

RX Family

List of Firmware Integration Technology modules included with RX Driver Package

Introduction

This application note indicates Firmware Integration Technology (FIT) module version included with RX Driver Package (RDP).

Target Device

RX Family MCU corresponding to FIT module.

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1. Overview

Indicates FIT module version included with RDP.

2. List of FIT modules included with RX Driver Package

List of FIT modules included with RDP in the table below.

Table 2.1 List of device driver included with RDP

FIT Module Document Number	RDP																																				
	1.50	1.49	1.48	1.47	1.46	1.45	1.44	1.42	1.41	1.40	1.39	1.37	1.36	1.34	1.33	1.32	1.31	1.30	1.29	1.27	1.26	1.25	1.24	1.23	1.22	1.20	1.19	1.18	1.17	1.16	1.15	1.14	1.13	1.12	1.11	1.10	
BSP R01AN1685	7.71	7.70	7.60	7.53	7.52	7.51	7.42	7.42	7.41	7.41	7.30	7.21	7.20	7.10	7.00	6.21	6.11	5.66	5.63	5.61	5.52	5.52	5.50	5.40	5.20	5.20	4.01	3.91	3.91	3.91	3.71	3.71	3.60	3.50	3.40	3.31	
LVD R01AN3152	4.91	4.90	4.82	4.81	4.80	4.80	4.70	4.60	4.50	4.50	4.40	4.30	4.10	4.00	3.90	3.80	3.70	3.60	3.60	3.60	3.50	3.40	3.30	3.20	3.20	3.00	2.50	2.41	2.41	2.40	2.31	2.31	2.30	2.20	2.10	1.50	
LPC R01AN2769	2.61	2.60	2.52	2.51	2.50	2.40	2.30	2.30	2.30	2.30	2.20	2.10	2.04	2.03	2.03	2.02	2.01	2.01	2.01	2.00	2.00	2.00	2.00	1.41	1.41	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	-	-	
VBATT R01AN2796	2.33	2.32	2.32	2.31	2.30	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.10	2.10	2.10	2.00	2.00	1.05	1.05	1.05	1.04	1.04	1.04	1.04	1.04	1.03	1.02	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	
IRQ R01AN1668	4.91	4.90	4.80	4.71	4.60	4.50	4.40	4.40	4.40	4.40	4.30	4.10	4.10	4.00	3.90	3.80	3.70	3.60	3.60	3.60	3.50	3.40	3.30	3.20	3.20	3.00	2.40	2.31	2.31	2.30	2.21	2.21	2.20	2.10	2.00	1.90	
DTC R01AN1819	4.61	4.60	4.52	4.51	4.50	4.50	4.40	4.40	4.40	4.40	4.30	4.21	4.10	4.00	3.90	3.80	3.70	3.60	3.60	3.60	3.50	3.40	3.30	3.21	3.20	3.00	2.20	2.09	2.09	2.09	2.08	2.08	2.08	2.07	2.05	2.04	
DMAC R01AN2063	3.43	3.42	3.42	3.41	3.30	3.30	3.20	3.20	3.20	3.20	3.10	2.90	2.90	2.80	2.70	2.60	2.60	2.50	2.50	2.50	2.40	2.30	2.20	2.20	2.20	2.00	1.20	1.06	1.06	1.06	1.05	1.05	1.05	1.04	1.04	1.03	
GPIO R01AN1721	5.31	5.30	5.20	5.11	5.10	5.10	5.00	5.00	5.00	5.00	4.90	4.70	4.50	4.40	4.20	4.10	4.00	3.90	3.70	3.60	3.50	3.40	3.30	3.20	3.20	3.00	2.50	2.41	2.41	2.40	2.31	2.31	2.30	2.20	2.10	2.00	
MPC R01AN1724	5.21	5.20	5.10	5.01	5.00	5.00	4.90	4.90	4.90	4.90	4.80	4.60	4.40	4.30	4.10	3.90	3.90	3.80	3.60	3.60	3.50	3.40	3.30	3.20	3.20	3.00	2.50	2.41	2.41	2.40	2.31	2.31	2.30	2.20	2.10	2.00	
CMT R01AN1856	5.81	5.80	5.72	5.71	5.70	5.70	5.60	5.60	5.60	5.60	5.50	5.40	5.20	5.10	5.00	4.90	4.80	4.70	4.70	4.70	4.40	4.31	4.31	4.20	4.20	4.00	3.40	3.31	3.31	3.30	3.21	3.21	3.20	3.10	3.00	2.90	
CMTW R01AN2199	2.93	2.92	2.92	2.91	2.90	2.80	2.80	2.80	2.80	2.80	2.80	2.60	2.60	2.50	2.50	2.40	2.40	2.30	2.30	2.30	2.20	2.20	2.10	2.10	2.10	2.00	1.40	1.32	1.32	1.31	1.31	1.31	1.30	1.20	1.20	1.10	
RTC R01AN1817	3.11	3.10	3.10	3.01	3.00	3.00	2.90	2.90	2.90	2.90	2.83	2.83	2.83	2.82	2.82	2.82	2.81	2.80	2.80	2.79	2.78	2.78	2.77	2.77	2.77	2.75	2.74	2.73	2.73	2.72	2.72	2.72	2.71	2.50	2.50	2.41	
LPT R01AN2571	5.02	5.01	5.01	5.01	5.00	5.00	4.00	4.00	4.00	4.00	3.01	3.01	3.01	3.01	3.00	3.00	2.01	2.01	2.01	2.00	1.23	1.23	1.23	1.23	1.23	1.23	1.22	1.22	1.22	1.21	1.21	1.21	1.20	1.11	1.10	1.00	
IWDT R01AN1820	4.61	4.60	4.52	4.51	4.50	4.50	4.40	4.40	4.40	4.40	4.30	4.10	4.10	4.00	3.90	3.80	3.70	3.60	3.60	3.60	3.50	3.40	3.30	3.20	3.20	3.00	2.00	1.91	1.91	1.90	1.81	1.81	1.80	1.70	1.60	1.51	
WDT R01AN3200	3.13	3.12	3.12	3.11	3.10	3.10	3.00	3.00	3.00	3.00	3.00	2.80	2.80	2.70	2.60	2.50	2.50	2.40	2.40	2.40	2.30	2.30	2.20	2.20	2.20	2.00	1.40	1.31	1.31	1.30	1.20	1.20	1.10	1.00	1.00	-	
SCI R01AN1815	5.61	5.60	5.50	5.41	5.40	5.30	5.20	5.00	4.90	4.90	4.80	4.60	4.40	4.30	4.10	3.90	3.80	3.70	3.70	3.70	3.50	3.40	3.30	3.20	3.20	3.00	2.20	2.11	2.11	2.10	2.01	2.01	2.00	1.90	1.80	1.70	
RSCI R01AN5759	2.73	2.72	2.72	2.71	2.60	2.60	2.50	2.40	2.40	2.30	2.30	2.20	2.10	2.00	2.00	1.00	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SCIFA R01AN2222	2.03	2.02	2.02	2.02	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.00	2.00	2.00	1.22	1.22	1.22	1.22	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.10	1.10	1.10	
SCI-IIC R01AN1691	2.91	2.90	2.82	2.81	2.80	2.80	2.71	2.71	2.70	2.70	2.60	2.50	2.50	2.49	2.49	2.49	2.48	2.47	2.47	2.46	2.46	2.45	2.45	2.43	2.43	2.41	2.40	2.31	2.31	2.20	2.20	2.20	2.20	2.00	2.00	1.90	

FIT Module Document Number	RDP																																				
	1.50	1.49	1.48	1.47	1.46	1.45	1.44	1.42	1.41	1.40	1.39	1.37	1.36	1.34	1.33	1.32	1.31	1.30	1.29	1.27	1.26	1.25	1.24	1.23	1.22	1.20	1.19	1.18	1.17	1.16	1.15	1.14	1.13	1.12	1.11	1.10	
RSCI-IIC R01AN8028	1.01	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
RIIC R01AN1692	3.11	3.10	3.02	3.01	3.00	3.00	2.90	2.90	2.80	2.80	2.70	2.60	2.50	2.49	2.49	2.48	2.47	2.47	2.46	2.46	2.45	2.45	2.43	2.43	2.41	2.40	2.31	2.31	2.20	2.20	2.20	2.20	2.00	2.00	2.00	-	
RIICHS R01AN5552	1.23	1.22	1.22	1.21	1.20	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.00	1.00	1.00	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
RI3C R01AN6808	1.14	1.13	1.12	1.12	1.11	1.11	1.11	1.11	1.10	1.00	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
RSPI R01AN1827	3.81	3.80	3.70	3.51	3.50	3.50	3.40	3.40	3.20	3.20	3.10	3.04	3.04	3.03	3.03	3.02	3.01	3.00	3.00	3.00	2.05	2.04	2.04	2.03	2.03	2.01	2.00	1.80	1.80	1.80	1.70	1.70	1.70	1.60	1.50	-	
RSPIA R01AN5684	1.63	1.62	1.62	1.61	1.50	1.50	1.50	1.50	1.40	1.30	1.30	1.20	1.10	1.10	1.10	1.00	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
QSPI R01AN1940	1.31	1.30	1.30	1.22	1.21	1.21	1.21	1.21	1.21	1.21	1.20	1.20	1.15	1.15	1.15	1.14	1.14	1.14	1.14	1.14	1.14	1.13	1.13	1.13	1.12	1.11	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.09	1.09	1.08	
QSPIX R01AN5685	1.44	1.43	1.43	1.42	1.41	1.41	1.41	1.41	1.40	1.40	1.40	1.30	1.20	1.20	1.20	1.00	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
USB Basic R01AN2025	1.45	1.44	1.44	1.44	1.43	1.43	1.42	1.42	1.41	1.41	1.41	1.41	1.40	1.31	1.31	1.31	1.31	1.30	1.30	1.30	1.30	1.30	1.27	1.27	1.27	1.26	1.25	1.23	1.23	1.23	1.23	1.23	1.23	1.22	1.20	1.20	1.11
USB Basic Mini R01AN2166	1.32	1.31	1.31	1.31	1.30	1.30	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.12	1.12	1.12	1.12	1.12	1.11	1.10	1.10	1.10	1.10	1.10	1.02	1.02	1.02	1.02	1.02	1.02
USB HMSC R01AN2026	1.45	1.44	1.44	1.44	1.42	1.42	1.42	1.42	1.41	1.41	1.41	1.41	1.31	1.31	1.31	1.31	1.31	1.30	1.30	1.30	1.30	1.30	1.27	1.27	1.27	1.26	1.25	1.23	1.23	1.23	1.23	1.23	1.23	1.22	1.20	1.20	1.11
USB HMSC Mini R01AN2169	1.32	1.31	1.31	1.31	1.30	1.30	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.12	1.12	1.12	1.12	1.12	1.11	1.10	1.10	1.10	1.10	1.10	1.02	1.02	1.02	1.02	1.02	1.02
USB HCDC R01AN2027	1.45	1.44	1.44	1.44	1.42	1.42	1.42	1.42	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.30	1.30	1.30	1.30	1.30	1.27	1.27	1.27	1.26	1.25	1.23	1.23	1.23	1.23	1.23	1.23	1.22	1.20	1.20	1.11
USB HCDC Mini R01AN2167	1.32	1.31	1.31	1.31	1.30	1.30	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.12	1.12	1.12	1.12	1.12	1.11	1.10	1.10	1.10	1.10	1.10	1.02	1.02	1.02	1.02	1.02	1.02
USB HHID R01AN2028	1.45	1.44	1.44	1.44	1.42	1.42	1.42	1.42	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.30	1.30	1.30	1.30	1.30	1.27	1.27	1.27	1.26	1.25	1.23	1.23	1.23	1.23	1.23	1.23	1.22	1.20	1.20	1.11
USB HHID Mini R01AN2168	1.32	1.31	1.31	1.31	1.30	1.30	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.12	1.12	1.12	1.12	1.12	1.11	1.10	1.10	1.10	1.10	1.10	1.02	1.02	1.02	1.02	1.02	1.02
USB PMSC R01AN2029	1.45	1.44	1.44	1.44	1.42	1.42	1.42	1.42	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.30	1.30	1.30	1.30	1.30	1.27	1.27	1.27	1.26	1.25	1.23	1.23	1.23	1.23	1.23	1.23	1.22	1.20	1.20	1.11
USB PMSC Mini R01AN2172	1.32	1.31	1.31	1.31	1.30	1.30	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.12	1.12	1.12	1.12	1.12	1.11	1.10	1.10	1.10	1.10	1.10	1.02	1.02	1.02	1.02	1.02	1.02
USB PCDC R01AN2030	1.45	1.44	1.44	1.44	1.42	1.42	1.42	1.42	1.40	1.40	1.40	1.40	1.40	1.31	1.31	1.31	1.31	1.30	1.30	1.30	1.30	1.30	1.27	1.27	1.27	1.26	1.25	1.23	1.23	1.23	1.23	1.23	1.23	1.22	1.20	1.20	1.11
USB PCDC Mini R01AN2170	1.32	1.31	1.31	1.31	1.30	1.30	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.12	1.12	1.12	1.12	1.12	1.11	1.10	1.10	1.10	1.10	1.10	1.02	1.02	1.02	1.02	1.02	1.02
USB PHID R01AN2663	1.45	1.44	1.44	1.44	1.42	1.42	1.42	1.42	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.30	1.30	1.30	1.30	1.30	1.27	1.27	1.27	1.26	1.25	1.23	1.23	1.23	1.23	1.23	1.23	1.22	1.20	1.20	1.11
USB PHID Mini R01AN2171	1.32	1.31	1.31	1.31	1.30	1.30	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.12	1.12	1.12	1.12	1.12	1.11	1.10	1.10	1.10	1.10	1.10	1.02	1.02	1.02	1.02	1.02	1.02
EPTPC R01AN1943	-	-	-	-	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.16	1.16	1.16	1.16	1.15	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.12	1.11	1.11

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	1.50	1.49	1.48	1.47	1.46	1.45	1.44	1.42	1.41	1.40	1.39	1.37	1.36	1.34	1.33	1.32	1.31	1.30	1.29	1.27	1.26	1.25	1.24	1.23	1.22	1.20	1.19	1.18	1.17	1.16	1.15	1.14	1.13	1.12	1.11	1.10		
EPTPC Light R01AN3035	-	-	-	-	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.13	1.13	1.13	1.13	1.12	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.10	1.10	
ETHERC R01AN2009	1.25	1.24	1.24	1.24	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.22	1.22	1.21	1.21	1.21	1.21	1.21	1.20	1.20	1.17	1.17	1.17	1.16	1.14	1.14	1.14	1.14	1.14	1.14	1.13	1.12	1.11	1.10	1.10		
CAN R01AN2472	5.74	5.73	5.72	5.71	5.70	5.60	5.50	5.50	5.40	5.40	5.40	5.40	5.21	5.21	5.20	5.10	5.10	5.00	4.10	4.00	3.20	3.20	3.11	3.11	3.10	3.00	2.15	2.14	2.14	2.13	2.12	2.12	2.12	2.12	2.10	2.10	2.02	
CANFD R01AN6130	1.52	1.51	1.50	1.41	1.40	1.40	1.31	1.31	1.30	1.30	1.30	1.20	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
RSCAN R01AN2805	2.93	2.92	2.92	2.91	2.80	2.80	2.80	2.80	2.70	2.70	2.60	2.50	2.41	2.40	2.32	2.31	2.31	2.31	2.31	2.21	2.20	2.20	2.20	2.10	2.00	1.21	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.00	1.00		
IrDA R01AN2175	1.04	1.03	1.03	1.03	1.02	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01		
PDC R01AN3167	2.08	2.07	2.07	2.07	2.06	2.06	2.06	2.06	2.06	2.06	2.06	2.06	2.06	2.06	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.04	2.04	2.04	2.03	2.02	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.00	2.00	1.03	
SDHI R01AN3852	2.21	2.20	2.13	2.12	2.11	2.11	2.11	2.11	2.11	2.10	2.10	2.10	2.07	2.07	2.07	2.07	2.06	2.06	2.06	2.06	2.06	2.05	2.05	2.05	2.04	2.03	2.02	2.02	2.01	2.01	2.01	2.01	2.01	2.00	-	-	-	
SDSI R01AN3238	2.07	2.06	2.06	2.05	2.04	2.04	2.04	2.03	2.03	2.03	2.03	2.02	2.02	2.02	2.02	2.02	2.02	2.02	2.02	2.02	2.02	2.02	2.02	2.02	2.01	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	-	-	-		
MMCIF R01AN4234	1.23	1.22	1.22	1.21	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.06	1.06	1.06	1.05	1.04	-	-	-	-	-	-	-	-	-		
DSMIF R01AN4707	1.03	1.02	1.02	1.02	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-	-	-	-	-	-	-	-	-	-	-		
S12AD R01AN1666	5.51	5.50	5.41	5.41	5.40	5.40	5.30	5.30	5.30	5.20	5.10	5.00	5.00	4.93	4.91	4.90	4.80	4.70	4.61	4.60	4.50	4.50	4.30	4.20	4.20	4.00	3.10	3.01	3.01	3.00	2.30	2.30	2.30	2.20	2.11	2.11		
DAC R01AN1818	5.41	5.40	5.32	5.31	5.30	5.30	5.20	5.10	5.10	5.10	5.00	4.90	4.80	4.70	4.60	4.60	4.50	4.50	4.50	4.50	4.40	4.40	4.30	4.20	4.20	4.00	3.30	3.21	3.21	3.20	3.11	3.11	3.10	3.00	2.91	2.80		
Flash R01AN2184	5.31	5.30	5.22	5.22	5.21	5.20	5.12	5.11	5.10	5.10	5.00	4.91	4.90	4.81	4.81	4.80	4.70	4.60	4.60	4.60	4.50	4.50	4.40	4.40	4.20	4.00	3.50	3.42	3.41	3.40	3.30	3.30	3.20	2.10	1.70	1.63		
SRC R01AN2090	1.16	1.15	1.15	1.15	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.13	1.13	1.13	1.13	1.13	1.13	1.12	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11		
SSI R01AN2150	2.05	2.04	2.04	2.04	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.02	2.02	2.02	2.01	2.01	1.24	1.24	1.24	1.23	1.22	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.20	1.20	1.20	
TSIP R20AN0548	1.24	1.23	1.23	1.22	1.21	1.21	1.21	1.19	1.18	1.18	1.18	1.16	1.15	1.15	1.14	1.12	1.12	1.11	1.11	1.09	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RSIP R20AN0748	2.01	2.00	2.00	1.00	1.00	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
RSIP CM R01AN7445	1.01	1.00	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
LCDC R01AN1980	2.02	2.01	2.01	2.01	2.00	2.00	2.00	2.00	2.00	2.00	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.01	1.01	1.01	1.01	1.01	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
GLCDC R01AN3609	1.62	1.61	1.61	1.61	1.60	1.60	1.60	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.40	1.40	1.30	1.30	1.20	1.20	1.20	1.10	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-	-	-	
Unique ID R01AN2191	1.16	1.15	1.15	1.15	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.13	1.13	1.13	1.12	1.12	1.11	1.10	1.10	1.10	1.10	1.10	1.10	1.00	1.00	1.00	1.00		
BYTEQ R01AN1683	2.21	2.20	2.12	2.11	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.00	2.00	1.90	1.90	1.82	1.82	1.81	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.71	1.71	1.71	1.70	1.60	1.60	1.60	1.60	1.60	1.60		

FIT Module Document Number	RDP																																			
	1.50	1.49	1.48	1.47	1.46	1.45	1.44	1.42	1.41	1.40	1.39	1.37	1.36	1.34	1.33	1.32	1.31	1.30	1.29	1.27	1.26	1.25	1.24	1.23	1.22	1.20	1.19	1.18	1.17	1.16	1.15	1.14	1.13	1.12	1.11	1.10
LONGQ R01AN1889	2.03	2.02	2.02	2.01	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	1.90	1.90	1.90	1.82	1.82	1.82	1.81	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.71	1.71	1.71	1.70	1.60	1.60	1.60	1.60	1.60	1.60
QE CTSU R01AN4469	3.30	3.20	3.20	3.11	3.00	3.00	2.20	2.20	2.20	2.20	2.20	2.20	2.10	2.10	2.01	2.00	2.00	1.11	1.11	1.11	1.11	1.10	1.10	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-	-	-	-	-	-
ELC R01AN3066	4.02	4.01	4.01	4.01	4.00	4.00	3.00	3.00	3.00	3.00	2.01	2.01	2.01	2.01	2.01	2.01	2.00	2.00	2.00	2.00	1.21	1.21	1.21	1.21	1.21	1.21	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.10	1.10	-
DRW2D R01AN5373	1.15	1.14	1.14	1.14	1.13	1.12	1.12	1.12	1.12	1.12	1.12	1.11	1.11	1.11	1.11	1.11	1.11	1.10	1.10	1.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 2.2 List of middleware included with RDP

FIT Module	RDP																																			
	1.50	1.49	1.48	1.47	1.46	1.45	1.44	1.42	1.41	1.40	1.39	1.37	1.36	1.34	1.33	1.32	1.31	1.30	1.29	1.27	1.26	1.25	1.24	1.23	1.22	1.20	1.19	1.18	1.17	1.16	1.15	1.14	1.13	1.12	1.11	1.10
TCP/IP for Embedded system M3S-T4-Tiny Module R20AN0051	-	-	-	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.09	2.09	2.09	2.09	2.09	2.09	2.09	2.08	2.08	2.08	2.08	2.07	2.07	2.07	2.06	2.06	2.05	2.05
Interface conversion module for Ethernet Driver and Embedded system M3S-T4-Tiny Module R20AN0311	-	-	-	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.07	1.07	1.07	1.07	1.06	1.06	1.06	1.06	1.05	1.04	
Embedded TCP/IP M3S-T4-Tiny Socket API Module R20AN0296	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.31	1.30
System Timer Module R20AN0431	1.03	1.02	1.02	1.02	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-	-
lwIP (lightweight IP) Driver R20AN0788	1.11	1.00	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
lwIP (lightweight IP) R20AN0789	1.11	1.00	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SX-ULPGN-2000 Wi-Fi Module Control Module R01AN4664	-	-	-	-	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.14	1.13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
US159-DA16200MEVZ Wi-Fi Control Module R01AN7173	1.41	1.40	1.40	1.32	1.30	1.30	1.30	1.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BLE Module (BLE) R01AN4860	2.62	2.61	2.61	2.61	2.60	2.60	2.60	2.50	2.50	2.50	2.50	2.50	2.40	2.30	2.30	2.20	2.20	2.11	2.10	2.00	1.10	1.10	1.01	1.01	-	-	-	-	-	-	-	-	-	-	-	-
RYZ012 Bluetooth Low Energy Module R01AN6290	-	-	-	-	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QE Utility Module (Profiles) R01AN4907	-	-	-	-	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.00	1.00	1.00	1.00	0.90	-	-	-	-	-	-	-	-	-	-	-	-
Mesh Module (Mesh) R01AN4930	1.32	1.31	1.31	1.31	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.20	1.20	1.20	1.10	1.10	1.10	1.10	1.10	1.01	1.01	1.01	1.00	-	-	-	-	-	-	-	-	-	-	-	-
US159-DA14531EVZ BLE Control Module R01AN7174	1.70	1.60	1.60	1.40	1.30	1.20	1.20	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RYZ014A Cellular Module R01AN6324	1.14	1.13	1.13	1.13	1.12	1.12	1.12	1.11	1.11	1.11	1.10	1.09	1.06	1.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PTX NFC Control Module R01AN7890	1.20	1.00	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

FIT Module	RDP																																					
	1.50	1.49	1.48	1.47	1.46	1.45	1.44	1.42	1.41	1.40	1.39	1.37	1.36	1.34	1.33	1.32	1.31	1.30	1.29	1.27	1.26	1.25	1.24	1.23	1.22	1.20	1.19	1.18	1.17	1.16	1.15	1.14	1.13	1.12	1.11	1.10		
SD memory card driver module R01AN4233	3.02	3.01	3.01	3.01	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.02	-	-	-	-	-	-		
SPI mode SD memory card driver module R01AN6908	1.12	1.11	1.11	1.11	1.10	1.10	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Flash Memory Data Management Module R20AN0507	2.32	2.31	2.31	2.31	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	-	-	-	-	-	-	-	-	-	-		
Clock Synchronous Control Module for Serial Flash Memory Access R01AN2662	3.61	3.60	3.60	3.51	3.40	3.40	3.40	3.30	3.30	3.30	3.20	3.10	3.03	3.03	3.03	3.02	3.02	3.02	3.01	3.01	3.01	3.01	3.01	3.01	3.01	3.01	3.00	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.33	2.33	2.33	
Clock Synchronous Control Module for EEPROM Access R01AN2325	3.23	3.22	3.22	3.21	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.02	3.02	3.02	3.02	3.02	3.02	3.01	3.01	3.01	3.01	3.01	3.01	3.01	3.01	3.00	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.33	2.33	2.33	
Memory Access Driver Interface Module R01AN4548	1.41	1.40	1.40	1.31	1.20	1.20	1.20	1.20	1.05	1.05	1.05	1.04	1.04	1.04	1.04	1.03	1.03	1.03	1.03	1.03	1.02	1.02	1.02	1.01	1.01	1.01	1.00	-	-	-	-	-	-	-	-	-	-	
JPEG Decoder Module R20AN0104	2.09	2.08	2.08	2.08	2.07	2.06	2.06	2.06	2.06	2.06	2.06	2.06	2.06	2.06	2.06	2.06	2.06	2.06	2.06	2.06	2.06	2.06	2.06	2.06	2.06	2.06	2.06	2.06	2.06	2.06	2.06	2.06	2.06	2.06	2.06	2.06	-	-
JPEG Encoder Module R20AN0263	1.04	1.03	1.03	1.03	1.02	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	-	-
AES Library Module R20AN0044	1.09	1.08	1.08	1.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SHA Library Module R20AN0157	1.07	1.06	1.06	1.06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RSA Library Module R20AN0292	1.06	1.05	1.05	1.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sound Playback /Compression System (Original ADPCM Codec) [M3S-S2-Tiny] Module R20AN0037	3.06	3.05	3.05	3.05	3.04	3.04	3.04	3.04	3.04	3.04	3.04	3.04	3.04	3.04	3.04	3.04	3.04	3.04	3.04	3.04	3.04	3.04	3.04	3.04	3.04	3.04	3.04	3.04	3.04	3.04	3.04	3.04	3.04	3.04	3.04	3.04	3.03	
Open Source FAT File System [M3S-TFAT-Tiny] Module R20AN0038	4.16	4.15	4.15	4.14	4.13	4.12	4.11	4.10	4.02	4.02	4.02	4.02	4.02	4.02	4.02	4.02	4.02	4.02	4.01	4.01	4.00	3.04	3.04	3.04	3.04	3.04	3.04	3.04	3.04	3.03	3.03	3.03	3.03	3.03	3.03	3.03	3.02	
M3S-TFAT-Tiny Memory Driver Interface Module R20AN0335	2.63	2.62	2.62	2.61	2.60	2.50	2.40	2.30	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.10	2.10	2.00	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.04	1.03	1.03	1.03	1.03	1.03	1.02	
Firmware Update Module R01AN5824	2.06	2.06	2.05	2.04	2.04	2.04	2.03	1.06	1.06	1.06	1.06	1.04	1.04	1.03	1.02	1.01	1.01	1.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

FIT Module	RDP																																				
	1.50	1.49	1.48	1.47	1.46	1.45	1.44	1.42	1.41	1.40	1.39	1.37	1.36	1.34	1.33	1.32	1.31	1.30	1.29	1.27	1.26	1.25	1.24	1.23	1.22	1.20	1.19	1.18	1.17	1.16	1.15	1.14	1.13	1.12	1.11	1.10	
Firmware Updating Communications Module R01AN7757	1.11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
MCUboot Module R01AN7374	1.02	1.02	1.01	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Sensor i2C Communication Middleware Control Module R01AN5895	-	-	-	1.23	1.22	1.22	1.22	1.22	1.22	1.22	1.21	1.21	1.21	1.21	1.20	1.10	1.00	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
HS300x Sensor Control Module R01AN5893	-	-	-	1.24	1.23	1.23	1.23	1.23	1.23	1.23	1.22	1.22	1.22	1.22	1.11	1.10	1.00	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HS400x Sensor Control Module R01AN6445	-	-	-	1.02	1.01	1.01	1.01	1.01	1.01	1.01	1.00	1.00	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FS2012 Sensor Control Module R01AN6045	-	-	-	1.04	1.03	1.03	1.03	1.03	1.03	1.03	1.02	1.02	1.02	1.02	1.01	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FS3000 Sensor Control Module R01AN5894	-	-	-	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FS1015 Sensor Control Module R01AN6048	-	-	-	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OB1203 Sensor Control Module R01AN6352	-	-	-	1.02	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZMOD4410 and ZMOD4510 Sensor Control Module R01AN6046	-	-	-	1.41	1.31	1.31	1.31	1.31	1.31	1.31	1.20	1.20	1.20	1.20	1.10	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RRH46410 Sensor Control Module Firmware Integration Technology R01AN6046	-	-	-	1.01	1.00	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RRH62000 Sensor Control Module Firmware Integration Technology R01AN7389	-	-	-	1.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QE Touch Module R01AN4470	3.30	3.20	3.20	3.11	3.00	3.00	2.20	2.20	2.20	2.20	2.20	2.20	2.10	2.10	2.01	2.00	2.00	1.11	1.11	1.11	1.11	1.11	1.10	1.10	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-	-	-	-
Reality AI UART Communication Module Firmware Integration Technology R01AN6967	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

FIT Module	RDP																																					
	1.50	1.49	1.48	1.47	1.46	1.45	1.44	1.42	1.41	1.40	1.39	1.37	1.36	1.34	1.33	1.32	1.31	1.30	1.29	1.27	1.26	1.25	1.24	1.23	1.22	1.20	1.19	1.18	1.17	1.16	1.15	1.14	1.13	1.12	1.11	1.10		
Reality AI USB PCDC Communication Module Firmware Integration Technology R01AN6969	1.31	1.20	1.20	1.20	1.20	1.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Reality AI Data Collector Control Module Firmware Integration Technology R01AN6966	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Reality AI Data Shipper Control Module Firmware Integration Technology R01AN6965	1.21	1.20	1.20	1.20	1.20	1.20	1.00	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Aeropoint module R01AN5793	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
emWin v.6.14 module R01AN5533	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.30	1.30	1.30	1.10	1.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
emWin v.6.22 module R01AN5983	-	-	-	-	-	-	-	-	-	-	-	-	1.00	1.00	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
emWin v.6.26 module R01AN6452	-	-	-	-	-	-	-	-	-	-	-	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
emWin v.6.32 module R01AN6771	-	-	-	-	-	-	-	1.00	1.00	1.00	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
emWin v.6.34 module R01AN7047	-	-	1.21	1.21	1.20	1.20	1.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
emWin v.6.52 module R01AN8024	1.01	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
QE for Display Module R01AN7283	1.12	1.11	1.11	1.11	1.10	1.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Revision History

Rev.	Date	Description	
		Page	Summary
1.00	Aug. 31. 2021	—	First edition issued
1.01	Apr. 13. 2022	3-4	Table 1.2 Deleted v1.21 and added V1.33 and V1.34. Modified content.
		5-6	Table 2.2 Deleted v1.21 and added V1.33 and V1.34. Modified content.
1.02	Jul. 16. 2022	3-4	Table 1.2 Added V1.35. Modified content.
		5-6	Table 2.2 Added v1.35. Modified content.
1.03	Jul. 26. 2022	3-4	Table 1.2 Deleted v1.35 and added V1.36. Modified content.
		5-6	Table 2.2 Deleted v1.35 and added V1.36. Modified content.
1.04	Jan. 20. 2023	3-4	Table 1.2 Added V1.37. Modified content.
		5-6	Table 2.2 Added v1.37. Modified content.
1.05	May. 23. 2023	3-4	Table 2.1 Changed page layout. Added v1.38. Modified content.
		5-6	Table 2.2 Changed page layout. Added v1.38. Modified content.
1.06	May. 24. 2023	3-4	Table 2.1 Deleted v1.38 and added V1.39.
		5-6	Table 2.2 Deleted v1.38 and added V1.39.
1.07	Jun. 29. 2023	3-4	Table 2.1 Added V1.40. Modified content.
		5-6	Table 2.2 Added V1.40. Modified content.
1.08	Aug. 25. 2023	3-4	Table 2.1 Added V1.41. Modified content.
		5-6	Table 2.2 Added V1.41. Modified content.
1.09	Jan.22.24	3-4	Table 2.1 Added V1.42. Modified content.
		5-6	Table 2.2 Added V1.42. Modified content.
1.10	Jul. 22. 24	3-4	Table 2.1 Added V1.43. Modified content.
		5-6	Table 2.2 Added V1.43. Modified content.
1.11	Aug.09.24	3-4	Table 2.1 Deleted v1.43 and added V1.44.
		5-6	Table 2.2 Deleted v1.43 and added V1.44.
1.12	Oct.15. 24	3-6	Table 2.1 Moved document number to FIT module column, changed to descending order. Added V1.45. Modified content.
		7-9	Table 2.2 Moved document number to FIT module column, changed to descending order. Added V1.45. Modified content.
1.13	Jan. 20. 25	3-6	Table 2.1 Added V1.46. Modified content.
		7-9	Table 2.2 Added V1.46. Modified content.
1.14	Apr. 21. 25	3-6	Table 2.1 Added V1.47. Modified content.
		7-10	Table 2.2 Added V1.47. Modified content.
1.15	Nov. 20. 25	3-6	Table 2.1 Added V1.48. Modified content.
		7-10	Table 2.2 Added V1.48. Modified content.
1.16	Mar. 31. 26	3-6	Table 2.1 Added V1.49. Modified content.
		7-10	Table 2.2 Added V1.49. Modified content.
1.17	Apr. 20. 26	3-6	Table 2.1 Added V1.50. Modified content.
		7-10	Table 2.2 Added V1.50. Modified content.

General Precautions in the Handling of Microprocessing Unit and Microcontroller Unit Products

The following usage notes are applicable to all Microprocessing unit and Microcontroller unit products from Renesas. For detailed usage notes on the products covered by this document, refer to the relevant sections of the document as well as any technical updates that have been issued for the products.

1. Precaution against Electrostatic Discharge (ESD)

A strong electrical field, when exposed to a CMOS device, can cause destruction of the gate oxide and ultimately degrade the device operation. Steps must be taken to stop the generation of static electricity as much as possible, and quickly dissipate it when it occurs. Environmental control must be adequate. When it is dry, a humidifier should be used. This is recommended to avoid using insulators that can easily build up static electricity.

Semiconductor devices must be stored and transported in an anti-static container, static shielding bag or conductive material. All test and measurement tools including work benches and floors must be grounded. The operator must also be grounded using a wrist strap. Semiconductor devices must not be touched with bare hands. Similar precautions must be taken for printed circuit boards with mounted semiconductor devices.

2. Processing at power-on

The state of the product is undefined at the time when power is supplied. The states of internal circuits in the LSI are indeterminate and the states of register settings and pins are undefined at the time when power is supplied. In a finished product where the reset signal is applied to the external reset pin, the states of pins are not guaranteed from the time when power is supplied until the reset process is completed. In a similar way, the states of pins in a product that is reset by an on-chip power-on reset function are not guaranteed from the time when power is supplied until the power reaches the level at which resetting is specified.

3. Input of signal during power-off state

Do not input signals or an I/O pull-up power supply while the device is powered off. The current injection that results from input of such a signal or I/O pull-up power supply may cause malfunction and the abnormal current that passes in the device at this time may cause degradation of internal elements. Follow the guideline for input signal during power-off state as described in your product documentation.

4. Handling of unused pins

Handle unused pins in accordance with the directions given under handling of unused pins in the manual. The input pins of CMOS products are generally in the high-impedance state. In operation with an unused pin in the open-circuit state, extra electromagnetic noise is induced in the vicinity of the LSI, an associated shoot-through current flows internally, and malfunctions occur due to the false recognition of the pin state as an input signal become possible.

5. Clock signals

After applying a reset, only release the reset line after the operating clock signal becomes stable. When switching the clock signal during program execution, wait until the target clock signal is stabilized. When the clock signal is generated with an external resonator or from an external oscillator during a reset, ensure that the reset line is only released after full stabilization of the clock signal. Additionally, when switching to a clock signal produced with an external resonator or by an external oscillator while program execution is in progress, wait until the target clock signal is stable.

6. Voltage application waveform at input pin

Waveform distortion due to input noise or a reflected wave may cause malfunction. If the input of the CMOS device stays in the area between V_{IL} (Max.) and V_{IH} (Min.) due to noise, for example, the device may malfunction. Take care to prevent chattering noise from entering the device when the input level is fixed, and also in the transition period when the input level passes through the area between V_{IL} (Max.) and V_{IH} (Min.).

7. Prohibition of access to reserved addresses

Access to reserved addresses is prohibited. The reserved addresses are provided for possible future expansion of functions. Do not access these addresses as the correct operation of the LSI is not guaranteed.

8. Differences between products

Before changing from one product to another, for example to a product with a different part number, confirm that the change will not lead to problems. The characteristics of a microprocessing unit or microcontroller unit products in the same group but having a different part number might differ in terms of internal memory capacity, layout pattern, and other factors, which can affect the ranges of electrical characteristics, such as characteristic values, operating margins, immunity to noise, and amount of radiated noise. When changing to a product with a different part number, implement a system-evaluation test for the given product.

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