

Datasheet _ MG215M

Products (Part number)

- MG215M Receptacle (MG215MRE02)
- MG215M Plug to MG215M plug cable assembly 300mm (MGC15203)
- MG215M Plug to MG215M plug cable assembly 400mm (MGC15204)
- MG215M Plug to MS15A plugs cable assembly 75mm (MGC15205)

Accessory (Part number)

- MG215M Plug to SMA(Female) cable assembly 400mm (TRA2P01)
- MG215M Test board (TPA2PA3)
- Tweezer for mating and un-mating (GJSZZA7)





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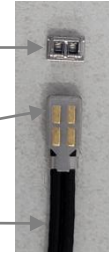
1. MG215M Products

1.1. Receptacle (P/N : MG215MRE02)

1.2. Plug to plug cable assembly (P/N : MGC152XX)

1.2.1. Plug for cable (P/N : MG215PL03)

1.2.2. Raw cable (P/N : FXPL30D1)



Made by its length and customer

2. Electrical & Mechanical Specification

2.1 Raw Cable (P/N : FXPL30D1)

Layers		Material	Thickness
1	Center Conductor	Silver Plated Copper [Solid]	0.25 [mm] / 0.01 [inch]
2	Dielectric	LDPFA [Extruded]	-
3	Outer Conductor	Silver plated copper wire /Copper tape	
4	Jacket	FEP	1.1 [mm] / 0.04 [inch]

Characteristic Impedance	Typ. 50 Ω
Operating Frequency	DC to 15 GHz
Temperature	-40 °C ~ +85 °C
Velocity of Propagation	78% nominal
Minimum Bend Radius	5 mm / 0.197 inch

Frequency	Insertion Loss	
	[dB/10cm]	[25°C, at Sea Level] [dB/FT]
5 GHz	- 0.33	- 1.01
10 GHz	- 0.47	- 1.43
15 GHz	- 0.62	- 1.89



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2.2 MGC15203(300mm cable assembly) with MG215MRE02(receptacle) mated at both ends

2.2.1 Electrical Performance

Specification	Frequency	Performance
Return Loss (Max.)	DC ~ 15GHz	-15dB
Insertion Loss (Typ.)	DC ~ 15GHz	-1.8dB
Crosstalk (Typ.)	DC ~ 15GHz	-50dB

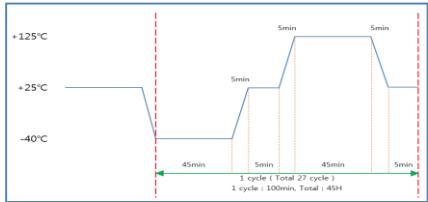
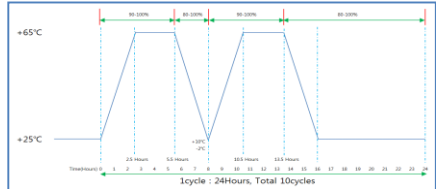
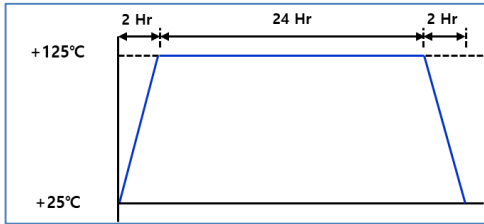
2.2.2 Mechanical performance

Mating & Un-mating Force	1. Mating & Un-mating Force after test. - Mating : 30N•m Max. - Un-mating :5N•m Min.	EIA-364-13 1. Test Equipment : Universal Testing Machine 2. Test Method : Receptacle(Connector) & Plug Cable Mating & Un-mating. - Speed : 25±3mm/min - Measure : After 20 times
Durability	1. Mating & Un-mating Force after test. - Mating : 30N•m Max. - Un-mating : 3N•m Min.	EIA-364-09 1. Test Equipment : Universal Testing Machine 2. Test Method : Receptacle(Connector) & Plug Cable Mating & Un-mating. - Speed : 25±3mm/min - Measure : After 20 times Min
Cable Retention Force	1. No disconnection (0.1s Max) 2. No mechanical deformation or damage.	1. Test Equipment : Push-Pull Gauge Power Supply 2. Test Method : 100mA DC power supply at insertion state. - Measure : at 0degree 10N•m



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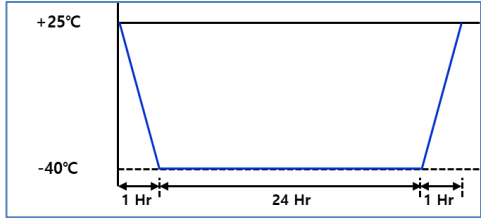
2.2.3 Environmental Performance

<p>Thermal Shock</p>	<p>1. Satisfy the electrical characteristics. 2. No mechanical deformation or damage.</p>	<p>UL 83 & UL 12771. 1. Test Equipment : Thermal Shock Chamber 2. Test Method : -40°C ~ +125°C - 1 cycle : -40°C (45 min) → 25 °C (5 min) → 125°C (45 min) → 25°C (5min) - Total 27cycles (45hours) - Measure : After leaving at room temperature for 1hour</p> 
<p>Moisture Resistance</p>	<p>1. Satisfy the electrical characteristics. 2. No mechanical deformation or damage.</p>	<p>MIL-STD-202G Method 10 1. Test Equipment : Temperature & Humidity Chamber 2. Test Method : +25°C ~ +65°C / 80% ~ 100% RH - Total 10 cycles (1 cycle : 24 hours) - Measure : After removing moisture and leaving it at room temperature for 1 hour.</p> 
<p>High Temperature</p>	<p>1. Satisfy the electrical characteristics. 2. No mechanical deformation or damage.</p>	<p>1. Test Equipment : Temperature & Humidity Chamber 2. Test Method : +125 °C, 24 hours - Measure : After leaving at room temperature for 1 hour</p> 



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2.2.3 Environmental Performance

<p>Low Temperature</p>	<p>1. Satisfy the electrical characteristics. 2. No mechanical deformation or damage.</p>	<p>1. Test Equipment : Temperature & Humidity Chamber 2. Test Method : -40 °C, 24 hours - Measure : After leaving at room temperature for 1 hour</p> 
<p>Vibration</p>	<p>1. No disconnection (0.1s Max) 2. No mechanical deformation or damage.</p>	<p>MIL-STD-202G Method 204, Condition A 1. Test Equipment : Vibration Testing Machine, Power Supply 2. Test Method : 100mA DC power supply at insertion state. - Frequency : 10-50-10Hz/min - Amplitude, acceleration : 0.76 ~ 1.52mm/S2 (6G) - Test Time : 2 hours for each X, Y, Z axis (Total 6 hours)</p>
<p>Salt Spray (Corrosion)</p>	<p>1. No corrosion, red rust, defect</p>	<p>1. Test Equipment : Salt Spray Chamber 2. Test Method : - Salinity : NaCl 5% Spray - Chamber Temperature : 35°C - Test Time : 72 Hours - Remove all salt water with water, dry it for 12 hours and check.</p>

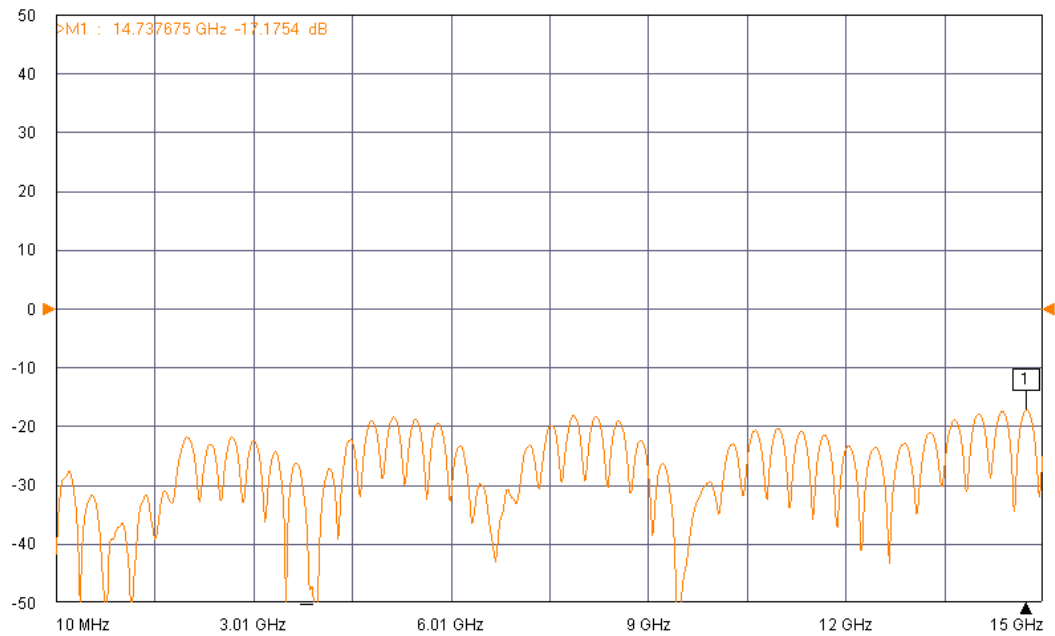


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2.3 RF Test data

2.3.1. Return loss

Tr1 S11 Refl LogM RefLvl: 0 dB Res: 10 dB/Div



2.3.2. Insertion loss

Tr3 S21 Trans LogM RefLvl: 0 dB Res: 1 dB/Div

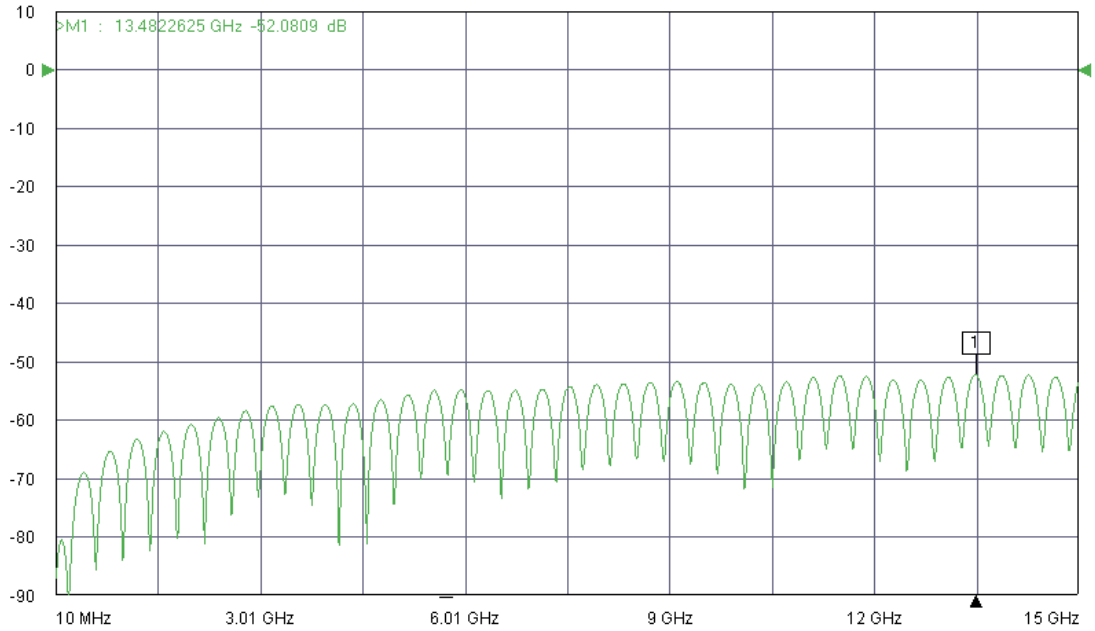




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2.3.3. Cross talk

Tr2 S12 Trans LogM RefLvl: 0 dB Res: 10 dB/Div

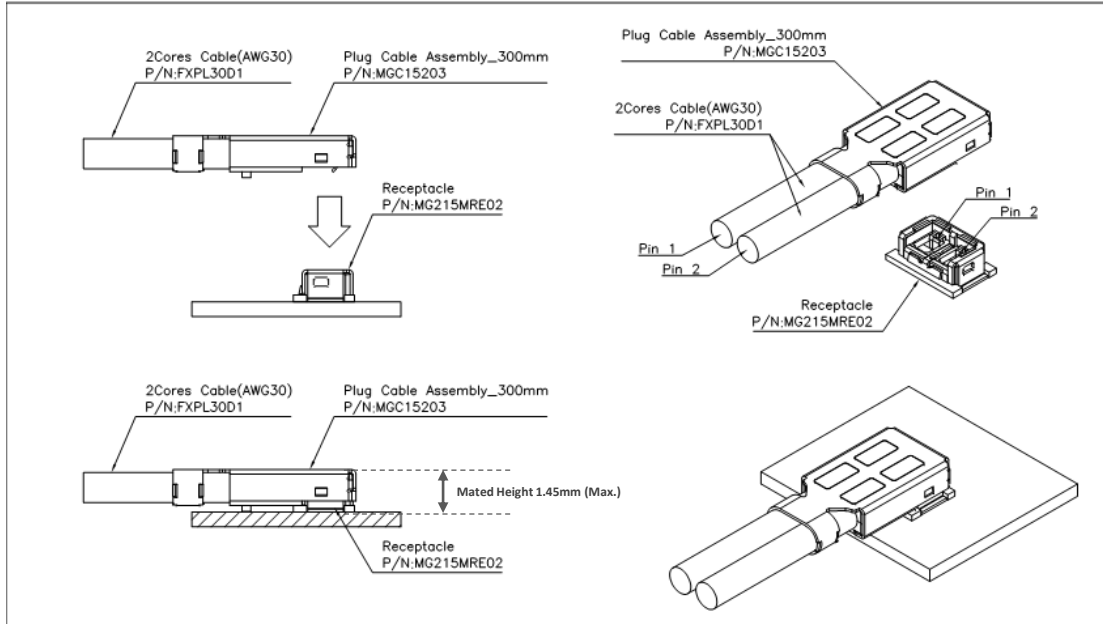




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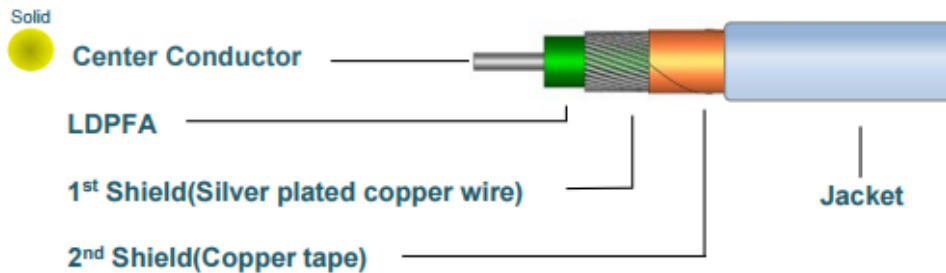
3. Structure Figure

3.1. Plug and receptacle



- Plug can be provided as being assembled with cable

3.2. Outer Diameter 1.1mm cable (P/N : FXPL30D1)

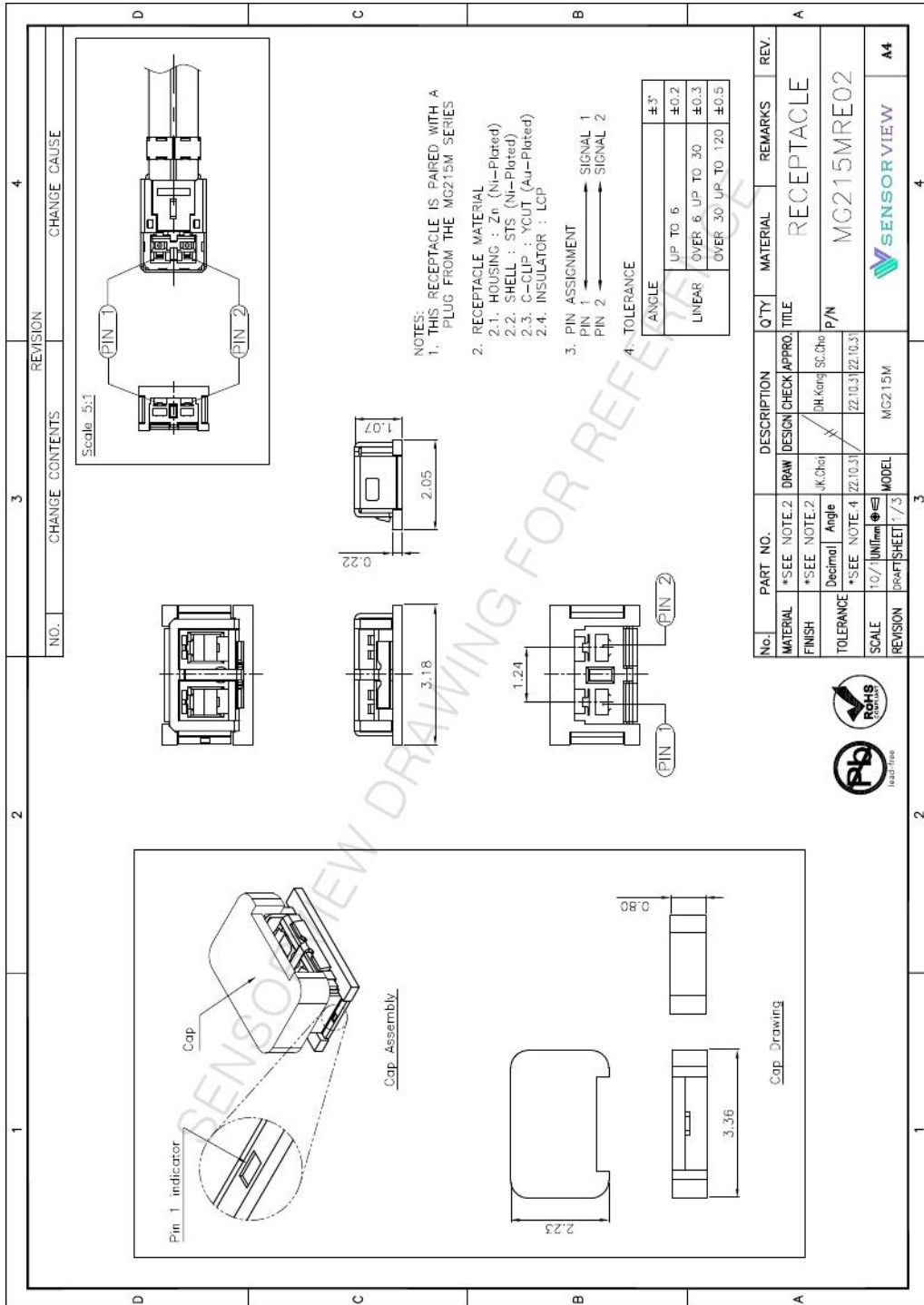




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4. Drawing

4.1. MG215M Receptacle (P/N : MG215MRE02) _ 1/3





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4.1. MG215M Receptacle (P/N : MG215MRE02) _ 2/3

1	2		3		4	
		CHANGE CONTENTS		REVISION		CHANGE CAUSE
		NO.				

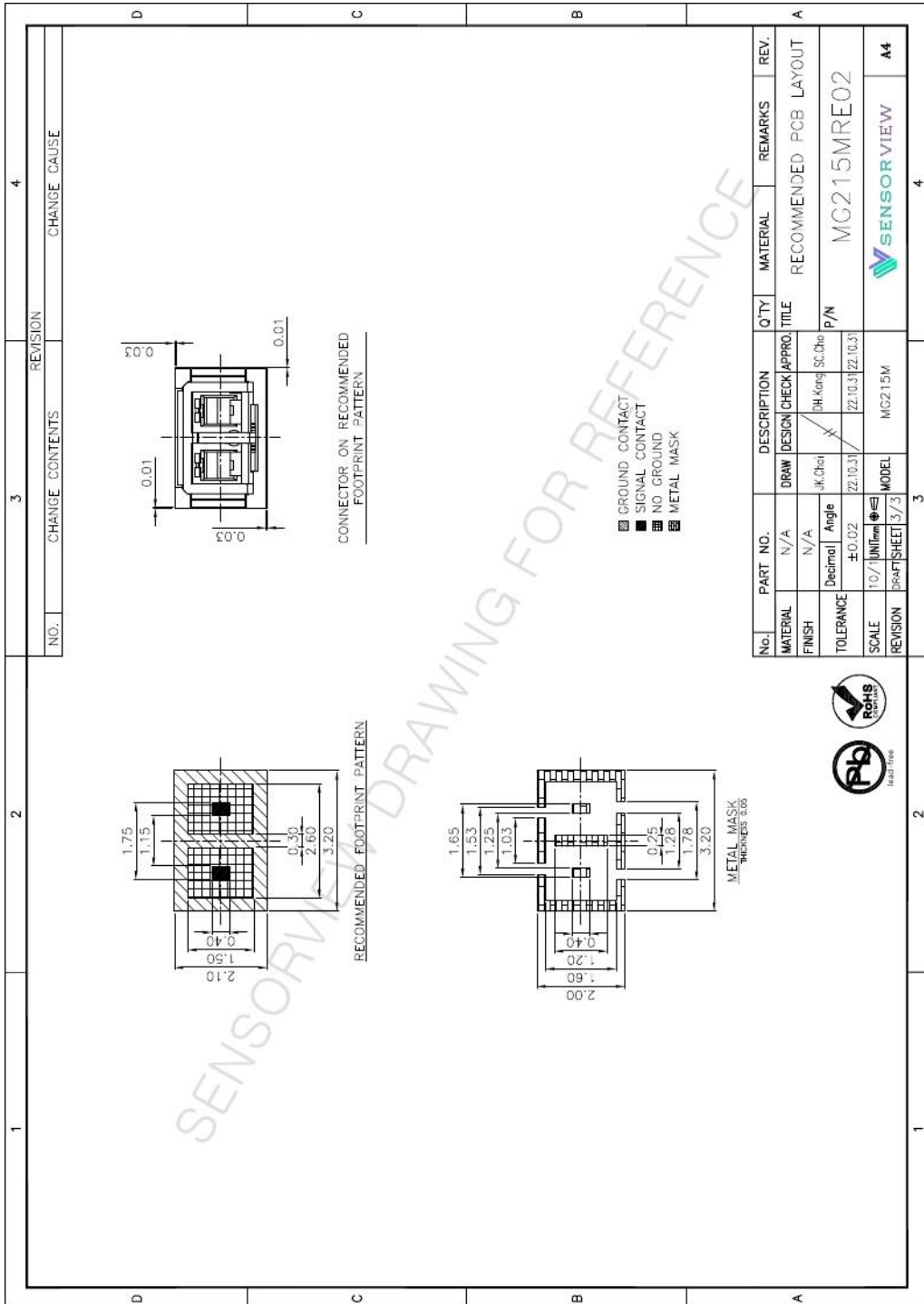
No.	Parameter	Unit	Specification
1	Item		MG215M Receptacle
2	Applicable country		Korea
3	Environmental Conditions		Indoor
4	Operating frequency range	GHz	DC ~ 15
5	Connector type		Vertical type
6	Weight (Ass'y)	g	about 0.02
7	Impedance	Ω	50 (Typ.)
8	Insertion Loss	dB	See MG215M Plug Cable Assembly Specification
9	Return Loss	dB	-15.0dB (Max.) < With MG215M Plug Cable Assembly >
10	Crosstalk	dB	-50 (Typ.) < With MG215M Plug Cable Assembly >
11	Contact Resistance	mΩ	Center / Outer 40 (Max.) < With MG215M Plug Cable Assembly >
12	Insulation Resistance	MΩ	500 < With MG215M Plug Cable Assembly >
13	Dielectric voltage-withstand	V	100 < With MG215M Plug Cable Assembly > AC / 60 sec / 5mA
14	Rated Voltage	Vrms	85 < With MG215M Plug Cable Assembly >
15	Durability	Cycle	20 (Max.)
16	Mating Force	N·m	5 (Min.), After Test : 3 (Min.)
17	De-Mating Force	N·m	30 (Max.)
18	Operating Temperature	°C	-40 ~ 85
19	Storage Temperature	°C	-40 ~ 110
20	Salt Spray (Corrosion)		MIL-STD-202G, Method 101, Condition B
21	Thermal Shock		MIL-STD-202G, Method 107, Condition B1
22	High/Low Temperature		EIA-364-17
23	Vibration		MIL-STD-202G, Method 204, Condition A
24	Moisture Resistance		MIL-STD-202G, Method 106

No.	PART NO.	DESCRIPTION	Q'TY	MATERIAL	REMARKS	REV.
MATERIAL	N/A	DRWN / DESIGN / CHECK / APPRO	TITLE	RECEPTACLE SPECIFICATION		
FINISH	N/A	UK,Char				
TOLERANCE	Decimal / Angle	DH, Kmg, SC, Oho				
SCALE	N/A	22.10.31 / 22.10.31	P/N	MG215MRE02		
REVISION	10 / UNIT / DRAFT SHEET / 2 / 3	MODEL				



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4.1. MG215M Receptacle (P/N : MG215MRE02) _ 3/3



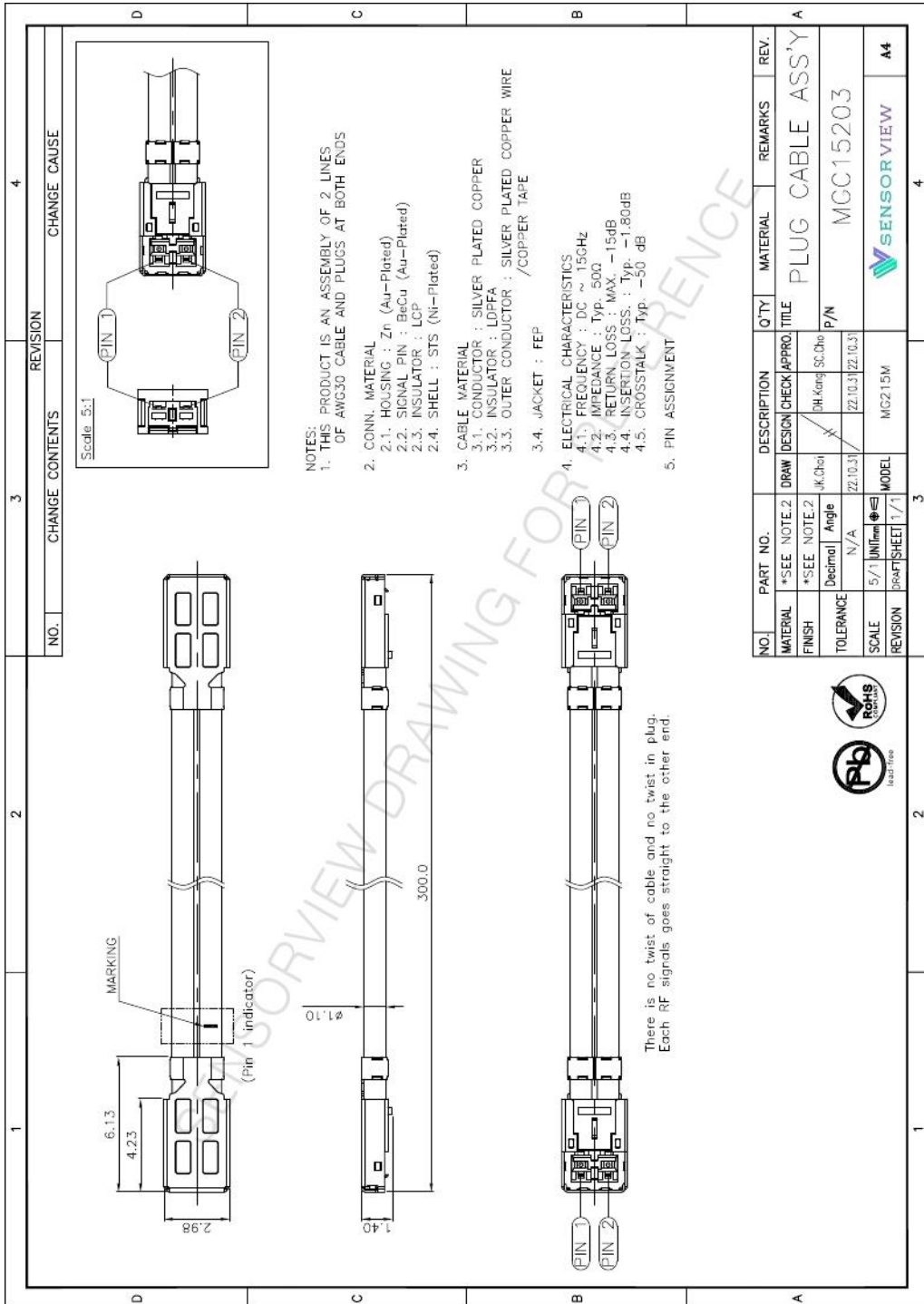


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Length of cable can be modified by request

4.2. MG215M Plug to MG215M plug cable assembly 300mm (P/N : MGC15203)

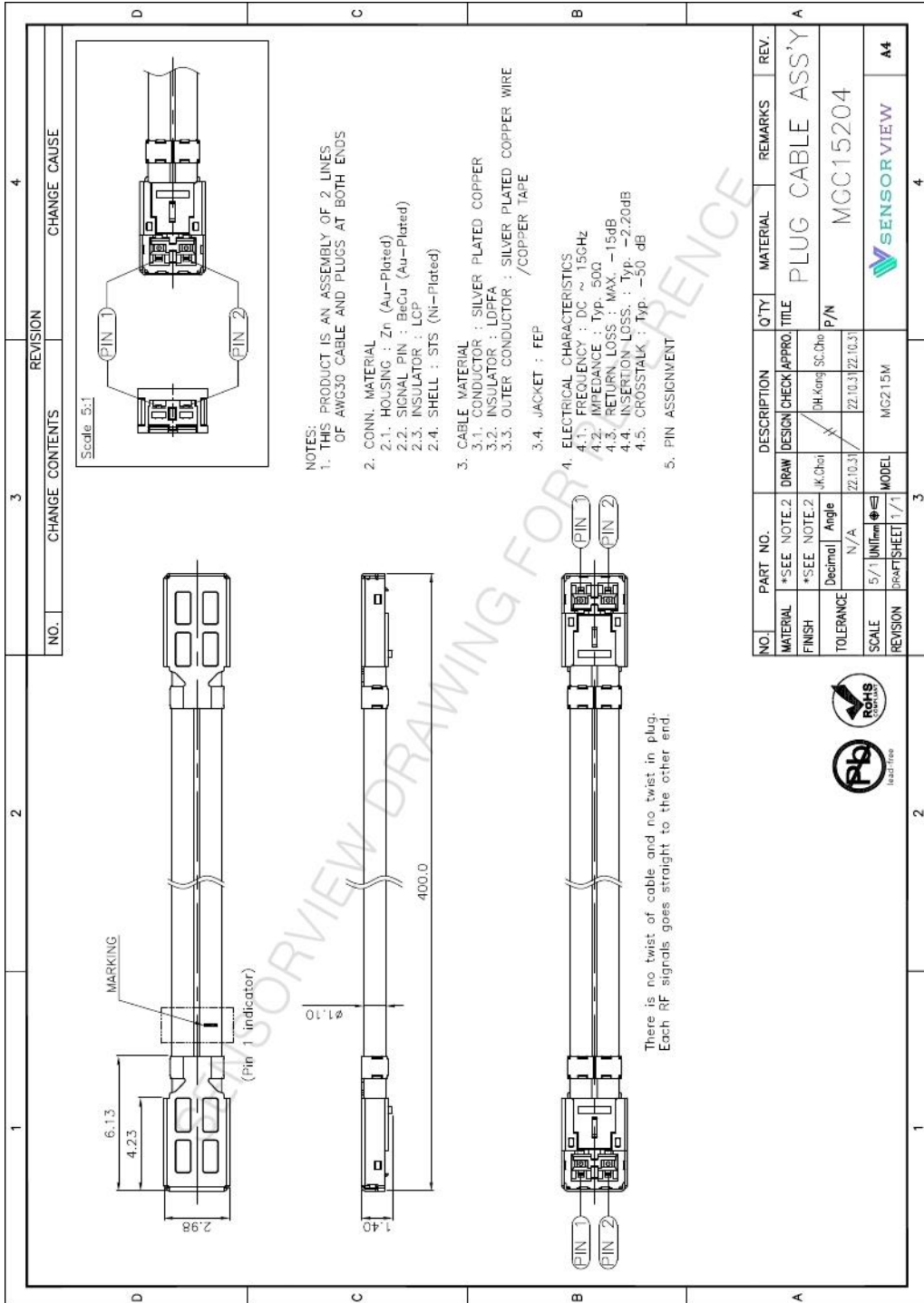




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Length of cable can be modified by request

4.3. MG215M Plug to MG215M plug cable assembly 400mm (P/N : MGC15204)





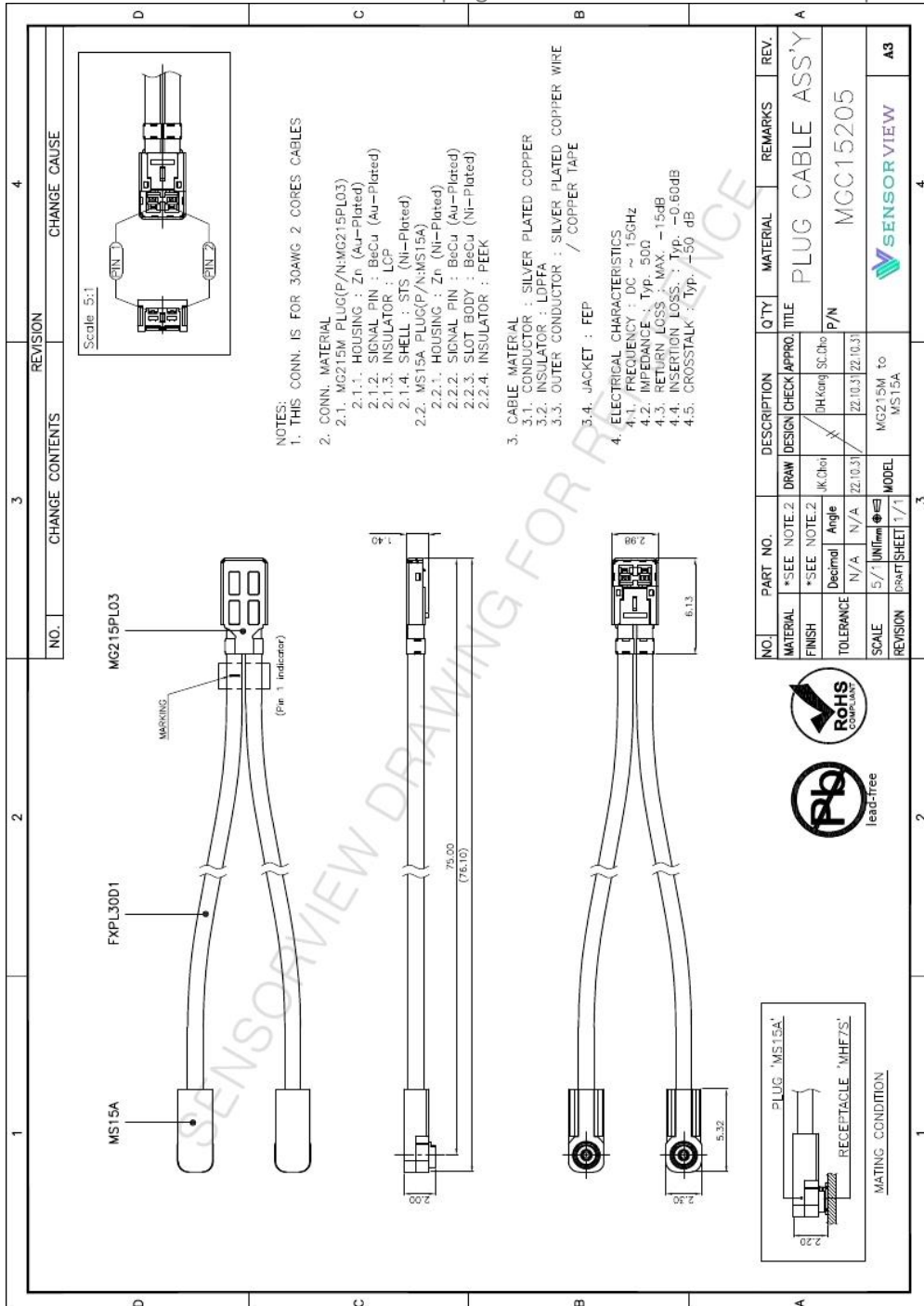
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Length of cable can be modified by request

4.4. MG215M Plug to MS15A plugs cable assembly 75mm (P/N : MGC15205)

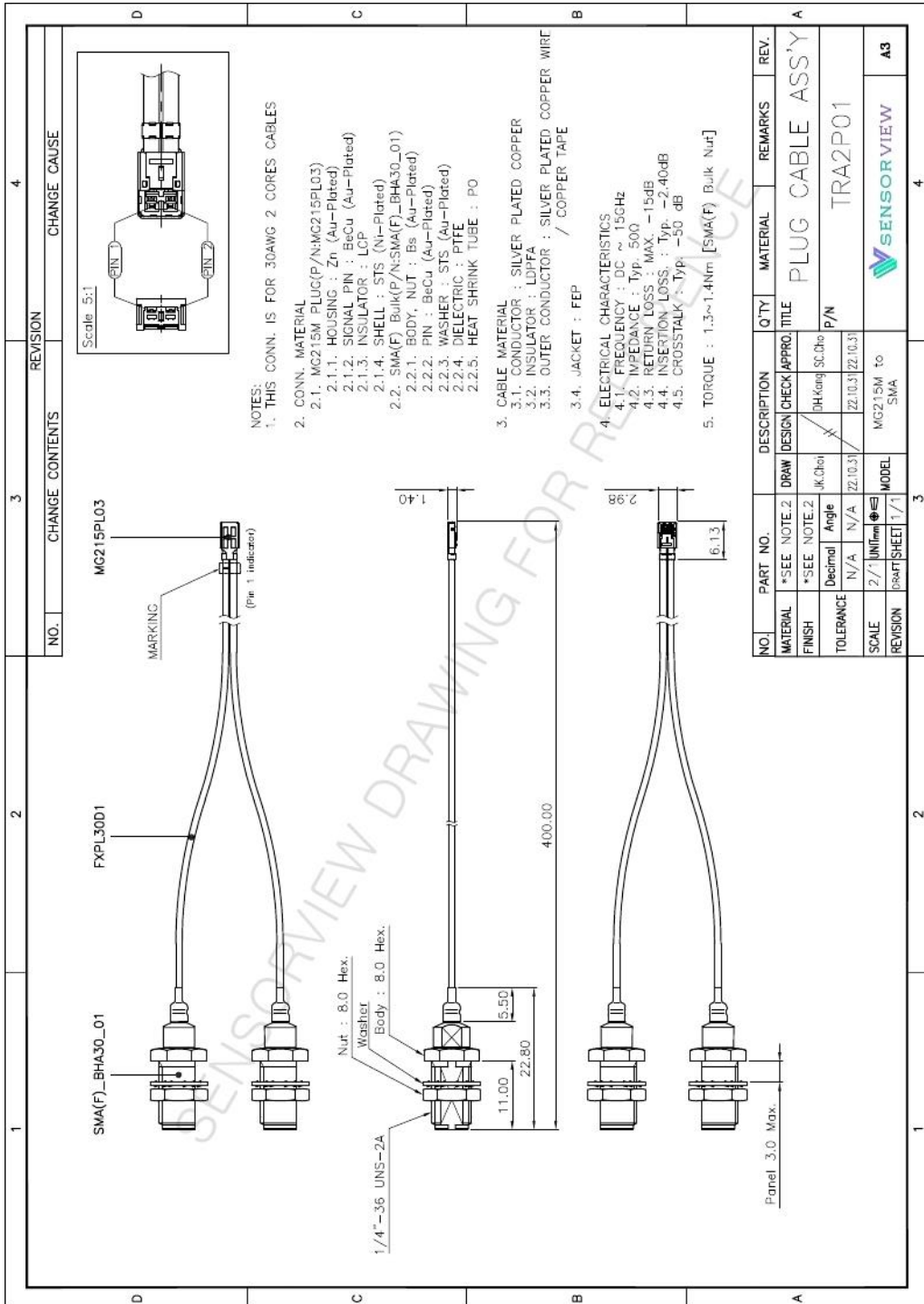
MS15A is a plug which can mate with MHF7S receptacle





Length of cable can be modified by request

4.5. MG215M Plug to SMA(Female) cable assembly 400mm (P/N : TRA2P01)





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4.6. MG215M Test board (P/N : TPA2PA3)

NO.	CHANGE CONTENTS	REVISION	CHANGE CAUSE

NOTES:

- THIS TEST PCB IS FOR MG215M SERIES
- CONN. MATERIAL
 - MG215M RECEPTACLE
 - HOUSING : Zn (Ni-Plated)
 - SHELL : STS (Ni-Plated)
 - C-CLIP : YCUT (Au-Plated)
 - INSULATOR : LCP
- 2.92mm(K) CONN.
 - BODY : Bs (Au-Plated)
 - PN : BeCu (Au-Plated)
- PCB MATERIAL
 - FR-4
 - Au-Plated
- ELECTRICAL CHARACTERISTICS
 - FREQUENCY : DC ~ 15GHz
 - IMPEDANCE : Typ. 50Ω
 - RETURN LOSS : MAX. -15dB
 - INSERTION LOSS : -2.15dB (2e-Embedding PCB Loss)
 - CROSSTALK : Typ. -50 dB

No.	PART NO.	DESCRIPTION	QTY	MATERIAL	REMARKS	REV.
MATERIAL	*SEE NOTE.2	DRAW DESIGN CHECK APPRO.				
FINISH	*SEE NOTE.2	Jk,Choi				
TOLERANCE	Decimal Angle	DH,Kang SC,Cho				
SCALE	2/1 UNIT/mm	22.10.31				
REVISION	DRAFT/SHEET 1/1	MODEL				
		MG215M				
					TPA2PA3	
						A4

RoHS Part 2

Pb free

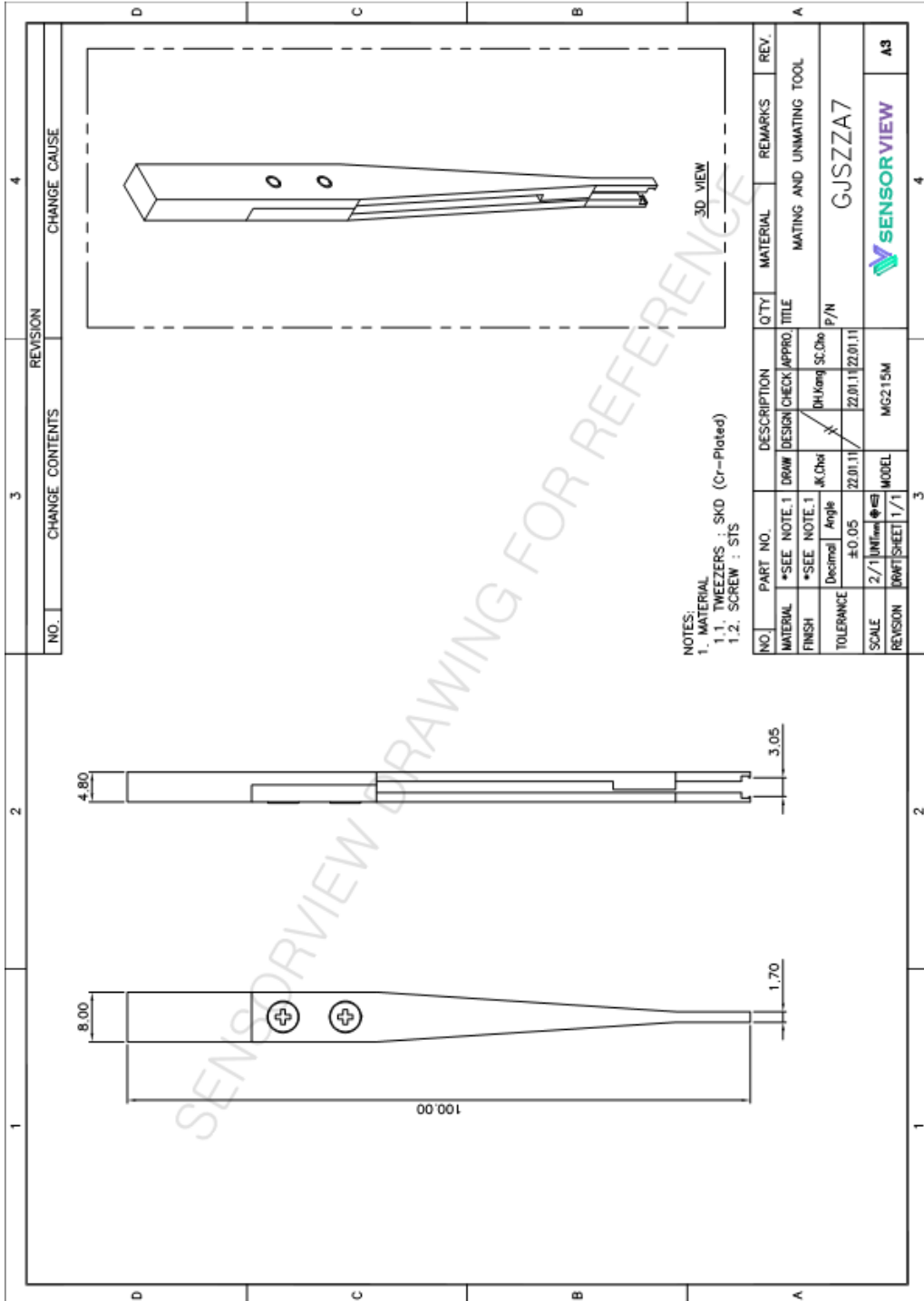
PANHEAD SCREW(4EA)
M2.6 X 0.45P, 4mm

1/4-36 UNS-2A



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4.7. Tweezer for mating and unmating (GJSZZA7)

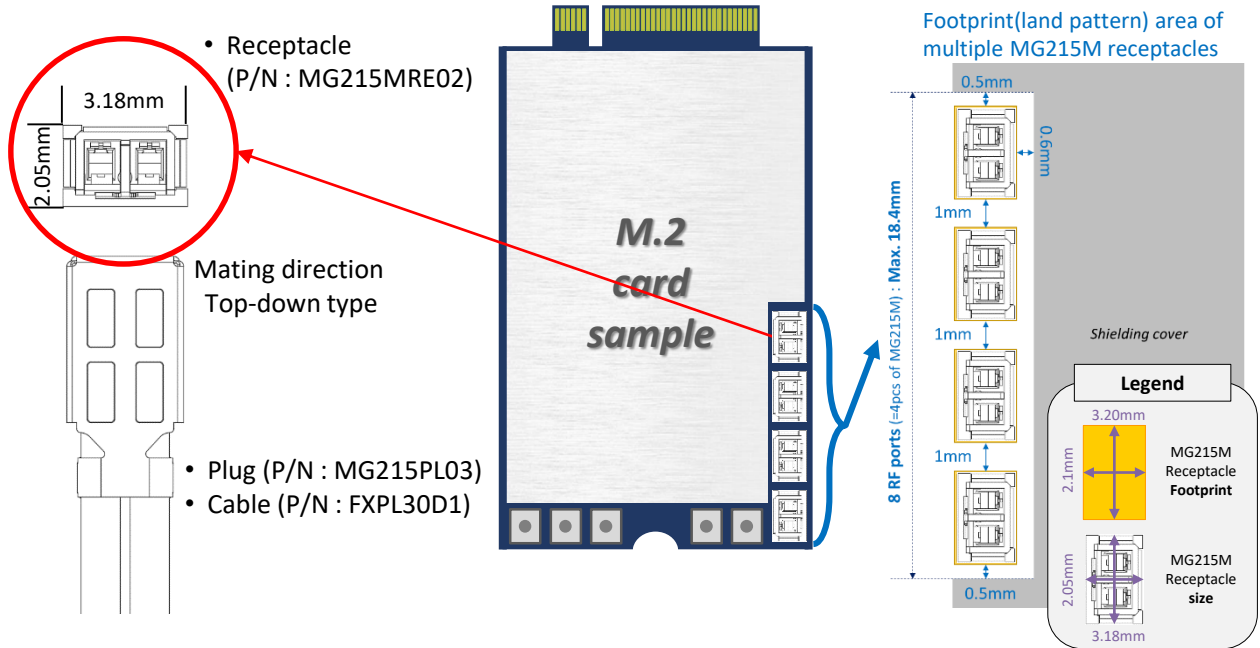




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5. Use case _ Main application of MG215M

- RF or IF(Intermediate frequency) transmission in between M.2 card and RF/Antenna module



6. Product package

Receptacle
(MPN : MG215MRE02)



[Packaged In a tape and reel]

Cable assembly
(MPN : MGC152XX)



[Packaged In ESD bag and carton]