



# RF CONNECTORS

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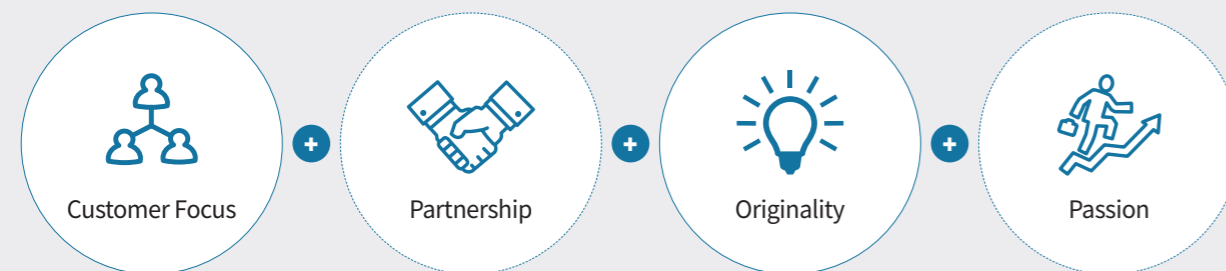
# Simple Connectivity Solution

## Company Information

Telcon seeks to develop the best technology by continuous investments in developing wireless communication parts which are essential for ICT business since the founding in 1999. Especially, we offer high-quality services in the fields of wireless communication device, wireless network installation, and communication system.

Moreover, our business area has expanded to automotive and medical equipment with the establishment of local subsidiaries in China and Vietnam, which help us enhance global competitiveness.

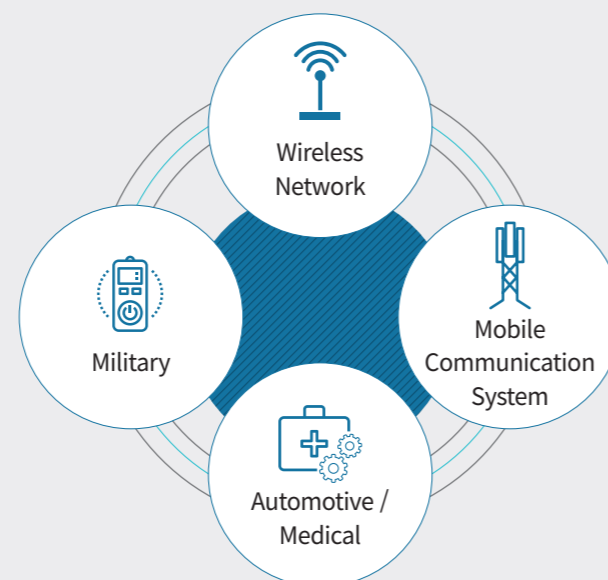
## Core Values



## Vision



## Business Area



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## Smaller Design Board to Board Connector

STBM is optimized solution that has smaller design, and misalignment limit between connectors in the compact, and narrow inside of equipment, it supports stable electrical Performance as well.



- High density interconnection
- Stable electrical and mechanical blind mating interface
- Competitive price

Parameter		Value		
Frequency Range		DC ~ 8.5GHz		
Impedance		50ohm(Nominal)		
Typical	Working Range	3GHz	6GHz	8.5GHz
	Axial +1.0mm(Radial 0,0.6mm)	1.25	1.30	1.35
	Axial 0mm(Radial 0,0.6mm)	1.18	1.25	1.30
	Axial -1.0m(Radial 0,0.6mm)	1.25	1.30	1.35
Insertion Loss		> -0.07 x $\sqrt{f}$ (GHz)		
Insulation resistance		> 5000M $\Omega$		
Working voltage		< 330 Vrms 60Hz, sea level		
Contact Resistance(mOhm)		Inner Contact $\leq$ 6.0m $\Omega$ Outer Contact $\leq$ 3.0m $\Omega$		
Screening Effectiveness		>70dB@3GHz (Zero, Max tolerance) >65dB@6GHz (Zero, Max tolerance)		
Input Power		< 100W @2.6GHz, +25°C, CW		
Inter-modulation 3rd order	2Tone x 43dBm, 3th	<150dBc		
	2Tone x 40dBm, 3th	<155dBc		
	2Tone x 37dBm, 3th	<160dBc		
Durability		100matings		
Temperature / Humidity Range		-40°C ~ +125°C / 65°C, 80%		
Axial misalignment tolerance		$\pm$ 0.6mm (Minimum distance when contrary dimension)		
Material (Finish)		Body : Bs, BeCu(3MAT'L) Inner : BeCu, Bs(Au) Insulator : PTFE		

NO	PART NAME	SPECIFICATION	QTY	REMARKS
1	BODY	BeCu(C1730 B), 3MAT'L PLATING	1	
2	BODY COVER	Bs(C3904 BD), 3MAT'L PLEATING	1	
3	PIN	BeCu(C1730 B), Au PLATING	1	
4	PIN	BeCu(C1730 B), Au PLATING	1	
5	INSULATOR	TEFLON(PTFE)	1	
6	INSULATOR	TEFLON(PTFE)	1	
7	SPRING	STS304, PASSIVITY	1	

Distance(Axial) tolerance +1.0mm

Standard application 0mm

Distance(Axial) tolerance -1.0mm

SCALE(2/1)

1. ELECTRICAL

1.1 FREQUENCY RANGE : DC-8.5GHz

1.2 IMPEDANCE : 50 $\Omega$  NOMINAL

1.3 VSWR : 1.30 Max (Typical)

1.4 INSERTION LOSS : -0.07 x  $\sqrt{f}$  (FREQUENCY(GHz))

1.5 Insulation Resistance : 5000M $\Omega$  MIN.

1.6 Power Handling : 100W MIN. @2.6GHz, +25°C, CW

1.7 PIMD

1.7.1 5W (2Tone x 37dBm, 3th) : -160dBc MAX.

1.7.2 10W (2Tone x 40dBm, 3th) : -155dBc MAX.

1.7.3 20W (2Tone x 43dBm, 3th) : -150dBc MAX.

2. MECHANICAL

2.1 DURABILITY : 100 CYCLES

2.2 Board to Board Distance : 14.0 $\pm$ 1.0mm(with TG16CN641Z)

2.3 Misalignment:  $\pm$ 0.5mm

3. ENVIRONMENTAL

3.1 TEMPERATURE RANGE : -40°C ~ +125°C

3.2 Thermal Shock : MIL-STD-202F, Method 107, Condition B

3.3 Corrosion (Salt Mist) : MIL-STD-202F, Method 101 (98hrs Spraying)

3.4 Moisture Resistance : MIL-STD-202F, Method 106

3.5 Vibration : MIL-STD-202F, Method 204, Condition A

NO	PART NAME	DESCRIPTION	REMARKS	REV NO	DATE

DRAWING	NAME	SIGN	DATE
DESIGN			
CHECK			
APPROVAL			

UNLESS OTHERWISE SPECIFIED : DIMENSIONS ARE IN MM  
DECIMAL TOLERANCE : ANGULAR  $\pm$  0.2

MODEL NAME : STBM PCB MOUNT PLUG  
RECEPTACLE

PART NAME : ASS'Y(APPROVAL)

SPEC : -

CODE NO : TG16CN640Z

MATERIAL : 2/1

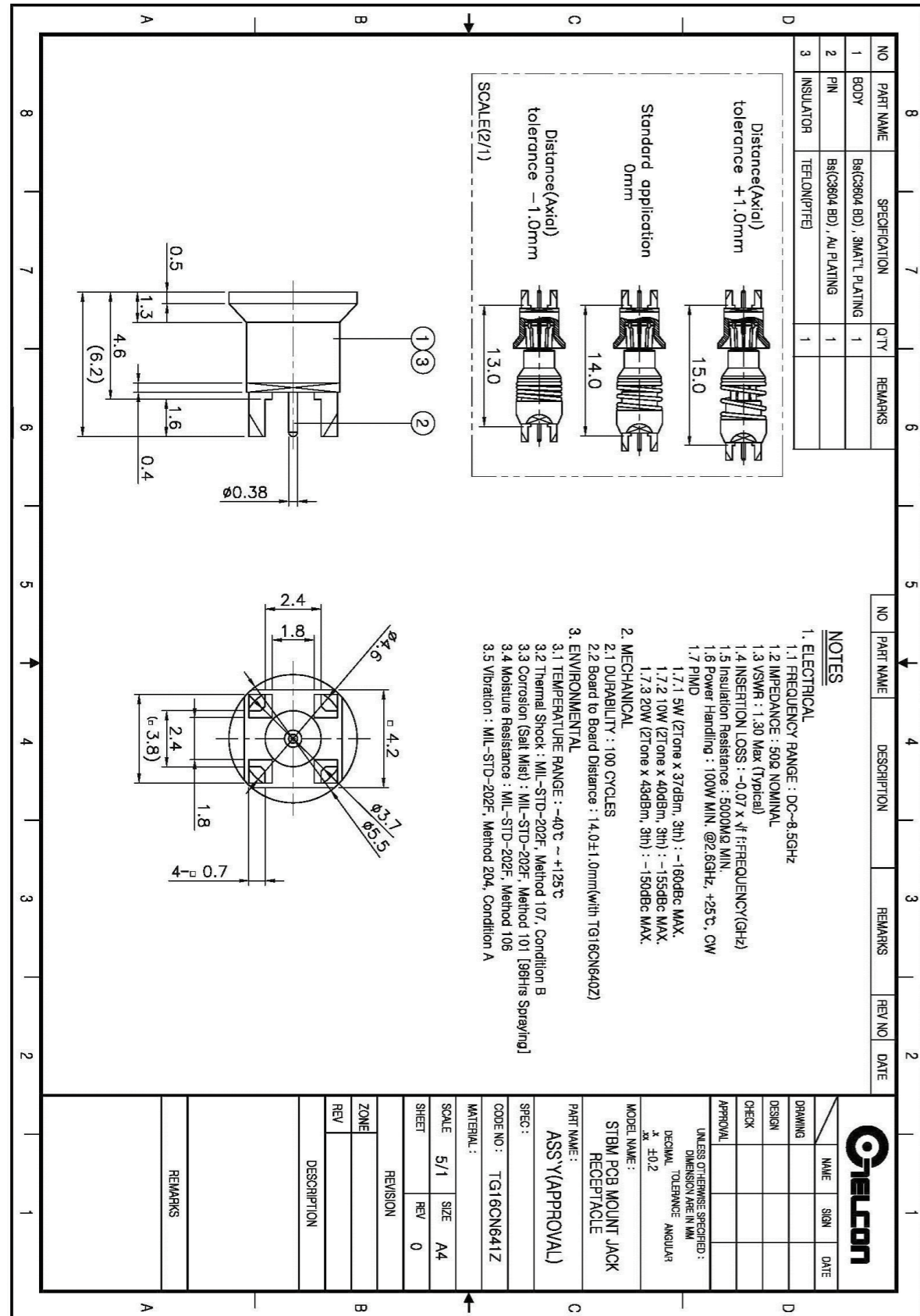
SCALE : A4

SHEET : 4

REVISION	
ZONE	DESCRIPTION
REV	

REMARKS





### High Power Board to Board Connector

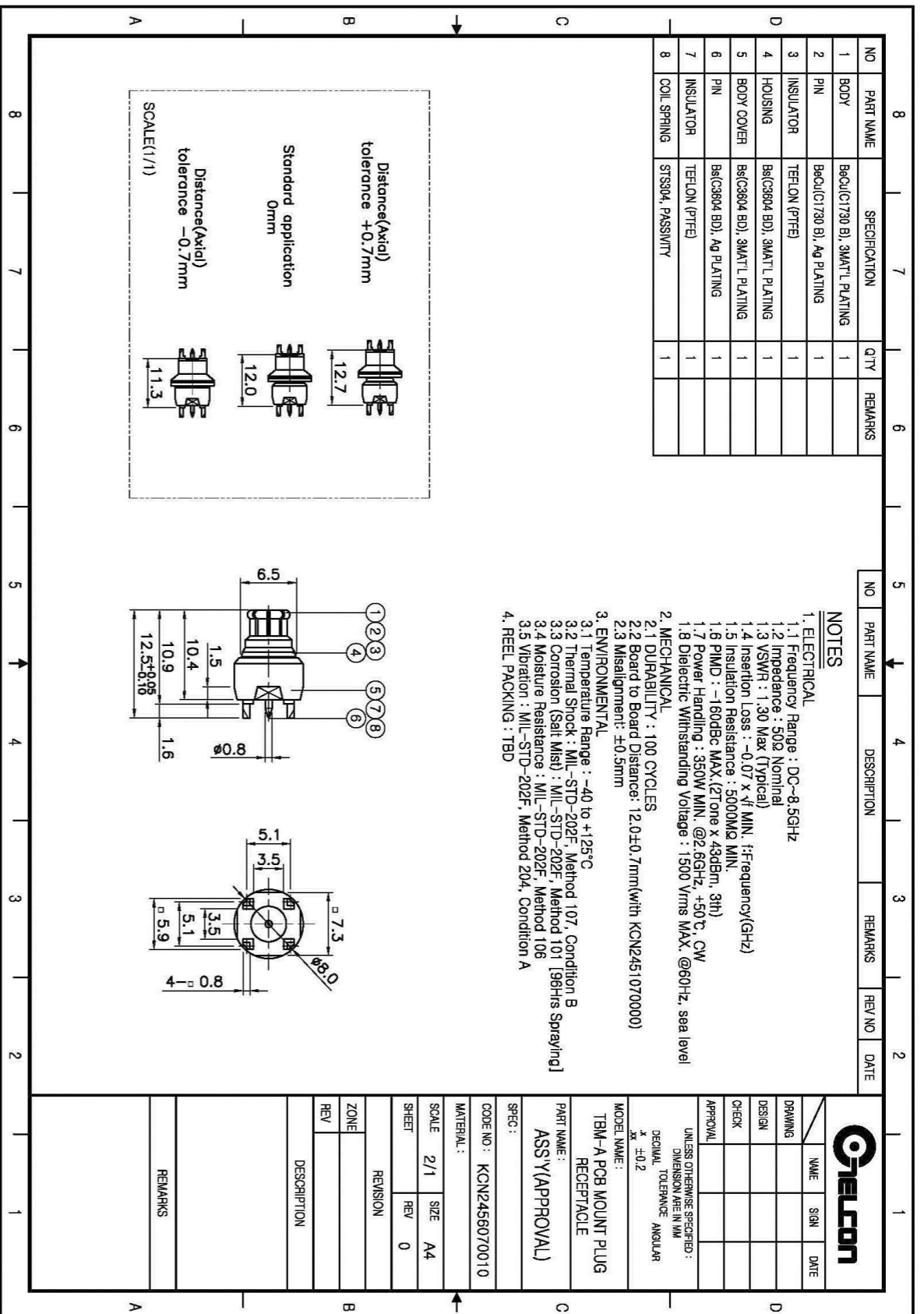
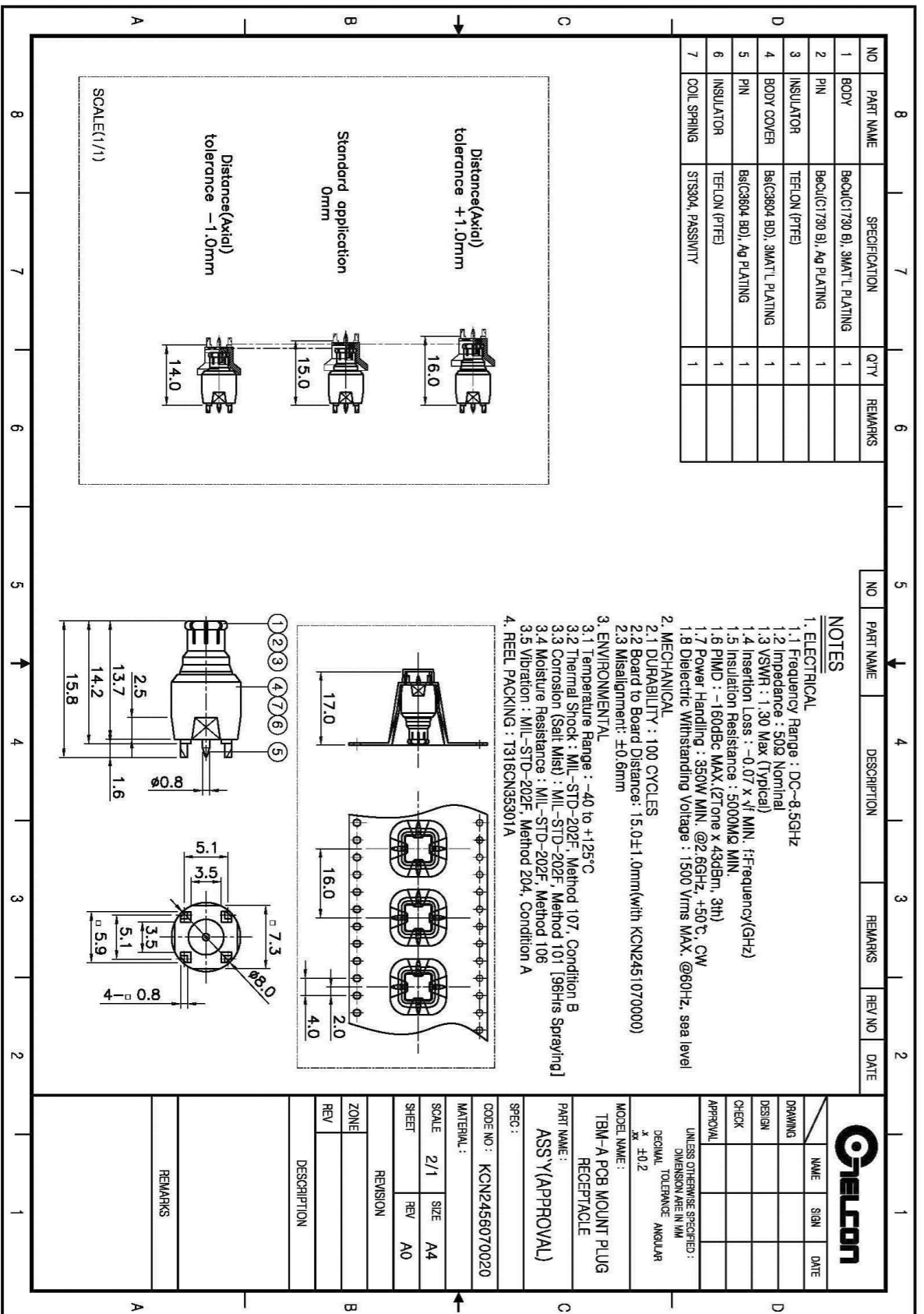
TBM-A is high power transmission connector, which has misalignment limit between connectors in the compact, and mounts narrow inside of equipment. it supports stable electrical Performance as well.

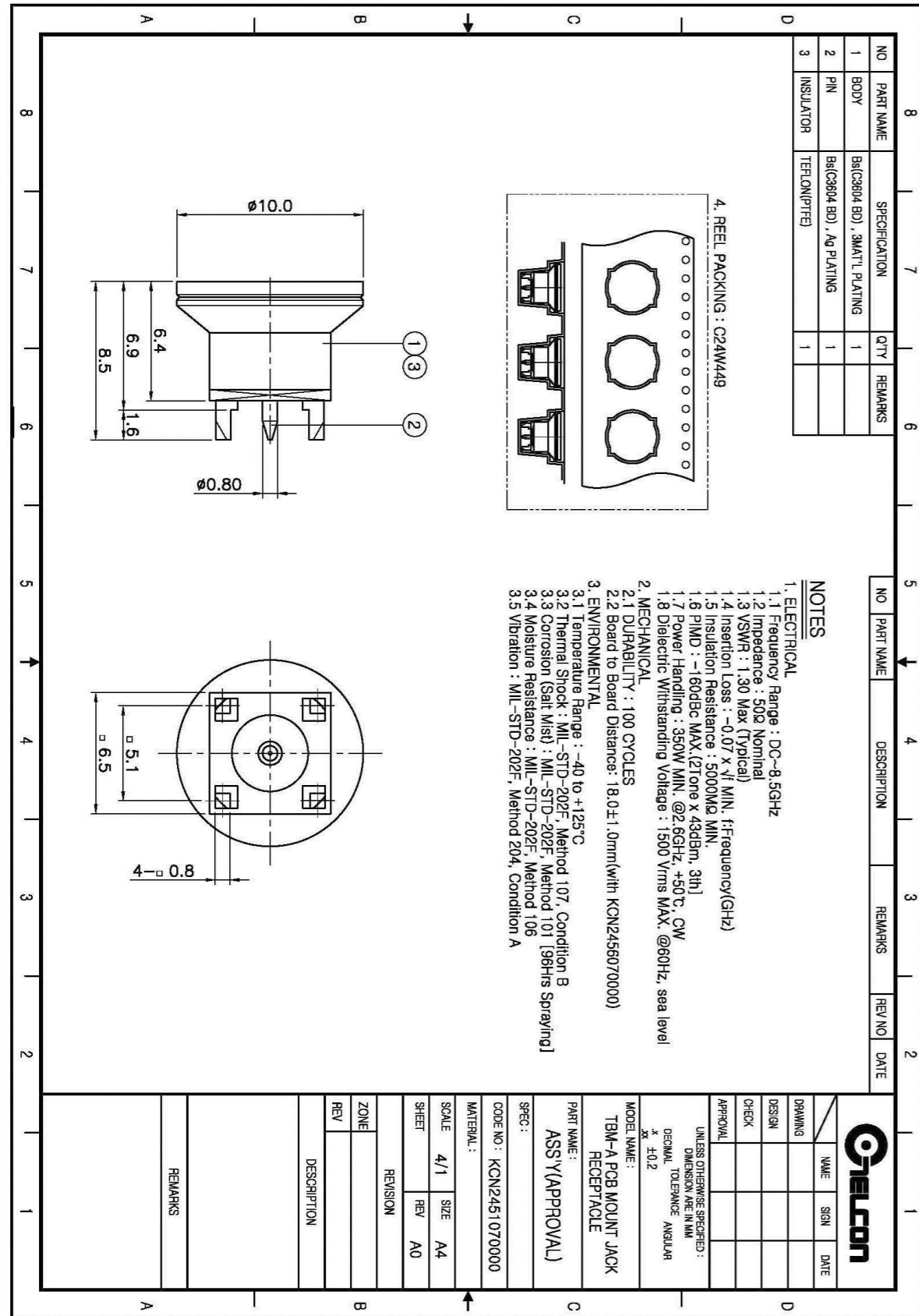


- Transit able High Power connector
- Stable electrical and mechanical blind mating interface
- Competitive price

Parameter		Value		
Frequency Range		DC ~ 8.5GHz		
Impedance		50ohm(Nominal)		
Typical VSWR	Misalignment	3GHz	6GHz	8.5GHz
	Axial +1mm(Radial 0,0.8mm)	1.20	1.25	1.35
	Axial 0mm(Radial 0,0.8mm)	1.18	1.20	1.30
	Axial -1mm(Radial 0,0.8mm)	1.20	1.25	1.35
Insertion Loss		$> -0.07 \times \sqrt{f}$ (GHz)		
Insulation resistance		$> 5000M\Omega$		
Dielectric withstanding Voltage		$< 1500 V$		
Working voltage		$< 330 V_{rms}$ 60Hz, sea level		
Contact Resistance(mOhm)		Inner Contact $\leq 4.0m\Omega$ Outer Contact $\leq 3.0m\Omega$		
Screening Effectiveness		$> 80dB@3GHz$ (Zero, Max tolerance) $> 75dB@6GHz$ (Zero, Max tolerance)		
Input Power		$< 350W @2.6GHz, +50^\circ C, CW$		
Inter-modulation 3rd order		$< 160dBc @1.8GHz (2x43dBm)$ (Zero, Max tolerance) @ Except PCB Type		
Durability		100matings		
Temperature / Humidity Range		$-40^\circ C \sim +125^\circ C / 65^\circ C, 80\%$		
Misalignment tolerance		$\pm 0.8mm / \pm 0.6mm / \pm 0.5mm$ (Minimum distance when contrary dimension)		
Material (Finish)		Body : Bs, BeCu(3MAT'L) Inner : BeCu, Bs(Silver) Insulator : PTFE Spring : STS(Passivity)		







### Direct Contact Board to Board Connector

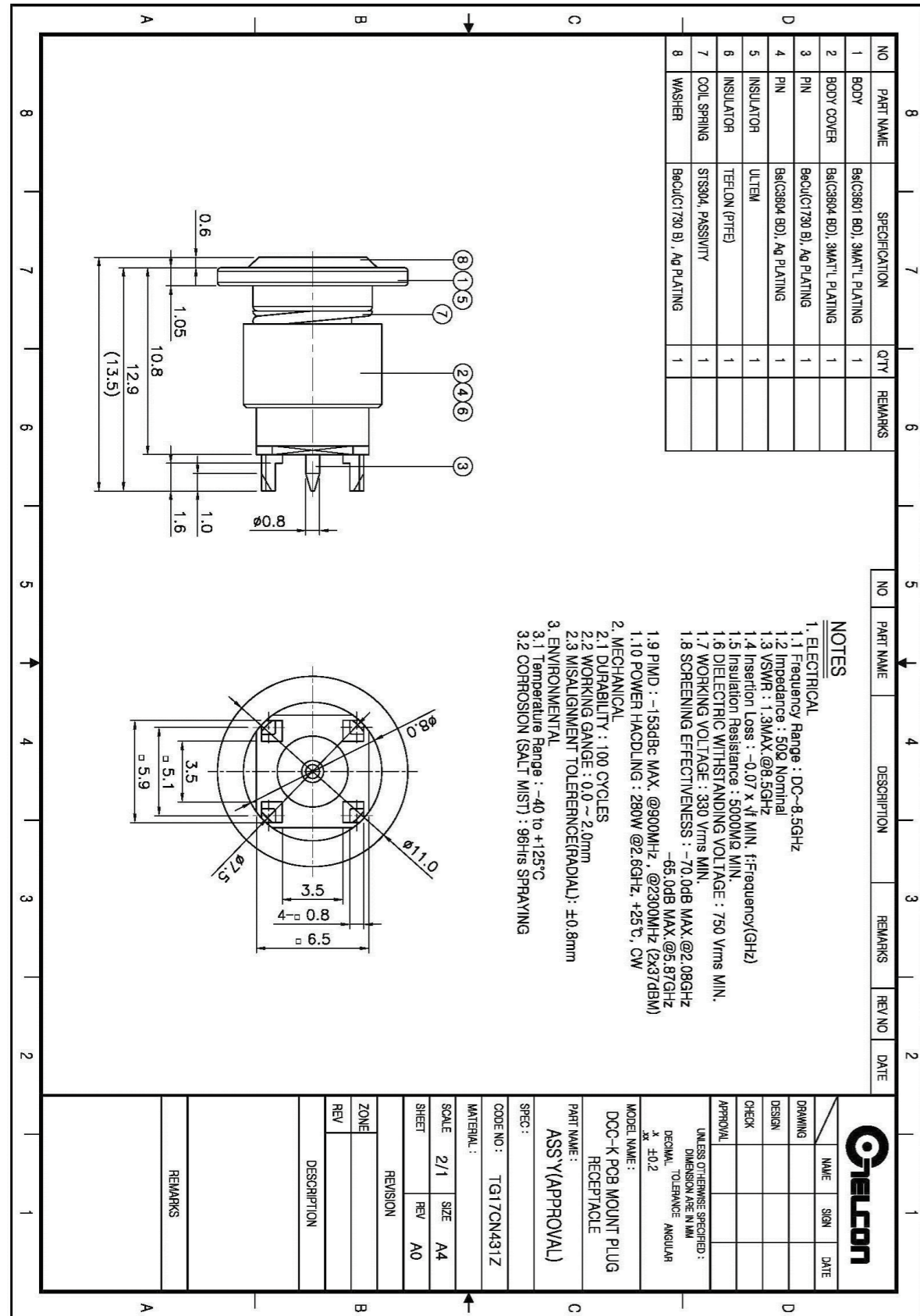
DCCK provide very short distance of Board to board. And misalignment limit between connectors in the compact, and Need only one part inside of equipment, it supports stable electrical Performance as well.



- Smallest Board to Board distance
- Stable blind mating construction

Parameter		Value		
Frequency Range		DC ~ 8.5GHz		
Impedance		50ohm(Nominal)		
Typical VSWR	Misalignment	3GHz	6GHz	8.5GHz
	Axial +1mm(Radial 0,0.8mm)	1.20	1.30	1.35
	Axial 0mm(Radial 0,0.8mm)	1.18	1.25	1.30
	Axial -1mm(Radial 0,0.8mm)	1.20	1.30	1.35
Insertion Loss		> -0.07 x √ f(GHz)		
Insulation resistance		> 5000MΩ		
Dielectric withstanding Voltage		< 750 Vrms 60Hz, sea level		
Working voltage		< 330 Vrms 60Hz, sea level		
Contact Resistance(mOhm)		Inner Contact ≤4.0mΩ Outer Contact ≤3.0mΩ		
Screening Effectiveness		>75dB@3GHz (Zero, Max tolerance) >70dB@6GHz (Zero, Max tolerance)		
Input Power		< 300W @2.6GHz, +25°C, CW		
Inter-modulation 3rd order		<150dBc @1.8GHz (2x40dBm) (Zero, Max tolerance) @ Except PCB Type		
Durability		100matings		
Temperature / Humidity Range		-40°C ~ +125°C / 65°C, 80%		
Misalignment tolerance	Axial	±1.0 mm		
	Radial	±0.4mm (Minimum distance when contrary dimension)		
Material (Finish)		Body : Bs, BeCu(TCP) Inner : BeCu, Bs(Ag) Insulator : PTFE, PEEK		





### mmWAVE Board to Board Connector

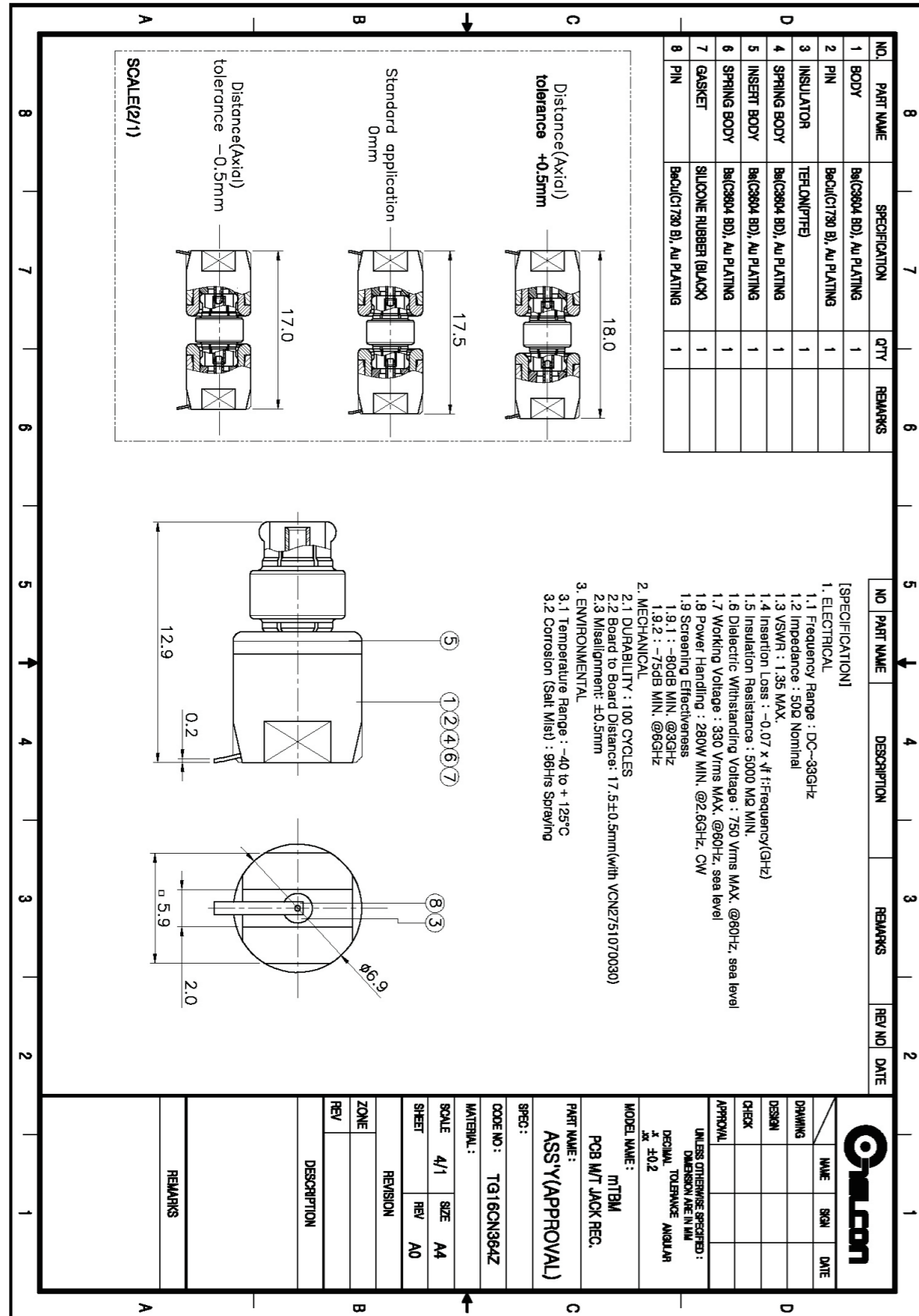
mTBM applicable in mmWAVE equipment, and The guaranteed frequency range is up to 33GHz. misalignment limit between connectors in the compact, and narrow inside of equipment, it supports stable electrical Performance as well.



- High frequency microwave application up to 33ghz
- Board to Board blind-mate construction

Parameter		Value	
Frequency Range		DC ~ 33GHz	
Impedance		50ohm(Nominal)	
Typical VSWR	Misalignment	25GHz	33GHz
	Axial +0.5mm(Radial 0,0.5mm)	1.25	1.35
	Axial 0mm(Radial 0,0.5mm)	1.25	1.35
	Axial -0.5mm(Radial 0,0.5mm)	1.25	1.35
Insertion Loss		> -0.07 x $\sqrt{f}$ (GHz)	
Insulation resistance		< 750 Vrms @60Hz, sealevel	
Dielectric withstanding Voltage		< 330 Vrms @60Hz, sealevel	
Working voltage		> 5000MΩ	
Contact Resistance(mOhm)		Inner Contact ≤4mΩ Outer Contact ≤3mΩ	
Screening Effectiveness		> 80dB@3GHz (Zero tolerance, Max tolerance) > 75dB@6GHz (Zero tolerance, Max tolerance)	
Input Power		< 280W @ 2.6GHz, +25°C, Pulse Duty : 10%	
Durability		< 100 cycles	
Operating Temperature Range		-40°C ~ +125°C	
Misalignment tolerance	Axial	> ± 0.5mm	
	Radial	> ± 0.5mm	
Material (Finish)		Body : Bs, BeCu(Au) Inner : B eCu, Bs(Au) Insulator : Ultem	





## Connector & with Coupler Port Connector

Telcon is passionate and committed to deliver unparalleled technology like the best plating technology in the name of TCP/TIP which shows unique salt resistance performance in the harsh environment as well as Low pimd performance Coupler port is installed in the connector body in order to reduce cost , and increase space efficiency.



Parameter	Value
Frequency Range	dc ~ 6GHz
Impedance	50ohm(Nominal)
Return Loss	< -23.1dB(VSWR 1.15)
Coupling Value (Coupler only)	-30.0~-50.0dB @3.5GHz (±1dB Freq. Point, B/W 100MHz)
Insertion Loss	> -0.05x √f(GHz)
Insulation resistance	> 5000MΩ
Contact Resistance	Inner Contact ≤1.5mΩ(Max.) Outer Contact ≤1.0mΩ(Max.)
Isolation	< -90dB@1GHz
Input Power	500W @2GHz
PIMD	< -160dBc(+43dBm/2tone)
Durability	500matings
Temperature / Humidity Range	-40°C ~ +85°C / 65°C, 80%
Salt spray(5%)	720hrs
Environment Class	Mating sealing: IP67 Inner sealing: IP67
Material (Finish)	Body : Bs(TIP) Inner : BeCu, Bs(Silver) Insulator : PTFE Gasket: Silicone rubber Chain : STS(passivity)

## 4.1/9.5



Parameter		Value
Frequency Range		dc ~ 6GHz
Impedance		50ohm(Nominal)
Return Loss		< -32.2dB(VSWR 1.05)
Insertion Loss		> -0.05 x $\sqrt{f}$ (GHz)
Insulation resistance		> 5000M $\Omega$
Contact Resistance(mOhm)		Inner Contact $\leq$ 1.0m $\Omega$ Outer Contact $\leq$ 1.5m $\Omega$
Isolation		< -90dB@1GHz
Input Power		500W @2GHz
PIMD		< -160dBc(+43dBm/2tone)
Durability		500matings
Temperature / Humidity Range		-40°C ~ +85°C / 65°C, 80%
Salt spray(5%)		720hrs
Environment Class	Mating sealing	IP67
	Inner sealing	Airleak 0.15bar 1Min.
Material (Finish)		Body : Bs(TIP) Inner : BeCu, Bs(Silver) Insulator : PTFE Gasket: Silicone rubber

## 4.3/10

### Connector & with Coupler Port Connector

Features of 4.3-10 connectors are compact reduced size than 7/16 Din connector, and offers excellent electrical characteristics, and the best Low PIM performance among of RF connector series. Three different coupling mechanisms of the plug connectors screw, quick-lock/push-pull and hand-screw types are mateable with all jack connectors.



Parameter		Value
Frequency Range		dc ~ 6GHz
Impedance		50ohm(Nominal)
Return Loss		< -36.6dB(VSWR 1.03) @4GHz < -32.2dB(VSWR 1.05) @6GHz
Coupling Value (Coupler only)		-30.0~-50.0dB @3.5GHz ( $\pm$ 1dB Freq. Point, B/W 100MHz)
Insertion Loss		> -0.05 x $\sqrt{f}$ (GHz)
Insulation resistance		> 5000M $\Omega$
Contact Resistance		Inner Contact $\leq$ 1.0m $\Omega$ Outer Contact $\leq$ 1.5m $\Omega$
Isolation		< -110dB min. @6GHz, screw type < -90dB min. @3GHz, Hand screw, Quick lock type < -70dB min. @3~ 6GHz, Hand screw, Quick lock type
Input Power		500W @2GHz
PIMD		< -166dBc(+43dBm/2tone) < -160dBc(+46dBm/2tone)
Durability		500matings
Temperature / Humidity Range		-40°C ~ +85°C / 65°C, 80%
Salt spray(5%)		720hrs
Environment Class	Mating sealing	IP67
	Inner sealing	IP67

## 4.3/10 NEXT

Basically Telcon new 4.3-10 Advanced connector is upgrading interface version which prevent 4.3-10 jack connectors from accidentally mating with 4.1-9.5 male connector. Moreover Telcon offers special features of mechanical spec with 500 mating durability, and environmental spec with salt spray testing with 720hrs guarantee. This small change make Telcon.



- Eliminating the risk of mating with 4.1/9.5 male connector
- Excellent coating technology
- IEC standard compatible

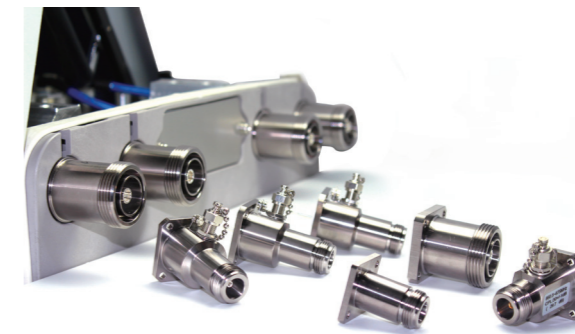
Parameter	Value
Frequency Range	Dc ~ 6GHz
Impedance	50ohm(Nominal)
Return Loss	< -36.6dB(VSWR 1.03) @4GHz < -32.2dB(VSWR 1.05) @6GHz
Insertion Loss	> -0.05 x $\sqrt{f}$ (GHz)
Insulation resistance	> 5000M $\Omega$
Contact Resistance(mOhm)	Inner Contact $\leq$ 1.0m $\Omega$ Outer Contact $\leq$ 1.5m $\Omega$
Isolation	< -110dB min. @6GHz, screw type < -90dB min. @3GHz, Hand screw, Quick lock type < -70dB min. @3~ 6GHz, Hand screw, Quick lock type
Input Power	500W @2GHz
PIMD	< -166dBc(+43dBm/2tone) < -160dBc(+46dBm/2tone)
Durability	100matings
Temperature / Humidity Range	-40°C ~ +85°C / 65°C, 80%
Salt spray(5%)	720hrs
Environment Class	Mating sealing IP67 Inner sealing Air leak 0.15bar 1Min.
Material (Finish)	Body : Bs(TIP) Inner : BeCu, Bs(Silver) Insulator : PTFE Gasket: Silicone rubber

## 7/16

### Connector & with Coupler Port Connector

Wireless mobile communication is one of the rapidly growing industries which requires high transmission power and low noise level technology. The 7/16 is a reference to the 7 mm inside diameter of the female inner contact and the corresponding 16 mm ID of the outer contact.

It is designed in consideration of mechanical robustness , and has very stabilization construction. Telcon use 7/16 Din connector with widely application like outdoor jumper cable, RRH I/O port, and adaptors, and very proud of to be featured in high level plating technology in the name of TCP/TIP enduring more than 720hours in harsh environment.



Parameter	Value
Frequency Range	dc ~ 6GHz
Impedance	50ohm(Nominal)
Return Loss	< -23.1dB(VSWR 1.15)
Coupling Value	-30.0~-50.0dB @3.5GHz ( $\pm$ 1dB Freq. Point, B/W 100MHz)
Insertion Loss	> -0.05 x $\sqrt{f}$ (GHz)
Insulation resistance	> 10,000M $\Omega$
Contact Resistance(mOhm)	Inner Contact $\leq$ 0.4m $\Omega$ Outer Contact $\leq$ 1.5m $\Omega$
Isolation	< -90dB min. @3GHz
Input Power	500W @2GHz
PIMD	< -165dBc(+43dBm/2tone)
Durability	500matings
Temperature / Humidity Range	-40°C ~ +85°C / 65°C, 80%
Salt spray(5%)	720hrs
Environment Class	Mating sealing IP67 Inner sealing Airleak 0.15bar 1Min.
Material (Finish)	Body : Bs(TIP) Inner : BeCu, Bs(Silver) Insulator : PTFE Gasket: Silicone rubber Chain : STS(PASSIVITY)



# Multi Port RF Connector

# Memo

Telcon's Screw type multi RF Connector is designed to provide multiple RF ports within a single connector, and it provides the following advantages.

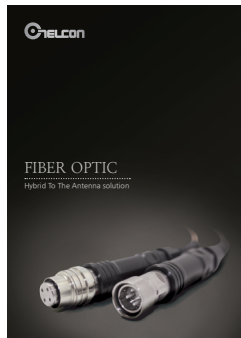


- Easy installation
- Cable-Saving design
- Very robust housing and coupling mechanism
- Stable RF performance – Passive Inter Modulation Distortion

Parameter	Value
Frequency Range	dc ~ 6GHz
Number of port	4 ports (Possible customize)
Impedance	50ohm(Nominal )
Return Loss	< -30.7dB(VSWR 1.06)
Insertion Loss	> -0.05 x $\sqrt{f}$ (GHz)
Insulation resistance	> 5000M $\Omega$
Contact Resistance(mOhm)	Inner Contact $\leq$ 3.0m $\Omega$
	Outer Contact $\leq$ 2.5m $\Omega$
Isolation	< -90dB min. @3GHz
Input Power	300W @2GHz
PIMD	< -160dBc(+43dBm/2tone)
Durability	100matings
Temperature / Humidity Range	-40°C ~ +85°C / 65°C, 80%
Salt spray(5%)	720hrs
Environment Class(Mating sealing)	IP67
Material (Finish)	Body : Bs, BeCu(TIP)
	Inner : BeCu, Bs(Silver)
	Insulator : PTFE
	Gasket: Silicone rubber



## Company Products



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