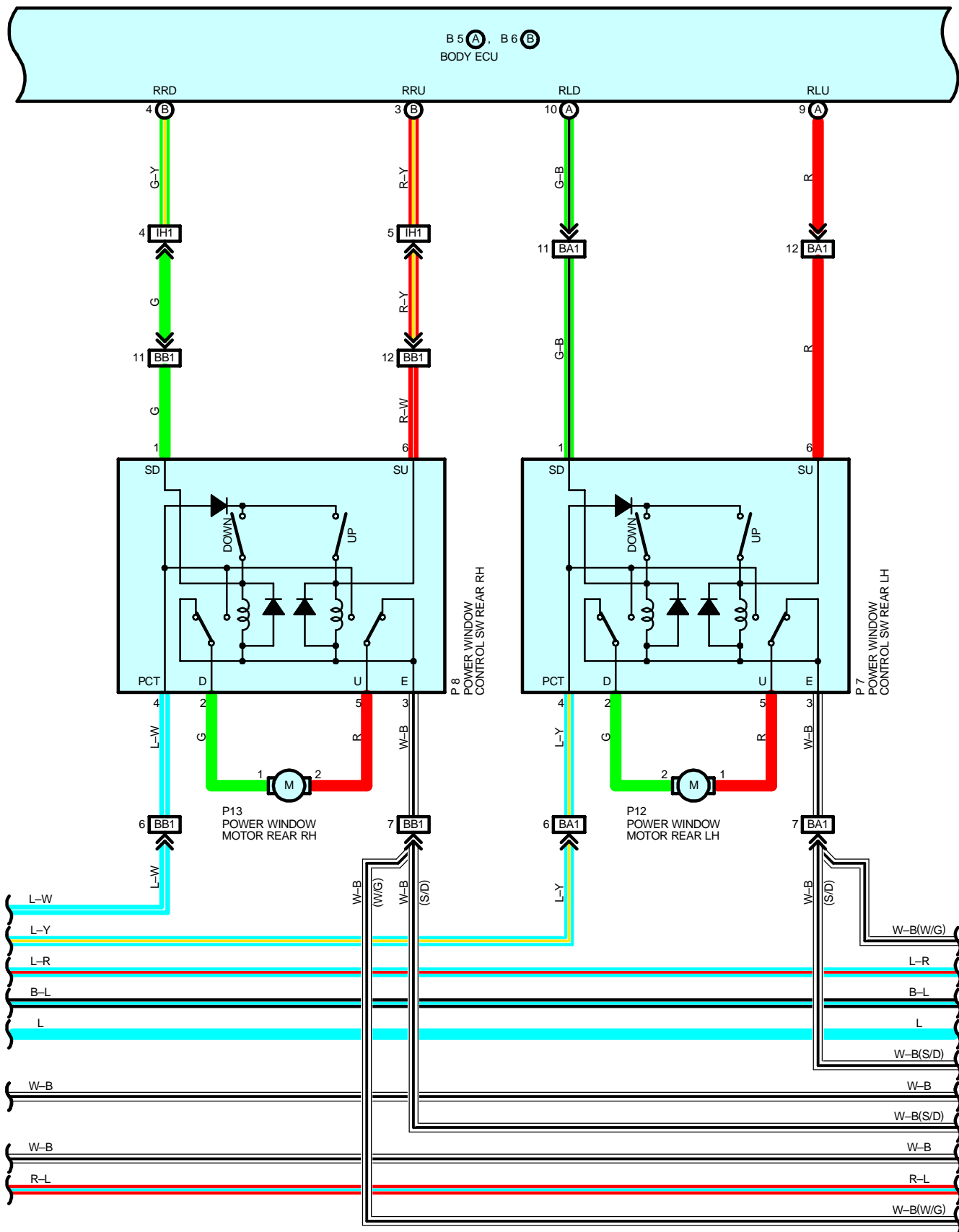
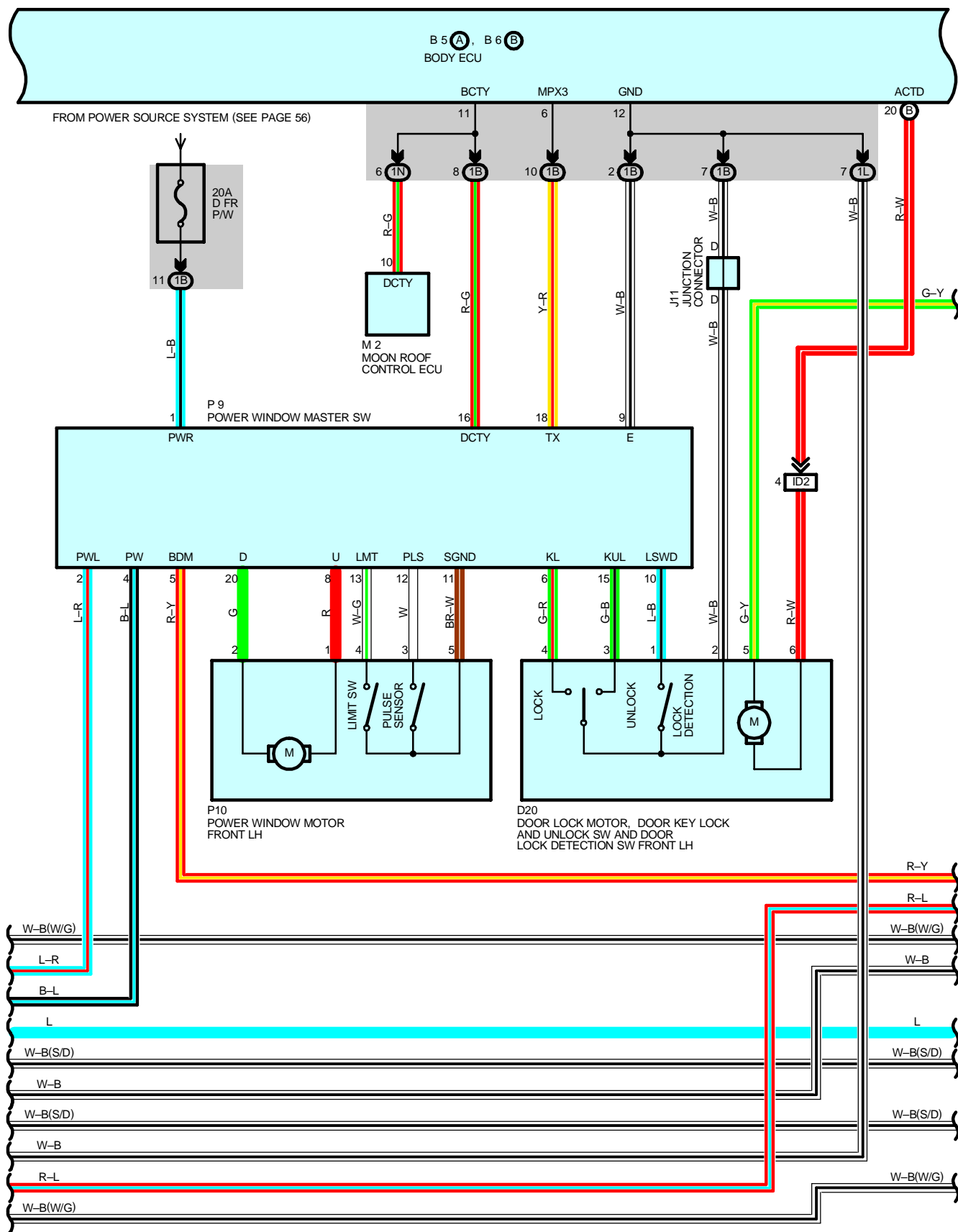
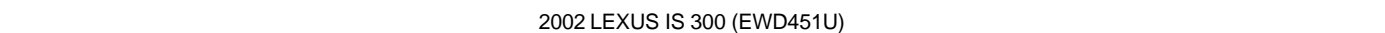
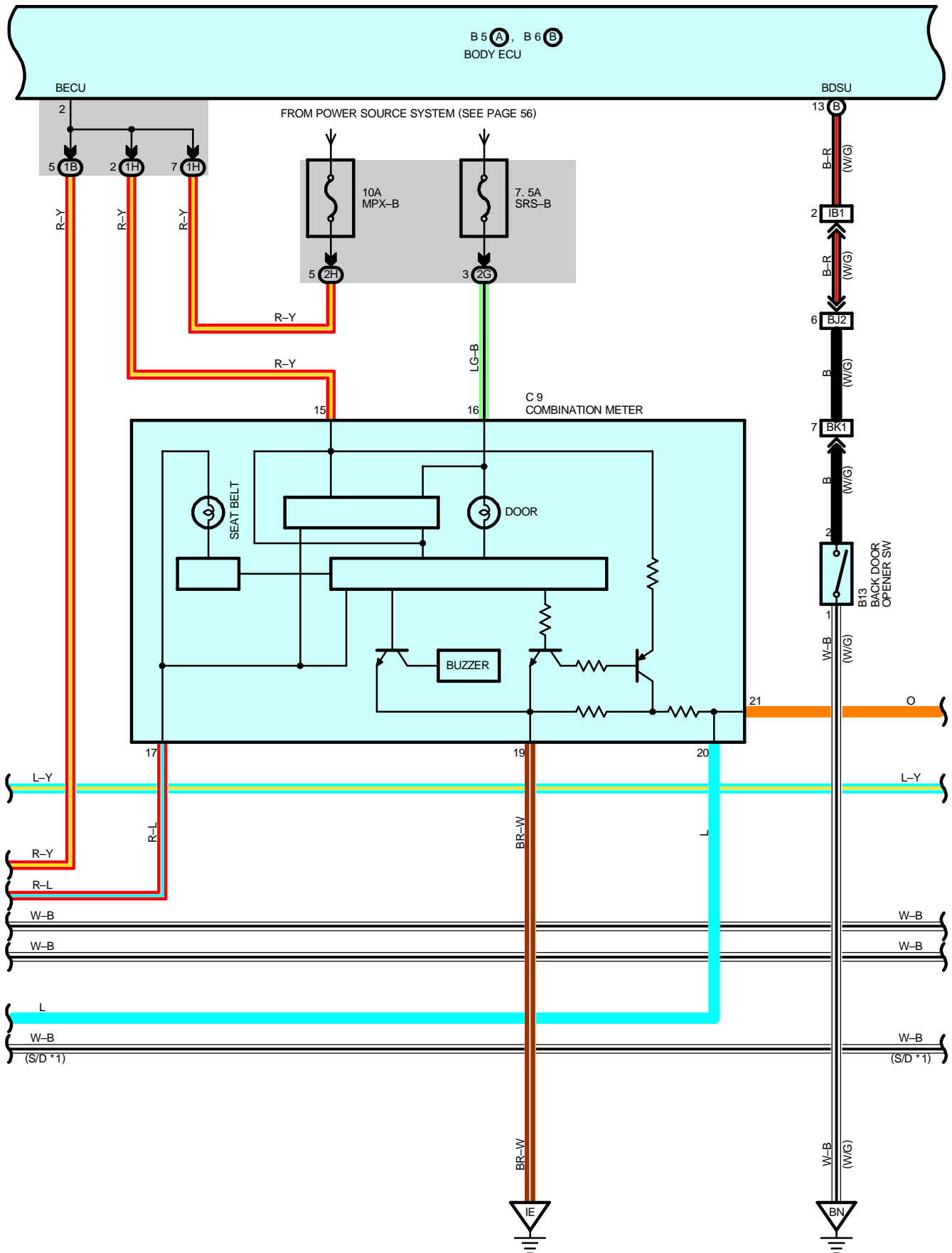


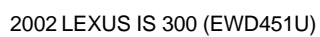
MULTIPLEX COMMUNICATION SYSTEM

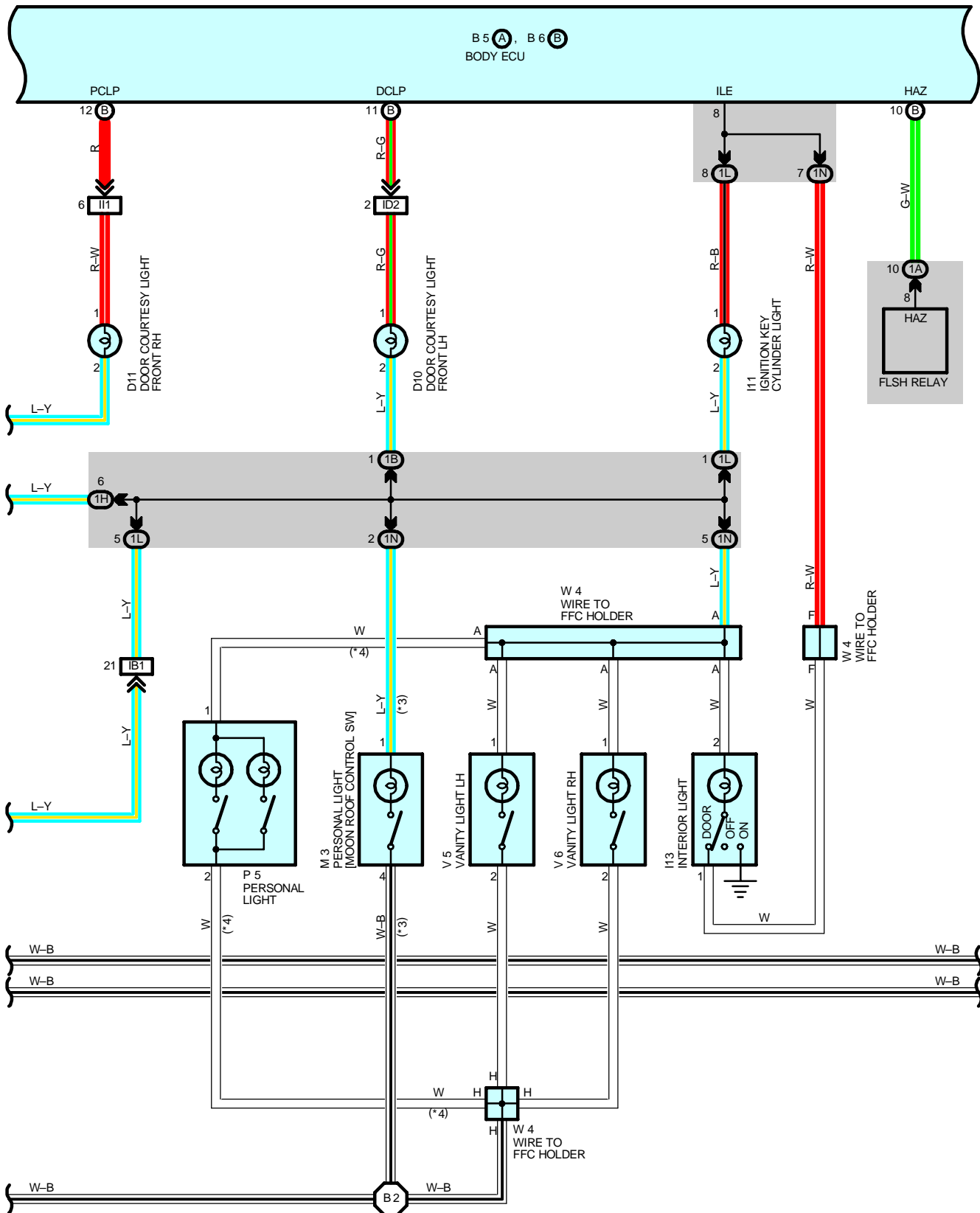


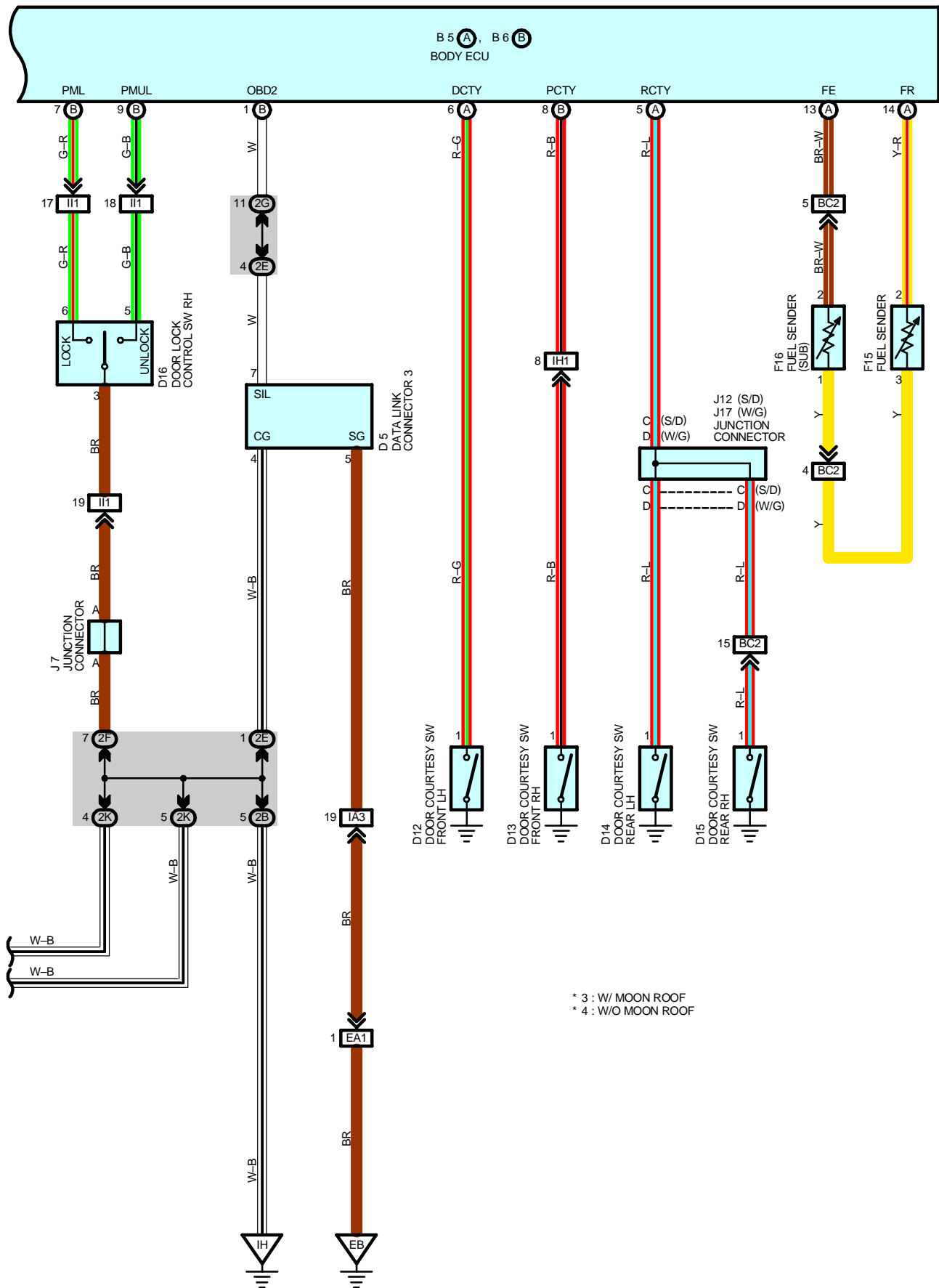












MULTIPLEX COMMUNICATION SYSTEM

SYSTEM OUTLINE

MULTIPLEX COMMUNICATION SYSTEM

The system is comprised of the communication modes of the body ECU, engine control module, theft deterrent ECU, power window master SW, combination meter and A/C control assembly. 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).

	Body ECU	Engine Control Module	Combination Meter	A/C Control Assembly	Theft Deterrent ECU
Door Lock Control	1	—	—	—	—
Wireless Door Lock Control	1	—	—	—	2
Light Auto Turn Off	—	—	—	—	1
Automatic Light Control	—	—	—	—	1
Theft Deterrent	2	—	—	—	1
Illuminated Entry	1	—	—	—	—
Key Reminder Buzzer	1	—	2	—	—
Luggage Compartment Door or Back Door Opener	1	—	—	—	—
C-BEST System	1	—	2	2	2
Diagnosis System	1	—	2	2	2
Seat Belt Warning	1	—	2	—	—
Electronically Controlled Transmission Signal	—	1	2	2	—
A/C Control	—	2	—	1	—
Multi Information Display	2	2	1	2	—

1 : Master control 2 : Sub control

1. COMMUNICATION OUTLINE

Communication is implemented among the combination meter, A/C control assembly, body ECU, engine control module and theft deterrent ECU, and among the body ECU and power window master SW.

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

B5 (A), B6 (B) BODY ECU

3-GROUND : Approx. **12** volts with the ignition SW at **ON** position

1-GROUND : Always approx. **12** volts

2-GROUND : Always approx. **12** volts

12-GROUND : Always continuity

4-GROUND : Approx. **12** volts with the ignition SW at **ACC** or **ON** position

(B)19-GROUND : Always continuity

MULTIPLEX COMMUNICATION SYSTEM

○ : PARTS LOCATION

Code		See Page	Code		See Page	Code		See Page	
A12	A	34	D17		38 (W/G)	M2		37 (S/D)	
A13	B	34	D18		36 (S/D)			39 (W/G)	
B5	A	34			D19		38 (W/G)	M3	37 (S/D)
B6	B	34	D20				36 (S/D)	39 (W/G)	
B7		36 (S/D w/o Power Seat)			D20		38 (W/G)	P5	37 (S/D)
		38 (W/G w/o Power Seat)	36 (S/D)	39 (W/G)					
		40 (w/ Power Seat)	38 (W/G)	P6			37 (S/D)		
B8		36 (S/D w/o Power Seat)	E4	32	P6		39 (W/G)		
		38 (W/G w/o Power Seat)	F15				36 (S/D)	P7	37 (S/D)
		40 (w/ Power Seat)					38 (W/G)	39 (W/G)	
B11	B	38 (W/G)	F16		36 (S/D)	P8		37 (S/D)	
B12	B	38 (W/G)			38 (W/G)			39 (W/G)	
B13		38 (W/G)	I11		35	P9		37 (S/D)	
C9		34	I13		36 (S/D)			39 (W/G)	
C11		34			J5		38 (W/G)	P10	37 (S/D)
D5		34	J6				35	39 (W/G)	
D9		36 (S/D)	J7		35	P11		37 (S/D)	
		38 (W/G)	J11		36 (S/D)			39 (W/G)	
D10		36 (S/D)	J12		38 (W/G)	P12		37 (S/D)	
		38 (W/G)			36 (S/D)			39 (W/G)	
D11		36 (S/D)	J13		38 (W/G)	P13		37 (S/D)	
		38 (W/G)			36 (S/D)			39 (W/G)	
D12		36 (S/D)	J15		38 (W/G)	T5	A	35	
		38 (W/G)			36 (S/D)	T6	B	35	
D13		36 (S/D)	J16		38 (W/G)	U1		35	
		38 (W/G)			36 (S/D)			V5	
D14		36 (S/D)	J17		38 (W/G)	V5		39 (W/G)	
		38 (W/G)			38 (W/G)			V6	
D15		36 (S/D)	K1		33	V6		39 (W/G)	
		38 (W/G)	L4	A	36 (S/D)			W3	
D16		36 (S/D)	L6		A	36 (S/D)	W3		39 (W/G)
		38 (W/G)	L7		36 (S/D)	W4			37 (S/D)
D17		36 (S/D)			L7		38 (W/G)	W4	

○ : RELAY BLOCKS

Code	See Page	Relay Blocks (Relay Block Location)
1	22	Engine Room No.1 R/B (Engine Compartment Right)

: JUNCTION BLOCK AND WIRE HARNESS CONNECTOR

Code	See Page	Junction Block and Wire Harness (Connector Location)
1A	24	Instrument Panel Wire and Driver Side J/B (Left Kick Panel)
1B	24	Front Door LH Wire and Driver Side J/B (Left Kick Panel)
1E	24	Instrument Panel Wire and Driver Side J/B (Left Kick Panel)
1F		
1G	24	Engine Room Main Wire and Driver Side J/B (Left Kick Panel)
1H	24	Instrument Panel Wire and Driver Side J/B (Left Kick Panel)
1I	24	Floor No.2 Wire and Driver Side J/B (Left Kick Panel)
1L	24	Instrument Panel Wire and Driver Side J/B (Left Kick Panel)
1N	24	Roof Wire and Driver Side J/B (Left Kick Panel)
1O	24	Engine Room Main Wire and Driver Side J/B (Left Kick Panel)
2B	26	Engine Room Main Wire and Passenger Side J/B (Right Kick Panel)
2C		
2E	26	Instrument Panel Wire and Passenger Side J/B (Right Kick Panel)
2F		
2G		
2H		
2I		
2K	26	Front Door RH Wire and Passenger Side J/B (Right Kick Panel)
2L	26	Floor Wire and Passenger Side J/B (Right Kick Panel)

: CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

Code	See Page	Joining Wire Harness and Wire Harness (Connector Location)
EA1	42	Engine Wire and Engine Room Main Wire (Inside of the ECU Box)
IA1	44	Instrument Panel Wire and Engine Room Main Wire (Near the Driver Side J/B)
IA3		
IB1	44	Instrument Panel Wire and Floor No.2 Wire (Near the Driver Side J/B)
IB3		
ID2	44	Front Door LH Wire and Instrument Panel Wire (Left Kick Panel)
IH1	46	Instrument Panel Wire and Floor Wire (Near the Passenger Side J/B)
II1	46	Front Door RH Wire and Instrument Panel Wire (Right Kick Panel)
IJ1	46	Roof Wire and Floor No.2 Wire (Left Side of the Instrument Panel)
BA1	48 (S/D)	Rear Door No.2 Wire and Floor No.2 Wire (Left Center Pillar)
	50 (W/G)	
BB1	48 (S/D)	Rear Door No.1 Wire and Floor Wire (Right Center Pillar)
	50 (W/G)	
BC2	48 (S/D)	Floor No.2 Wire and Floor Wire (Rear Floor Partition Panel RH)
	50 (W/G)	Floor No.2 Wire and Floor Wire (Rear Floor Partition Panel Center)
BG1	52	Floor No.2 Wire and Front Seat LH Wire (Under the Driver's Seat)
BH1	52	Floor Wire and Front Seat RH Wire (Under the Front Passenger's Seat)
BJ2	50 (W/G)	Back Door No.1 Wire and Floor No.2 Wire (Left Side of the Back Panel Upper)
BK1	50 (W/G)	Back Door No.1 Wire and Back Door No.2 Wire (Left Side of the Back Panel Lower)

MULTIPLEX COMMUNICATION SYSTEM



: GROUND POINTS

Code	See Page	Ground Points Location
EB	42	Center Side of the Intake Manifold
EC	42	Left Fender Apron
ID	44	Cowl Side Panel LH
IE	44	Front Floor Panel Center LH
IH	44	Cowl Side Panel RH
BJ	48 (S/D)	Front Floor Panel LH
	50 (W/G)	
BK	48 (S/D)	Front Floor Panel RH
	50 (W/G)	
BL	48 (S/D)	Left Quarter Panel LH
	50 (W/G)	
BN	50 (W/G)	Right Side of the Back Panel Lower



: SPLICE POINTS

Code	See Page	Wire Harness with Splice Points	Code	See Page	Wire Harness with Splice Points
I2	46	Instrument Panel Wire	B4	48 (S/D)	Floor No.2 Wire
B2	48 (S/D)	Roof Wire		50 (W/G)	
	50 (W/G)		B7	50 (W/G)	Floor Wire
B3	48 (S/D)	Floor No.2 Wire			

