OPERATIONS SHEET

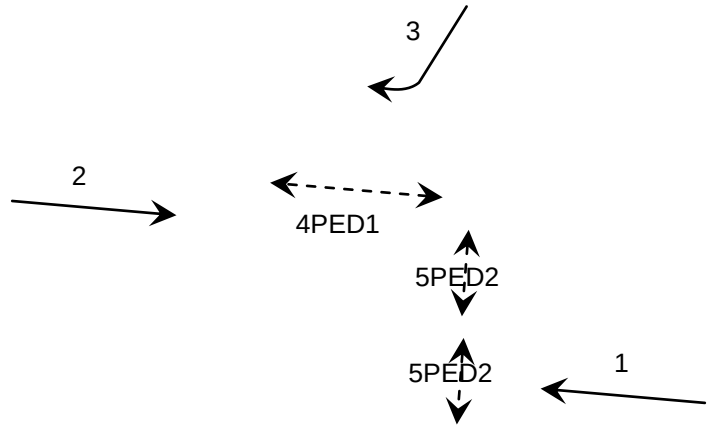
Location: Keppel Rd / Shenton Way / ECP Int. No: 101

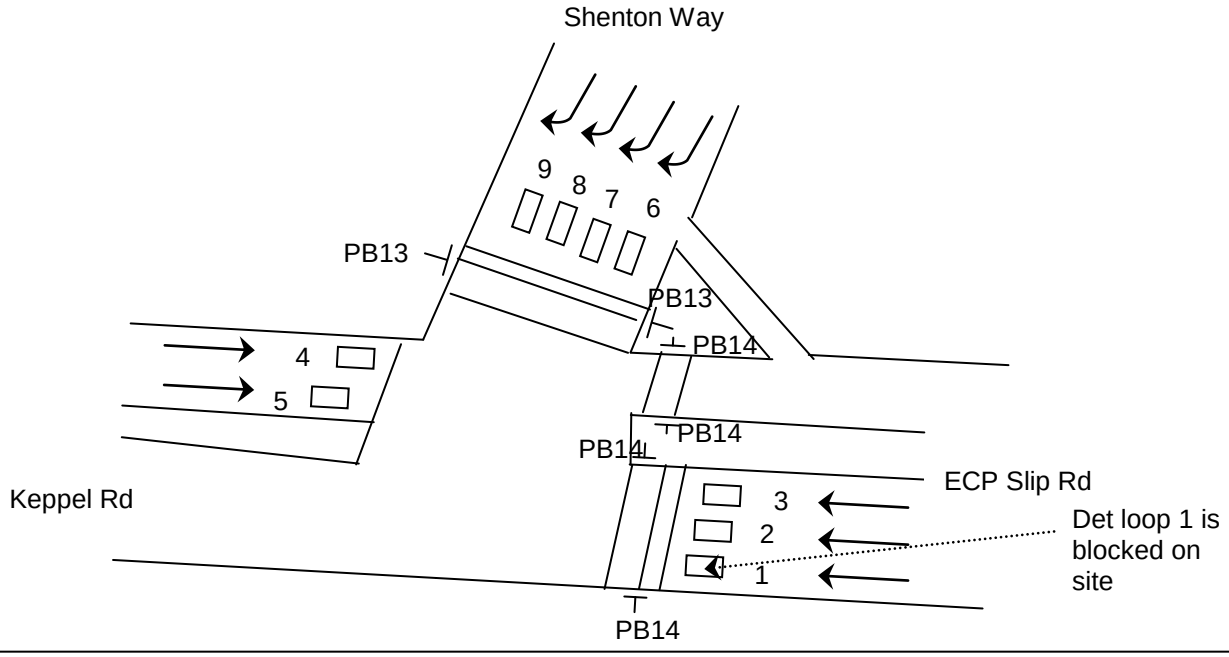
Prepared by: Lang Jie Date: 24 / 11 / 2015 Signal ID: 355

Checked by: Jeremy Chung

Approved by: Simon Ho

Upgrade controller





Wef. 1st April 2005

REMARKS

Int. No: 101

☑ If phase change switch is equal or more than TSM15, controller is to send out MSS15 flag

☐ If phase _____ is not introduced, SG ____ will flash for 3 seconds (TSM 14) in All-Red.

☐ If phase _____ is not introduced, SG ____ will flash for 3 seconds (TSM 14) in All-Red.

☑ ***B*** phase(s) is/are demand dependent.

☑ ***A*** phase(s) is/are placed on permanent demand in all Modes.

☑ PED ***1*** is introduced when Push Button ***13*** is activated.

☑ PED 2 is introduced when Push Button 14 is activated.

☐ PED _____ is introduced when Push Button _____ is activated.

☐ PED _____ is introduced when Push Button _____ is activated.

☐ During _____ phase, disable detector loop(s) _____ call for _____ phase.

☐ During _____ phase, after the lock call timer has expired (more than TSM _____), detector loop(s) _____ will cancel demand for _____ phase.

☐ During _____ phase, after the lock call timer has expired (more than TSM _____), detector loop(s) _____ will cancel demand for _____ phase.

☐ During _____ phase, after the lock call timer has expired (more than TSM _____), detector loop(s) _____ will cancel demand for _____ phase.

☐ Left Turn Green Arrow SG _____

1. It is introduced in _____ phase.
2. SG _____ terminates with SG/Phase _____ with green arrow flashing for 3 seconds.

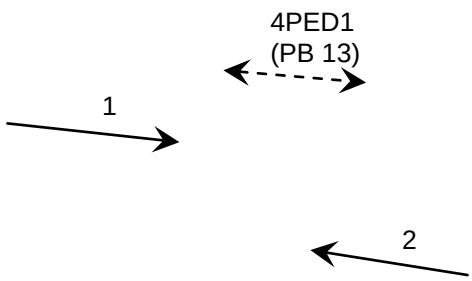
☐ Left Turn Green Arrow SG _____

1. It is introduced in _____ phase.
2. SG _____ terminates with SG/Phase _____ with green arrow flashing for 3 seconds.

PHASING DIAGRAM

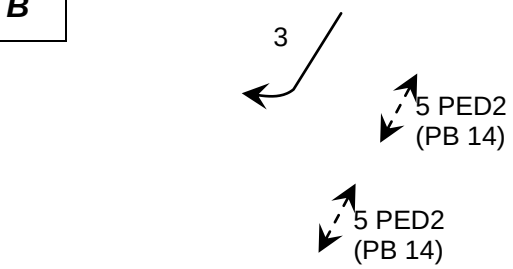
Int No: 101

A



PHASE	PROHIBITED PHASE CHANGES TO	REVERSION ON MAXIMUM	MAXIMUM V. I. G. ON MAXIMUN
A			
B			
C			
D			
E			
F			
G			

B



V. A. Sequence: _____

DETECTOR FUNCTION

Int. No: 101

DETECTOR NO	CALL PHASE	LOCKING	NON LOCKING	SET VIG ON PHASE	EXTEND PHASE	SPECIAL	DETECTOR ALARMS / FAULT SIMULATION: CALL & EXTEND	CALL ONLY	DISABLE	PLAN REFERENCE
1	***A***	***A***			***A***		✓			
2	***A***	***A***			***A***		✓			
3	***A***	***A***			***A***		✓			
4	***A***	***A***			***A***		✓			
5	***A***	***A***			***A***		✓			
6	***B***	***B***			***B***		✓			
7	***B***	***B***			***B***		✓			
8	***B***	***B***			***B***		✓			
9	***B***	***B***			***B***		✓			
10										
11										
12										
13	***A***	***A***				***PUSH BUTTON PED 1***		✓		
14	***B***	***B***				***PUSH BUTTON PED 2***		✓		
15						PHASE CHANGE SWITCH			✓	
16						POLICE CONTROL SWITCH			✓	

TICK IF DETECTOR FAILURE CAUSES AN ALARM ON DET. 16.

APPROACH TIMING

Int. No: 101

APPROACH	EXTENDING DETECTORS	SIGNAL GROUP	COMMENTS
A1	***1***	***1***	
A2	***2, 3***	***1***	
A3	***4***	***1***	
A4	***5***	***1***	
B1	***6***	***3***	
B2	***7***	***3***	
B3	***8***	***3***	
B4	***9***	***3***	
C1			
C2			
C3			
C4			
D1			
D2			
D3			
D4			
E1			
E2			
E3			
E4			
F1			
F2			
F3			
F4			
G1			
G2			
G3			
G4			

NOTE: MAXIMUM NUMBER OF APPROACHES IS 16

INTERGREEN, PEDESTRIAN TIMES AND SPECIAL FUNCTIONS

Int. No: 101

PHASE	CLEARANCE MOVEMENT	CLEARANCE DISTANCE	INTERGREEN		
			AMBER	RED	TOTAL
A			***3***	***3***	***6***
B			***3***	***4***	***7***
C					
D					
E					
F					
G					

PED NO.	PHASE	WALK		CLEARANCE TIME	
		DISTANCE (m)	GREEN TIME	1	2
1	***A***	***17***	***6***	***15***	
2	***B***	***11***	***12***	***10***	
3					
4					
5					
6					
7					

Pedestrian Walking Speed: ***1.2*** m/s

SPECIAL FACILITIES

SIGNAL GROUP	HOUR	MINUTE	SECOND	FUNCTION

PRE-EMPTION

SIGNAL GROUP	PHASE	FUNCTION	REMARKS

CONTROLLER TIMESETTING

Int. No: 101

SPECIAL MOVEMENT (S. M.) TIME
('B' ENTER)

	S. M. INTERVAL	1	2	3	4	5	6	7	8
MINIMUM GREEN	1								
AMBER	2								
RED	3								
GAP	4								
HEADWAY	5								
WASTE	6								
MAXIMUM	7								
SIGNAL GROUP									
DETECTORS									

PRESENCE (RANGE 0 –5)
('D' ENTER)

DET. NO	PRESENCE TIME	DET. NO	PRESENCE TIME
1	Secs	13	Secs
2	Secs	14	Secs
3	Secs	15	Secs
4	Secs	16	Secs
5	Secs	17	Secs
6	Secs	18	Secs
7	Secs	19	Secs
8	Secs	20	Secs
9	Secs	21	Secs
10	Secs	22	Secs
11	Secs	23	Secs
12	Secs	24	Secs

ALTERNATE TIME SETTING (RANGE 0-200)
('B' ENTER)

ALT. NO	TIME	ALT. NO	TIME
1		17	
2		18	
3		19	
4		20	*5 Sec
5		21	
6		22	
7		23	
8		24	
9		25	
10		26	
11		27	
12		28	
13		29	
14		30	
15	50 Sec	31	
16		32	

***Note:** During start-up of controller, there will be a 5 seconds All Red (TSM20)

CONTROLLER TIMESETTING

Int. No: 101

	PHASE	A	B	C	D	E	F	G	H	
	INTERVAL	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**Range**
RED/YELLOW	1									0 – 5
LATE START	2									0 – 20
MINIMUM GREEN	3	***10***	***7***							5 – 20
INCREMENT	4									0 – 5
MAX. V. I. G.	5									0 – 40
MAX. EXT. GREEN	6	***37***	***25***							0 – 150
EARLY CUT-OFF	7									0 – 20
AMBER	8	***3***	***3***							3 – 7
ALL RED	9	***3***	***4***							0 – 15
SPECIAL ALL RED	10									0 – 15
GAP 1	11	***3***	***3***							0 –10
GAP 2	12	***3***	***3***							0 –10
GAP 3	13	***3***	***3***							0 –10
GAP 4	14	***3***	***3***							0 –10
HEADWAY 1	15	***1.2***	***1.2***							0 – 5
HEADWAY 2	16	***0.6***	***1.2***							0 – 5
HEADWAY 3	17	***1.2***	***1.2***							0 – 5
HEADWAY 4	18	***1.2***	***1.2***							0 – 5
WASTE 1	19	***7***	***7***							0 – 50
WASTE 2	20	***7***	***7***							0 – 50
WASTE 3	21	***7***	***7***							0 – 50
WASTE 4	22	***7***	***7***							0 – 50
MAXIMUM 1	23									0 – 150
MAXIMUM 2	24									0 – 150
MAXIMUM 3	25									0 – 150
MAXIMUM 4	26									0 – 150

Maximum V. A. Cycle Time: _____

☐ Use Special All Red if going from _____ phase to _____ phase

☐ Use Special All Red if going from _____ phase to _____ phase

☐ Use Special All Red if going from _____ phase to _____ phase

	PEDESTRIAN NO.	1	2	3	4	5	6	7	8	
	INTERVAL	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**Range**
DELAY	1									0 – 20
WALK	2	***6***	***6***							0 – 40
CLEARANCE 1	3	***15***	***10***							0 – 40
CLEARANCE 2	4									0 – 10

CO-ORDINATION DATA

Int. No: 101

MASTERLINK & FLEXILINK SPECIAL FLAGS

SIGNAL	FUNCTION
Y− FLEXI	***CONTINUOUS***
Y− MASTER	AUTO CALL PUSH BUTTON PED ***1, 2***
Y+ FLEXI	
Z− FLEXI	AUTO CALL PUSH BUTTON PED ***1***
Z− MASTER	
Z+ FLEXI	
Z+ MASTER	
R− FLEXI	***B*** PHASE RELEASE PULSE
R+ FLEXI	PHASE RELEASE PULSE
Q− FLEXI	***A*** PHASE RELEASE PULSE
Q+ FLEXI	
Z1 MASTER	
Z MASTER	
Z MASTER	
Z MASTER	

LOOK AHEADS AND RELEASES

Phase Sequence 1		
PHASE	**LOOK AHEAD**	**RELEASE**
A	***NO***	***Q-***
B	***Yes to A***	***R-***
C		
D		
E		
F		
G		

Phase Sequence 2		
PHASE	**LOOK AHEAD**	**RELEASE**
A		
B		
C		
D		
E		
F		
G		

The following phases can be inhibited in Flexilink by omitting the call pulses in the plan data _____

NO	PHASE SEQUENCE
1 (No Z−)	***AB***
2 (Z−)	

GLIDE INTERSECTION DATA

Int. No: 101

Note: The data shown on this page should be entered when the intersection is first placed on line. This data is not necessarily used for Master Link operation.

SLOT *1* = *2, 4, 2*

E.g. x, y, z. x = No of Phases y = No of Split Plans z = No of PEDs

INT = ***101***
VC =
CS =
COM = ***3***
PK =
S# =
LM = ***MF***
RMN =
DCL =
VOLS = ***1 – 9***
VP# =
AT = ***6***
BT = ***7***
CT =
DT =
ET =
FT =
GT =

Date:	Date:
PP1 = ***0, 0B***	PP1 =
PP2 = ***0, 0B***	PP2 =
PP3 = ***0, 0B***	PP3 =
PP4 = ***0, 0B***	PP4 =

Note: Always LM = F initially

Variation Parameter (VP)

VP1 =	VP8 =	VP15 =	VP22 =	VP29 =
VP2 =	VP9 =	VP16 =	VP23 =	VP30 =
VP3 =	VP10 =	VP17 =	VP24 =	VP31 =
VP4 =	VP11 =	VP18 =	VP25 =	VP32 =
VP5 =	VP12 =	VP19 =	VP26 =	VP33 =
VP6 =	VP13 =	VP20 =	VP27 =	VP34 =
VP7 =	VP14 =	VP21 =	VP28 =	VP35 =

W1 = ***0***		
W1T = ***21***	P–	
W2 = ***-24***		
W2T = ***17***	P–	P+
W3 =		
W3T =	P–	P+

W4 =		
W4T =	P–	P+
W5 =		
W5T =	P–	P+
W6 =		
W6T =	P–	P+

SPLIT PLANS

	SF / FEATURES	1	2	3	4
A	***0 PD B***	***0 B***	***0 B***	***0 B***	***0 B***
B	***NG A***	***43A***	***38A***	***34A***	***50 A***
C					
D					
E					
F					
G					

SF / FEATURES	5	6	7	8

PLAN DATA

Int. No: 101

PLAN

('E' ENTER)

		1	2	3	4	5	6	7	8	9	10
0	**CL**	*120*	*120*	*120*	*125*	*100*	*110*	*120*	120		
1	**A**	*6*	*3*	*0*	*3*	*89*	*3*	*3*	3		
2	**B**	*66*	*63*	*63*	*69*	*69*	*58*	*67*	67		
3	**C**										
4	**D**										
5	**E**										
6	**F**										
7	**G**										
8	**R−**	*C*	*C*		*C*	*C*	*C*	*C*	C		
9	**R+**										
10	**Y−**	C	C		C	C	C	C	C		
11	**Y+**										
12	**Z−**										
13	**Z+**										
14	**Q−**	*56*	*53*	*53*	*59*	*59*	*48*	*57*	57		
15	**Q+**										
16	**XSF (9-16)***										
17	**XSF (1-8)***										

* A digit hexadecimal number which signifies which XSF bits are used; e.g. AO signifies bits 14 & 16 are set.

NOTE: C = Continuous (255) N = Not Used (254)

PLAN SCHEDULE

('F' ENTER)

CODE	HOUR	MINUTE	PLAN
8	0	0	5
8	6	30	1
8	***7***	30	1
8	***9***	30	7
8	***10***	30	2
8	***17***	***30***	4
8	***19***	30	6
7	0	0	5
7	***6***	30	1
7	07	30	3

CODE	HOUR	MINUTE	PLAN
7	10	30	8
7	16	30	2
7	***19***	30	4
7	23	0	5
1	0	0	5
1	7	0	7
1	10	30	3
1	12	0	2
1	***19***	30	6
1	23	0	5

Pedestrian and Vehicle Signal Groups Interlock Table

Int. No: 101

	Phase A	Phase B	Phase C	Phase D	Phase E	Phase F	Phase G
SG 1	***GAR***	***RED***					
SG 2	***GAR***	***RED***					
SG 3	***RED***	***GAR***					
SG 4	***WALK***	***DON'T***					
SG 5	***DON'T***	***WALK***					
SG 6							
SG 7							
SG 8							
SG 9							
SG 10							
SG 11							
SG 12							
SG 13							
SG 14							
SG 15							
SG 16							

Legend:

GAR	Green, Amber, Red
GEAR	Green, Amber, Red (With ECO)
RED	Red
SGRN	Special Green
SOFF	Special Off
WALK	PED Walk, Clearance 1 and Clearance 2
SWALK	Special PED Walk, Clearance 1 and Clearance 2
DON'T	PED Red

Appendix A

Signal Groups Conflict Matrix

Int. No: 101

('C16' ENTER)

SG	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1			X		X											
2			X		X											
3	X	X		X												
4			X													
5	X	X														
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
16																