

# FCC DFS Test Report

Equipment : Mobile Phone  
Brand Name : Xi  
Model No. : F-06E  
FCC ID : VQK-F06E  
Standard : 47 CFR FCC Part 15.407  
Applicant : FUJITSU LIMITED  
Manufacturer : 1-1, Kamikodanaka 4-chome, Nakahara-ku, Kawasaki  
211-8588, Japan  
Operate Mode : Client without radar detection

The product sample received on Mar. 27, 2013 and completely tested on Apr. 08, 2013. We, SPORTON, would like to declare that the tested sample has been evaluated in accordance with the procedures given in FCC 06-96 Appendix and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.

Reviewed by:



Vic Hsiao / Supervisor



# FCC DFS Client Test Result

|                     |          |                                       |
|---------------------|----------|---------------------------------------|
| <b>Equipment</b>    | <b>:</b> | <b>Mobile Phone</b>                   |
| <b>Brand Name</b>   | <b>:</b> | <b>Xi</b>                             |
| <b>Model No.</b>    | <b>:</b> | <b>F-06E</b>                          |
| <b>Standard</b>     | <b>:</b> | <b>47 CFR FCC Part 15.407</b>         |
| <b>Sporton No.</b>  | <b>:</b> | <b>FZ322231</b>                       |
| <b>Operate Mode</b> | <b>:</b> | <b>Client without radar detection</b> |



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# 1 Information

## 1.1 Antenna Information

| Antenna General Information                                                                                                                                                                                                       |           |                  |       |                        |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|------------------|-------|------------------------|
| No.                                                                                                                                                                                                                               | Ant. Cat. | Ant. Type        | Model | G <sub>ANT</sub> (dBi) |
| 1                                                                                                                                                                                                                                 | Integral  | Monopole Antenna | --    | -4                     |
| <input type="checkbox"/> For radiated tests, the DFS test should be performed with lowest antenna gain (regardless of antenna type).                                                                                              |           |                  |       |                        |
| <input checked="" type="checkbox"/> For conducted tests, antenna ports are used for the tests and Master lowest antenna gain [0] dBi that was used to set the DFS Detection Threshold level during calibration of the test setup. |           |                  |       |                        |

### 1.1.1 Type of EUT

| Identify EUT                        |                                                                                                                                   |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| EUT Serial Number                   | N/A                                                                                                                               |
| IMEI No.                            | 355250050008145                                                                                                                   |
| Presentation of Equipment           | <input type="checkbox"/> Production ; <input checked="" type="checkbox"/> Pre-Production ; <input type="checkbox"/> Prototype     |
| Type of EUT                         |                                                                                                                                   |
| <input checked="" type="checkbox"/> | Stand-alone                                                                                                                       |
| <input type="checkbox"/>            | Combined (EUT where the radio part is fully integrated within another device)<br>Combined Equipment - Brand Name / Model No.: ... |
| <input type="checkbox"/>            | Plug-in radio (EUT intended for a variety of host systems)<br>Host System - Brand Name / Model No.: ...                           |
| <input type="checkbox"/>            | Other:                                                                                                                            |

## 1.2 Accessories and Support Equipment

| Accessories |           |                 |              |                      |
|-------------|-----------|-----------------|--------------|----------------------|
| No.         | Equipment | Brand Name      | Model Name   | Spec.                |
| 1           | Cradle    | Fujitsu limited | CA50601-1791 | 5.0Vdc, 1.5A         |
| 2           | Battery   | Fujitsu limited | CA54310-0046 | 3.8V, 3,020mA Li-ion |

| Support Equipment |             |            |                |              |
|-------------------|-------------|------------|----------------|--------------|
| No.               | Equipment   | Brand Name | Model Name     | FCC ID       |
| 1                 | AP (Master) | D-Link     | DIR-826L       | KA2IR826LMO1 |
| 2                 | Notebook    | DELL       | LATITUDE-E5420 | -            |

## 1.3 Testing Location Information

| Testing Location                    |        |                                                                                                                             |               |                  |
|-------------------------------------|--------|-----------------------------------------------------------------------------------------------------------------------------|---------------|------------------|
| <input checked="" type="checkbox"/> | HWA YA | ADD : No. 52, Hwa Ya 1st Rd., Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.<br>TEL : 886-3-327-3456 FAX : 886-3-318-0055 |               |                  |
| <input type="checkbox"/>            | JHUBEI | ADD :8, Lane 724, Bo-ai St., Jhubei City, HsinChu County 302, Taiwan, R.O.C.<br>TEL : 886-3-656-9065 FAX : 886-3-656-9085   |               |                  |
| Test Condition                      |        | Test Site No.                                                                                                               | Test Engineer | Test Environment |
| DFS Site                            |        | DF01-HY                                                                                                                     | Ben Tseng     | 21°C / 70%       |
|                                     |        |                                                                                                                             |               | 3/27-4/8         |



## 1.4 DFS and TPC Information

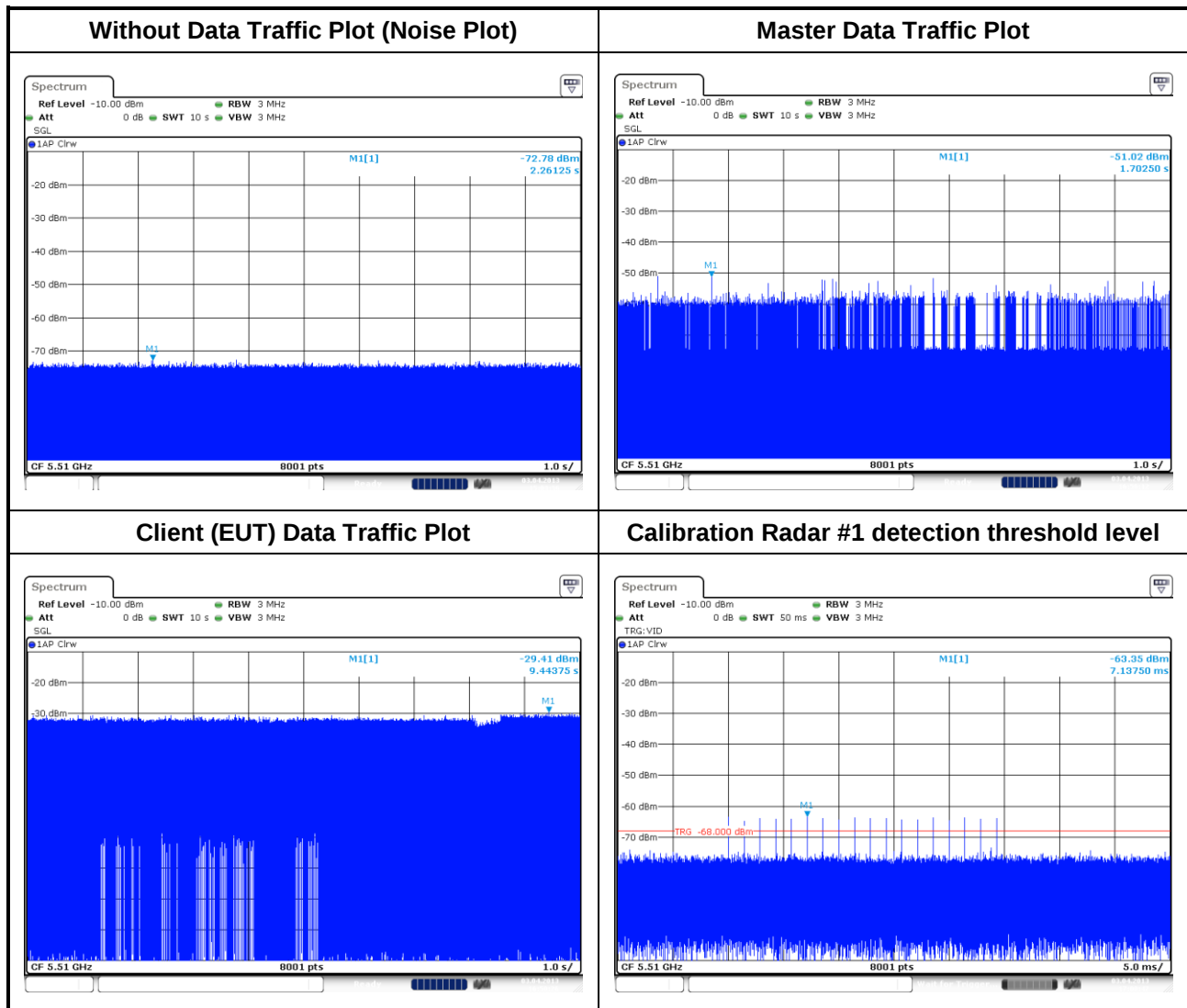
| The DFS Related Operating Mode(s) of the Equipment                 |                                               |                                                                                                                               |                                      |
|--------------------------------------------------------------------|-----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|
| <input type="checkbox"/> Master                                    |                                               |                                                                                                                               |                                      |
| <input type="checkbox"/> Cilent with radar detection               |                                               |                                                                                                                               |                                      |
| <input checked="" type="checkbox"/> Cilent without radar detection |                                               |                                                                                                                               |                                      |
| <b>Software / Firmware Version</b>                                 |                                               | Android Ver : 4.2.2 , Baseband ver : 7012.0101.0105 , Kernel Ver : 3.4.0<br>build@PROMERGY041 #1 Thu Mar 21 11:45:48 JST 2013 |                                      |
| <b>Communication Mode</b>                                          |                                               | <input checked="" type="checkbox"/> IP Based (Load Based)                                                                     | <input type="checkbox"/> Frame Based |
| <b>IEEE Std.<br/>802.11</b>                                        | <b>Frequency<br/>Range (MHz)</b>              | <b>TPC (Transmit Power Control)</b>                                                                                           | <b>Passive Scan</b>                  |
| a / n (HT20)                                                       | <input checked="" type="checkbox"/> 5250-5350 | No                                                                                                                            | Yes                                  |
| n (HT40)                                                           | <input checked="" type="checkbox"/> 5470-5725 | No                                                                                                                            | Yes                                  |
|                                                                    | <input type="checkbox"/> 5600-5650            | -                                                                                                                             | -                                    |

## 1.5 Channel Loading/Data Streaming

|                                                                                                          |                                                                                          |
|----------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/>                                                                      | IP Based (Load Based) - stream the test file from the Master to the Client.              |
| <input checked="" type="checkbox"/>                                                                      | Performed NTIA approved WAV file. (EUT w/o video function application)                   |
| <input type="checkbox"/>                                                                                 | Performed NTIA approved MPEG2 file. (EUT with video function application)                |
| <input type="checkbox"/>                                                                                 | Alternative streaming e.g., FTP with about 17 to 20% loading and submit proposal to FCC. |
| <input type="checkbox"/>                                                                                 | Frame Based - stream the test file from the Master to the Client.                        |
| <input type="checkbox"/>                                                                                 | fixed talk/listen ratio, set the ratio to 45%/55%                                        |
| NTIA test file refer as: <a href="http://ntiacsd.ntia.doc.gov/dfs/">http://ntiacsd.ntia.doc.gov/dfs/</a> |                                                                                          |

## 1.6 Master DFS Threshold Level

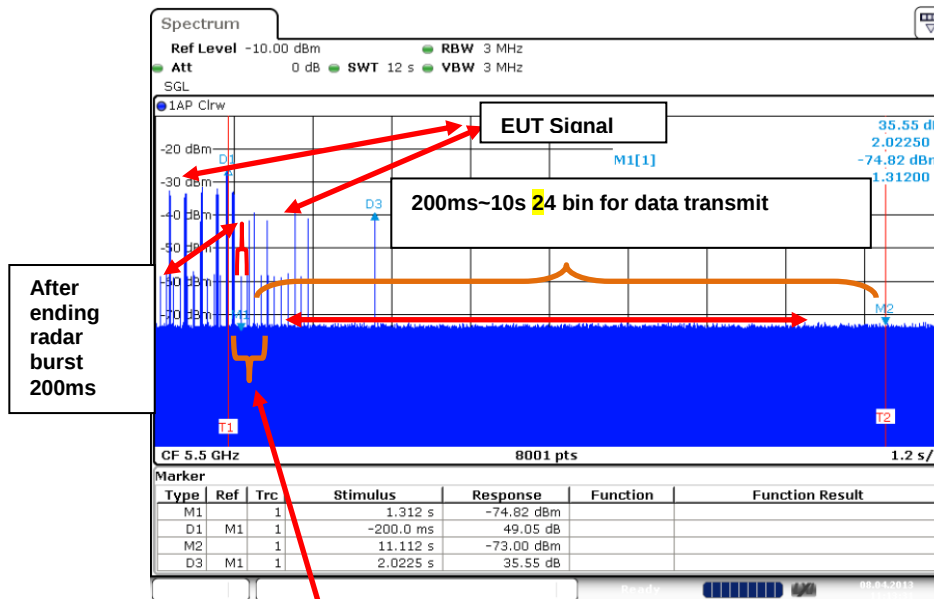
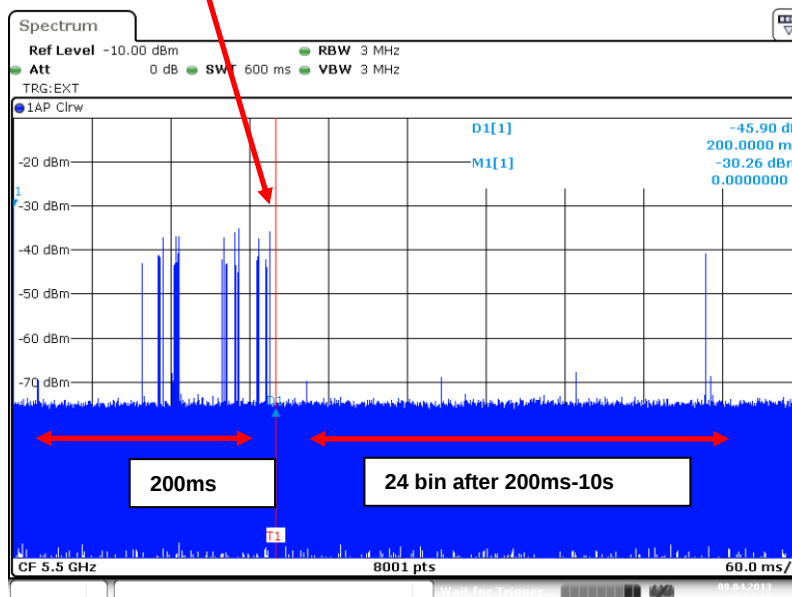
| Master DFS Threshold Level                                                                                                                                                                                       |                                                                                                                                                         |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| DFS Threshold level: -63 dBm                                                                                                                                                                                     | <input checked="" type="checkbox"/> at the antenna connector (-63 dBm conducted)<br><input type="checkbox"/> in front of the antenna (-63 dBm e.i.r.p.) |
| The Interference Radar Detection Threshold Level is $(-64\text{dBm}) + (0 \text{ [dB]}) + \{1 \text{ dB}\} = -63 \text{ dBm}$ . That had been taken into account the master output power range and antenna gain. |                                                                                                                                                         |



## 1.7 In-service Monitoring

**Channel Closing Transmission Time and Channel Move Time Result**

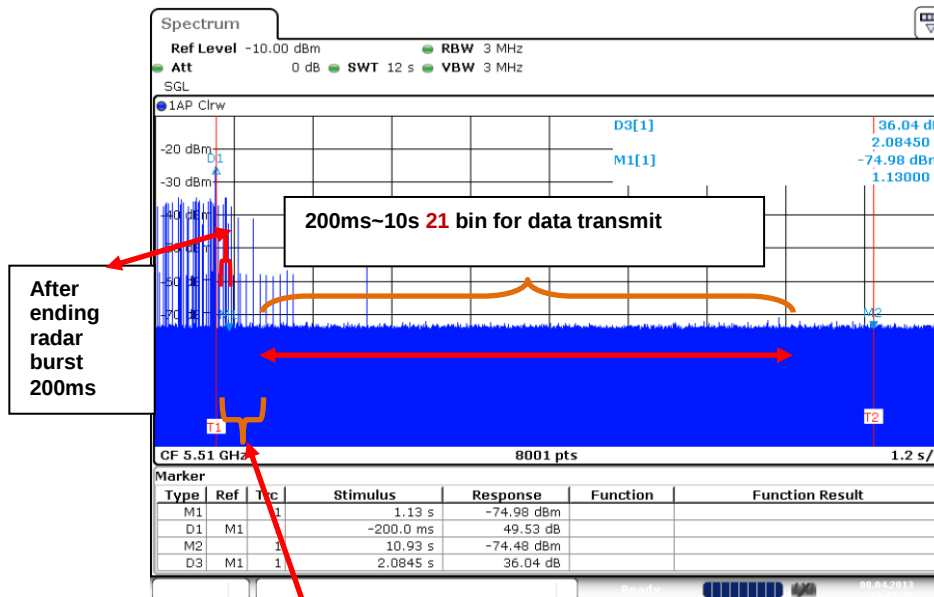
| Modulation Mode                 | Freq. (MHz) | Radar Type | Channel Closing Transmission Time |                 |                  |                   | Channel Move Time |       |
|---------------------------------|-------------|------------|-----------------------------------|-----------------|------------------|-------------------|-------------------|-------|
|                                 |             |            | Test (0-200ms)                    | Limit (0-200ms) | Test (200ms-10s) | Limit (200ms-10s) | Test              | Limit |
| HT20                            | 5500        | 1          | < 200ms                           | 200ms           | 36ms             | 60ms              | 2.22s             | 10 s  |
| 8001 sample bin for measurement |             |            | 24 bin [200ms~10s]                |                 |                  |                   |                   |       |

**12 sec Timing Plot**

**Zoom-in 600 ms Timing Plot**


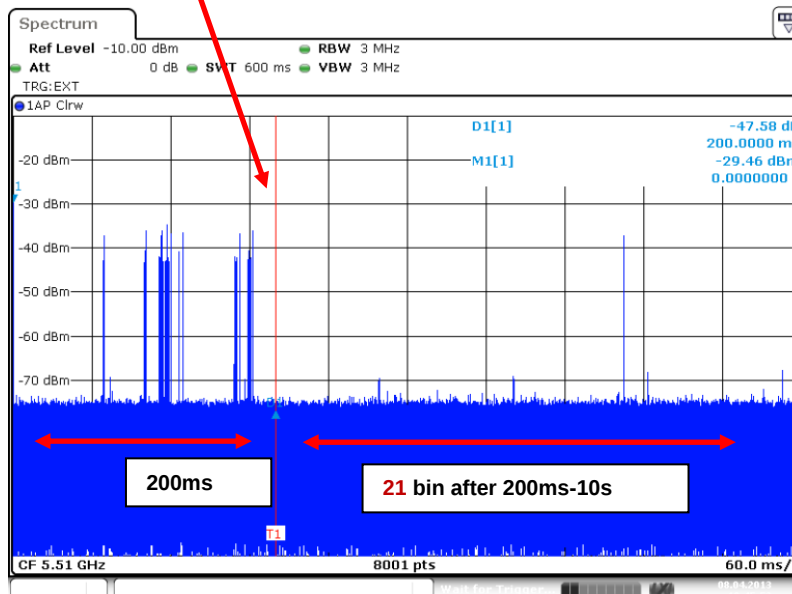
## Channel Closing Transmission Time and Channel Move Time Result

| Modulation Mode                 | Freq. (MHz) | Radar Type | Channel Closing Transmission Time |                 |                  |                   | Channel Move Time |       |
|---------------------------------|-------------|------------|-----------------------------------|-----------------|------------------|-------------------|-------------------|-------|
|                                 |             |            | Test (0-200ms)                    | Limit (0-200ms) | Test (200ms-10s) | Limit (200ms-10s) | Test              | Limit |
| HT40                            | 5510 (F3')  | 1          | < 200ms                           | 200ms           | 31.5ms           | 60ms              | 2.28s             | 10s   |
| 8001 sample bin for measurement |             |            | 21 bin [200ms~10s]                |                 |                  |                   |                   |       |

## 12 sec Timing Plot

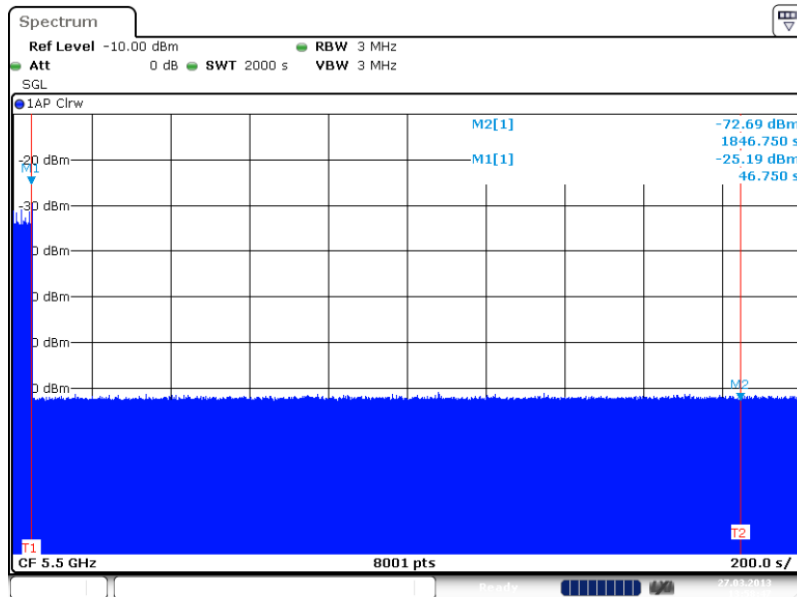


## Zoom-in 600 ms Timing Plot



**Non-Occupancy Period Result**

| Modulation Mode | Freq. (MHz) | Non-Occupancy Period |       |          |
|-----------------|-------------|----------------------|-------|----------|
|                 |             | Measured             | Limit | Result   |
| HT20            | 5500 (F3)   | >30min               | 30min | Complied |

**2000 sec Timing Plot**


## 2 Test Equipment and Calibration Data

| Instrument              | Manufacturer | Model No.    | Serial No.         | Spec.         | Calibration Date | Calibration Until | Remark  |
|-------------------------|--------------|--------------|--------------------|---------------|------------------|-------------------|---------|
| Spectrum Analyzer       | R&S          | FSV-7        | 101607             | 9kHz ~ 7GHz   | 2012/12/19       | 2013/12/18        | DF01-HY |
| RF Cable-01             | Huber&Suhner | SUCOFLEX 104 | 296081/4           | 0.5m          | 2012/12/24       | 2013/12/23        | DF01-HY |
| RF Cable-02             | Huber&Suhner | SUCOFLEX 104 | 500199/4           | 0.5m          | 2012/12/24       | 2013/12/23        | DF01-HY |
| RF Cable-03             | Huber&Suhner | SUCOFLEX 104 | 329023/4           | 0.2m          | 2012/12/24       | 2013/12/23        | DF01-HY |
| RF Cable-04             | Huber&Suhner | SUCOFLEX 104 | 329021/4           | 0.2m          | 2012/12/24       | 2013/12/23        | DF01-HY |
| RF Cable-05             | Huber&Suhner | SUCOFLEX 104 | MY15686/4          | 4m            | 2012/12/24       | 2013/12/23        | DF01-HY |
| Vector Signal Generator | R&S          | SMJ100A      | 100498             | 100kHz ~ 6GHz | 2012/12/13       | 2013/12/12        | DF01-HY |
| Combiner(1x2)           | WOKEN        | 2WAYDIV      | 12101200003        | --            | 2012/12/24       | 2013/12/23        | DF01-HY |
| Combiner(1x3)           | MCLI         | PS3-7        | 24940              | --            | 2012/12/24       | 2013/12/23        | DF01-HY |
| Combiner(1x4)           | WOKEN        | 4WAYDIV      | 0120A0420110<br>10 | --            | 2012/12/24       | 2013/12/23        | DF01-HY |