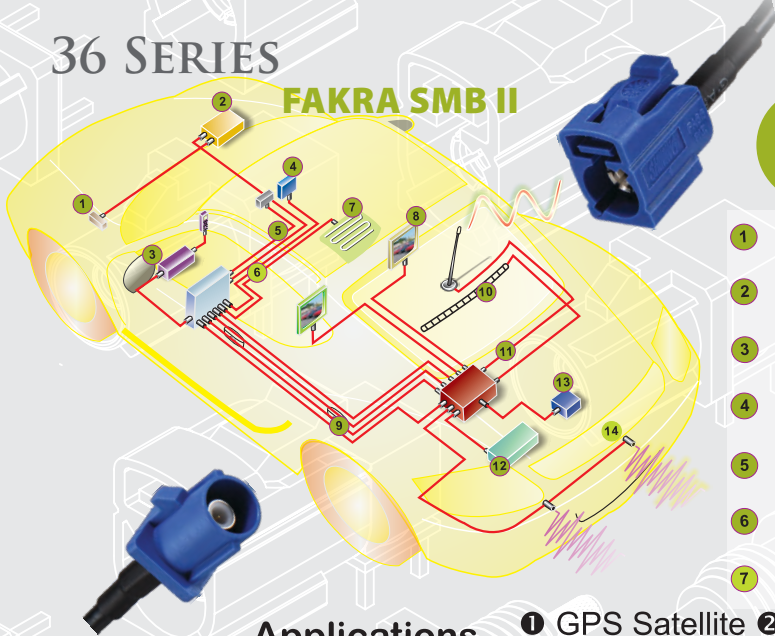


Automotive Connection Systems



- 1 Air pressure control
- 2 Engine management system
- 3 Cellular phone
- 4 Navigation system
- 5 Analog radio
- 6 Distributor box
- 7 Auxiliary heating
- 8 TV / Video-displays
- 9 Remote keyless entry
- 10 Antenna
- 11 Amplifier
- 12 Accident data analysis
- 13 GPS Antenna
- 14 Distance Control

Applications

- 1 GPS Satellite
- 2 Radio
- 3 Cellular
- 4 Mobile TV
- 5 Vehicular internet access
- 6 Bluetooth

Jack	Application	Color	RAL	Coding	Plug
	Analog radio without phantom supply	Black	9005	A	
	Phantom radio with supply	White	9001	B	
	GPS:Telematics Navigation	Blue	5005	C	
	GSM: Cellular phone	Bordeaux	4004	D	
	TV 1	Green	6002	E	
	TV2	Brown	8011	F	
	Remote control keyless entry	Grey	7031	G	
	Radio controlled parking heating	Violet	4003	H	
	Bluetooth	Beige	1001	I	
	Radio with IF output (antenna diversity)	Curry	1027	K	
	Neutral coding	Water Blue	5021	Z	

FAKRA SMB which meet the requirements of automotive electronics in the field of telematics, multimedia, safety and security.

FAKRA SMB interface are based on the proven SMB standard and includes an additional plastic housing.

This housing contains a mechanical locking device that prevents disconnect in high vibration environments there are 11 different mechanical and color codes in our products.

SPECIFICATIONS

Electrical	
Impedance	50 Ω
Frequency Range	0 – 4 GHz
V.S.W.R.	≤ 1.3 (straight)
Insulation Resistance	1000 MΩ
Dielectric Withstanding Voltage	≥ 8000 VRMS @ sea level
Mechanical	
Durability (Matings)	25 cycles min.
Plastic housing retention force	≥ 90 N
Cable retention force	≥ 100 N
Temperature range	-40°C to +105°C
Material	
Insulator	PTFE
Female, male body & center contact	Brass
Female center contact	Bronze
Plastic Housing	PA66



FAKRA SMB II

(*)	A	B	C	D	E	F	G	H	I	K	Z
JACK											
PLUG											

36-01L-(*)-IP68-TGN



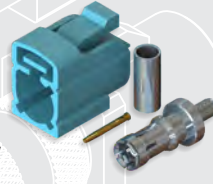
FAKRA Jack Crimp, Code (*) Straight, Waterproof IP68, PA66 Housing, Teflon Insulation, Gold Plated Pin, Nickel Plated Body, for TCC Cable Group L

36-02L-(*)-IP68-TGN



FAKRA Plug Crimp, Code (*) Straight, Waterproof IP68, PA66 Housing, Teflon Insulation, Gold Plated Pin, Nickel Plated Body, for TCC Cable Group L

36-01L-(*)-R-TGN



FAKRA Jack Crimp, Code (*) Straight, "Rotary" PA66 Housing, Teflon Insulation, Gold Plated Pin, Nickel Plated Body, for TCC Cable Group L

36-16L-(*)-TGN



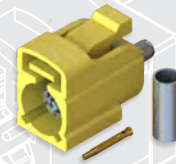
FAKRA Plug Crimp, Bulkhead, Code (*) Straight, PA66 Housing, Teflon Insulation, Gold Plated Pin, Nickel Plated Body, for TCC Cable Group L

36-01F-6-(*)-TGN



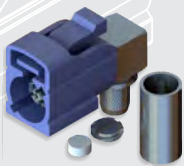
FAKRA Jack Crimp, Code (*), Straight, PA66 Housing, Teflon Insulation, Gold Plated Pin, Nickel Plated Body, for TCC Cable Group F

36-01L-12-(*)-TGN



FAKRA Jack Crimp, Code (*), Straight, PA66 Housing, Teflon Insulation, Gold Plated Pin, Nickel Plated Body, for TCC Cable Group L

36-03F-(*)-TGN



FAKRA Jack Crimp, Right Angle, Code (*) PA66 Housing, Teflon Insulation, Gold Plated Pin, Nickel Plated Body, for TCC Cable Group F

36-03L-(*)-TGN



FAKRA Jack Crimp, Right Angle, Code (*) PA66 Housing, Teflon Insulation, Gold Plated Pin, Nickel Plated Body, for TCC Cable Group L

36-02F-(*)-TGN



FAKRA Plug Crimp, Straight, PA66 Housing, Teflon Insulation, Gold Plated Pin, Nickel Plated Body, for TCC Cable Group F

36-02L-(*)-TGN



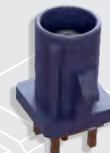
FAKRA Jack Crimp, Straight, PA66 Housing, Teflon Insulation, Gold Plated Pin, Nickel Plated Body, for TCC Cable Group L

36-02L-(*)-R-TGN



FAKRA Plug Crimp, Code (*) Straight, "Rotary" PA66 Housing, Teflon Insulation, Gold Plated Pin, Nickel Plated Body, for TCC Cable Group L

36-06-(*)-TGN



FAKRA Plug, Straight, PCB Mount, PA66 Housing, Teflon Insulation, Gold Plated Pin, Nickel Plated Body.

36-07-(*)-TGN



FAKRA Jack, Straight, PCB Mount, PA66 Housing, Teflon Insulation, Gold Plated Pin, Nickel Plated Body.

36-08-(*)-TGN



FAKRA Plug, Right Angle, PCB Mount, PA66 Housing, Teflon Insulation, Gold Plated Pin, Nickel Plated Body.

36-43-23-Z-TGN



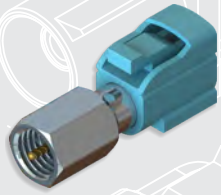
Adapter, FME Male, to FAKRA Female Water Blue (PA66 Housing), Teflon Insulation, Gold Plated Pin, Nickel Plated Body.

36 SERIES

FAKRA SMB II

AUTOMOTIVE

36-44-23-Z-TGN



Adapter, FME Male, to FAKRA Male Water Blue (PA66 Housing), Teflon Insulation, Gold Plated Pin, Nickel Plated Body.

36-34-23-Z-TGN



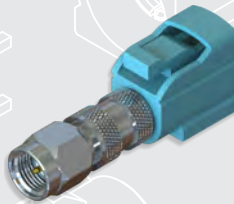
Adapter, FME Female, to FAKRA Male Water Blue (PA66 Housing), Teflon Insulation, Gold Plated Pin, Nickel Plated Body.

36-33-23-Z-TGN



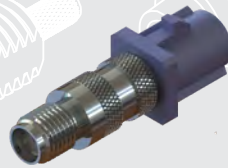
Adapter, FME Female to FAKRA Female Water Blue (PA66 Housing), Teflon Insulation, Gold Plated Pin, Nickel Plated Body.

36-43-19-Z-TGN



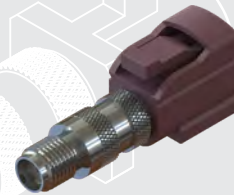
Adapter, SMA Male, to FAKRA Female Water Blue (PA66 Housing), Teflon Insulation, Gold Plated Pin, Nickel Plated Body.

36-34-19-C-TGN



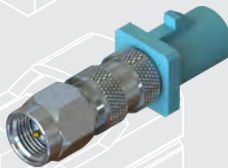
Adapter, SMA Female to FAKRA Male Blue (PA66 Housing), Teflon Insulation, Gold Plated Pin, Nickel Plated Body.

36-33-19-C-TGN



Adapter, SMA Female to FAKRA Female Bordeaux (PA66 Housing), Teflon Insulation, Gold Plated Pin, Nickel Plated Body.

36-44-19-Z-TGN

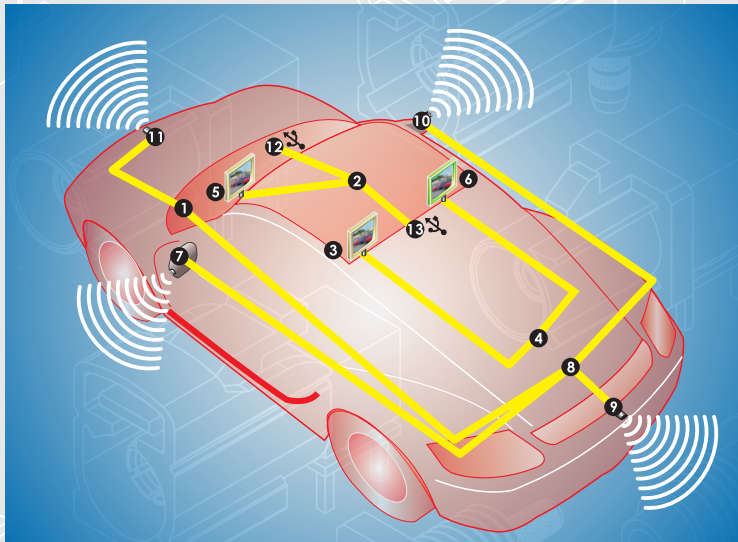


Adapter, SMA Male, to FAKRA Male Water Blue (PA66 Housing), Teflon Insulation, Gold Plated Pin, Nickel Plated Body.

36-4R4R-36-Z-12-TGN



ADAPTER Straight, FAKRA Rotary Plug to FAKRA Rotary Plug, Key Code: Z, Color: Water Blue, BULKHEAD



The Increased adoption of telematics in the automotive industry has driven the demand for high speed data communication system in vehicles. TCC Industries has responded to this demand with the introduction of the HSD (High Speed Data) product portfolio. HSD interconnect products focus on various application areas in the automobile, such as the inside compartment for connection to displays, head units and rear seat entertainment modules.

The product portfolio can be used in combination with a variety of protocols such as LVDS camera (Low Voltage Differential Signaling), GVIF (Gigabit Video interface), USB, IEEE 1394 as well as Ethernet protocols.

HSD APPLICATION

Control System

- 1 Inline Connection
- 2 Head Unit

Entertainment & Convenience System

- 3 Rear Seat Display
- 4 Rear Seat Entertainment Module
- 5 Display
- 6 Rear Seat Display

Safe & Security System

- 7 Side View Camera
- 8 Camera Module
- 9 Rear View Camera
- 10 Side View Camera
- 11 Front View Camera

Information System

- 12 USB Connection
- 13 USB Connection

HSD SPECIFICATIONS

Electrical

Impedance	100 Ω
Frequency Range	DC – 2 GHz
Insertion Loss	0.1 dB max from DC – 1 GHz
Insulation Resistance	1000 MΩ MIN.
Contact Resistance	
Center Contact	≤ 10 MΩ MIN.
Outer Contact	≤ 7.5 MΩ MIN.
Dielectric Withstanding Voltage	At Sea Level: > 250 VRMS (Interface only)

Environmental

Temperature Range	-40°C to + 105°C
Thermal Shock	DIN EN 60068-2-14
Vibration	DIN EN 60068-2-64
Mechanical Shock	DIN EN 60068-2-27

Mechanical

Durability (matings)	25 min
Plastic Housing-Engagement Force	≤ 30 N
Plastic Housing-Disengagement Force	≥ 5 N
Cable Retention Force	≥ 110 N
Coding	Mechanical and Color Keyed Mating Specs

Material

Parts Name	Material	Finish
Housing	PA 66	Color per key code
Insertion	Male: P. Bronze	Gold
Loss	Female: P. Bronze	Gold
Body, Metal Parts	Brass	Nickel – (Gold)
Insulators	LCP / PA 66	

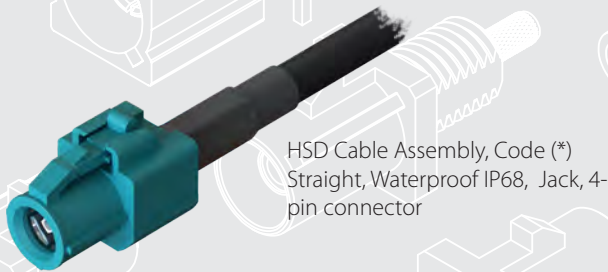
Coding	Jack	Plug	Color/RAL -Nr.
A			Black/ 9005
B			White/ 9001
C			Blue/ 5005
D			Bordeaux/ 4004
E			Green/ 6002
F			Brown/ 8011
Z			Water Blue/ 5021
G			Grey/ 7031
H			Violet/ 4003
J			Beige/ 1001
K			Curry/ 1027
L			Yellow Green/ 6018
M			Pastel Orange/ 2003
			Light Green/ 6027



HSD HIGH SPEED DATA

(*)	A	B	C	D	E	F	Z	G	H	I	K	L	M	O
JACK														
PLUG														

36H-01DA535-(*)-IP68-PGN



HSD Cable Assembly, Code (*)
Straight, Waterproof IP68, Jack, 4-pin connector

36H-02DA535-(*)-IP68-PGN



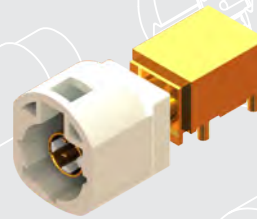
HSD Cable Assembly, Code (*)
Straight, Waterproof IP68, Plug, 4-pin connector

36H-05-(*)-LGG



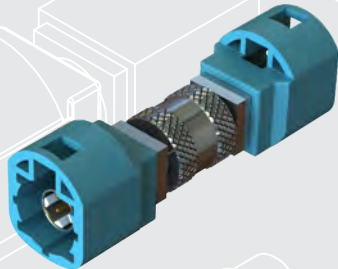
HSD Jack, Code (*) Straight Plug, 4-pin connector PCB Mount

36H-06-(*)-LGG



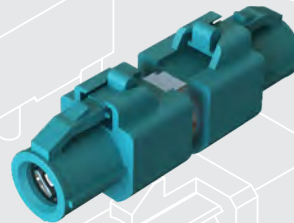
HSD Jack, Code (*) Right Angle Plug, 4-pin connector PCB Mount

36H-44-36H-Z-PGN



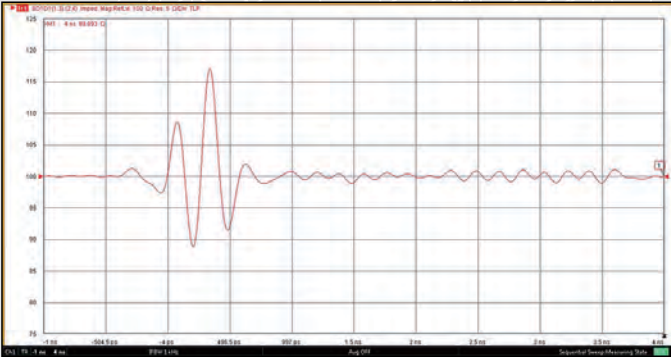
ADAPTER Straight, HSD Jack to HSD Jack, Key C, Code: Z, Color: Water Blue.

36H-33-36H-Z-PGN

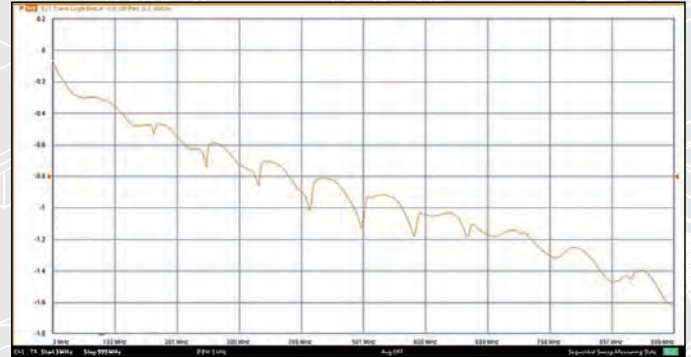


ADAPTER Straight, HSD Plug to HSD Plug, Key C, Code: Z, Color: Water Blue.

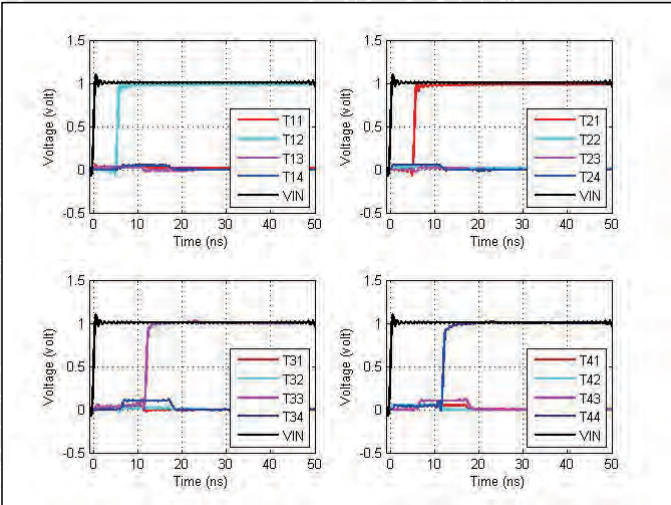
HSD ELECTRICAL TEST



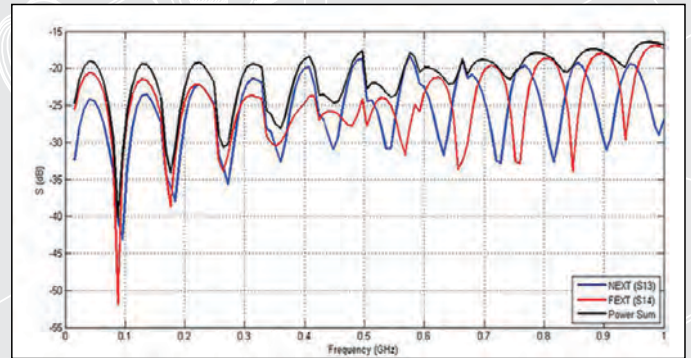
IMPEDANCE



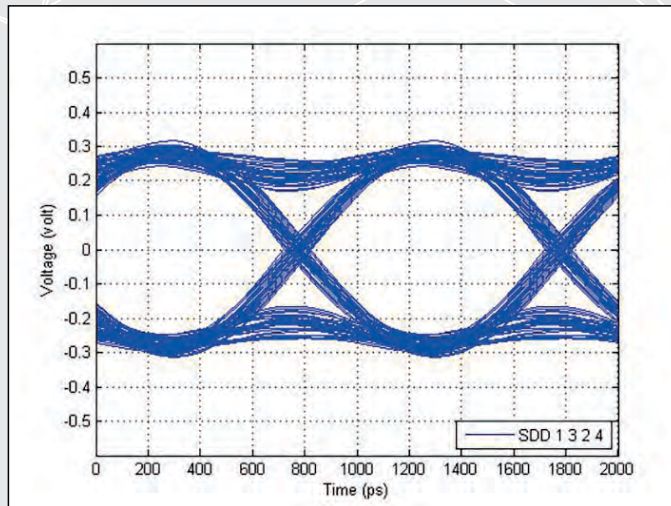
INSERTION LOSS



INTRA PAIR SKEW



CROSSTALK



EYE DIAGRAM
TCC INDUSTRIES INC.