

MULTIPLEX COMMUNICATION SYSTEM (RHD)

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 and ECT ECU, combination meter, A/C control assembly, navigation ECU, tilt and telescopic ECU, power seat ECU and moon roof control 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).

	Body ECU No.1	Body ECU No.2	Driver Door ECU	Front Passenger Door ECU	Rear Door LH ECU	Rear Door RH ECU	Engine and ECT ECU	Combination Meter	A/C Control Assembly	Navigation ECU	Tilt and Telescopic ECU	Power Seat ECU	Moon Roof Control ECU
Power Window	2	2	1	2	2	2	—	—	—	—	—	—	2
Theft Deterrent and Door Lock Control	1	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	—	—	—	—	—	—	—	—	—
Shift Lock	—	1	—	—	—	—	2	—	—	—	—	—	—
Fog Light	—	1	—	—	—	—	—	2	—	—	—	—	—
Memory System	—	—	2	2	—	—	—	—	—	—	2	1	—
Seat Belt Warning	2	2	—	—	—	—	—	1	—	—	—	—	—

1 : Master control 2 : Sub control

1. COMMUNICATION OUTLINE

Communication is implemented among the body No.1, No.2, driver door, front passenger door, rear door LH, RH, combination meter, tilt and telescopic, navigation, A/C control assembly, moon roof, power seat, engine and ECT 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

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

D18 (A), D20 (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

R13 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

R14 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

MULTIPLEX COMMUNICATION SYSTEM (RHD)

○ : PARTS LOCATION

Code		See Page	Code		See Page	Code		See Page
A16		86 (RHD)	F11	A	90 (RHD)	P12		92 (RHD)
A33		86 (RHD)	F12	B	90 (RHD)	P13		92 (RHD)
B1		82 (RHD)	F13	C	90 (RHD)	P16		94 (RHD)
B5	A	86 (RHD)	H20		86 (RHD)	P18	A	94 (RHD)
B6	A	86 (RHD)	I11		86 (RHD)	P19	B	94 (RHD)
B7		94 (RHD)	I14		90 (RHD)	P20		94 (RHD)
B8		94 (RHD)	I15		90 (RHD)	P21		94 (RHD)
C10		86 (RHD)	J29		84 (RHD)	P22		94 (RHD)
C11	A	86 (RHD)	J31		88 (RHD)	P23		94 (RHD)
C12	B	86 (RHD)	J32		88 (RHD)	P24		94 (RHD)
C13	A	86 (RHD)	J37		88 (RHD)	P30		94 (RHD)
	B	86 (RHD)	J38		88 (RHD)	P31		94 (RHD)
D2		86 (RHD)	J39		88 (RHD)	P32		94 (RHD)
D3		90 (RHD)	J40		88 (RHD)	P33		94 (RHD)
D4		90 (RHD)	J41		88 (RHD)	R6		88 (RHD)
D5		90 (RHD)	J42		88 (RHD)	R7		88 (RHD)
D6		90 (RHD)	J44		90 (RHD)	R8		88 (RHD)
D7		90 (RHD)	J45		90 (RHD)	R13		92 (RHD)
D8		90 (RHD)	J46		94 (RHD)	R14		92 (RHD)
D9		90 (RHD)	J47		94 (RHD)	R17		92 (RHD)
D10		90 (RHD)	L1		88 (RHD)	R18		92 (RHD)
D11		90 (RHD)	L4		90 (RHD)	S5		88 (RHD)
D12		90 (RHD)	L5		90 (RHD)	S6		88 (RHD)
D14		90 (RHD)	L6		90 (RHD)	S7		88 (RHD)
D15		90 (RHD)	L7		90 (RHD)	S12		88 (RHD)
D16		90 (RHD)	L8		94 (RHD)	S17		94 (RHD)
D17		90 (RHD)	M2		88 (RHD)	T1		84 (RHD)
D18	A	90 (RHD)	M4		92 (RHD)	T5		88 (RHD)
D19	B	90 (RHD)	P3		88 (RHD)	U1		88 (RHD)
D20	C	90 (RHD)	P6		92 (RHD)	V6		92 (RHD)
D21		90 (RHD)	P7		92 (RHD)	V7		92 (RHD)
E5		82 (RHD)	P9		92 (RHD)	W5		84 (RHD)
E8		82 (RHD)	P10		92 (RHD)	W6		92 (RHD)
E11		86 (RHD)	P11		92 (RHD)			

○ : RELAY BLOCKS

Code	See Page	Relay Blocks (Relay Block Location)
1	54 (RHD)	Engine Room No.1 R/B (Engine Compartment Left)
2	55 (RHD)	Engine Room No.2 R/B (Engine Compartment Right)
4	57 (RHD)	Passenger Side R/B (Left Kick Panel)
5	57 (RHD)	Driver Side R/B (Right Kick Panel)

**: JUNCTION BLOCK AND WIRE HARNESS CONNECTOR**

Code	See Page	Junction Block and Wire Harness (Connector Location)
1A	58 (RHD)	Engine Room Main Wire and Driver Side J/B (Right Kick Panel)
1B		
1D	58 (RHD)	Instrument Panel Wire and Driver Side J/B (Right Kick Panel)
1E	58 (RHD)	Floor No.1 Wire and Driver Side J/B (Right Kick Panel)
1F	58 (RHD)	Cowl Wire and Driver Side J/B (Right Kick Panel)
1G	59 (RHD)	
1H		
2B	60 (RHD)	Engine Room Main Wire and Passenger Side J/B (Left Kick Panel)
2D	60 (RHD)	Roof Wire and Passenger Side J/B (Left Kick Panel)
2E	60 (RHD)	Floor No.2 Wire and Passenger Side J/B (Left Kick Panel)
2F	60 (RHD)	Cowl Wire and Passenger Side J/B (Left Kick Panel)
2G	61 (RHD)	
2H		

**: CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS**

Code	See Page	Joining Wire Harness and Wire Harness (Connector Location)
IA2	108 (RHD)	Engine Room Main Wire and Cowl Wire (Near the Passenger Side R/B)
IA3		
IB1	108 (RHD)	Front Door LH Wire and Cowl Wire (Left Kick Panel)
IC1	108 (RHD)	Floor No.2 Wire and Cowl Wire (Left Kick Panel)
IC2		
IC3		
ID1	108 (RHD)	Instrument Panel Wire and Cowl Wire (Right Side of the Blower Unit)
ID3		
IJ1	110 (RHD)	Instrument Panel Wire and Cowl Wire (Right Side of the Steering Column)
IJ2		
IK3	110 (RHD)	Engine Room Main Wire and Cowl Wire (Near the Driver Side J/B)
IL1	110 (RHD)	Front Door RH Wire and Cowl Wire (Right Kick Panel)
IM1	110 (RHD)	Floor No.1 Wire and Cowl Wire (Right Kick Panel)
IM3		
BA1	112 (RHD)	Rear Door LH Wire and Floor No.2 Wire (Under the Center Pillar LH)
BB1	112 (RHD)	Rear Door RH Wire and Floor No.1 Wire (Under the Center Pillar RH)
BC1	114 (RHD)	Floor No.2 Wire and Front Seat LH Wire (Under the Front Passenger's Seat)
BD1	114 (RHD)	Floor No.1 Wire and Front Seat RH Wire (Under the Driver's Seat)

**: GROUND POINTS**

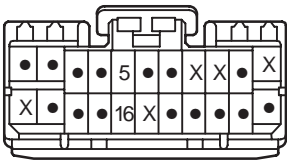
Code	See Page	Ground Points Location
EB	106 (RHD)	Left Fender
EE	106 (RHD)	Under the ABS & TRC & VSC Actuator
IF	108 (RHD)	Left Kick Panel
IG	108 (RHD)	Behind the Combination Meter
II	108 (RHD)	Cowl Side Panel RH
BJ	112 (RHD)	Rear Floor Partition Panel LH
	112 (RHD)	
BK	112 (RHD)	Quarter Panel LH
BL	112 (RHD)	Rear Floor Partition Panel RH
BM	112 (RHD)	Quarter Panel RH

MULTIPLEX COMMUNICATION SYSTEM (RHD)

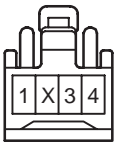
 : SPLICE POINTS

Code	See Page	Wire Harness with Splice Points	Code	See Page	Wire Harness with Splice Points
I1	110 (RHD)	Cowl Wire	I11	110 (RHD)	Floor No.1 Wire
I7			B1	112 (RHD)	Roof Wire
I8			B7	114 (RHD)	Front Seat RH Wire

A16



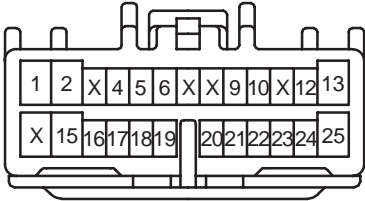
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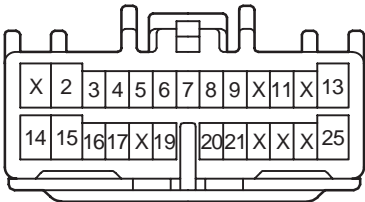
B1 GRAY



B5 (A)



B6 (A)



B7



(w/ Driving Position Memory) B8 BLUE



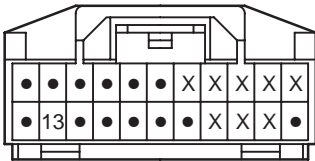
(w/o Driving Position Memory) B8



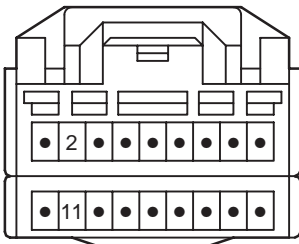
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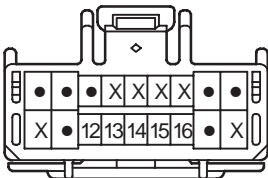
C11 (A)



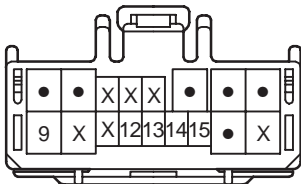
C12 (B)



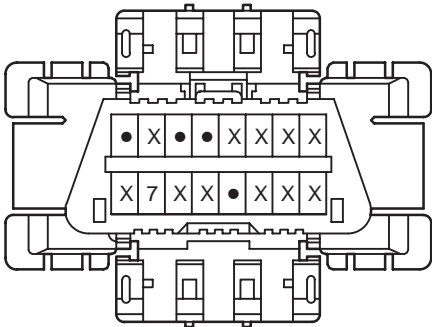
(Europe) C13 (A)



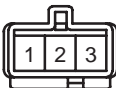
(Australia) C13 (B)



D2



D3



D4

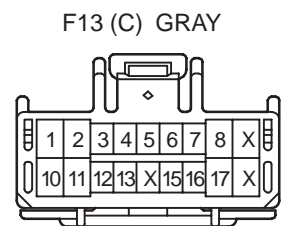
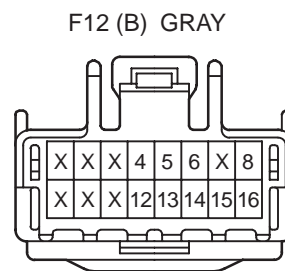
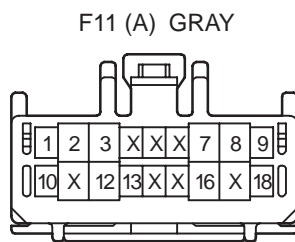
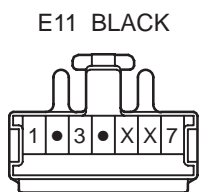
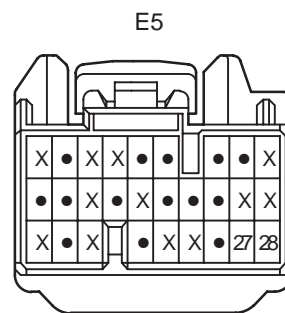
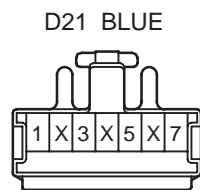
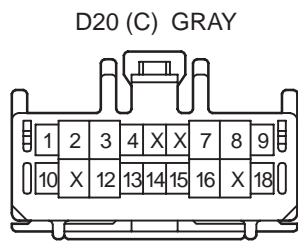
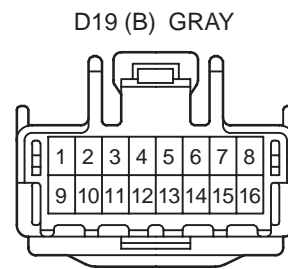
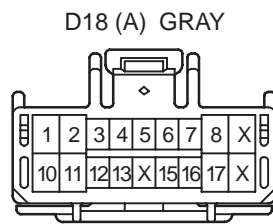
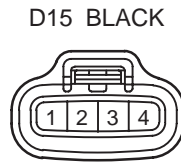
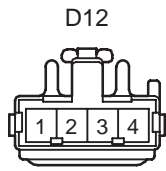
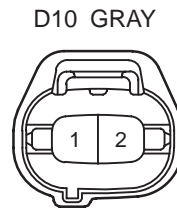
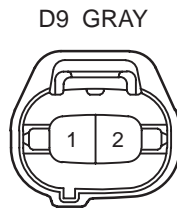
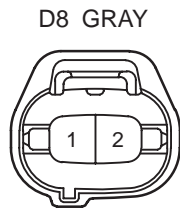
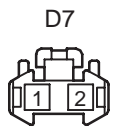


D5



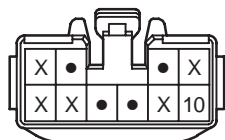
D6



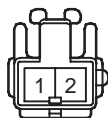


MULTIPLEX COMMUNICATION SYSTEM (RHD)

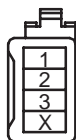
H20 BLACK



I11



I14



I15

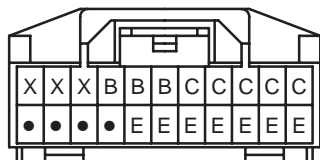


J29 BLUE



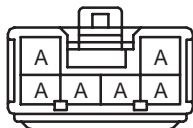
(Hint : See Page 7, 23, 39)

J31



(Hint : See Page 7, 23, 39)

J32



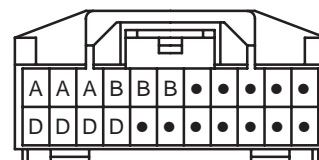
(Hint : See Page 7, 23, 39)

J37



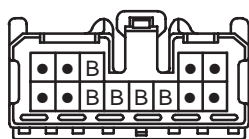
(Hint : See Page 7, 23, 39)

J38



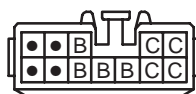
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J39



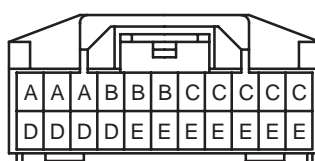
(Hint : See Page 7, 23, 39)

J40 GRAY



(Hint : See Page 7, 23, 39)

J41



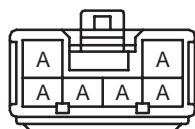
(Hint : See Page 7, 23, 39)

J42



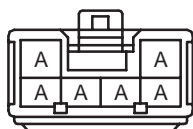
(Hint : See Page 7, 23, 39)

J44



(Hint : See Page 7, 23, 39)

J45



(Hint : See Page 7, 23, 39)

J46



(Hint : See Page 7, 23, 39)

J47

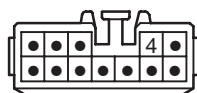


(Hint : See Page 7, 23, 39)

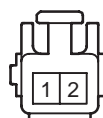
L1



L4



L5 BLACK



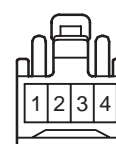
L6



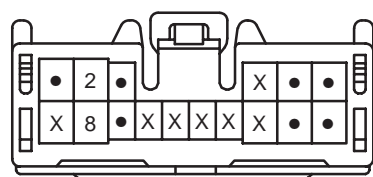
L7 GRAY



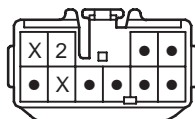
L8



M2 BLUE



M4



P3

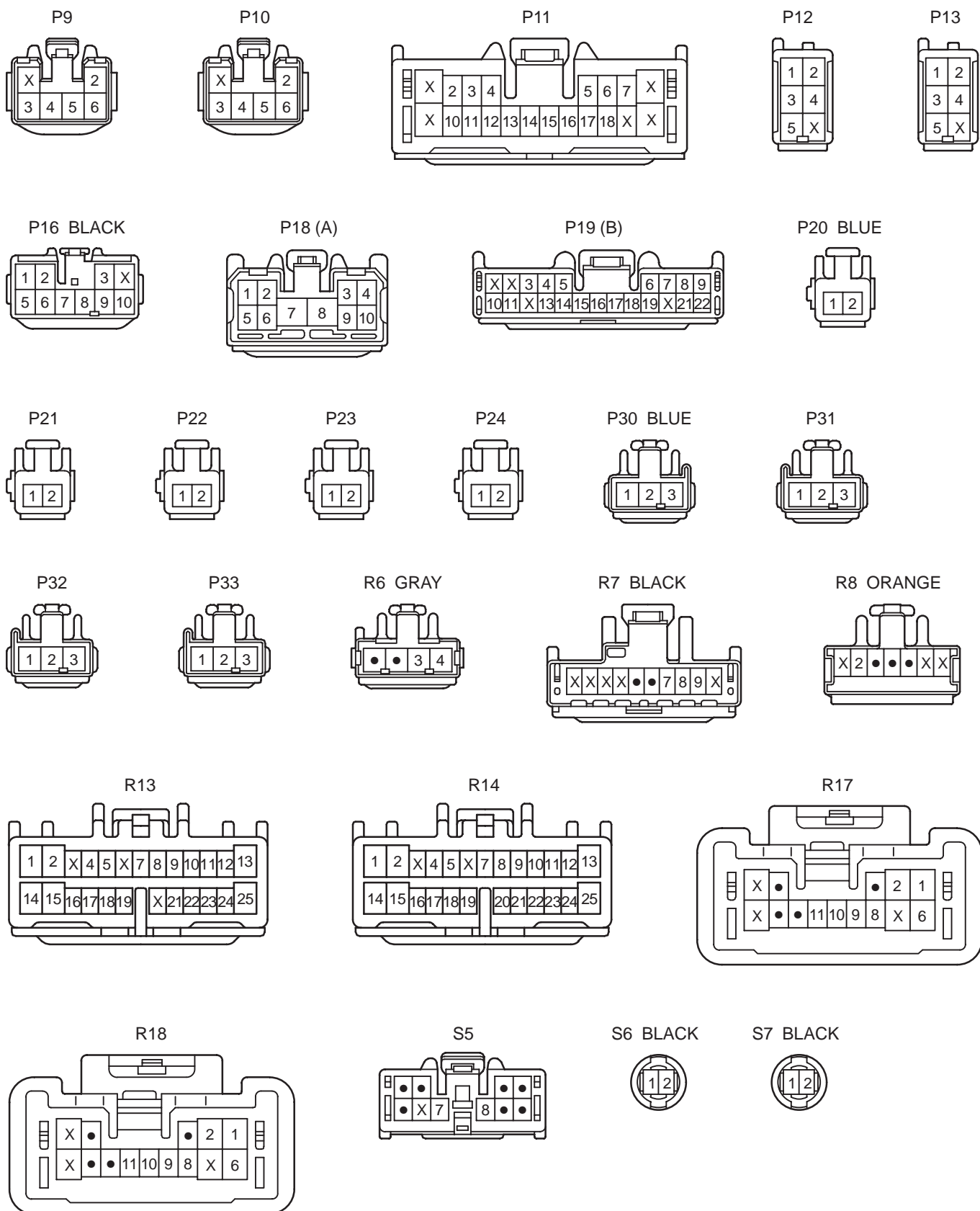


P6



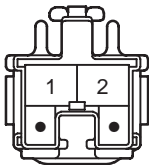
P7





MULTIPLEX COMMUNICATION SYSTEM (RHD)

S12 BLUE



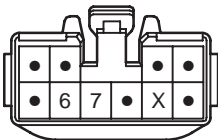
S17 GREEN



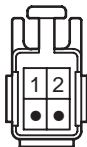
T1 BLACK



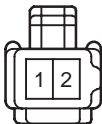
T5 GRAY



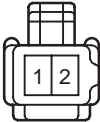
U1



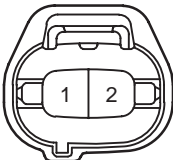
V6



V7



W5 BLACK



W6

