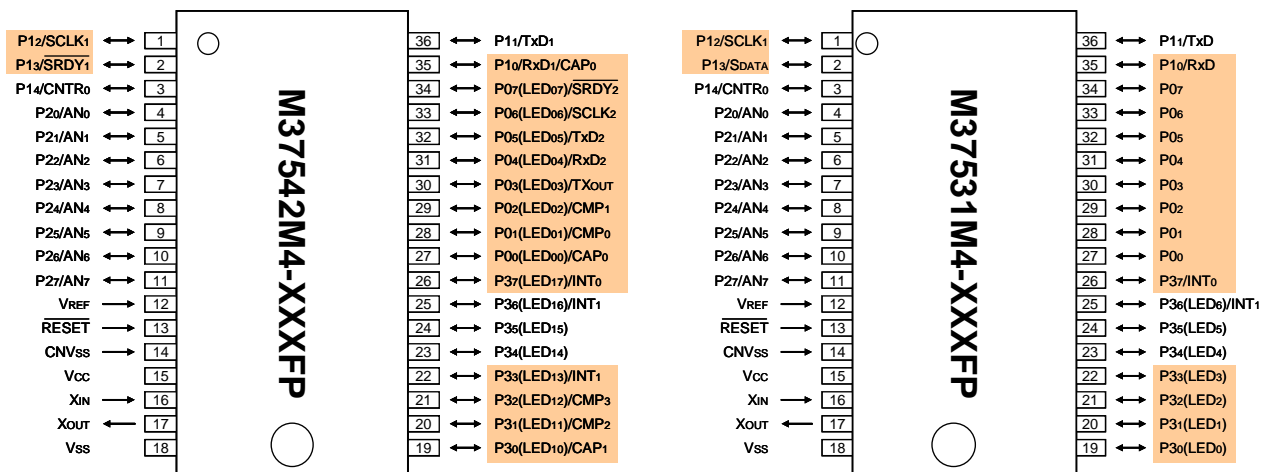
Differences between 7542 Group and 7531 Group

1. Difference between 7542 Group / 7531 Group

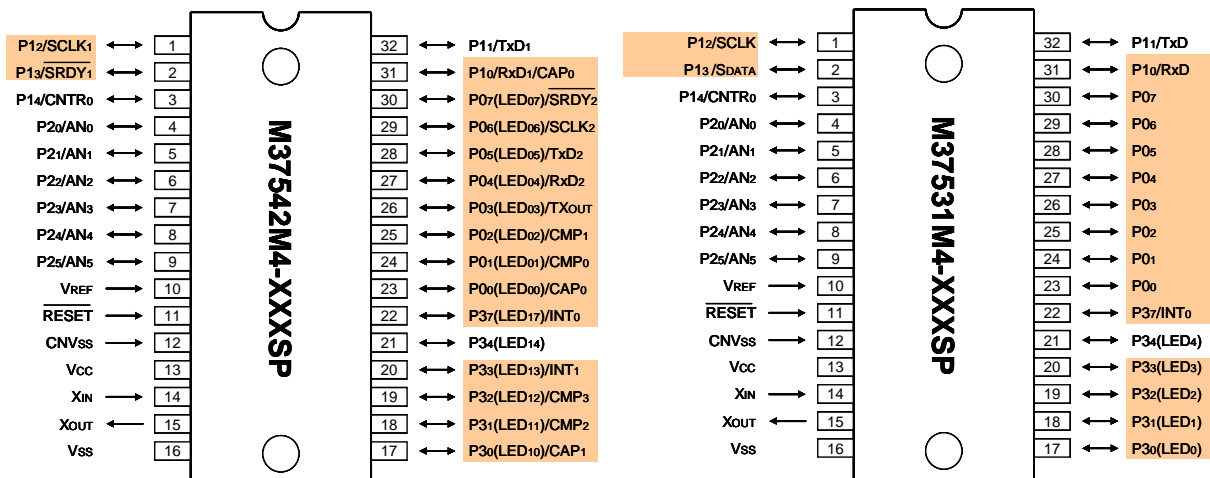
	7542 Group	7531 Group
Applicable Product	M37542M2/M4-XXXSP/FP/GP/HP M37542M2T/M4T-XXXFP/GP M37542M2V/M4V-XXXFP/GP M37542F8SP/FP/GP M37542F8TFP/GP M375428VFP/GP	M37531M4/M4T-XXXSP/FP/GP M37531E4SP/FP/GP M37531M4V/E4T/E4V-XXXGP M37531M8-XXXSP/FP/GP M37531E8SP/FP
ROM Type : ROM Size	MASK : 8K, 16K Flash : 32K PROM : -	MASK : 8K, 16K Flash : - PROM : 8K, 16K
Basic Machine-Language instructions	71 (including DIV and MUL instructions)	69
Instruction Execution Time (Shortest Instruction)	0.25 μ s (8MHz double-speed mode)	0.5 μ s (8MHz high-speed mode)
I/O Port Pull-up Control Register	Initial value: 00 ₁₆ (Port P0, P3: pull-up off)	Initial value: FF ₁₆ (Port P0, P3: pull-up on)
Interrupts	18 sources, 16 vectors	32-pin version: 11 sources, 8 vectors (external 3 sources) 36-pin version: 12 sources, 8 vectors (external 4 sources)
Timer	8-bit x 2, 16-bit x 2	8-bit x 3
Serial Interface	8-bit x 2 : Serial I/O1 (UART or Clock synchronous type) Bus collision detection Serial I/O2 (UART or Clock synchronous type)	8-bit x 2 : Serial I/O1 (UART) Serial I/O2 (Clock synchronous type)
Clock generating circuit	Ceramic resonator/Quartz-crystal oscillator/External RC oscillation/On-chip oscillator oscillation	Ceramic resonator/Quartz-crystal oscillator/External RC oscillation/ On-chip oscillator only for power-on
Oscillation stop detection function	Available	Not available

2. Pin Configuration 7542 Group/7531 Group

7542 Group/7531 Group Difference =

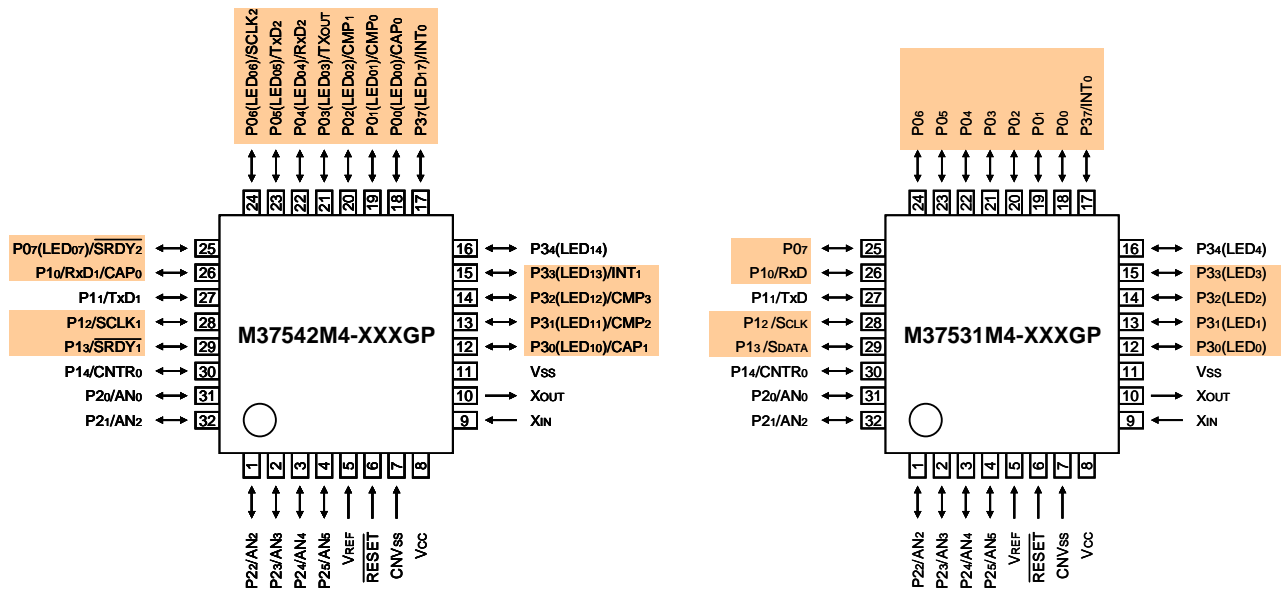


Package Type: 36P2R-A



Package Type: 32P4B

7542 Group/7531 Group Difference =



Package Type: 32P6U-A

3. Interrupt Vector 7542 Group/7531 Group

7542 Group/7531 Group Difference =

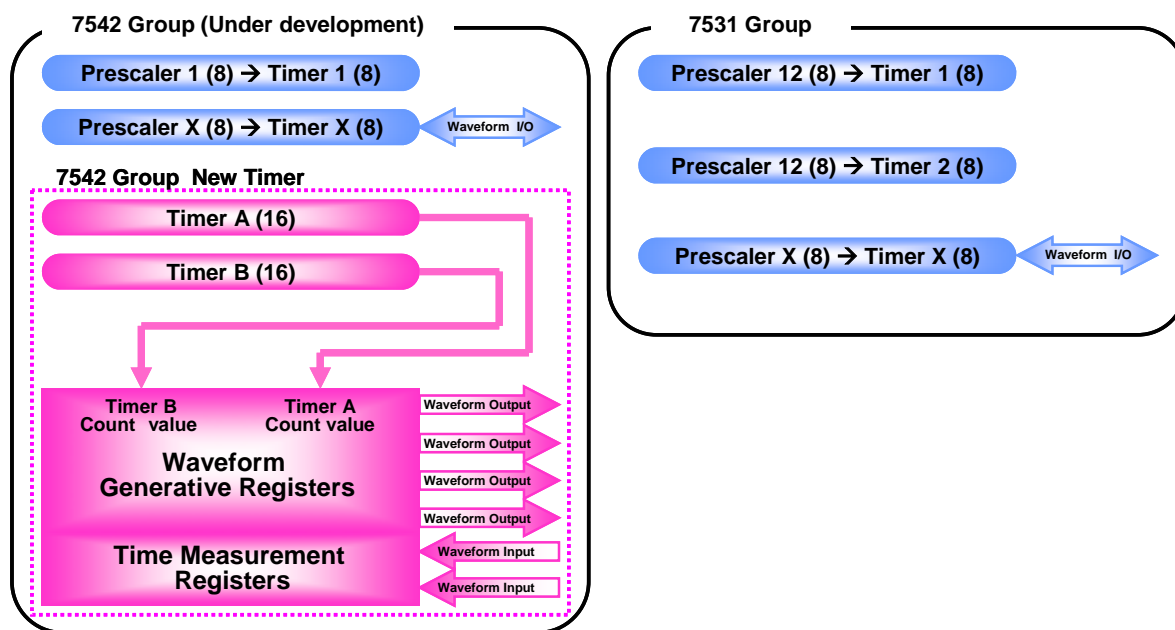
Vector addresses		Priority	7542 Group Interrupt Source	7531 Group Interrupt Source
High-order	Low-order			
FFFD ₁₆	FFFC ₁₆	1	Reset	Reset
FFFB ₁₆	FFFA ₁₆	2	Serial I/O1 receive	Serial I/O1 receive
FFF9 ₁₆	FFF8 ₁₆	3	Serial I/O1 transmit	Serial I/O1 transmit/INT1
FFF7 ₁₆	FFF6 ₁₆	4	Serial I/O2 receive	INT0
FFF5 ₁₆	FFF4 ₁₆	5	Serial I/O2 transmit	Timer X/Key-on wakeup
FFF3 ₁₆	FFF2 ₁₆	6	INT0	Timer 1
FFF1 ₁₆	FFF0 ₁₆	7	INT1	Timer 2/Serial I/O2
FFEF ₁₆	FFEE ₁₆	8	Key-on wakeup/ UART1 bus collision detection	CNTR0/ A/D Conversion
FFED ₁₆	FFEC ₁₆	9	CNTR0	BRK Instruction
FFEB ₁₆	FFEA ₁₆	10	Capture 0	
FFE9 ₁₆	FFE8 ₁₆	11	Capture 1	
FFE7 ₁₆	FFE6 ₁₆	12	Compare	
FFE5 ₁₆	FFE4 ₁₆	13	Timer X	
FFE3 ₁₆	FFE2 ₁₆	14	Timer A	
FFE1 ₁₆	FFE0 ₁₆	15	Timer B	
FFDF ₁₆	FFDE ₁₆	16	A/D conversion / Timer 1	
FFDD ₁₆	FFDC ₁₆	17	BRK Instruction	

4. SFR 7542 Group/7531 Group

	7542 Group	7531 Group	
0000 ₁₆	Port P0 (P0)	Port P0 (P0)	
0001 ₁₆	Port P0 direction register (P0D)	Port P0 direction register (P0D)	
0002 ₁₆	Port P1 (P1)	Port P1 (P1)	
0003 ₁₆	Port P1 direction register (P1D)	Port P1 direction register (P1D)	
0004 ₁₆	Port P2 (P2)	Port P2 (P2)	
0005 ₁₆	Port P2 direction register (P2D)	Port P2 direction register (P2D)	
0006 ₁₆	Port P3 (P3)	Port P3 (P3)	
0007 ₁₆	Port P3 direction register (P3D)	Port P3 direction register (P3D)	
0008 ₁₆	Reserved	Reserved	
0009 ₁₆	Reserved	Reserved	
000A ₁₆	Interrupt source selection register (INTSEL)	Reserved	
000B ₁₆	Interrupt source discrimination register (INTDIS)	Reserved	
000C ₁₆	Capture register 0 (low-order) (CAP0L)	Reserved	
000D ₁₆	Capture register 0 (high-order) (CAP0H)	Reserved	
000E ₁₆	Capture register 1 (low-order) (CAP1L)	Reserved	
000F ₁₆	Capture register 1 (high-order) (CAP1H)	Reserved	
0010 ₁₆	Compare register (low-order) (CMPL)	Reserved	
0011 ₁₆	Compare register (high-order) (CMPH)	Reserved	
0012 ₁₆	Capture/Compare register R/W pointer (CCRP)	Reserved	
0013 ₁₆	Capture software trigger register (CSTR)	Reserved	
0014 ₁₆	Compare register re-load register (CMPR)	Reserved	
0015 ₁₆	Port P0P3 drive capacity control register (DCCR)	Reserved	
0016 ₁₆	Pull-up control register (PULL)	Pull-up control register (PULL)	
0017 ₁₆	Port P1P3 control register (P1P3C)	Port P1P3 control register (P1P3C)	
0018 ₁₆	Transmit 1/Receive 1 buffer register 1 (TB1/RB1)	Transmit /Receive buffer register (TB/RB)	
0019 ₁₆	Serial I/O1 status register (SIO1STS)	Serial I/O1 status register (SIO1STS)	
001A ₁₆	Serial I/O1 control register (SIO1CON)	Serial I/O1 control register (SIO1CON)	
001B ₁₆	UART1 control register (UART1CON)	UART control register (UARTCON)	
001C ₁₆	Baud rate generator 1 (BRG1)	Baud rate generator (BRG)	
001D ₁₆	Timer A,B mode register (TABM)	Reserved	
001E ₁₆	Capture/Compare port register (CCPR)	Reserved	
001F ₁₆	Timer source selection register (TMSR)	Reserved	
0020 ₁₆	Capture mode register (CAPM)	Reserved	
0021 ₁₆	Compare output mode register (CMOM)	Reserved	
0022 ₁₆	Capture / Compare status register (CCSR)	Reserved	
0023 ₁₆	Capture interrupt source register (CISR)	Reserved	
0024 ₁₆	Timer A register (low-order) (TAL)	Reserved	
0025 ₁₆	Timer A register (high-order) (TAH)	Reserved	
0026 ₁₆	Timer B register (low-order) (TBL)	Reserved	
0027 ₁₆	Timer B register (high-order) (TBH)	Reserved	
0028 ₁₆	Prescaler 1 (PRE1)	Prescaler 12 (PRE12)	
0029 ₁₆	Timer 1 (T1)	Timer 1 (T1)	
002A ₁₆	Timer count source set register (TCSS)	Timer 2 (T2)	
002B ₁₆	Timer X mode register (TXM)	Timer X mode register (TXM)	
002C ₁₆	Prescaler X (PREX)	Prescaler X (PREX)	
002D ₁₆	Timer X (TX)	Timer X (TX)	
002E ₁₆	Transmit 2/Receive 2 buffer register (TB2/RB2)	Timer count source set register (TCSS)	
002F ₁₆	Serial I/O2 status register (SIO2STS)	Reserved	
0030 ₁₆	Serial I/O2 control register (SIO2CON)	Serial I/O2 control register (SIO2CON)	
0031 ₁₆	UART2 control register (UART2CON)	Serial I/O2 register (SIO2)	
0032 ₁₆	Baud rate generator 2 (BRG2)	Reserved	
0033 ₁₆	Reserved	Reserved	
0034 ₁₆	A/D control register (ADCON)	A/D control register (ADCON)	
0035 ₁₆	A/D conversion register (low-order) (ADL)	A/D conversion register (low-order) (ADL)	
0036 ₁₆	A/D conversion register (high-order) (ADH)	A/D conversion register (high-order) (ADH)	
0037 ₁₆	On-chip oscillation division ratio selection register (RODR)	Reserved	
0038 ₁₆	MISRG	MISRG	
0039 ₁₆	Watchdog timer control register (WDTCON)	Watchdog timer control register (WDTCON)	
003A ₁₆	Interrupt edge selection register (INTEDGE)	Interrupt edge selection register (INTEDGE)	
003B ₁₆	CPU mode register (CPUM)	CPU mode register (CPUM)	
003C ₁₆	Interrupt request register 1 (IREQ1)	Interrupt request register 1 (IREQ1)	
003D ₁₆	Interrupt request register 2 (IREQ2)	Reserved	
003E ₁₆	Interrupt control register 1 (ICON1)	Interrupt control register 1 (ICON1)	
003F ₁₆	Interrupt control register 2 (ICON2)	Reserved	

Note : Do not access to the SFR area including nothing.

5. Timer Composition 7542 Group/7531 Group



6. Reference

Data Sheet
7542 Group Data sheet
7531 Group Data sheet

User's Manual
7531 Group User's Manual

Before using this manual, please visit our website to verify that this is the most updated document available.

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REVISION HISTORY	Differences between 7542 Group and 7531 Group
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Rev.	Date	Description	
		Page	Summary
1.00	Jun.01.05	—	First edition issued

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