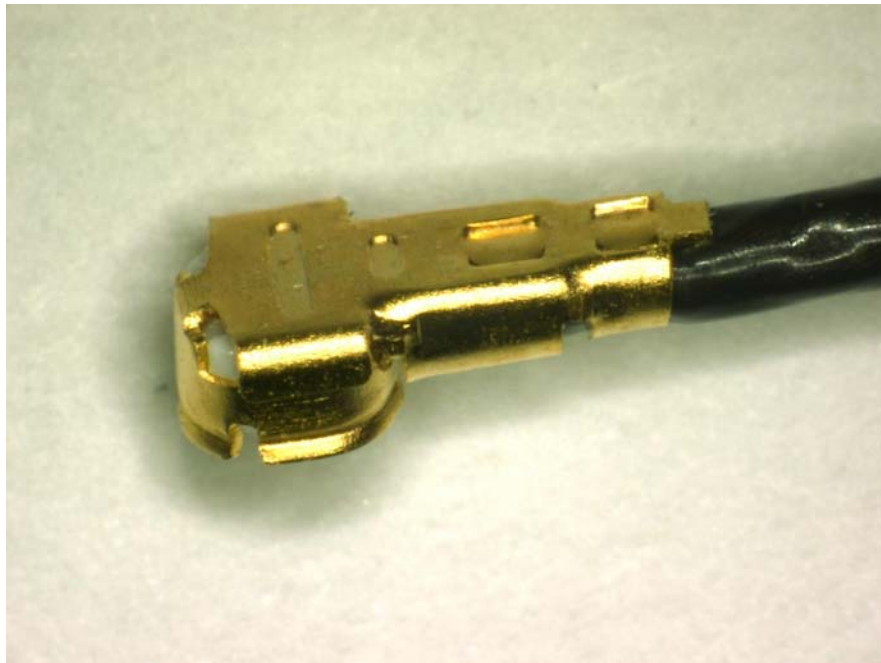


# **Technical Report**

## **MHF III Connector**

### **Superiority compare to Hirose's W-FL**



# Wellshow



Wellshow Technology is the top manufacturer of mini coaxial cable assembly and RF connectors in Asia.



## Wellshow's strength

- Quick Lead Time
- Competitive price
- Complete quality management
- Full series of RF connectors
- Prompt technique support
- Systemized manufacturing procedure



## Product Range

### *Mini connector and Mini cable*

Hirose U.FL/ W.FL/ H.FL/ N.FL/ E.FL/ W.FL2  
IPEX MHF/ MHF 2 / MHF 3/ MHF 4  
Murata GSC/ HSC

### *RF connector and RF cable*

SMA / SMB / SSMB / SMC / MMCX /  
MCX / FME / BNC / TNC / N ...etc.



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DOCUMENT CLASSIFICATION	TITLE	No.
Technical Report	MHFIII Plug Connector Superiority Compare to Hirose's W-FL	

### 1. Objection

Describe superiority of MHFIII compared to competitor(W-FL of HIROSE)

### 2. Superiority

#### 2-1. Adopt of i-Fit termination Method(Non Soldering )

- W-FL terminate Inner Conductor & contact by soldering process. Soldering process is difficult to control solder quantity & they vary widely on Characteristic of hi-frequency of connector. On the contract, i-Fit termination requires no soldering and result to stable performance of Characteristic of hi-frequency of connector. Measurement of VSWR prove scattering result of W-FL up to 3GHz and stable result of MHFIII. As regard to waveform, W-FL had data spread & MHFIII resulted in stable.(Refer VSWR on 3-1)
- i-Fit soldering method is possible to connect wires in a lump easily with specific tools after locating connectors and it enable stable quality. But Soldering method can not do that.(Refer MHFIII Structure on 4.)

#### 2-2. High Rigidity Design

- Receptacle connector has a cable-socket which hold cable and crimp . This mechanism satisfy high rigidity performance and prevent deformation by unexpected force.(Refer MHFIII Structure on 4)

Cable retention force test resulted as follows. Deform of connectors had seen on W-FL, but MHFIII had no deformation at all.(Refer Cable Retention Test on 3-2)

### 3. Reference <Evaluation data >

#### 3-1. VSWR

##### I-PEX

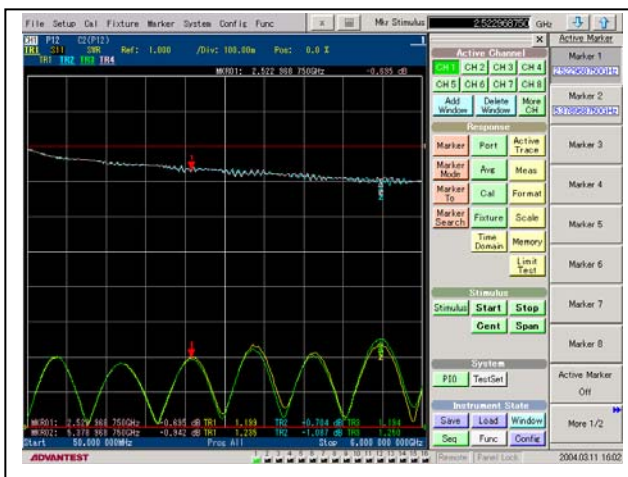
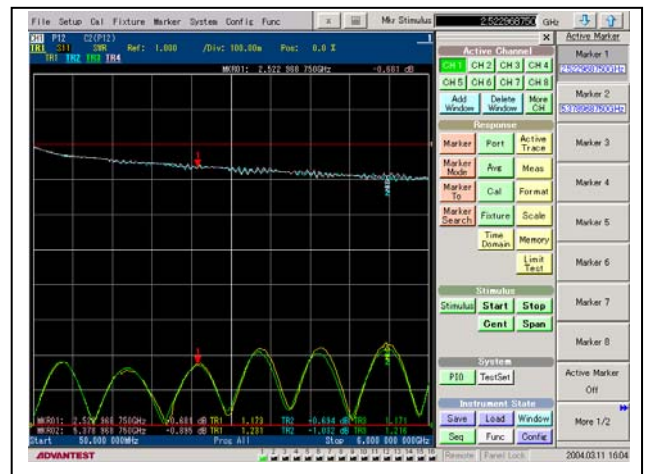
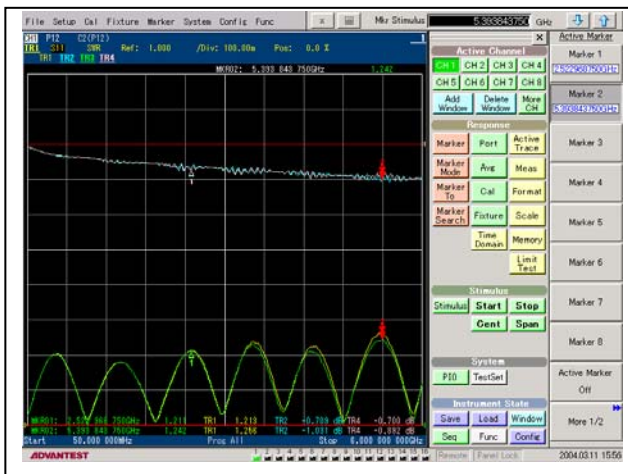
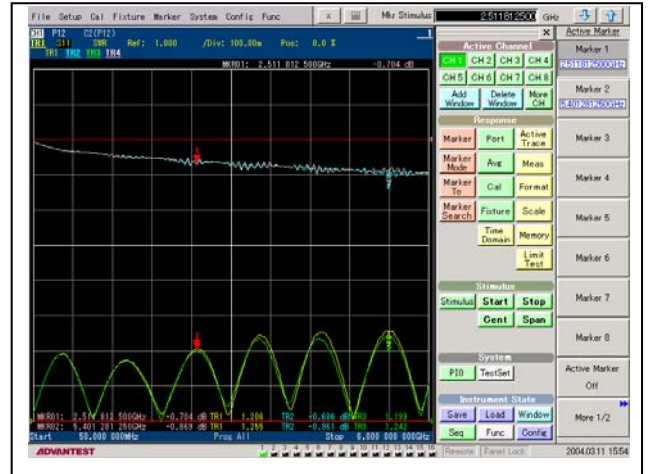
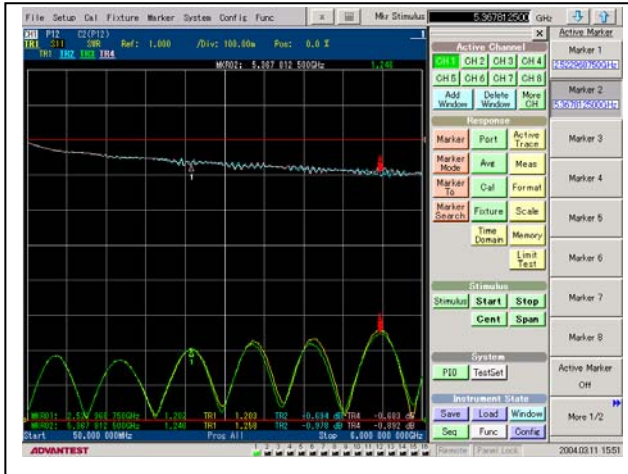
Sample No.	Port	~3GHz	3GHz~6GHz
1	1	1.202	1.246
	2	1.203	1.258
2	1	1.206	1.255
	2	1.199	1.242
3	1	1.211	1.213
	2	1.242	1.256
4	1	1.173	1.231
	2	1.171	1.216
5	1	1.199	1.235
	2	1.194	1.250
Ave.		1.2000	1.2402
Max.		1.242	1.258
Min.		1.171	1.213
I-PEX Spec.		1.3Max.	1.5Max.

##### W-FL

Sample No.	Port	~3GHz	3GHz~6GHz
1	1	1.310	1.255
	2	1.309	1.234
2	1	1.147	1.245
	2	1.150	1.233
3	1	1.294	1.262
	2	1.293	1.246
4	1	1.255	1.286
	2	1.252	1.256
5	1	1.200	1.245
	2	1.200	1.229
Ave.		1.2410	1.2491
Max.		1.310	1.286
Min.		1.147	1.229
I-PEX Spec.		1.3Max.	1.5Max.

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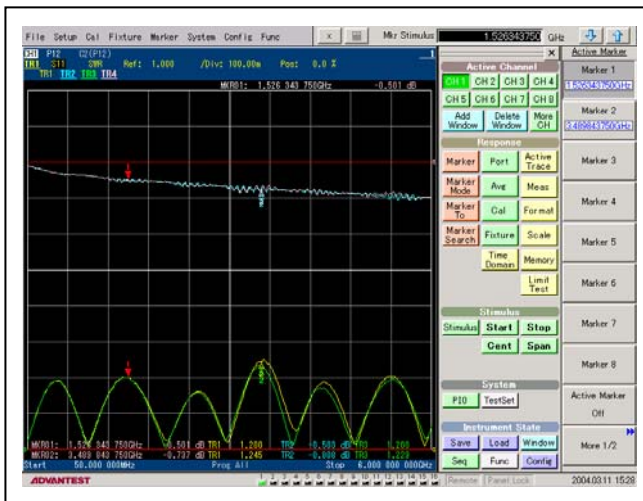
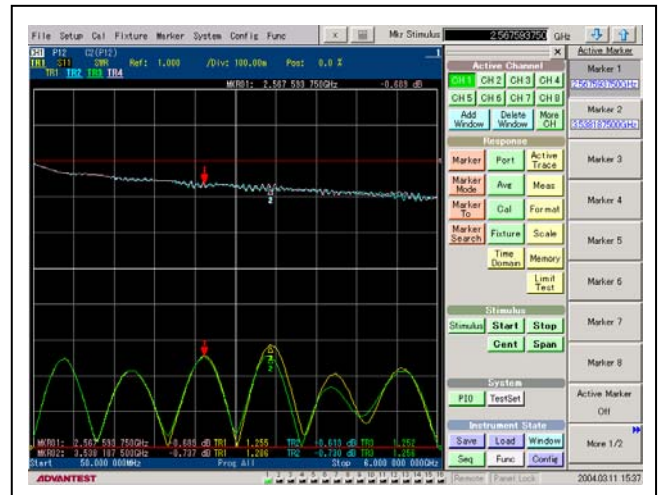
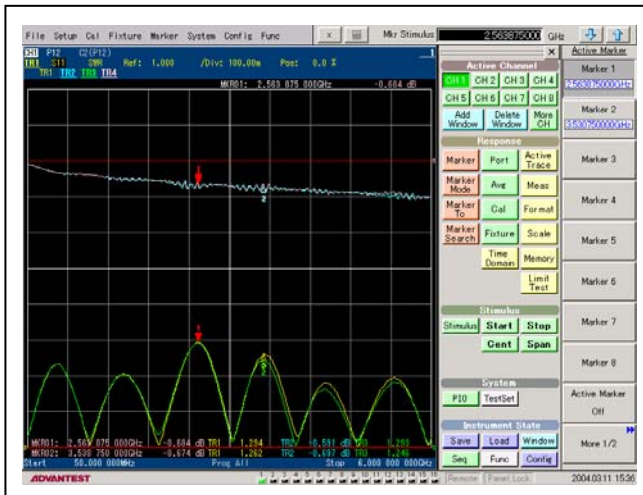
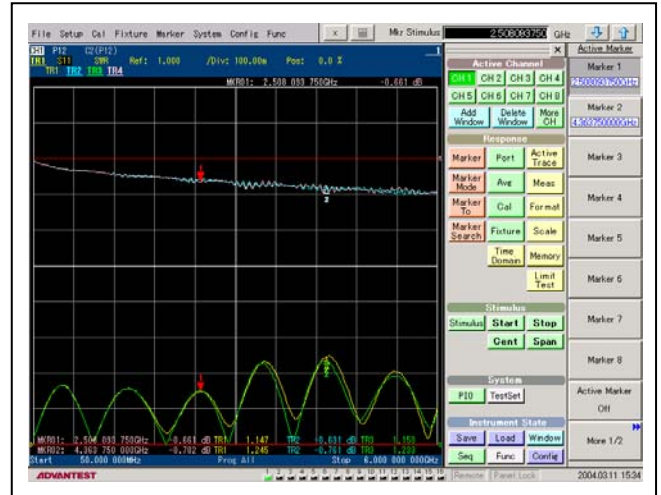
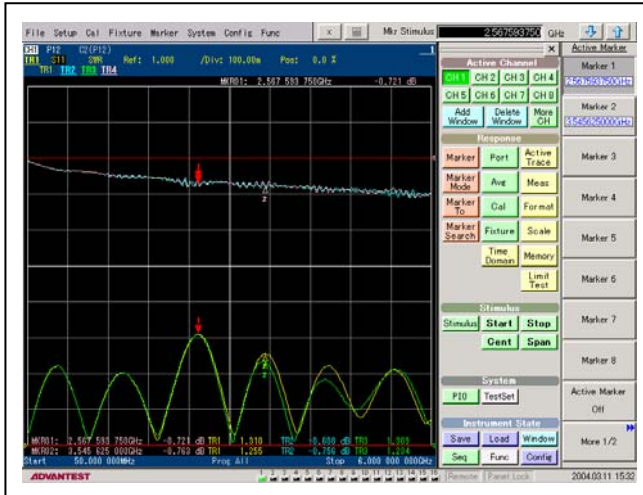
**I-PEX (VSWRdata)**



Waveform is stable and little variation.

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**W-FL (VSWR data)**

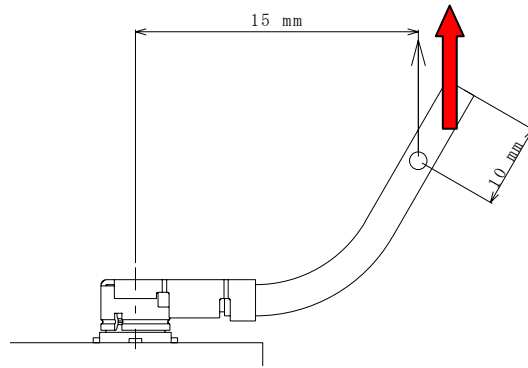


Waveform is distorted & considerable variation.

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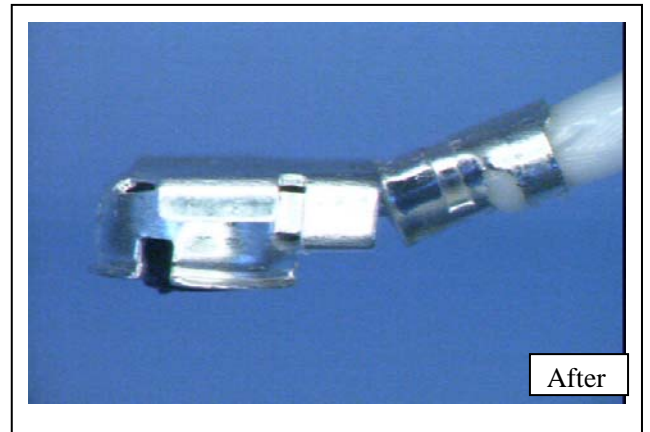
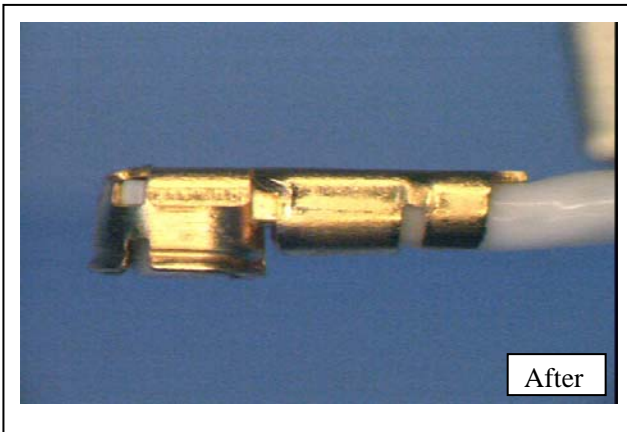
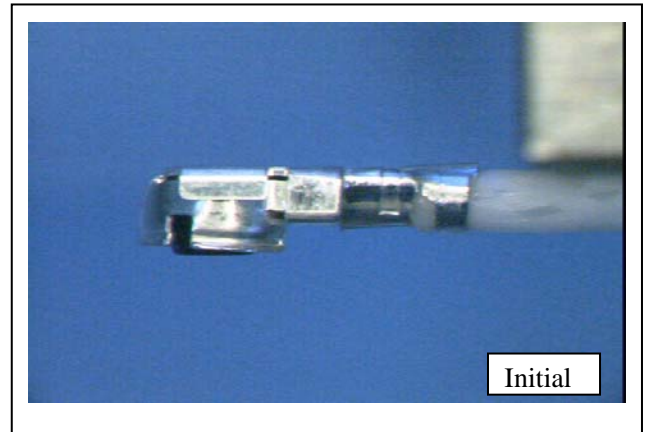
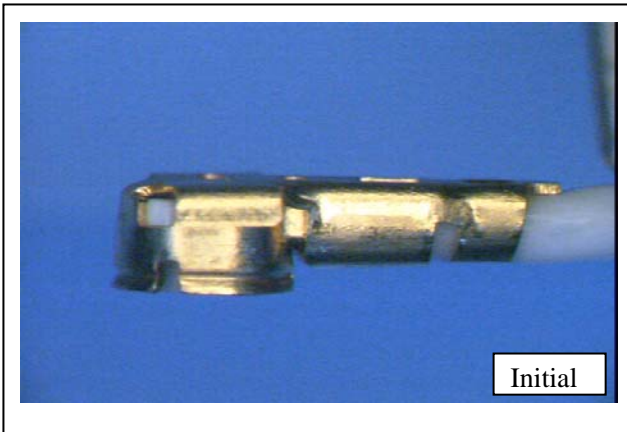
3-2. Cable Retention Test

Pull cable (unmate connector)in condition of connectos mated as shown below.



**MHF III**

**W-FL**



W-FL: Deform dogleg when unmated only 1time.  
MHF III: No deform after 5times unmating.

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4. Reference <MHFIII Structure>

