

~~12.4 [v61] TS2 I/O Mapping, Logic and Color Check (MM->1->3->9)~~

~~Version 61.3n and later has added this menu to allow the user to customize I/O for BIU's 1 and 2, do simple I/O logic as well as comparing the active channel color outputs to the status as reported by the MMU.~~

```

I/O Mapping, Logic & Check
1.IO Logic      4.Color Chk Status
2.IO Map
3.Color Check
    
```

12.4.1 [v61] TS2 Programmable I/O Logic (MM->1->3->9->1)

There are ten I/O logic equations supported. These are entered on the I/O Logic screen that is found at MM->1->3->9->1. Please refer to the 2070 Programmable I/O Logic section in this chapter for further details.

```

Result Fcn Oper  Fcn Oper  Fcn  Timer
I  0= I  0      I  0      I  0  DLY  0
I  0= I  0      I  0      I  0  DLY  0
I  0= I  0      I  0      I  0  DLY  0
I  0= I  0      I  0      I  0  DLY  0
I  0= I  0      I  0      I  0  DLY  0
I  0= I  0      I  0      I  0  DLY  0
I  0= I  0      I  0      I  0  DLY  0
I  0= I  0      I  0      I  0  DLY  0
    
```

12.4.2 [v61] TS2 Fully Mappable I/O for BIU 1 and BIU 2 (MM->1->3->9->2)

The I/O Mapping screen is found by accessing MM->1->3->9->2. It has an input and output column for each BIU (BIU 1 and BIU 2). The layout on the screen of the BIU Input, Output and I/O signals is as follows:

Screen Row	Input Group	Output Group
1-8	Inputs 1-8	Outputs 1-8
9-12	Opto-inputs 1-4	Outputs 9-12
13-15	Not used	Outputs 13-15
16-39	I/O 1-24	I/O 1-24

Note that individual I/O lines are assigned as either an input or output, but usually not both at the same time. Therefore, for rows 16-39, there will be an entry in either the input column or output column, but not both.

The sections below provides the dictionary of function codes and the programming for default TS2 I/O assignments.

To Enable the mappable I/O feature, go to the Chan, I/O Parameters screen (MM->1->3->3) and set the Alt T&F BIU Map to "IOMAP BIU 1 & 2".

BIU 1 #	In	Out	BIU 2 #	In	Out
1	0	0	1	0	0
2	0	0	2	0	0
3	0	0	3	0	0
4	0	0	4	0	0
5	0	0	5	0	0
6	0	0	6	0	0
7	0	0	7	0	0
8	0	0	8	0	0
9	0	0	9	0	0
10	0	0	10	0	0
11	0	0	11	0	0
12	0	0	12	0	0
13	0	0	13	0	0
14	0	0	14	0	0
15	0	0	15	0	0
16	0	0	16	0	0
17	0	0	17	0	0
18	0	0	18	0	0
19	0	0	19	0	0
20	0	0	20	0	0
			21	0	0
			22	0	0
			23	0	0
			24	0	0
			25	0	0
			26	0	0
			27	0	0
			28	0	0
			29	0	0
			30	0	0
			31	0	0
			32	0	0
			33	0	0
			34	0	0
			35	0	0
			36	0	0
			37	0	0
			38	0	0
			39	0	0

[v61] TS2 IO Map – Input Function Table

Func	Input	Func	Input	Func	Input	Func	Input	Func	Input
0	Unused	50	Veh Call 50	100	Veh Chng 36	150	Ped Omit 6	200	Pre 3 In
1	Veh Call 1	51	Veh Call 51	101	Veh Chng 37	151	Ped Omit 7	201	Pre 4 In
2	Veh Call 2	52	Veh Call 52	102	Veh Chng 38	152	Ped Omit 8	202	Pre 5 In
3	Veh Call 3	53	Veh Call 53	103	Veh Chng 39	153	Ph Omit 1	203	Pre 6 In
4	Veh Call 4	54	Veh Call 54	104	Veh Chng 40	154	Ph Omit 2	204	Pre 7 In
5	Veh Call 5	55	Veh Call 55	105	Veh Chng 41	155	Ph Omit 3	205	Pre 8 In
6	Veh Call 6	56	Veh Call 56	106	Veh Chng 42	156	Ph Omit 4	206	CMU/MMU Flash In
7	Veh Call 7	57	Veh Call 57	107	Veh Chng 43	157	Ph Omit 5	207	33x Composite Stop Time
8	Veh Call 8	58	Veh Call 58	108	Veh Chng 44	158	Ph Omit 6	208	Local Flash In
9	Veh Call 9	59	Veh Call 59	109	Veh Chng 45	159	Ph Omit 7	209	TBC Online (Input)
10	Veh Call 10	60	Veh Call 60	110	Veh Chng 46	160	Ph Omit 8	210	Dim Enable
11	Veh Call 11	61	Veh Call 61	111	Veh Chng 47	161	R1 Frc Off	211	Auto Flash In
12	Veh Call 12	62	Veh Call 62	112	Veh Chng 48	162	R1 Stop Tim	212	Alt Seq A
13	Veh Call 13	63	Veh Call 63	113	Veh Chng 49	163	R1 Inh Max	213	Alt Seq B
14	Veh Call 14	64	Veh Call 64	114	Veh Chng 50	164	R1 Red Rest	214	Alt Seq C
15	Veh Call 15	65	Veh Chng 1	115	Veh Chng 51	165	R1 PedRecyc	215	Alt Seq D
16	Veh Call 16	66	Veh Chng 2	116	Veh Chng 52	166	R1 Max II	216	Plan A
17	Veh Call 17	67	Veh Chng 3	117	Veh Chng 53	167	R1 OmtRdClr	217	Plan B
18	Veh Call 18	68	Veh Chng 4	118	Veh Chng 54	168	Non-Act I	218	Plan C
19	Veh Call 19	69	Veh Chng 5	119	Veh Chng 55	169	R2 Frc Off	219	Plan D
20	Veh Call 20	70	Veh Chng 6	120	Veh Chng 56	170	R2 Stop Tim	220	Addr Bit 0
21	Veh Call 21	71	Veh Chng 7	121	Veh Chng 57	171	R2 Inh Max	221	Addr Bit 1
22	Veh Call 22	72	Veh Chng 8	122	Veh Chng 58	172	R2 Red Rest	222	Addr Bit 2
23	Veh Call 23	73	Veh Chng 9	123	Veh Chng 59	173	R2 PedRecyc	223	Addr Bit 3
24	Veh Call 24	74	Veh Chng 10	124	Veh Chng 60	174	R2 Max II	224	Addr Bit 4
25	Veh Call 25	75	Veh Chng 11	125	Veh Chng 61	175	R2 OmtRdClr	225	Offset 1
26	Veh Call 26	76	Veh Chng 12	126	Veh Chng 62	176	Non-Act II	226	Offset 2
27	Veh Call 27	77	Veh Chng 13	127	Veh Chng 63	177	Ext Start	227	Offset 3
28	Veh Call 28	78	Veh Chng 14	128	Veh Chng 64	178	Int Advance	228	33x Flash Sense
29	Veh Call 29	79	Veh Chng 15	129	Ped Call 1	179	Door Open	229	33x CMU Stop
30	Veh Call 30	80	Veh Chng 16	130	Ped Call 2	180	Min Recall	230	GateMode0
31	Veh Call 31	81	Veh Chng 17	131	Ped Call 3	181	ManCtrlEnbl	231	GateMode1
32	Veh Call 32	82	Veh Chng 18	132	Ped Call 4	182	Mode Bit A	232	GateMode2
33	Veh Call 33	83	Veh Chng 19	133	Ped Call 5	183	Mode Bit B	233	GateMode3
34	Veh Call 34	84	Veh Chng 20	134	Ped Call 6	184	Mode Bit C	234	GateOpen1
35	Veh Call 35	85	Veh Chng 21	135	Ped Call 7	185	Test A	235	GateClose1
36	Veh Call 36	86	Veh Chng 22	136	Ped Call 8	186	Test B	236	GateOpen2
37	Veh Call 37	87	Veh Chng 23	137	Hold 1	187	Test C	237	GateClose2
38	Veh Call 38	88	Veh Chng 24	138	Hold 2	188	WalkRestMod	238	Reserved
39	Veh Call 39	89	Veh Chng 25	139	Hold 3	189	Unused	239	Reserved
40	Veh Call 40	90	Veh Chng 26	140	Hold 4	190	Free	240	Logic1
41	Veh Call 41	91	Veh Chng 27	141	Hold 5	191	Flash In	241	Logic2
42	Veh Call 42	92	Veh Chng 28	142	Hold 6	192	Alarm 1	242	Logic3
43	Veh Call 43	93	Veh Chng 29	143	Hold 7	193	Alarm 2	243	Logic4
44	Veh Call 44	94	Veh Chng 30	144	Hold 8	194	Alarm 3	244	Logic5
45	Veh Call 45	95	Veh Chng 31	145	Ped Omit 1	195	Alarm 4	245	Logic6
46	Veh Call 46	96	Veh Chng 32	146	Ped Omit 2	196	Alarm 5	246	Logic7
47	Veh Call 47	97	Veh Chng 33	147	Ped Omit 3	197	Alarm 6	247	Logic8
48	Veh Call 48	98	Veh Chng 34	148	Ped Omit 4	198	Pre 1 In	248	Logic9
49	Veh Call 49	99	Veh Chng 35	149	Ped Omit 5	199	Pre 2 In	249	Logic10

Func	Input
250	Reserved
251	Reserved
252	Reserved
253	Reserved
254	False
255	True

[v61] TS2 IO Map – Output Function Table

Func	Output	Func	Output	Func	Output	Func	Output	Func	Output
0	Unused	50	Ch2 Green	100	R2 Status A	150	Reserved	200	IO UCF Flash
1	Ch1 Red	51	Ch3 Green	101	R2 Status B	151	Reserved	201	Preempt Int Stat Out 1
2	Ch2 Red	52	Ch4 Green	102	R2 Status C	152	Reserved	202	Preempt Int Stat Out 2
3	Ch3 Red	53	Ch5 Green	103	Special 1	153	Reserved	203	Preempt Int Stat Out 3
4	Ch4 Red	54	Ch6 Green	104	Special 2	154	Reserved	204	Preempt Int Stat Out 4
5	Ch5 Red	55	Ch7 Green	105	Special 3	155	Reserved	205	Preempt Int Stat Out 5
6	Ch6 Red	56	Ch8 Green	106	Special 4	156	Reserved	206	Preempt Int Stat Out 6
7	Ch7 Red	57	Ch9 Green	107	Special 5	157	Reserved	207	Preempt Int Stat Out 7
8	Ch8 Red	58	Ch10 Green	108	Special 6	158	Reserved	208	Reserved
9	Ch9 Red	59	Ch11 Green	109	Special 7	159	Reserved	209	Reserved
10	Ch10 Red	60	Ch12 Green	110	Special 8	160	Reserved	210	Reserved
11	Ch11 Red	61	Ch13 Green	111	Fault Mon	161	Reserved	211	Reserved
12	Ch12 Red	62	Ch14 Green	112	Voltage Mon	162	Reserved	212	Reserved
13	Ch13 Red	63	Ch15 Green	113	Flash Logic	163	Reserved	213	Reserved
14	Ch14 Red	64	Ch16 Green	114	170 Watchdog	164	Reserved	214	Reserved
15	Ch15 Red	65	Ch17 Green	115	Constant Zero	165	Reserved	215	Reserved
16	Ch16 Red	66	Ch18 Green	116	Pre Stat 1	166	Reserved	216	Reserved
17	Ch17 Red	67	Ch19 Green	117	Pre Stat 2	167	Reserved	217	Reserved
18	Ch18 Red	68	Ch20 Green	118	Pre Stat 3	168	Reserved	218	Reserved
19	Ch19 Red	69	Ch21 Green	119	Pre Stat 4	169	Reserved	219	Reserved
20	Ch20 Red	70	Ch22 Green	120	Pre Stat 5	170	Reserved	220	Reserved
21	Ch21 Red	71	Ch23 Green	121	Pre Stat 6	171	Reserved	221	Reserved
22	Ch22 Red	72	Ch24 Green	122	TBCAux/Pre1	172	Reserved	222	Reserved
23	Ch23 Red	73	Ph 1 Check	123	TBCAux/Pre2	173	Reserved	223	Reserved
24	Ch24 Red	74	Ph 2 Check	124	LdSwchFlsh	174	Reserved	224	Reserved
25	Ch1 Yellow	75	Ph 3 Check	125	TBC Aux 1	175	Reserved	225	Reserved
26	Ch2 Yellow	76	Ph 4 Check	126	TBC Aux 2	176	Reserved	226	Reserved
27	Ch3 Yellow	77	Ph 5 Check	127	TBC Aux 3	177	Reserved	227	Reserved
28	Ch4 Yellow	78	Ph 6 Check	128	Coord Active	178	Reserved	228	Reserved
29	Ch5 Yellow	79	Ph 7 Check	129	Time plan A	179	Reserved	229	Reserved
30	Ch6 Yellow	80	Ph 8 Check	130	Time plan B	180	Reserved	230	Logic1
31	Ch7 Yellow	81	Ph 1 Next	131	Time plan C	181	Reserved	231	Logic2
32	Ch8 Yellow	82	Ph 2 Next	132	Time plan D	182	Reserved	232	Logic3
33	Ch9 Yellow	83	Ph 3 Next	133	Offset Out1	183	Reserved	233	Logic4
34	Ch10 Yellow	84	Ph 4 Next	134	Offset Out2	184	Reserved	234	Logic5
35	Ch11 Yellow	85	Ph 5 Next	135	Offset Out3	185	Reserved	235	Logic6
36	Ch12 Yellow	86	Ph 6 Next	136	Auto Flash	186	Reserved	236	Logic7
37	Ch13 Yellow	87	Ph 7 Next	137	Preempt Actv (Composite)	187	Reserved	237	Logic8
38	Ch14 Yellow	88	Ph 8 Next	138	Reserved: LiteRailVeh Warning	188	Reserved	238	Logic9
39	Ch15 Yellow	89	Phase 1 On	139	Reserved	189	Reserved	239	Logic10
40	Ch16 Yellow	90	Phase 2 On	140	Audible Ped 2	190	Reserved	240	Logic11
41	Ch17 Yellow	91	Phase 3 On	141	Audible Ped 4	191	Reserved	241	Logic12
42	Ch18 Yellow	92	Phase 4 On	142	Audible Ped 6	192	Reserved	242	Logic13
43	Ch19 Yellow	93	Phase 5 On	143	Audible Ped 8	193	Reserved	243	Logic14
44	Ch20 Yellow	94	Phase 6 On	144	Reserved	194	Reserved	244	Logic15
45	Ch21 Yellow	95	Phase 7 On	145	Reserved	195	Reserved	245	Logic16
46	Ch22 Yellow	96	Phase 8 On	146	Reserved	196	Reserved	246	Logic17
47	Ch23 Yellow	97	R1 Status A	147	Reserved	197	Reserved	247	Logic18
48	Ch24 Yellow	98	R1 Status B	148	Reserved	198	Reserved	248	Logic19
49	Ch1 Green	99	R1 Status C	149	Reserved	199	Reserved	249	Logic20

Func	Output
250	Reserved
251	Reserved
252	Reserved
253	Reserved
254	False
255	True