

# Sunridge MCD Series – Ultimate Miniature Coaxial Interconnect, 1.55mm Mated Height



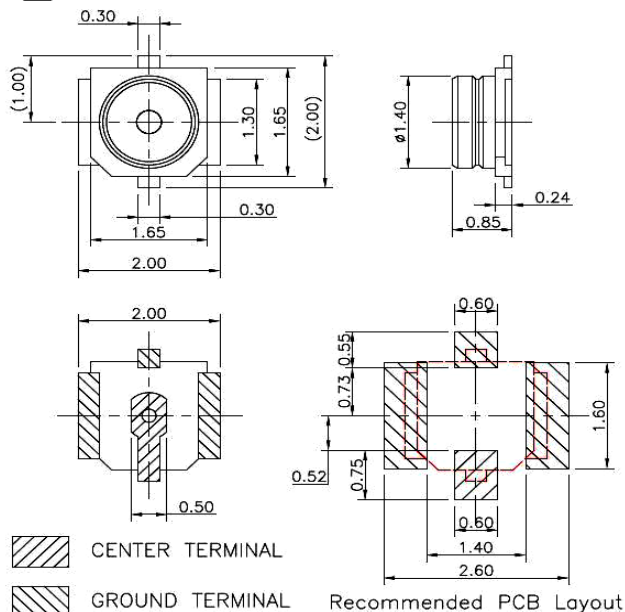
Sunridge MCD series coaxial product fulfills the rigorous requirements of high frequency data transmission in digital world. Constructed in supreme Teflon coax cable and advanced mechanical design, MCD delivers high electrical performance of a typical 1.3 max VSWR at 6.0GHz, while providing for a sturdy interconnection in a slim form factor of 2.0mm x 2.0mm footprint by 1.55mm mated height.



## Typical Application:

Smart cell phone, portable or wearable information devices, such as GPS receiver in wrist watch form factor, or hand-free sunglass cell phone.

## PCB Connector Pn: MCD-ST-00T



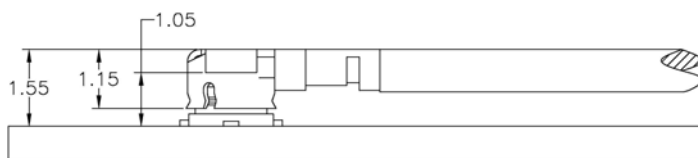
## Material Spec

**Outer Contact:** Copper Alloy, Gold Plated.  
**Center Contact:** Copper Alloy, Gold Plated.  
**Insulator:** Engineering Plastic.  
**Cable:** Silver plated center conductor with Teflon dielectric and jacket.

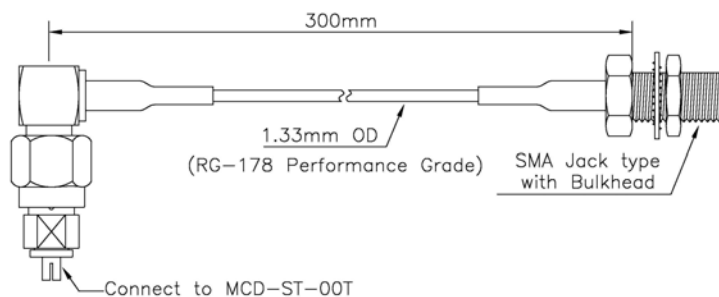
## Features

- Space Economy: 2.0mm x 2.0mm PCB footprint, mated height of 1.55mm.
- Teflon Cable s: Silver plated center conductor, Teflon dielectric and jacket.
- Cable Options: 0.81mm OD for routing flexibility; 0.91mm OD (with copper foil shield) for low insertion loss; 0.98mm OD, for structure strength.
- PCB connector: Integral molded construction ensures product reliability.
- Sturdy Connection: Lead-in and interlock features among mating pair ensure solid coupling.
- Accessory: Insertion/extraction tool, test adapters for connection to MCD cable head and PCB connector.

## Form Factor



## MCD Test Probe Pn: MCD-TP-LLL-SMAJB207 (For Production Test on MCD-ST-00T)



Note: For "SMA Plug" fitting, specify Pn MCD-TP-300-SMAP205

## Characteristics

Frequency Range	DC to 6GHz
Nominal Impedance	50 ohm
Temperature Range	-40°C to +90°C
Contact Resistance	25m ohm max
Withstanding Voltage	AC 200Vrms
Insulation Resistance	500M ohm min
Durability	20 Cycles

(dimension: mm)



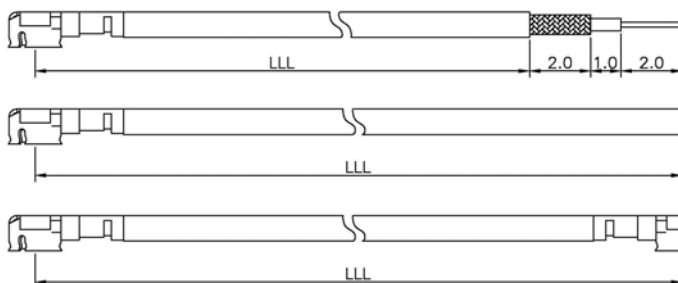
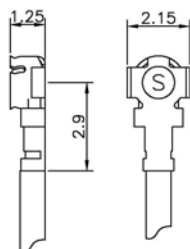
Sunridge Corporation

Specialist in Interconnect Solutions





## MCD Cable Assembly



Pn: MCD-SH-□□-LLL-T

Pn: MCD-SH-□□-LLL-F

Pn: MCD-DH-□□-LLL

### P/N Designation

MCD - □□ - □□ - □□□□ - □

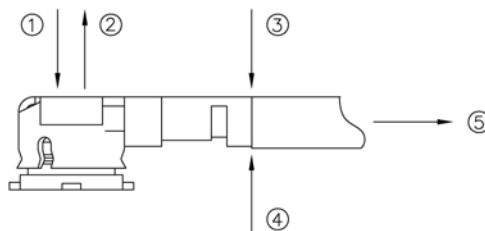
A B C D

- A. Head Configuration:** SH: Single-Headed Cable construction  
DH: Double-Headed Cable construction
- B. Coaxial Cable Code:** see cable selection guide
- C. Length (in mm):** Ex: LLL = 200: 200mm.
- D. End Cut (SH only):** T : open end striped & tinned.  
F : open end flat cut

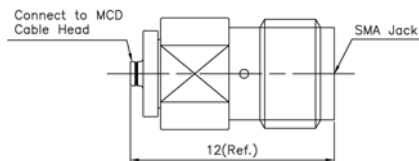
## Insertion/Extraction Tool Pn: ET-MCD



## Mechanical Application



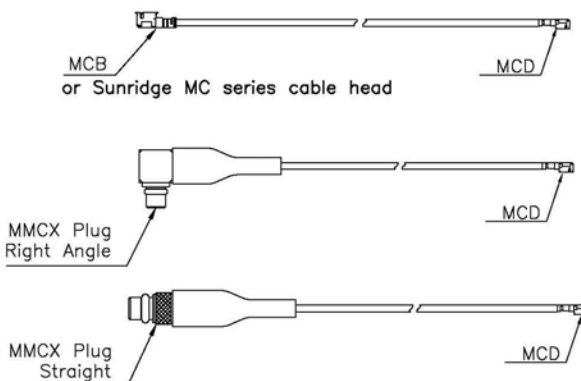
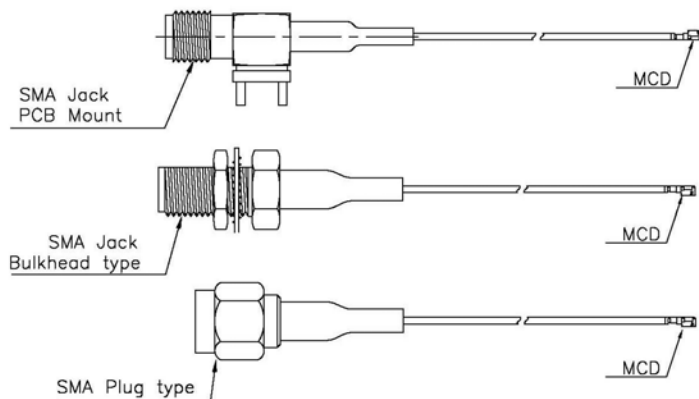
## Test Adaptor Pn: MCDP-SMAJ (Connection to Network Analyzer)



- ① Insertion force: 500gf.  
② Extraction force (with tool): 400gf.  
③ Retention, downward force: 200gf max.  
④ Retention, upward force: 200gf max.  
⑤ Retention, pull back: 2,000gf max  
Durability: 30 cycles

## Integrated Solution

MCD- cable head is typically integrated with another R/F connector for a variety of applications, such as from module to host board or to panel fitting. Sunridge is committed to support customers' integration requirement. Send your project inquiry to [engineering@sunridgecorp.com](mailto:engineering@sunridgecorp.com) for an effective solution.



[www.sunridgecorp.com](http://www.sunridgecorp.com)

(dimension: mm)



**Sunridge Corporation**

**Specialist in Interconnect Solutions**





## Cable Selection Guide

Cable Designation Code			#62	#60	#68
Inner conductor	No. and Dia.	(No./mm)	7/0.07	7/0.064	7/0.05
	Material	—	Silver plated copper wire	Silver plated copper wire	Silver plated copper wire
	Total Dia.	(mm)	0.21	0.192	0.15
Dielectric	Material	—	FEP	FEP	PFA
	Total Dia .	(mm)	0.63	0.53	0.4
Outer conductor	Material	—	Tinned copper wire/copper tape	Tinned copper wire	Silver plated copper wire
	Dia. of wire	(mm)	0.05	0.05	0.05
	Total Dia.	(mm)	0.80	0.78	0.65
Jacket	Material	—	FEP	FEP	PFA
	Nominal thickness	(mm)	0.05	0.1	0.08
Overall Dia.		(mm)	0.91	0.98	0.81
Nominal impedance		(Ohm)	50	50	50
Voltage rating		Vrms Max.	300	300	300
Nominal static capacitance		(pF/m)	97	97	96
Insertion loss		dB/m at 1GHz	2.00	2.66	3.53
		dB/m at 2GHz	2.60	3.82	5.17
		dB/m at 2.4GHz	3.10	4.45	5.71
		dB/m at 3GHz	3.50	4.73	6.45
		dB/m at 5GHz	4.00	6.21	8.53
		dB/m at 6GHz	4.40	7.45	9.42

## Application Note:

### ● #68 Cable of 0.81mm OD:

Feature: Thin and flexible. Good for short-length application that requires maximum flexibility and minimum pull-strain.

Suitable for: (1.) MCD-SH-68-LLL-T, single head cable assy with stripped end, for soldering directly to PCB. (2.) Board to board connection between two Sunridge MC- series PCB connectors, e.g., MCD-to-MCD or MCD-to-MCB (if the other end is free of the height constraint of 1.55mm) cable assy, etc. (3.) MCD-to-RF cable assy, such as MCD to SMA Jack (either panel mount or PCB mount) for connection to external antenna.

### ● #60 Cable of 0.98mm OD:

Features: Lower insertion loss. Strong mechanical structure.

Suitable for: (1.) MCD-SH-60-LLL-T, single head cable assy with stripped end, for soldering directly to PCB. (2.) Board to board connection between two Sunridge MC- series PCB connectors, e.g., MCD-to-MCD or MCD-to-MCB (if the other end is free of the height constraint of 1.55mm) cable assy, etc. (3.) MCD-to-RF cable assy, such as MCD to SMA Jack (either panel mount or PCB mount) for connection to external antenna.

### ● #62 Cable of 0.91mm OD:

Features: Very low insertion loss, and good EMI-shielding.

Caution: #62 cable is highly heat sensitive; thus, it should NOT be used for subsequent manual soldering. MCD-SH-62-LLL-T is NOT recommended for soldering directly to PCB or for assembly with another RF connector.

Suitable for: (1.) Board to board connection between two Sunridge MC- series PCB connectors, e.g., MCD-to-MCD or MCD-to-MCB (if the other end is free of the height constraint of 1.55mm) cable assy, etc. (2.) For low insertion-loss and low EMI requirement, Sunridge can offer MCD-to-RF cable assy solution with #62 cable, such as MCD to SMA Jack, upon customer's request.

[www.sunridgecorp.com](http://www.sunridgecorp.com)

(dimension: mm)



**Sunridge Corporation**

*Specialist in Interconnect Solutions*

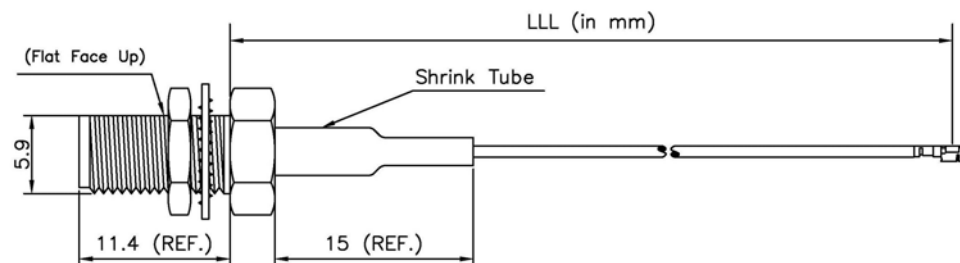




## MCD- Derivative Cable Assembly P/N Selector:

(Illustration of the most commonly used MCD-RF cable assy. A variety of other RF configurations is readily available at Sunridge Corp. Contact [engineering@sunridgecorp.com](mailto:engineering@sunridgecorp.com) for project inquiry.)

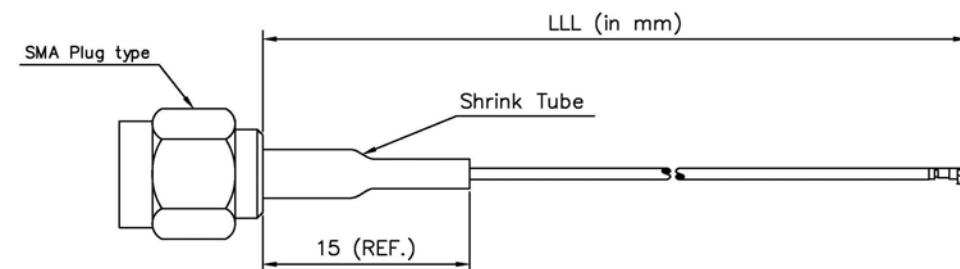
### ■ MCD to SMA Bulkhead Jack (Panel Mount) Cable Assembly:



Range	Tolerance
50 < LLL < 100	± 2
100 < LLL < 200	± 3
300 < LLL < 300	± 5
300 < LLL < 500	± 10
500 < LLL < 1000	± 25
1000 < LLL	±60

Descriptions	Recommended Cable	Sunridge P/N
MCD to SMAJB	#60, 0.98 mm OD	MCD-RH-60-LLL-SMAJB103
MCD to SMAJB Reverse Polarity (RP)	#60, 0.98 mm OD	MCD-RH-60-LLL-SMAJB181
MCD to SMAJB with O-Ring Seal	#60, 0.98 mm OD	MCD-RH-60-LLL-SMAJB105
MCD to SMAJB RP with O-ring Seal	#60, 0.98 mm OD	MCD-RH-60-LLL-SMAJB183

### ■ MCD to SMA Plug Cable Assembly:



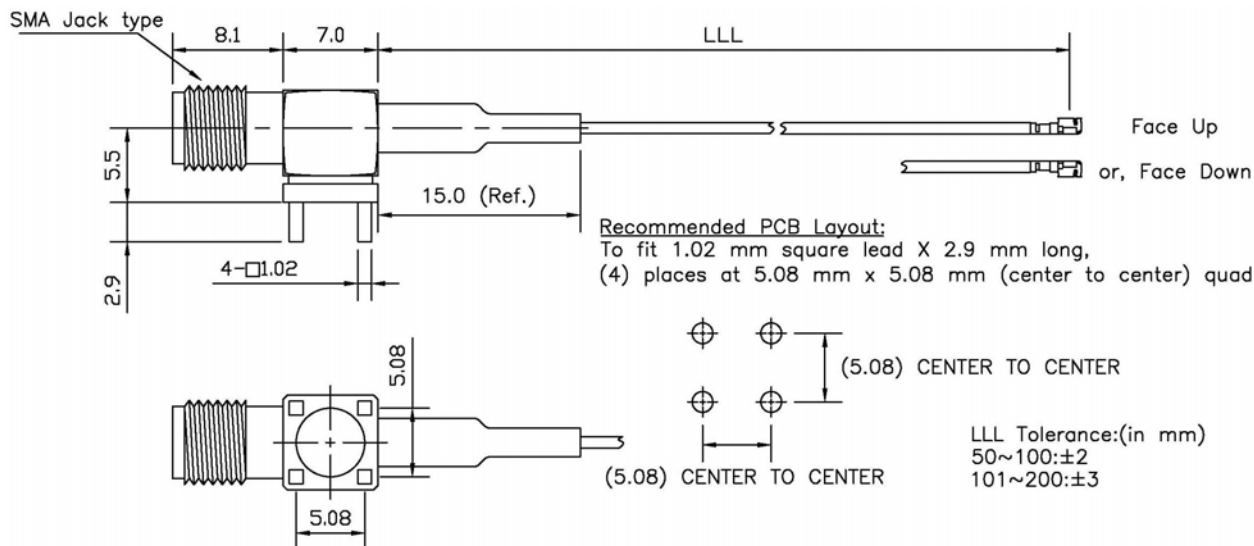
Range	Tolerance
50 < LLL < 100	± 2
100 < LLL < 200	± 3
300 < LLL < 300	± 5
300 < LLL < 500	± 10
500 < LLL < 1000	± 25
1000 < LLL	±60

Descriptions	Recommended Cable	Sunridge P/N
MCD to SMAP	#60, 0.98 mm OD	MCD-RH-60-LLL-SMAP103
MCD to SMAP Reverse Polarity (RP)	#60, 0.98 mm OD	MCD-RH-60-LLL-SMAP181





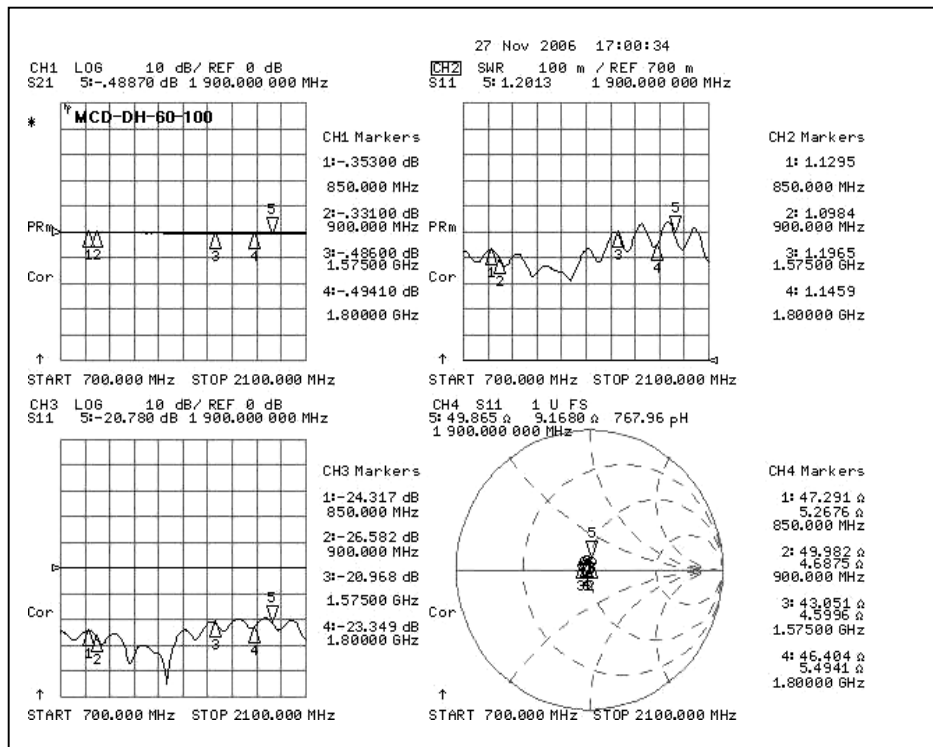
## MCD to SMA Jack (PCB Mount) Cable Assembly:



Descriptions	Recommended Cable	Sunridge P/N
MCD to SMAJ PCB Mount (Converse Orientation, MCD Faces Up)	#60, 0.98 mm OD	MCD-RH-60-LLL-SMAJX105-R1
MCD to SMAJ PCB Mount (Regular Orientation, MCD Faces Down)	#60, 0.98 mm OD	MCD-RH-60-LLL-SMAJX105

## Performance Measurement Reference:

(Test sample: MCD dual head cable assy; Test instrument: Agilent 8753ES.)



## MCD-DH-60-100

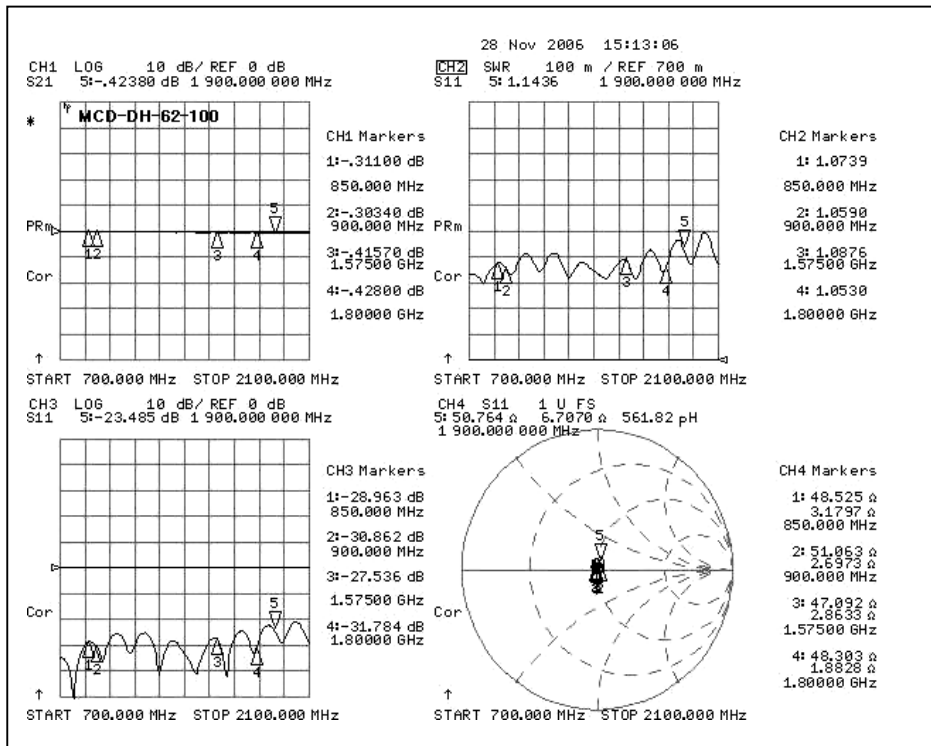
Length: 100mm  
Cable Code: #60  
OD: 0.98mm  
Inner Conductor: 0.192mm  
Dielectric: 0.53mm  
Outer Conductor: 0.78mm  
Jacket: 0.98mm





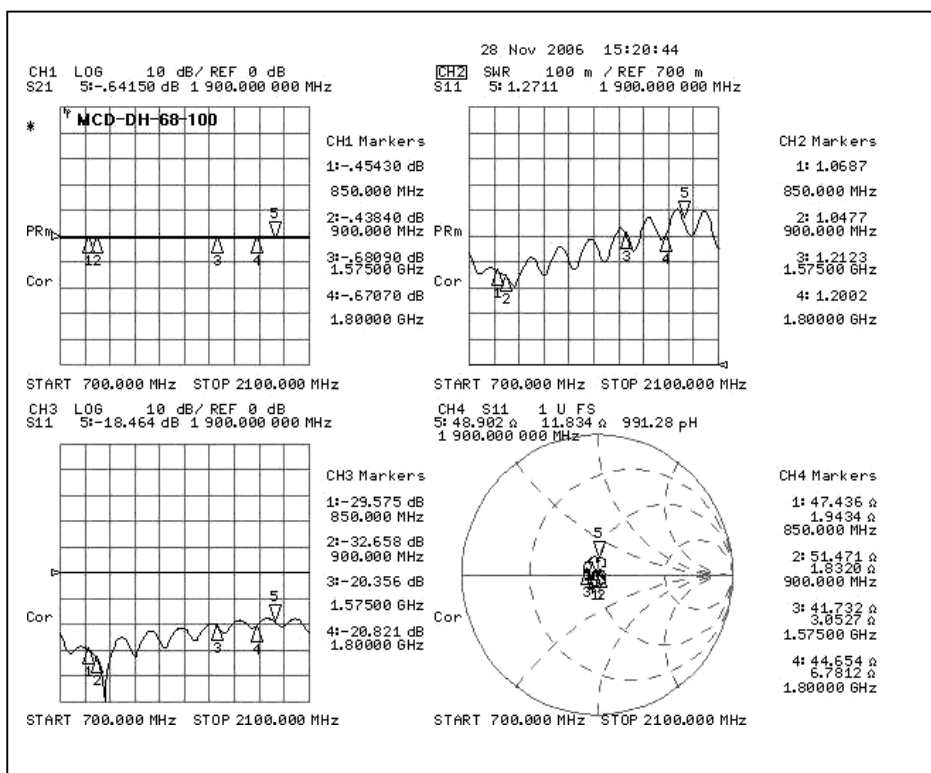
## Performance Measurement Reference:

(Test sample: MCD dual head cable assy,100mm;Test instrument: Agilent 8753ES.)



## MCD-DH-62-100

Length: 100mm  
Cable Code: #62  
OD: 0.90mm  
Inner Conductor: 0.21mm  
Dielectric: 0.63mm  
Outer Conductor(Copper PET):0.65mm  
Outer Conductor: 0.80mm  
Jacket: 0.90mm



## MCD-DH-68-100

Length: 100mm  
Cable Code: #68  
OD: 0.81mm  
Inner Conductor: 0.15mm  
Dielectric: 0.4mm  
Outer Conductor: 0.65mm  
Jacket: 0.81mm

