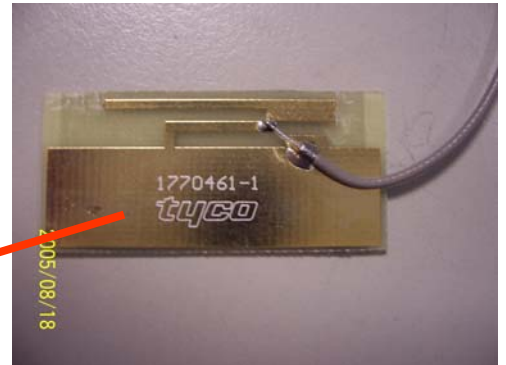
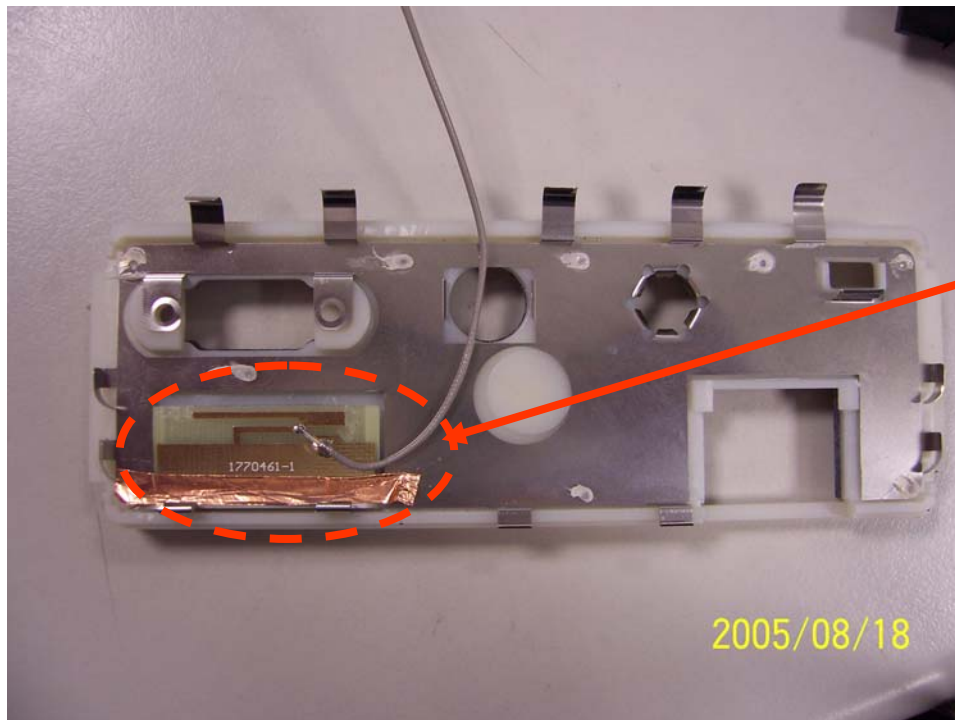




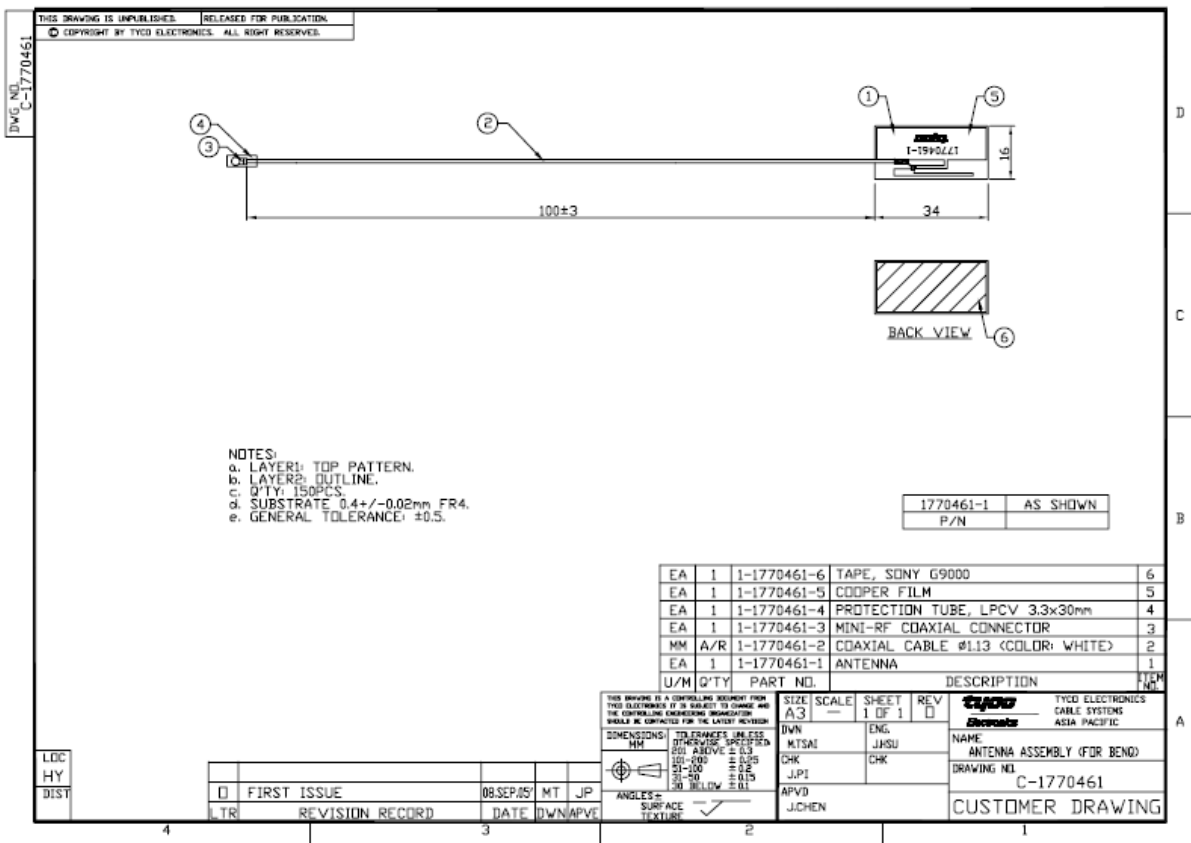
# Product Spec.

<b>Customer Name</b>	<b>BenQ Corporation</b>		
<b>Date</b>	2005/11/24		
<b>Customer P/N</b>			
<b>Tyco P/N</b>	1770461-1		
<b>Description</b>	<b>802.11 A+B+G WLAN Antenna</b>		
<b>Version</b>	2A	<b>Doc. Version</b>	3

# 1. Antenna Description

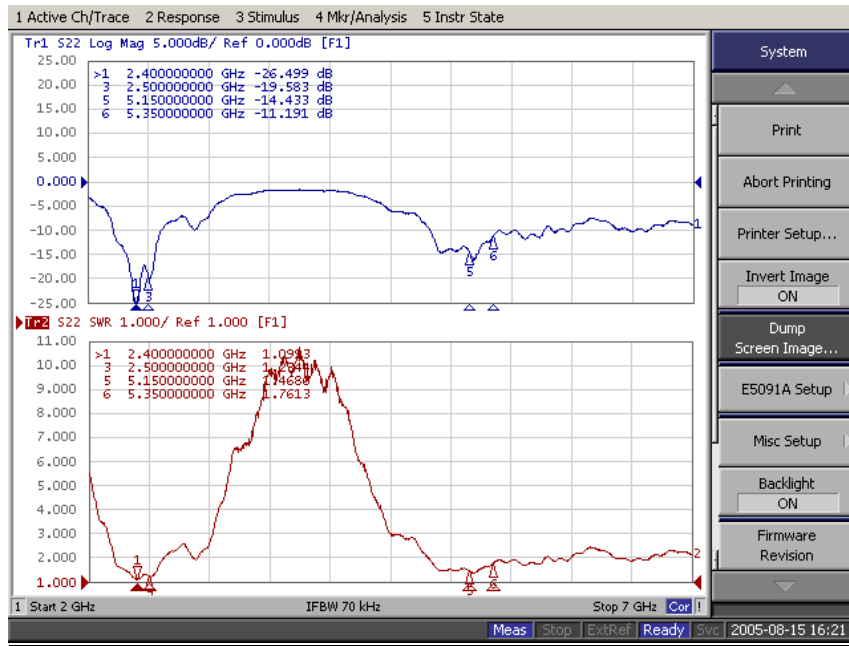


# 2. Outline drawing of antenna



# 3. Test Report

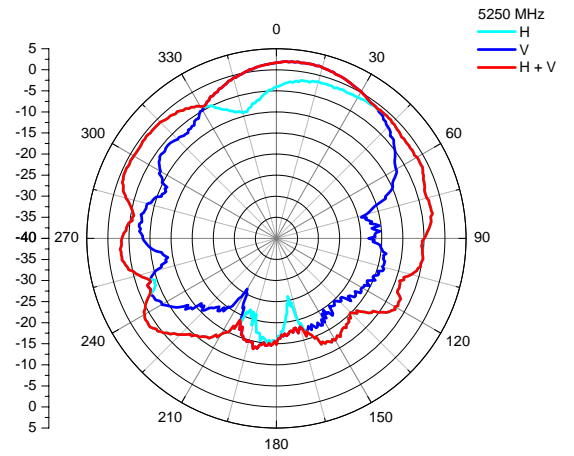
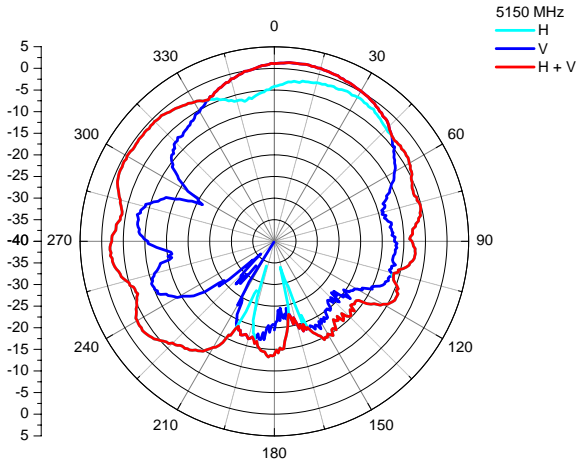
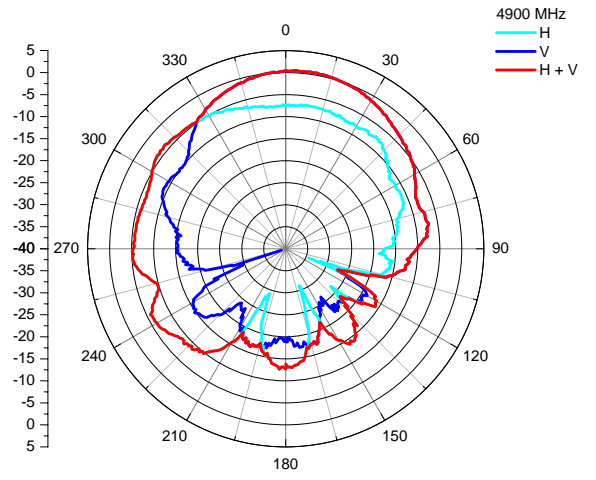
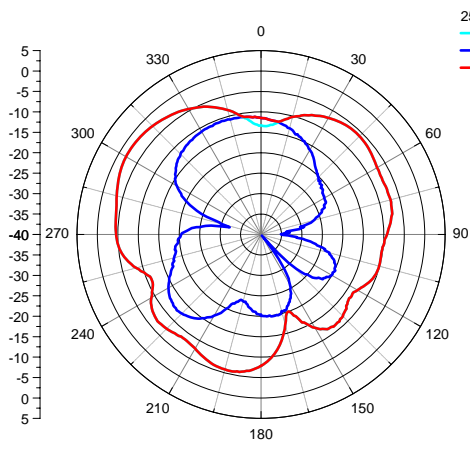
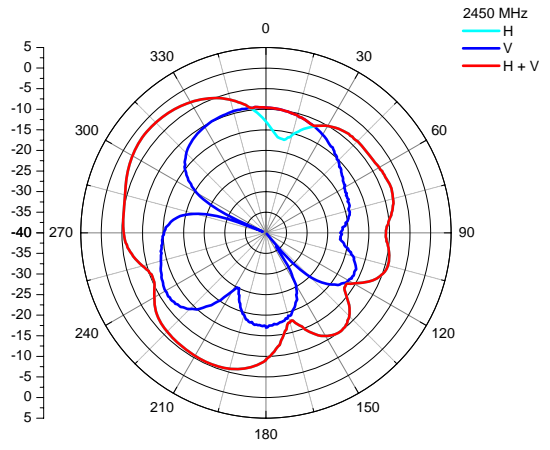
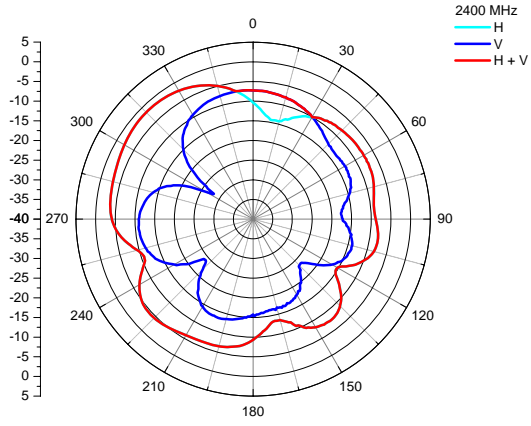
## VSWR

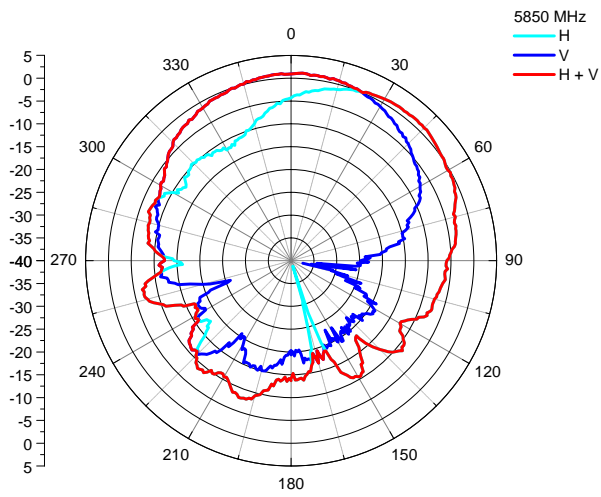
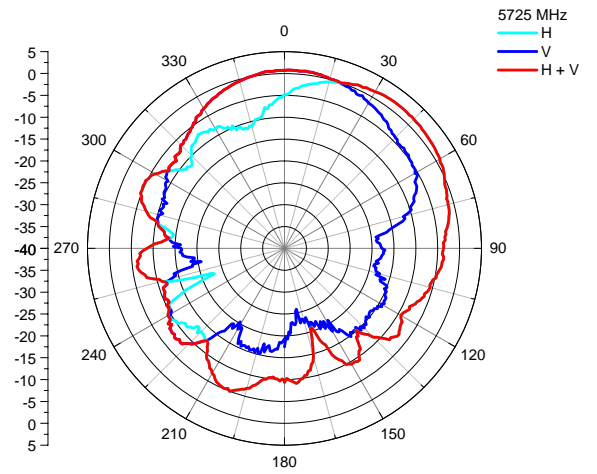
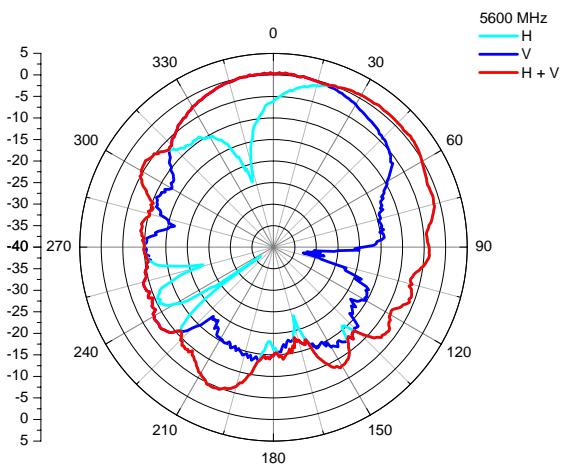
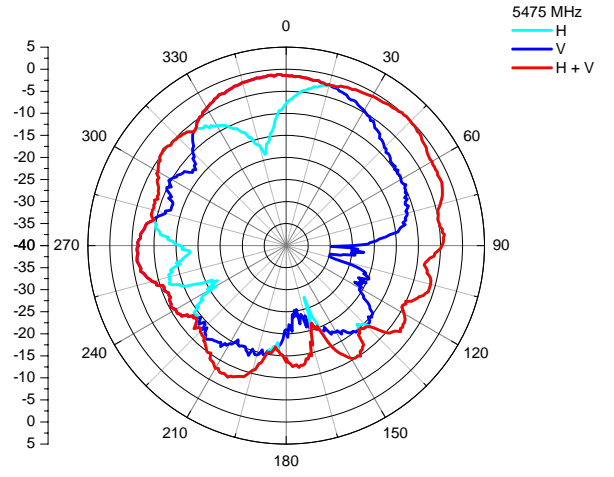
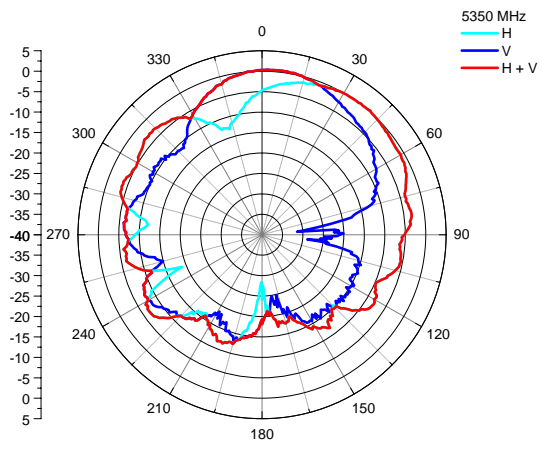


## Gain

Channel (GHz)	<u>2.40</u>	<u>2.45</u>	<u>2.50</u>	<u>4.9</u>	<u>5.15</u>	<u>5.25</u>	<u>5.35</u>
Peak Gain (dBi)	<u>-1.60</u>	<u>-2.05</u>	<u>-1.86</u>	<u>0.54</u>	<u>1.59</u>	<u>2.19</u>	<u>-0.43</u>
Avg Gain (dBi)	<u>-5.33</u>	<u>-6.37</u>	<u>-6.40</u>	<u>-4.36</u>	<u>-2.30</u>	<u>-1.86</u>	<u>-2.98</u>
Channel (GHz)	<u>5.47</u>	<u>5.6</u>	<u>5.725</u>	<u>5.875</u>			
Peak Gain (dBi)	<u>-1.60</u>	<u>-2.05</u>	<u>-1.86</u>	<u>0.54</u>			
Avg Gain (dBi)	<u>-5.33</u>	<u>-6.37</u>	<u>-6.40</u>	<u>-4.36</u>			

## Gain Pattern





# 4. Relative Documents ← Material Spec. data

## PCB Material

NAN YA PLASTICS CORPORATION  
COPPER CLAD LAMINATE  
QUALITY TEST REPORT

2, Chung-Yang Ind. Park,  
Hsin-Kang Hsiang,  
Jiayih, Taiwan

TEL: (05)3772111 FAX: (05)3771640  
DATE: 2005/08/23  
PALLET NO:

CUSTOMER: \_\_\_\_\_  
ORDER NO: HC8F1HE)  
LOT NO: 5704253U  
MATERIAL SPEC.: NP-140TL 1/1 0.15mm 1240mm x 1080mm CFHG  
IPC DESIGNATION: L21 0060 H1/H1 C/A 48.8" x 42.5" ( f x g )  
REQUIREMENT: IPC-4101A  
SPECIFICATION SHEET: IPC-4101A / 21  
GLASS FIBER SOURCE: NAN YA

NAN YA PLASTICS  
COPPER CLAD LAMINATE  
QUALITY ASSURANCE

CHARACTERISTICS	UNIT	CONDITIONING	SPECIFICATION	RESULTS
VISUALS(SUB-/SURFACE)	-	IPC-4101A	A	OK
METAL THICKNESS	μm	IPC-4101A	Q:8.1-9.9/1;U:30.9-37.7/0;2:61.4-75.5 T:10.8-13.2/H:15.5-18.9/R:46.4-56.7 P:77.2-94.4/3:92.7-113.3/4:123.3-150.7	32.6
DIELECTRIC CONSTANT(1MHZ)		C 24/23/50	<5.4	4.46
SURFACE RESISTANCE	MΩ	C 96/35/90	<0.50mm 10 <sup>4</sup> ↑ ≥0.50mm -----	7.0E6
SURFACE RESISTIVITY	MΩ	E 24/125	10 <sup>3</sup> ↑	5.9E5
VOLUME RESISTANCE	MΩ-cm	C 96/35/90	<0.50mm 10 <sup>6</sup> ↑ ≥0.50mm -----	5.4E9
VOLUME RESISTIVITY	MΩcm	E 24/125	10 <sup>3</sup> ↑	3.6E5
DISSIPATION FACTOR(1MHZ)		C 24/23/50	0.035 ↓ (CFRD · CFMD:0.020 ↓)	.025
ARC-RESISTANCE	sec	D48/50+D1/2 /23	60 ↑ (CFRS · CFMS:90 ↑)	122
THICKNESS	m/m	A	≤1.2mm CLASS C/M >1.2mm CLASS B/L	OK
THERMAL STRESS		288°C x 10sec	NO BLISTER DELAMINATION	OK
PEEL STRENGTH	lb/in	AFTER THERMAL STRESS	Q · Toz:3.0 ↑    Moz:4.5 ↑ 1 · U · V · Roz:6.0 ↑ 2 · O · Poz 8.0 ↑    3 · 4oz 9.0 ↑	8.12
TG GLASS TRANSITION TEMP	°C	E-2/105	140±5	141.1
FLAMMABILITY	sec	C 24/23/50 E 24/125	94-V0 94-V0	OK

THIS IS TO CERTIFY THAT THE MATERIAL BEING FURNISHED TO YOU MEETS THE IPC-4101A · RoHS AND SS-00259.  
THE RESULTS OF THIS QUALITY TEST REPORT IS PASS.

APPROVED BY :

*N. C. Cheng*



**Test Report**

No. SH304946/CHEM

Date: 6.17.2003

Page 1 of 1

SUMITOMO ELECTRIC INTERCONNECT PRODUCTS (SUZHOU) LTD  
NO. 232 JINFENG ROAD SND SUZHOU JIANGSU CHINA

The following sample(s) was/were submitted and identified on behalf of the applicant as:

Sample Description : 0.7DS CABLE (SES2)  
Model : 0.7DS CABLE

Sample Receiving Date : June 12, 2003  
Testing Period : June 12 to June 17, 2003

Test Requested : 1) To determine Cadmium Content on the submitted sample.  
2) To determine Lead Content on the submitted sample.

Test Method : 1) With reference to BS EN 1122:2001, Method B.  
Analysis was performed by Inductively Coupled Argon Plasma – Atomic Emission Spectrometry (ICP-AES).  
2) With reference to US EPA Method 3050B.  
Analysis was performed by Inductively Coupled Argon Plasma – Atomic Emission Spectrometry (ICP-AES).

Test Results	:	<u>Element</u>	<u>A</u>
		Cadmium (Cd)	N.D.
		Lead (Pb)	N.D.


(Result shown is of the total weight of sample)

Sample Description:  
A. Grey plastic wire

Note : ppm = mg/kg  
N.D. = not detected (Detection limit = <2ppm)

\*\*\* End of Report \*\*\*

Signed for and on behalf of  
SGS-CSTC Chemical Laboratory

  
Ella Zhang  
Supervisor

DOCUMENT CLASSIFICATION	TITLE	No.
Technical Report	MHF,MHF II 環境負荷化学物質 調査報告 Investigation report of Chemical substance with Environmental Impact	IER-001-01464

## 1. 目的【Purpose】

御社よりお問い合わせのありました弊社コネクタ MHF、MHF II における  
環境負荷化学物質調査について御報告致します。

This is the survey report for the evaluation of environmental load chemistry substance in  
MHF, MHF II connector.

## 2. 製品【Product】

- ・ MHF PLUG Vertical (Ground Contact : gold plating) . . . P/N 20278-1\*1R-\*\*
- ・ MHF PLUG Vertical (Ground Contact : gold plating) . . . P/N 20351-1\*1R-\*\*
- ・ MHF PLUG Vertical (Ground Contact : silver plating) . . . P/N 20308-1\*1R-\*\*
- ・ MHF RECE. Vertical(Ground Contact : gold plating) . . . P/N 20279-001E-01
- ・ MHF RECE. Vertical (Ground Contact : silver plating) . . . P/N 20314-001E-01
- ・ MHF II PLUG Vertical(Ground Contact : gold plating) . . . P/N 20311-0\*1R-\*\*
- ・ MHF II PLUG Vertical (Ground Contact : silver plating) . . . P/N 20312-0\*1R-\*\*

## 3. 調査結果【Investigation result】

Material	Cr	Cd	Hg	Pb	PBB	PBBDE
Connector	N/A	N/A	N/A	N/A	N/A	N/A
Packings/label	N/A	N/A	N/A	N/A	N/A	N/A