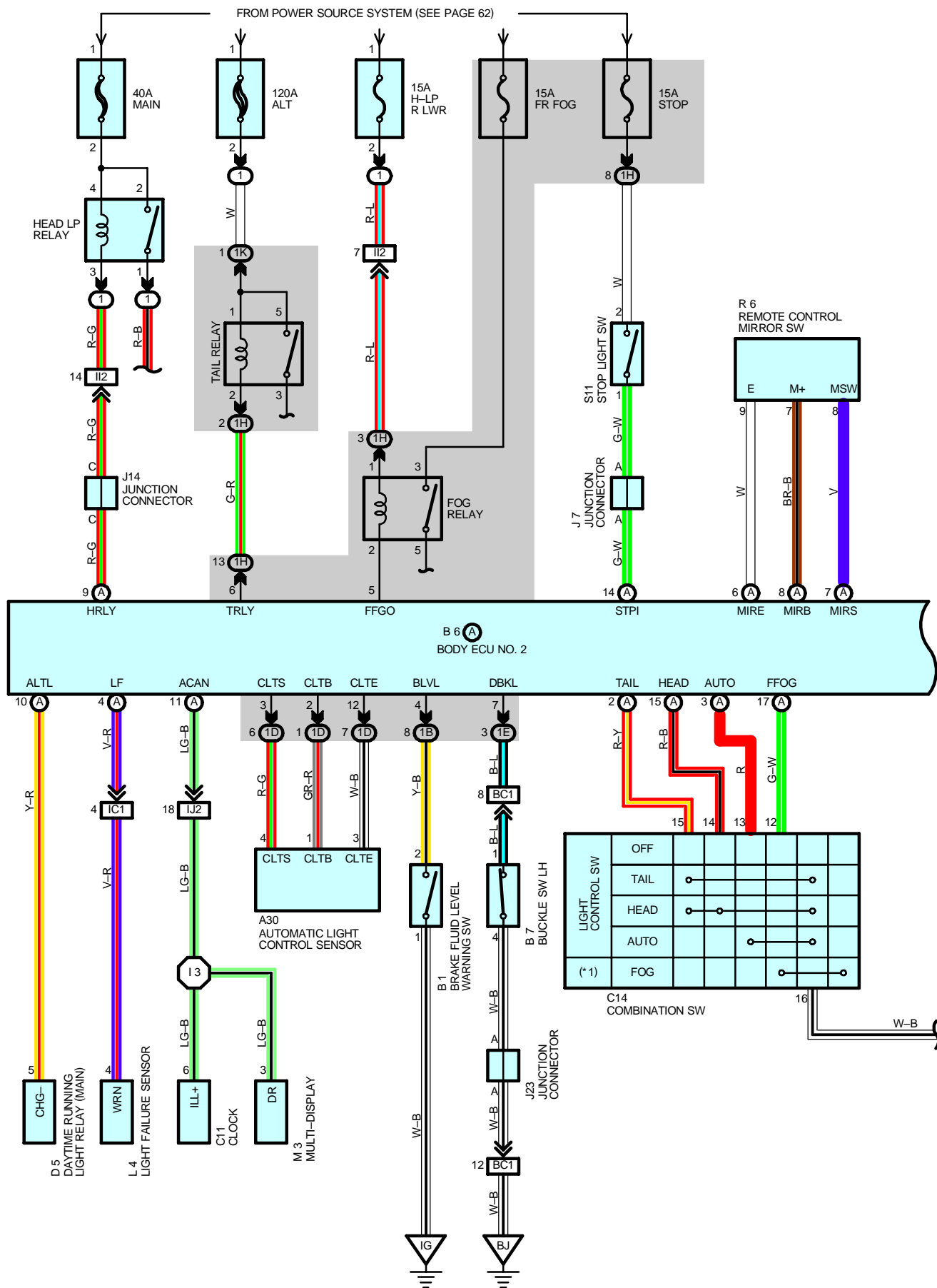
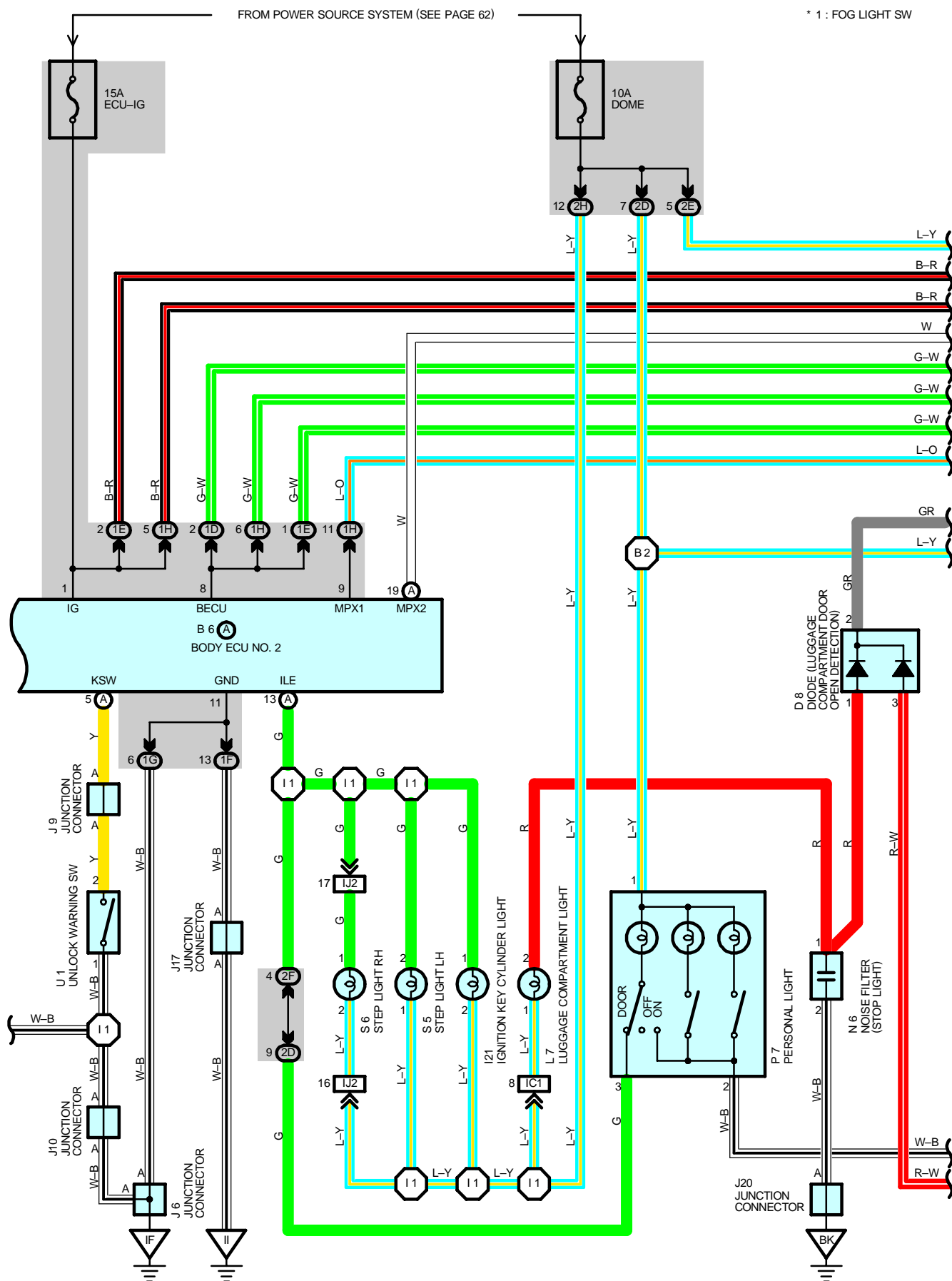
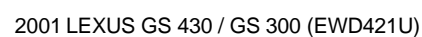


MULTIPLEX COMMUNICATION SYSTEM

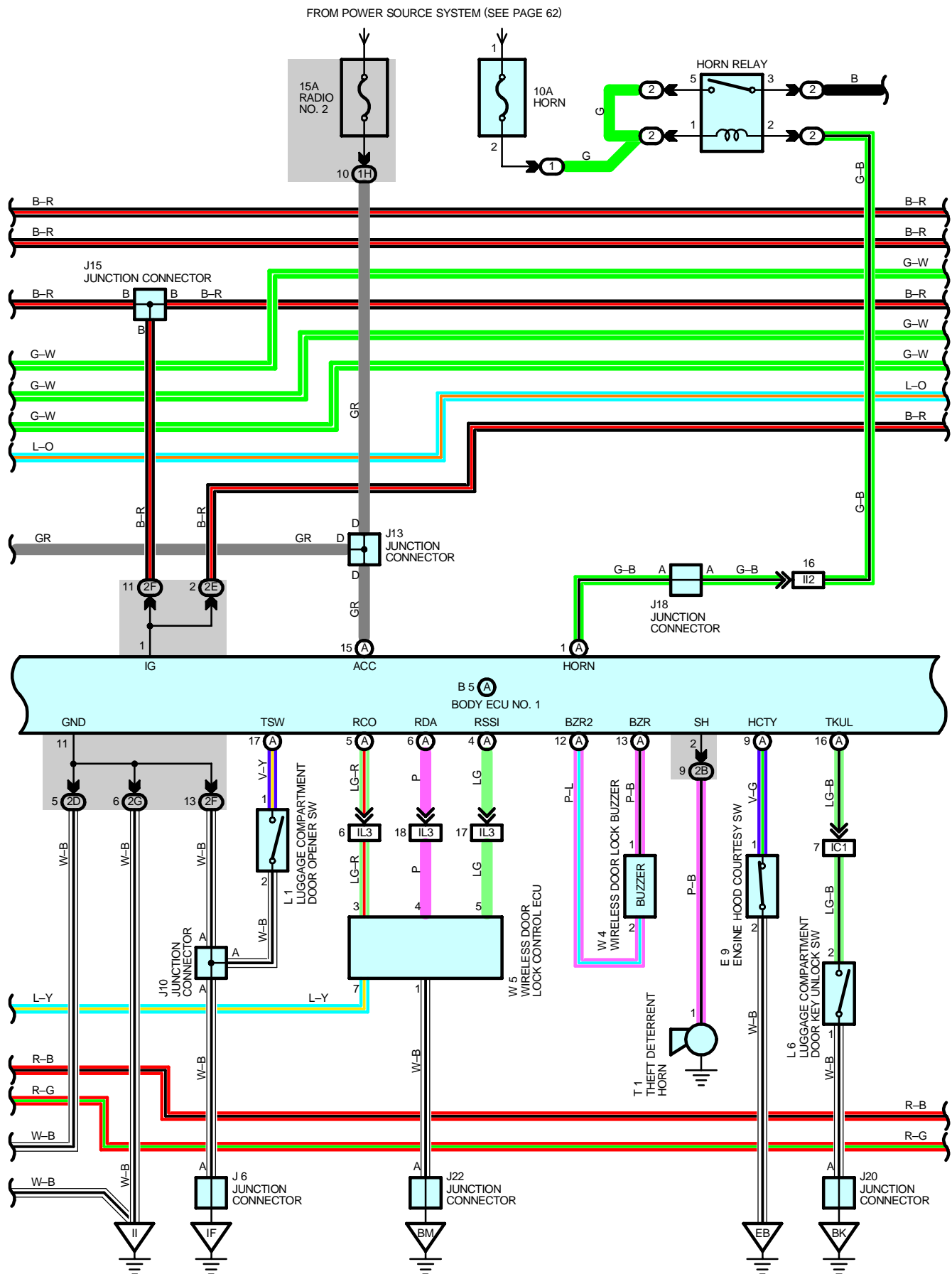




- FROM POWER SOURCE SYSTEM (SEE PAGE 62)

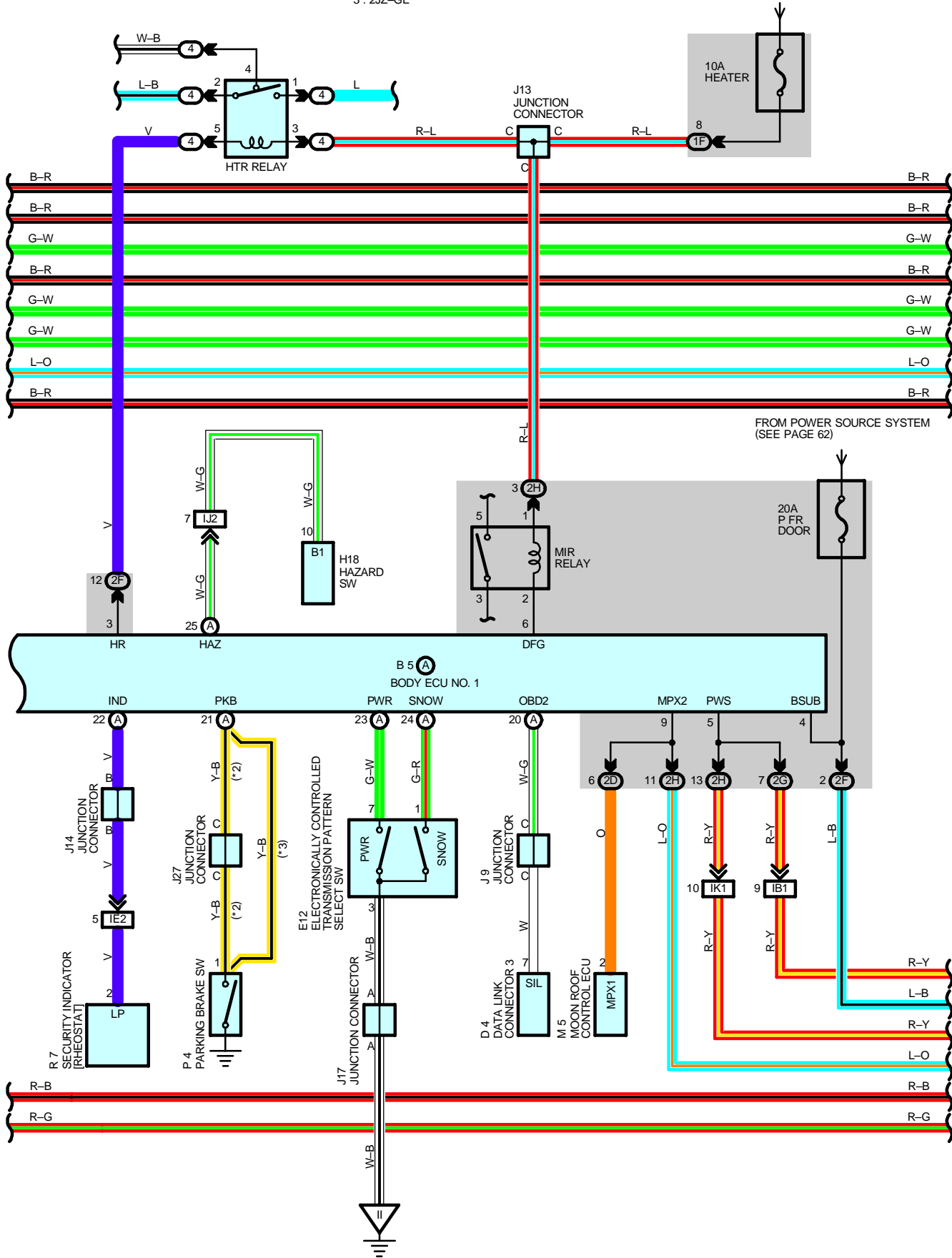


MULTIPLEX COMMUNICATION SYSTEM

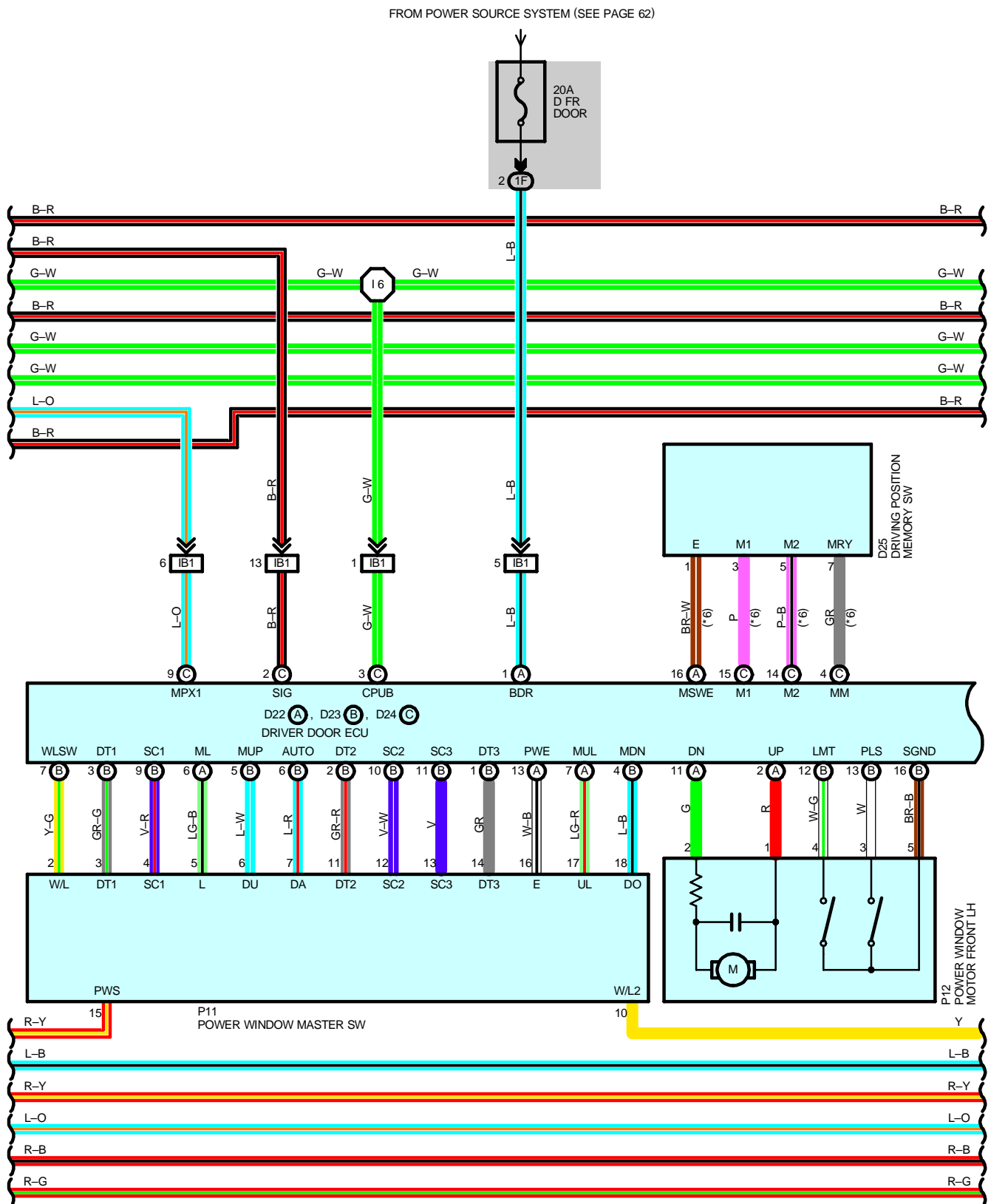


* 2 : 3UZ-FE
* 3 : 2JZ-GE

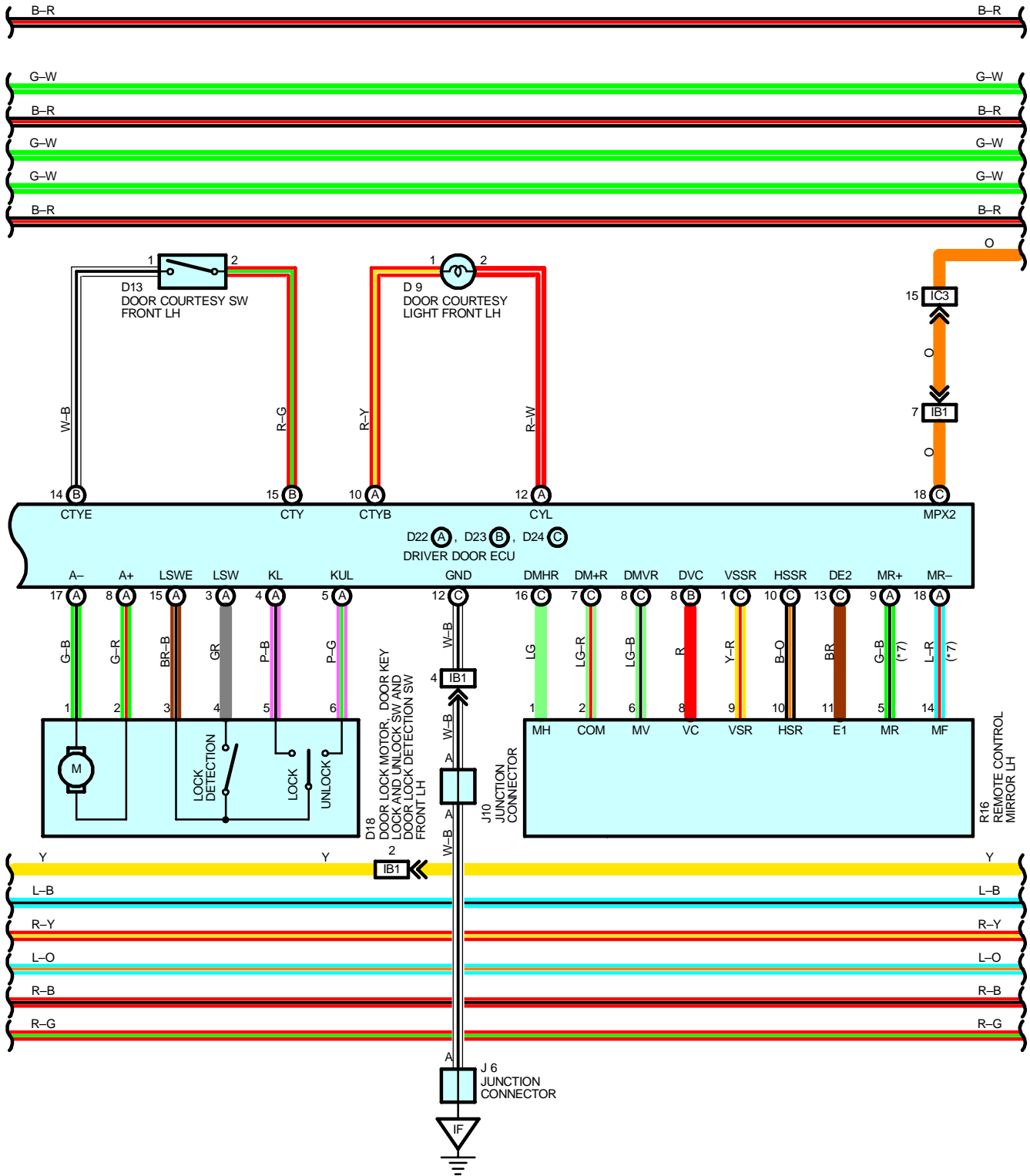
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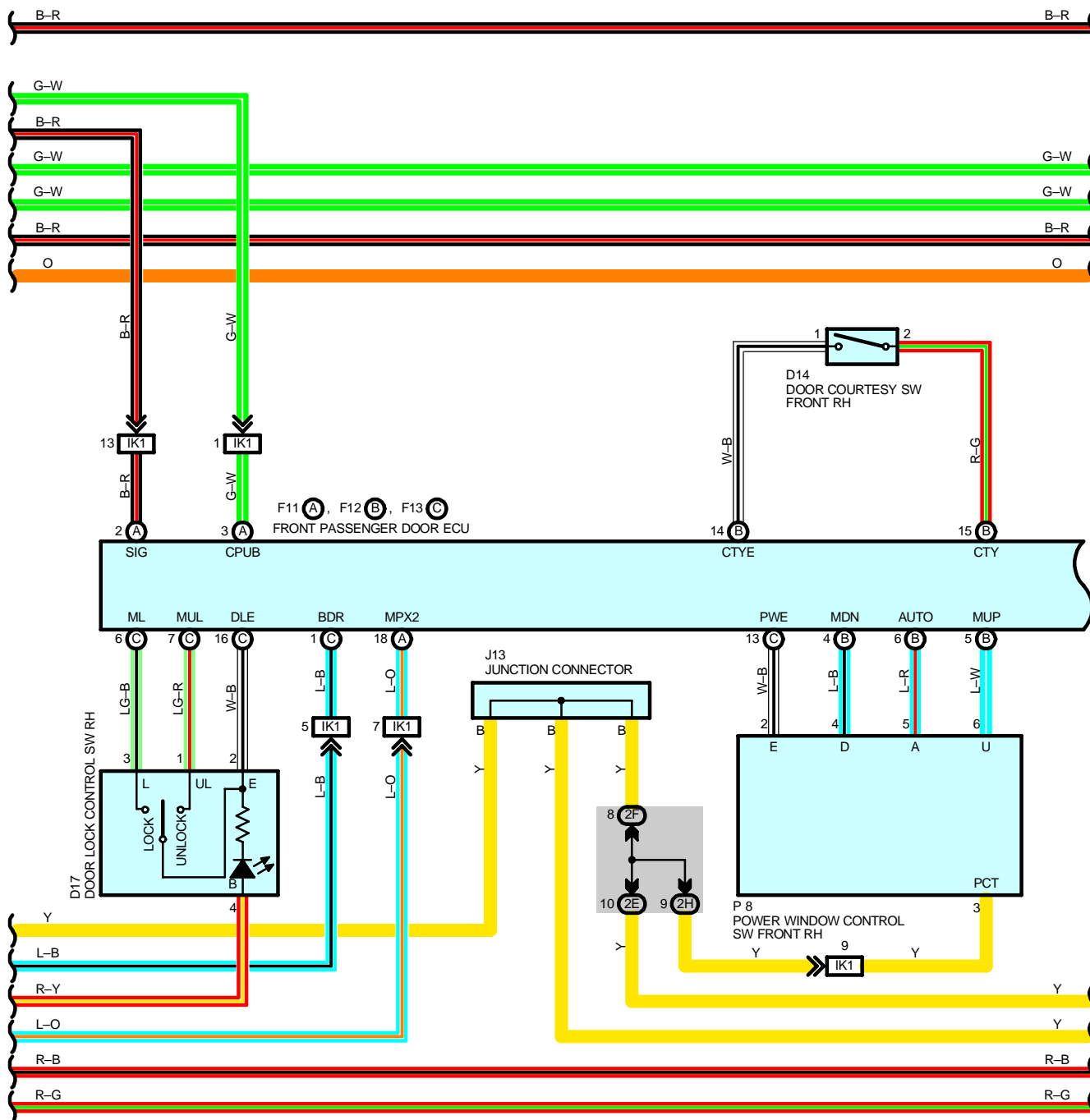
MULTIPLEX COMMUNICATION SYSTEM

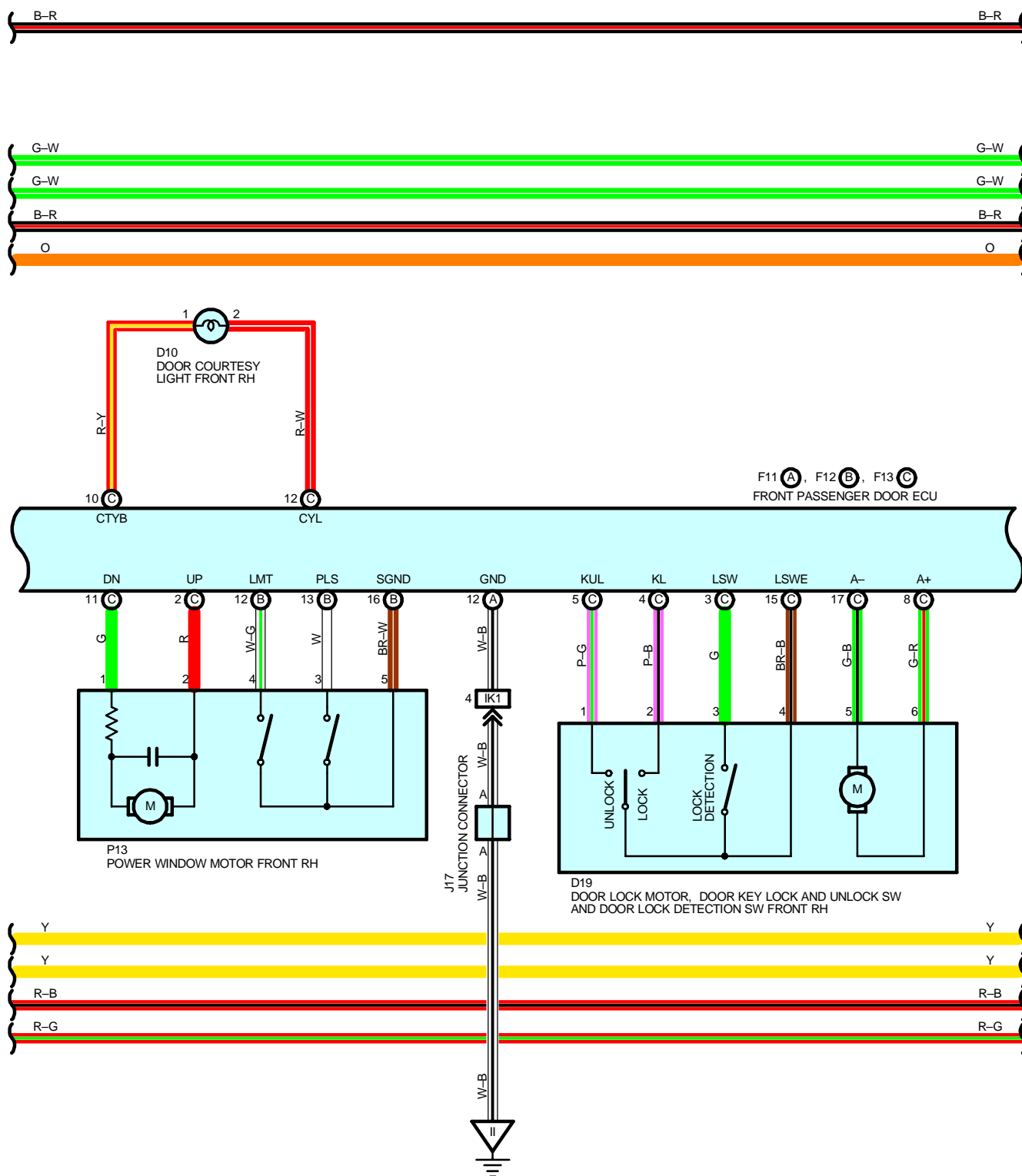


* 6 : W/ DRIVING POSITION MEMORY
 * 7 : TAIWAN



MULTIPLEX COMMUNICATION SYSTEM

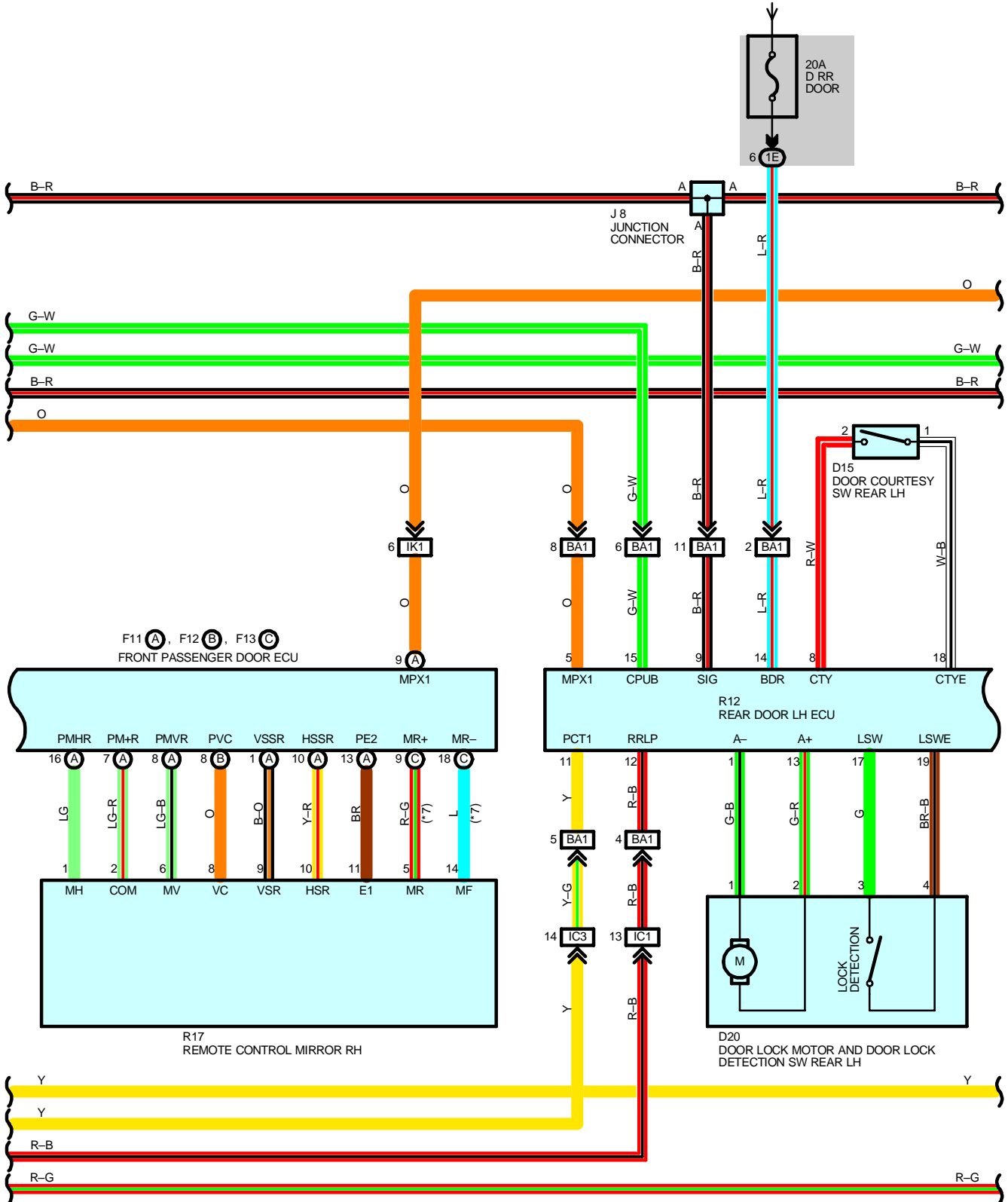




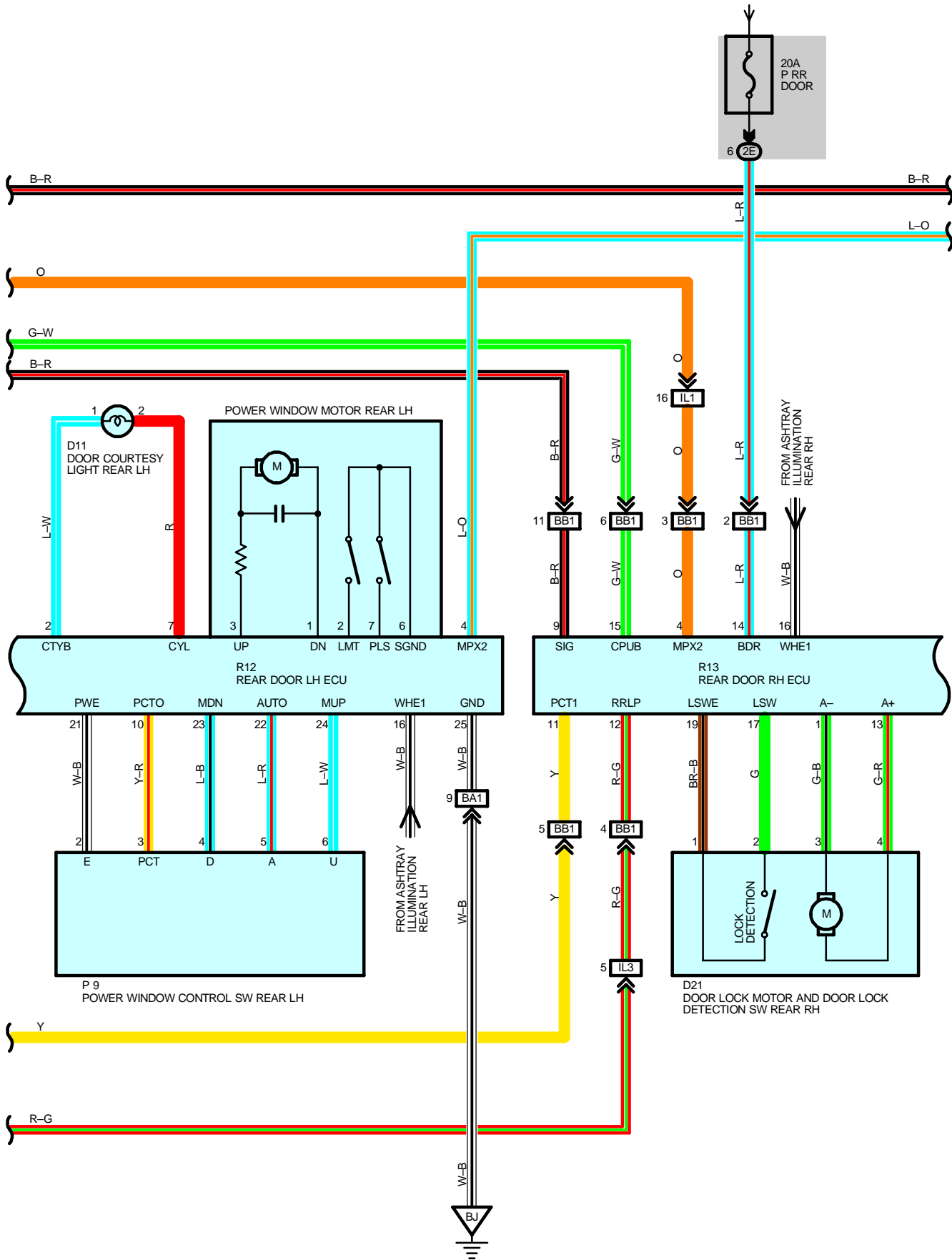
MULTIPLEX COMMUNICATION SYSTEM

* 7 : TAIWAN

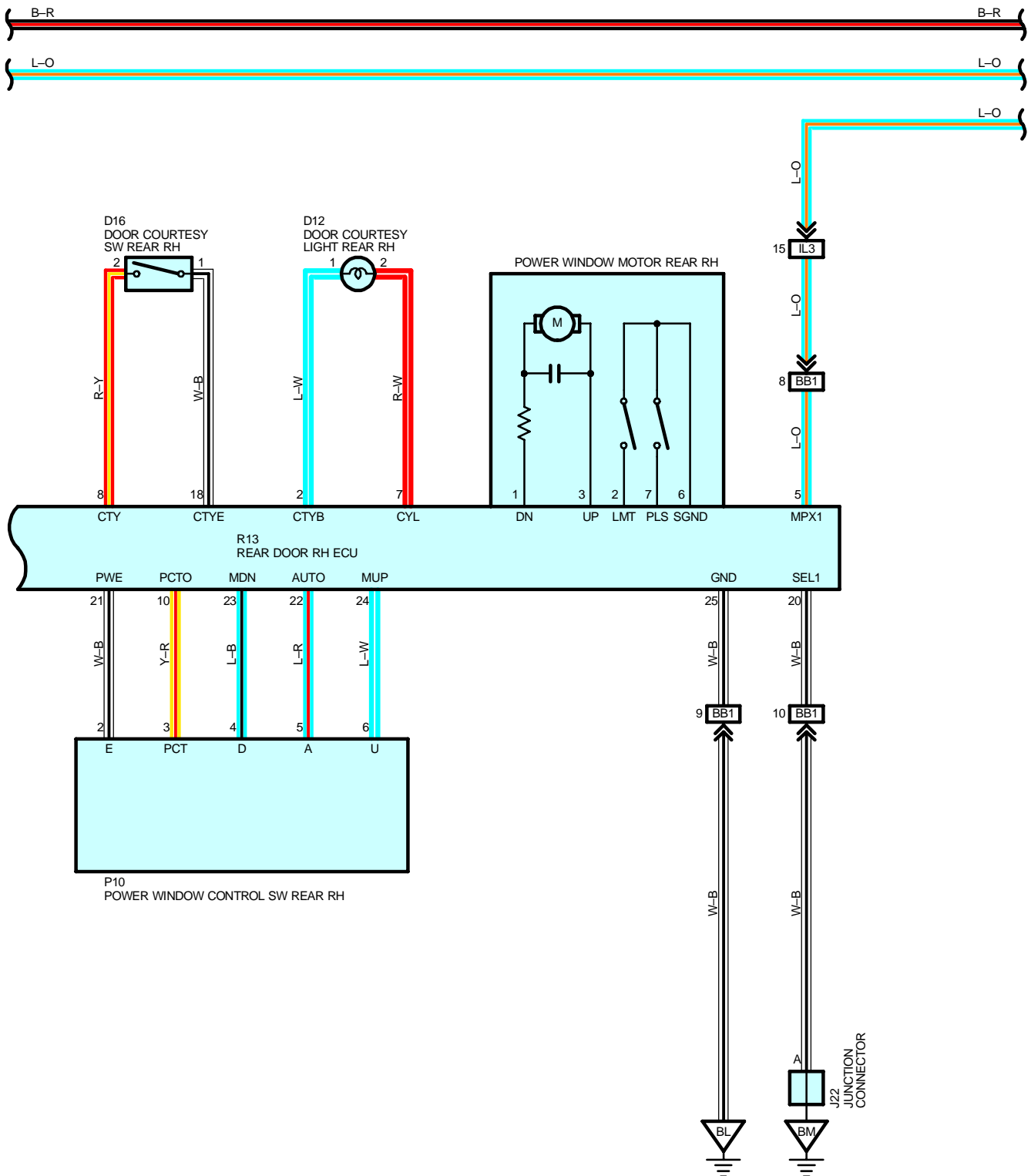
FROM POWER SOURCE SYSTEM (SEE PAGE 62)



FROM POWER SOURCE SYSTEM (SEE PAGE 62)

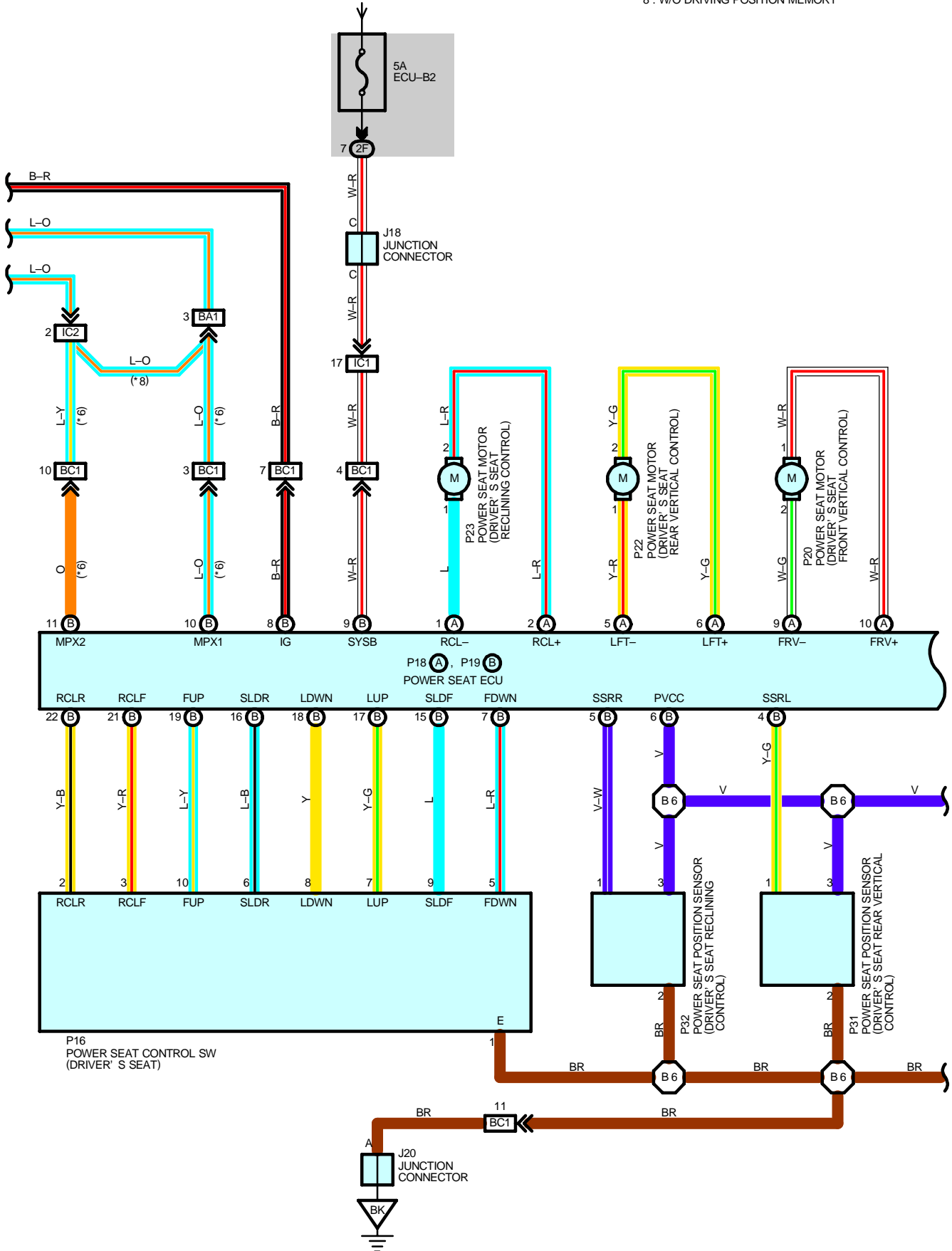


MULTIPLEX COMMUNICATION SYSTEM

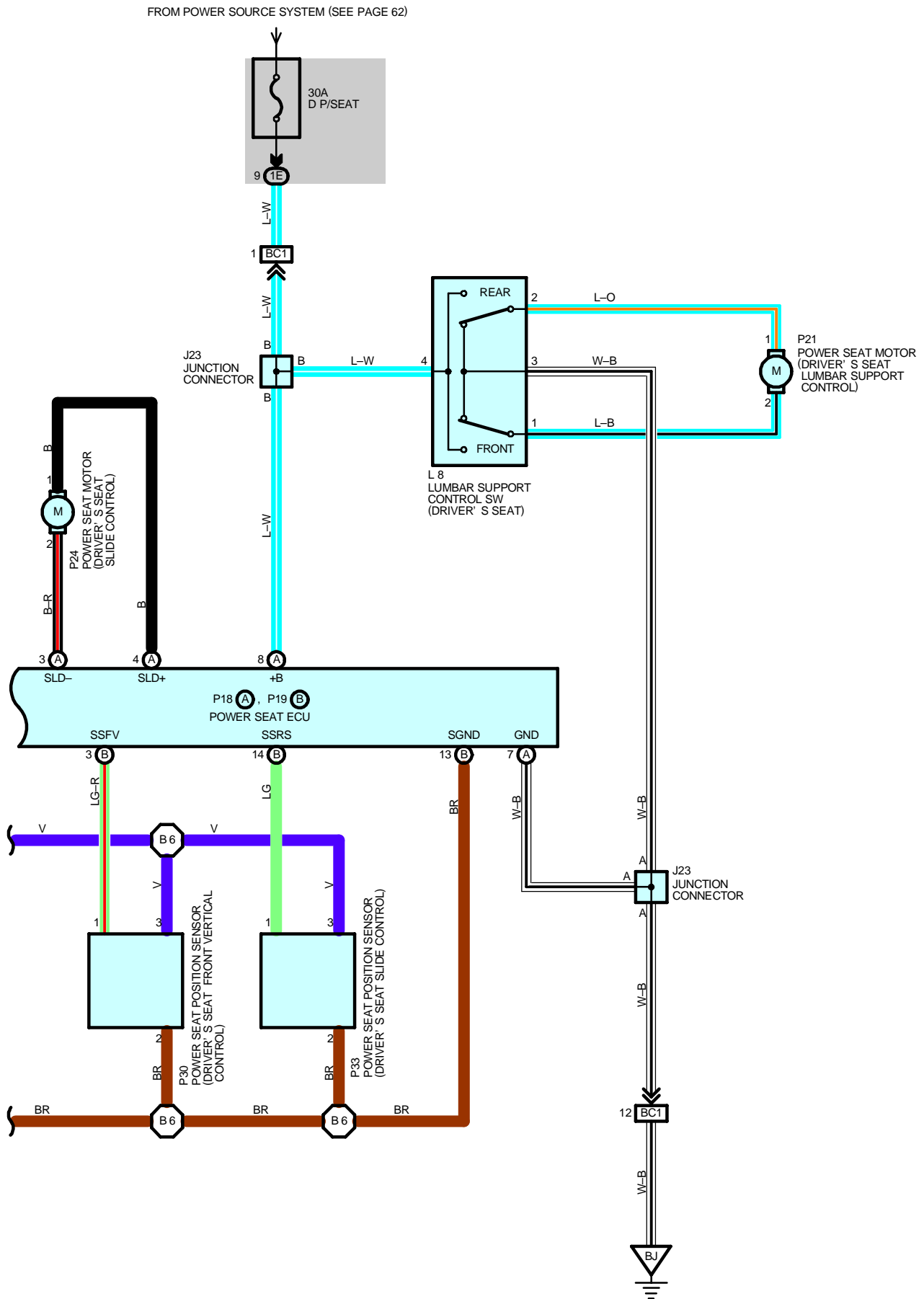


FROM POWER SOURCE SYSTEM (SEE PAGE 62)

* 6 : W/ DRIVING POSITION MEMORY
* 8 : W/O DRIVING POSITION MEMORY



MULTIPLEX COMMUNICATION SYSTEM



SYSTEM OUTLINE

MULTIPLEX COMMUNICATION SYSTEM

The system is comprised of the communication modes of the body ECU No.1, body ECU No.2, driver door ECU, front passenger door ECU, rear door LH ECU, rear door RH ECU, engine control module, combination meter, A/C control assembly, tilt and telescopic ECU, power seat ECU, moon roof control ECU, center airbag sensor assembly and gateway ECU. The body electrical systems are controlled by a serial communication in which each ECU is linked to another via a single communication line. This system is also equipped with a self-diagnosis function.

The table below shows the systems under the control of the MPX communication system and related ECUs (Communication nodes).

SYSTEM \ ECU	Body ECU No.1	Body ECU No.2	Driver Door ECU	Front Passenger Door ECU	Rear Door LH ECU	Rear Door RH ECU	Engine Control Module	Combination Meter	A/C Control Assembly	Tilt and Telescopic ECU	Power Seat ECU	Moon Roof Control ECU	Center Airbag Sensor Assembly	Gateway ECU
Power Window	2	2	1	2	2	2	—	—	—	—	—	2	—	—
Theft Deterrent and Door Lock Control	1	2	2	2	2	2	—	2	—	—	—	—	2	—
Wireless Door Lock Control	1	2	2	2	2	2	—	—	—	—	—	2	—	—
Light Auto Turn Off	—	1	2	2	2	2	—	—	—	—	—	—	—	—
Automatic Light Control	—	1	2	—	—	—	—	1	—	—	—	—	—	—
Illuminated Entry	—	1	2	2	2	2	—	—	—	—	—	—	—	—
Key Reminder	—	1	2	—	—	—	—	—	—	—	—	—	—	—
Luggage Compartment Door Opener	1	—	—	—	—	—	—	—	—	—	—	—	—	—
Remote Control Mirror	2	2	1	1	—	—	—	—	—	—	—	—	—	—
Fog Light	—	1	—	—	—	—	—	2	—	—	—	—	—	—
Memory System	—	—	2	2	—	—	—	—	—	2	1	—	—	—
Seat Belt Warning	2	2	—	—	—	—	—	1	—	—	—	—	—	—
C-BEST System	1	—	2	2	2	2	—	—	2	—	—	2	—	—
Diagnosis System	1	2	2	2	2	2	—	2	2	2	2	2	—	—
Electronically Controlled Transmission Signal	2	—	—	—	—	—	1	2	—	—	—	—	—	—
Automatic Air Conditioning	2	—	—	—	—	—	2	—	1	—	—	—	—	2
Combination Meter	2	2	2	2	2	2	2	1	2	—	—	2	2	—
Multi Information Display	—	—	—	—	—	—	2	1	—	—	—	—	—	2
Steering Wheel Audio Control	—	—	—	—	—	—	—	—	—	—	—	—	—	2

1 : Master control 2 : Sub control

MULTIPLEX COMMUNICATION SYSTEM

1. COMMUNICATION OUTLINE

Communication is implemented among the body No.1, No.2, driver door, front passenger door, rear door LH, rear door RH, center airbag sensor assembly, gateway tilt and telescopic, A/C control assembly, moon roof, power seat, engine control ECUs.

Upon receiving signals from applicable switches such as the door lock control switch or door courtesy light switch, each ECU determines the conditions of the switches as well as of the doors, and after converting this information into digital signals, outputs them to other ECUs via serial data communication. The ECU that receives these digital signals determines the conditions of the switches and doors so that it can implement various controls such as to activate a door lock motor.

However, if there are no changes in the input signals because no doors were opened and no switches were used within 30 seconds, the body ECU interrupts the communication to save electricity. Following this interruption, any changes in the input signals will cause the communication to resume.

For details please refer to the new car features and repair manuals.

SERVICE HINTS

BODY ECU NO.2

- 1-GROUND : Approx. **12** volts with ignition SW at **ON** or **ST** position
- 8-GROUND : Always approx. **12** volts
- 11-GROUND : Always continuity

G6 GATEWAY ECU

- 8-GROUND : Always approx. **12** volts
- 2-GROUND : Approx. **12** volts with ignition SW at **ON** or **ST** position
- 9-GROUND : Approx. **12** volts with ignition SW at **ACC** or **ON** position
- 7-GROUND : Always continuity
- 14-GROUND : Always continuity

B5 (A) BODY ECU NO.1

- 1-GROUND : Approx. **12** volts with ignition SW at **ON** or **ST** position
- 4-GROUND : Always approx. **12** volts
- 8-GROUND : Always approx. **12** volts
- 11-GROUND : Always continuity
- (A)15-GROUND : Approx. **12** volts with ignition SW at **ACC** or **ON** position

D22 (A), D24 (C) DRIVER DOOR ECU

- (C) 2-GROUND : Approx. **12** volts with ignition SW at **ON** or **ST** position
- (C) 3-GROUND : Always approx. **12** volts
- (A) 1-GROUND : Always approx. **12** volts
- (C)12-GROUND : Always continuity

F11 (A), F13 (C) FRONT PASSENGER DOOR ECU

- (A) 2-GROUND : Approx. **12** volts with ignition SW at **ON** or **ST** position
- (A) 3-GROUND : Always approx. **12** volts
- (C) 1-GROUND : Always approx. **12** volts
- (A)12-GROUND : Always continuity

R12 REAR DOOR LH ECU

- 9-GROUND : Approx. **12** volts with ignition SW at **ON** or **ST** position
- 15-GROUND : Always approx. **12** volts
- 14-GROUND : Always approx. **12** volts
- 25-GROUND : Always continuity

R13 REAR DOOR RH ECU

- 9-GROUND : Approx. **12** volts with ignition SW at **ON** or **ST** position
- 15-GROUND : Always approx. **12** volts
- 14-GROUND : Always approx. **12** volts
- 20-GROUND : Always continuity
- 25-GROUND : Always continuity

○ : PARTS LOCATION

Code		See Page	Code		See Page	Code		See Page
A13		42	E12		42	P8		45
A30		42	F11	A	44	P9		45
B1		38 (3UZ-FE)	F12	B	44	P10		45
		40 (2JZ-GE)	F13	C	44	P11		45
B5	A	42	G5		44	P12		45
B6	A	42	G6		42	P13		45
B7		46	H18		42	P16		46
C8		42	I21		43	P18	A	46
C11		42	I24		44	P19	B	46
C12	A	42	I25		44	P20		46
C13	B	42	J6		43	P21		46
C14		42	J7		43	P22		46
C16		42	J8		43	P23		46
D4		42	J9		43	P24		46
D5		42	J10		43	P30		46
D8		44	J13		43	P31		46
D9		44	J14		43	P32		46
D10		44	J15		43	P33		46
D11		44	J17		43	R2		43
D12		44	J18		43	R6		43
D13		44	J20		44	R7		43
D14		44	J22		44	R12		45
D15		44	J23		46	R13		45
D16		44	J27		43	R16		45
D17		44	L1		43	R17		45
D18		44	L4		45	S5		43
D19		44	L5		45	S6		43
D20		44	L6		45	S11		43
D21		44	L7		45	T1	39 (3UZ-FE)	
D22	A	44	L8		46		41 (2JZ-GE)	
D23	B	44	M3		43	T5		43
D24	C	44	M4		43	U1		43
D25		44	M5		45	V8		45

○ : PARTS LOCATION

Code		See Page	Code	See Page	Code	See Page
E5	D	38 (3UZ-FE)	M7	43	V9	45
		40 (2JZ-GE)	N6	45	W4	39 (3UZ-FE)
E9		38 (3UZ-FE)	P4	43		41 (2JZ-GE)
		40 (2JZ-GE)	P7	45	W5	45

○ : RELAY BLOCKS

Code	See Page	Relay Blocks (Relay Block Location)
1	24	Engine Room No.1 R/B (Engine Compartment Right)
2	25	Engine Room No.2 R/B (Engine Compartment Left)
4	27	Passenger Side R/B (Right Kick Panel)

MULTIPLEX COMMUNICATION SYSTEM



: JUNCTION BLOCK AND WIRE HARNESS CONNECTOR

Code	See Page	Junction Block and Wire Harness (Connector Location)
1B	28	Cowl Wire and Driver Side J/B (Left Kick Panel)
1D	28	Instrument Panel Wire and Driver Side J/B (Left Kick Panel)
1E	28	Floor No.2 Wire and Driver Side J/B (Left Kick Panel)
1F	28	Cowl Wire and Driver Side J/B (Left Kick Panel)
1G	29	
1H		
1K	28	Engine Room Main Wire and Driver Side J/B (Left Kick Panel)
2B	30	Engine Room Main Wire and Passenger Side J/B (Right Kick Panel)
2D	30	Roof Wire and Passenger Side J/B (Right Kick Panel)
2E	30	Floor No.1 Wire and Passenger Side J/B (Right Kick Panel)
2F	30	Cowl Wire and Passenger Side J/B (Right Kick Panel)
2G	31	
2H		



: CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

Code	See Page	Joining Wire Harness and Wire Harness (Connector Location)
IB1	52	Front Door LH Wire and Cowl Wire (Left Kick Panel)
IC1	52	Floor No.2 Wire and Cowl Wire (Left Kick Panel)
IC2		
IC3		
ID1	52	Cowl Wire and Cowl Wire (Left Side of the Instrument Panel Reinforcement)
IE1	52	Instrument Panel Wire and Cowl Wire (Left Side of the Steering Column)
IE2		
II2	52	Engine Room Main Wire and Cowl Wire (Near the Passenger Side R/B)
IJ1	54	Instrument Panel Wire and Cowl Wire (Left Side of the Blower Unit)
IJ2		
IK1	54	Front Door RH Wire and Cowl Wire (Right Kick Panel)
IL1	54	Floor No.1 Wire and Cowl Wire (Right Kick Panel)
IL3		
BA1	56	Rear Door LH Wire and Floor No.2 Wire (Under the Center Pillar LH)
BB1	56	Rear Door RH Wire and Floor No.1 Wire (Under the Center Pillar RH)
BC1	58	Floor No.2 Wire and Front Seat LH Wire (Under the Driver's Seat)



: GROUND POINTS

Code	See Page	Ground Points Location
EB	48 (3UZ-FE)	Left Fender
	50 (2JZ-GE)	
IF	52	Left Kick Panel
IG	52	Left Side of the Cowl Panel
II	52	Right Side of the Cowl Panel

**: GROUND POINTS**

Code	See Page	Ground Points Location
BJ	56	Rear Floor Partition Panel LH
BK	56	Quarter Panel LH
BL	56	Rear Floor Partition Panel RH
BM	56	Quarter Panel RH

**: SPLICE POINTS**

Code	See Page	Wire Harness with Splice Points	Code	See Page	Wire Harness with Splice Points
I1	54	Cowl Wire	B2	56	Roof Wire
I3	54	Instrument Panel Wire	B6	58	Front Seat LH Wire
I6	54	Cowl Wire			

