



October 15, 2011

Huawei Technologies Co.,Ltd
Bantian,Longgang District, Shenzhen, 518129 China

Dear Xinghai Zhang,

Enclosed you will find your file copy of a Part 15 report (FCC ID: QISHG8245).

For your reference, TCB will normally take another 5 days for reviewing the report. Approval will then be granted when no query is sorted.

Please contact me if you have any questions regarding the enclosed material.

Sincerely,

A handwritten signature in black ink, appearing to read "Shawn Xing", written over a horizontal line.

Shawn Xing
Manager

Enclosure

Intertek Testing Services Shenzhen Ltd. Kejiyuan Branch

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Huawei Technologies Co.,Ltd

Application
For
Certification
(FCC ID: QISHG8245)
Computer Peripheral

SZ11080403-2
Billy Li
October 15, 2011

- The test results reported in this test report shall refer only to the sample actually tested and shall not refer or be deemed to refer to bulk from which such a sample may be said to have been obtained.
- This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to copy or distribute this report. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results referenced from this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.
- For Terms And Conditions of the services, it can be provided upon request.
- The evaluation data of the report will be kept for 3 years from the date of issuance.

TRF No.: FCC 15C_PC_a
FCC ID: QISH8245

INTERTEK TESTING SERVICES

LIST OF EXHIBITS

INTRODUCTION

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INTERTEK TESTING SERVICES

MEASUREMENT / TECHNICAL REPORT

Huawei Technologies Co.,Ltd – MODEL: HG8245
FCC ID: QISHG8245

October 15, 2011

This report concerns (check one:) Original Grant Class II Change

Equipment Type: JBP-Class B Computing Device Peripheral

Deferred grant requested per 47 CFR 0.457(d)(1)(ii)? Yes No

If yes, defer until: _____
date

Company Name agrees to notify the Commission by: _____
date

of the intended date of announcement of the product so that the grant can be issued on that date.

Transition Rules Request per 15.37? Yes No

If no, assumed Part 15, Subpart C for intentional radiator – the new 47 CFR [10-1-10 Edition] provision.

Report prepared by:

Shawn Xing
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INTERTEK TESTING SERVICES

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List of attached file

Exhibit Type	File Description	Filename
Test Report	Test Report	report.pdf
Test Setup Photo	Radiated photos	radiated photos.pdf
Test Setup Photo	Conducted photos	conducted photos.pdf
External Photo	External Photos	external photos.pdf
Internal Photo	Internal Photos	internal photos.pdf
Block Diagram	Block Diagram	block.pdf
ID Label / Location	Label Artwork and Location	label.pdf
User Manual	User Manual	manual.pdf
Cover Letter	Letter of Agency	agency.pdf

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EXHIBIT 1

GENERAL DESCRIPTION

INTERTEK TESTING SERVICES

1.0 General Description

1.1 Product Description

The Equipment Under Test (EUT) is a GPON Terminal can connect with PC for data transmit. The device is powered by ac/dc adapter (Input: 100-240Vac, 50/60Hz; Output: 12Vdc, 2A) or battery backup unit via the BBU port. For more detailed features description, please refer to the user's manual.

1.2 Related Submittal(s) Grants

This is an application for certification of a computer peripheral.

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1.3 Test Methodology

Both AC mains line-conducted and radiated emission measurements were performed according to the procedures in ANSI C63.4 (2003). Radiated emission measurement was performed in Semi-anechoic chamber and conducted emission measurement was performed in shield room. For radiated emission measurement, preliminary scans were performed in the semi-anechoic chamber only to determine the worst case modes. All radiated tests were performed at an antenna to EUT distance of 3 meters, unless stated otherwise in the "**Justification Section**" of this Application.

1.4 Test Facility

The Semi-anechoic chamber and shielding room used to collect the radiated data and conducted data are **Interterk Testing Services Shenzhen Ltd. Kejiyuan Branch** and located at 6F, D Block, Huahan Building, Langshan Road, Nanshan District, Shenzhen, P. R. China. This test facility and site measurement data have been fully placed on file with the FCC.

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EXHIBIT 2

SYSTEM TEST CONFIGURATION

INTERTEK TESTING SERVICES

2.0 **System Test Configuration**

2.1 Justification

The system was configured for testing in a typical fashion (as a customer would normally use it), and in the confines as outlined in ANSI C63.4 (2003).

The device is powered by an AC/DC Adapter (INPUT: AC100-240, 50/60Hz; OUTPUT: DC 12V, 2A).

For maximizing emissions, the EUT was rotated through 360°, the antenna height was varied from 1 meter to 4 meters above the ground plane, and the antenna polarization was changed. The step by step procedure for maximizing emissions led to the data reported in Exhibit 3.0.

The rear of unit shall be flushed with the rear of the table.

The equipment under test (EUT) was configured for testing in a typical fashion (as a customer would normally use it). The EUT was placed on turntable, which enabled the engineer to maximize emissions through its placement in the three orthogonal axes.

The frequency range from 30MHz to 2GHz was searched for spurious emissions from the device. Only those emissions reported were detected. All other emissions were at least 20 dB below the applicable limits.

2.2 EUT Exercising Software

N/A.

2.3 Special Accessories

No special accessory.

2.4 Equipment Modification

Any modifications installed previous to testing by Huawei Technologies Co.,Ltd will be incorporated in each production model sold / leased in the United States.

No modifications were installed by Intertek Testing Services Shenzhen Ltd. Kejiyuan Branch.

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2.5 Measurement Uncertainty

When determining the test conclusion, the Measurement Uncertainty of test has been considered.

2.6 Support Equipment List and Description

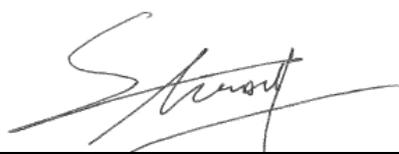
This product was tested in the following configuration:

Refer List:

Description	Manufacturer	Model No.
Laptop	HP	2510P
Laptop	Lenovo	T61
Hard Disk	Smart.drive	HD-003
USB Cable	Smart.drive	Unshielded, Length 155cm
1394 Cable	Smart.drive	Unshielded, Length 180cm
Adapter	huawei	HW-120200U1W (INPUT: 100-240, 50/60Hz; OUTPUT: DC 12, 2A)
Optical fiber adapter	D-Link	DFE-885
Optical fiber	D-Link	Length: 1.5m
Router	D-Link	DES-1008D
BBU Terminal	N/A	BBU-T-001
Telephone	GCE	GCE6097
Telephone	TCL	HCD868(78)TD
USB Disk	Sandisk	USB/2GB
2 x RJ11 PSTN cable	N/A	RJ11 PSTN Cable-001~002 (Length: 120cm)
4 x Cat.5 RJ45 net cable	N/A	Cat.5 RJ 45Net Cable-003~007 (Length: 100cm)
1 x Cat.5 RJ45 net cable 10m	N/A	Cat.5 RJ 45 Net Cable-008 (Length: 10m)

All the items listed under section 2.0 of this report are
Confirmed by:

Shawn Xing
Manager
Intertek Testing Services Shenzhen Ltd.
Kejiyuan Branch
Agent for Huawei Technologies Co.,Ltd



Signature

October 15, 2011 *Date*

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EXHIBIT 3
EMISSION RESULTS

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3.0 Emission Results

Data is included worst case configuration (the configuration which resulted in the highest emission levels). A sample calculation, configuration photographs and data tables of the emissions are included.

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3.1 Field Strength Calculation

The field strength is calculated by adding the reading on the Spectrum Analyzer to the factors associated with preamplifiers (if any), antennas, cables, pulse desensitization and average factors (when specified limit is in average and measurements are made with peak detectors). A sample calculation is included below.

$$FS = RA + AF + CF - AG + PD + AV$$

where FS = Field Strength in dB μ V/m

RA = Receiver Amplitude (including preamplifier) in dB μ V

CF = Cable Attenuation Factor in dB

AF = Antenna Factor in dB

AG = Amplifier Gain in dB

PD = Pulse Desensitization in dB

AV = Average Factor in -dB

In the radiated emission table which follows, the reading shown on the data table may reflect the preamplifier gain. An example of the calculations, where the reading does not reflect the preamplifier gain, follows:

$$FS = RA + AF + CF - AG + PD + AV$$

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3.1 Field Strength Calculation (cont'd)

Example

Assume a receiver reading of 62.0dB μ V is obtained. The antenna factor of 7.4dB and cable factor of 1.6dB is added. The amplifier gain of 29dB is subtracted. The pulse desensitization factor of the spectrum analyzer was 0dB, and the resultant average factor was -10dB. The net field strength for comparison to the appropriate emission limit is 32dB μ V/m. This value in dB μ V/m was converted to its corresponding level in μ V/m.

$$RA = 62.0\text{dB}\mu\text{V}$$

$$AF = 7.4\text{dB}$$

$$CF = 1.6\text{dB}$$

$$AG = 29.0\text{dB}$$

$$PD = 0\text{dB}$$

$$AV = -10\text{dB}$$

$$FS = 62 + 7.4 + 1.6 - 29 + 0 + (-10) = 32\text{dB}\mu\text{V/m}$$

$$\text{Level in } \mu\text{V/m} = \text{Common Antilogarithm } [(32\text{dB}\mu\text{V/m})/20] = 39.8\mu\text{V/m}$$

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3.2 Radiated Emission Configuration Photograph

Worst Case Radiated Emission
At
874.992MHz (data transmit with PC)

For electronic filing, the worst case radiated emission configuration photograph is saved with filename: radiated photos.pdf.

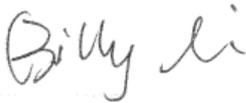
INTERTEK TESTING SERVICES

3.3 Radiated Emission Data

The data on the following page lists the significant emission frequencies, the limit and the margin of compliance. Numbers with a minus sign are below the limit.

Judgement: Passed by 3.5dB margin (data transmit with PC)

TEST PERSONNEL:



Signature

Billy Li, Team Leader
Typed / Printed Name

October 15, 2011
Date

INTERTEK TESTING SERVICES

Company: Huawei Technologies Co.,Ltd

Date of Test: October 15, 2011

Model: HG8245

Worst Case Operating Mode: Data transmit with PC

Table 2

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Limit at 3m (dB μ V/m)	Margin (dB)
Horizontal	374.995	45.6	20.0	16.4	42.0	46.0	-4.0
Horizontal	499.995	39.9	20.0	19.2	39.1	46.0	-6.9
Horizontal	874.987	35.1	20.0	25.5	40.6	46.0	-5.4
Vertical	33.395	39.1	20.0	16.5	35.6	40.0	-4.4
Vertical	375.004	43.5	20.0	16.4	39.9	46.0	-6.1
Vertical	874.992	37.0	20.0	25.5	42.5	46.0	-3.5

NOTES: 1. All measurements were made at 3 meters. Harmonic emissions not detected at the 3-meter distances were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other harmonic emissions than those reported were detected at a test distance of 0.3-meter.

2. Negative value in the margin column shows emission below limit.

3. All emissions are below the QP and AV limit.

Test Engineer: Billy Li

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3.4 Conducted Emission Configuration Photograph

Worst Case Line-Conducted Configuration
at
0.438 MHz

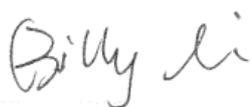
For electronic filing, the worst case conducted emission configuration photograph is saved with filename: conducted photos.pdf.

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3.5 Conducted Emission Data

Judgement: Passed by 13.7 dB margin

TEST PERSONNEL:



Signature

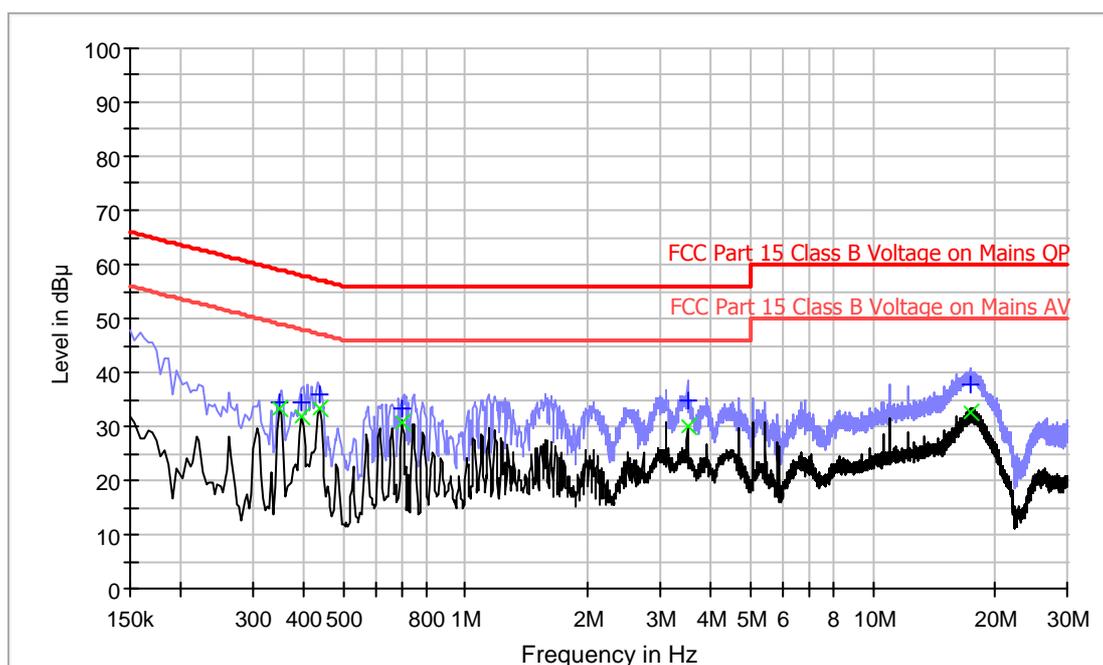
Billy Li, Team Leader
Typed/Printed Name

October 15, 2011
Date

INTERTEK TESTING SERVICES

Company: Huawei Technologies Co.,Ltd
 Date of Test: October 15, 2011
 Model: HG8245
 Worst Case Operating Mode: Data transmit with PC

Conducted Emission Test - FCC



Result Table QP

Frequency (MHz)	QuasiPeak (dB µ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)
0.350	34.4	L1	9.6	24.6	59.0
0.394	34.5	L1	9.6	23.5	58.0
0.438	36.1	L1	9.6	21.0	57.1
0.698	33.3	L1	9.7	22.7	56.0
3.506	34.7	L1	9.8	21.3	56.0
17.274	37.7	L1	10.0	22.3	60.0

Result Table AV

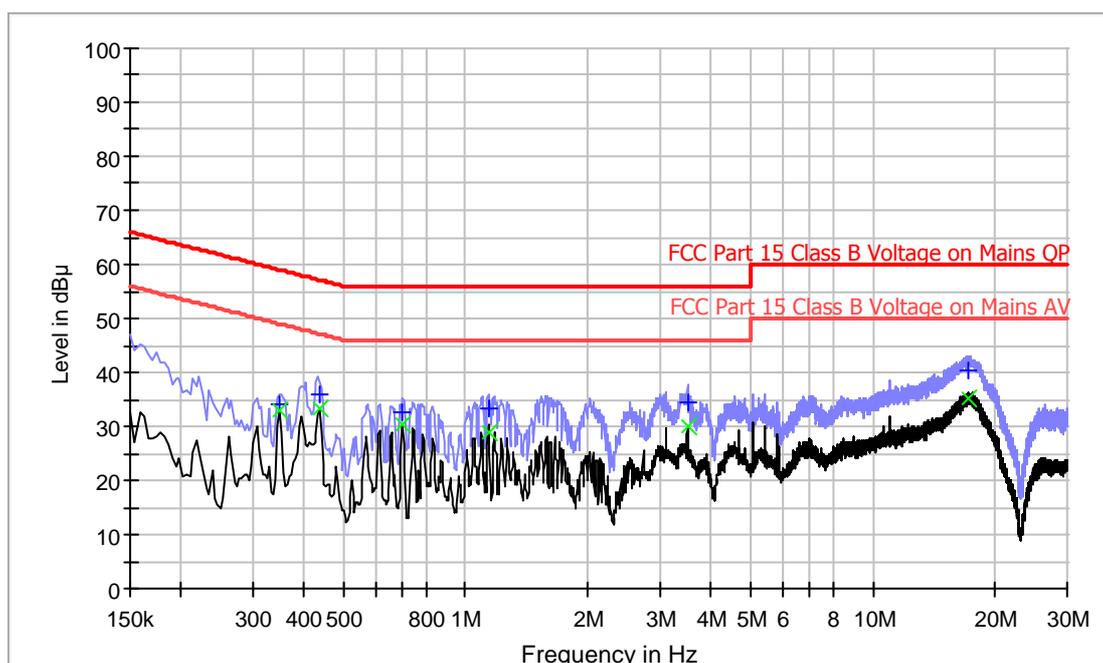
Frequency (MHz)	CAverage (dB µ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)
0.350	33.3	L1	9.6	15.7	49.0
0.394	32.0	L1	9.6	16.0	48.0
0.438	33.4	L1	9.6	13.7	47.1
0.698	30.8	L1	9.7	15.2	46.0
3.506	30.2	L1	9.8	15.8	46.0
17.274	32.7	L1	10.0	17.3	50.0

Test Engineer: Billy Li

INTERTEK TESTING SERVICES

Company: Huawei Technologies Co.,Ltd
 Date of Test: October 15, 2011
 Model: HG8245
 Worst Case Operating Mode: Data transmit with PC

Conducted Emission Test - FCC



Result Table QP

Frequency (MHz)	QuasiPeak (dB µ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)
0.350	34.1	N	9.6	24.9	59.0
0.438	36.0	N	9.6	21.1	57.1
0.698	32.8	N	9.6	23.2	56.0
1.134	33.3	N	9.7	22.7	56.0
3.506	34.6	N	9.8	21.4	56.0
17.198	40.2	N	10.1	19.8	60.0

Result Table AV

Frequency (MHz)	CAverage (dB µ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)
0.350	33.0	N	9.6	16.0	49.0
0.438	33.2	N	9.6	13.9	47.1
0.698	30.5	N	9.6	15.5	46.0
1.134	28.9	N	9.7	17.1	46.0
3.506	30.1	N	9.8	15.9	46.0
17.198	35.3	N	10.1	14.7	50.0

Test Engineer: Billy Li

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EXHIBIT 4
EQUIPMENT PHOTOGRAPHS

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4.0 **Equipment Photographs**

For electronic filing, photographs of the tested EUT are saved with filename: external photos.pdf and internal photos.pdf.

INTERTEK TESTING SERVICES

EXHIBIT 5
PRODUCT LABELLING

INTERTEK TESTING SERVICES

5.0 **Product Labelling**

For electronics filing, the FCC ID label artwork and the label location are saved with filename: label.pdf.

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EXHIBIT 6

TECHNICAL SPECIFICATIONS

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6.0 Technical Specifications

For electronic filing, the block diagram of the tested EUT is saved with filename: block.pdf.

EXHIBIT 7
INSTRUCTION MANUAL

INTERTEK TESTING SERVICES

7.0 Instruction Manual

For electronic filing, a preliminary copy of the Instruction Manual is saved with filename: manual.pdf.

This manual will be provided to the end-user with each unit sold / leased in the United States.

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EXHIBIT 8

MISCELLANEOUS INFORMATION

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8.0 Miscellaneous Information

This miscellaneous information includes emission measuring procedure.

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8.1 Emissions Test Procedures

The following is a description of the test procedure used by Intertek Testing Services in the measurements of computer peripheral operating under Part 15, Subpart B rules.

The test set-up and procedures described below are designed to meet the requirements of ANSI C63.4 – 2003.

The computer peripheral equipment under test (EUT) is placed on a wooden turntable which is four feet in diameter and approximately one meter in height above the ground plane. During the radiated emissions test, the turntable is rotated and any cables leaving the EUT are manipulated to find the configuration resulting in maximum emissions. The antenna height and polarization are varied during the testing to search for maximum signal levels. The height of the antenna is varied from one to four meters.

Detector function for radiated emissions are in QP mode from the frequency band 30MHz to 1GHz with RBW setting 120kHz and in PK & AV mode from frequency band 1GHz to 5GHz with RBW setting 1MHz. Detector function for conducted emissions are in QP & AV mode and IFBW setting is 9kHz from the frequency band 150kHz to 30MHz.

For radiated emission, the frequency range scanned is 30MHz to 1GHz. For line-conducted emissions, the range scanned is 150kHz to 30MHz.

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8.1 Emissions Test Procedures (cont'd)

The EUT is warmed up for 15 minutes prior to the test.

Conducted measurements are made as described in ANSI C63.4 – 2003.

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EXHIBIT 9

TEST EQUIPMENT LIST

INTERTEK TESTING SERVICES

9.0 Test Equipment List

Equipment No.	Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Due Date
SZ061-03	BiConiLog Antenna	ETS	3142C	00066460	02-Jul-11	02-Jan-13
SZ185-01	EMI Receiver	R&S	ESCI	100547	08-Mar-11	08-Mar-12
SZ188-01	Anechoic Chamber	ETS	RFD-F/A-100	4102	06-Mar-11	06-Mar-12
SZ062-04	RF Cable	RADIALL	RG 213U	--	24-Sep-11	24-Mar-12
SZ062-06	RF Cable	RADIALL	0.04-26.5GHz	083388	03-Sep-11	03-Mar-12
SZ185-02	EMI Test Receiver	R&S	ESCI	100692	12-Nov-10	12-Nov-11
SZ187-01	Two-Line V-Network	R&S	ENV216	100072	12-Nov-10	12-Nov-11
SZ187-02	Two-Line V-Network	R&S	ENV216	100072	12-Nov-10	12-Nov-11
SZ188-03	Shielding Room	ETS	RFD-100	4100	10-Sep-11	10-Sep-12