FCC PART 15 CLASS B

EMI MEASUREMENT AND TEST REPORT

For

ShangHai Jujo Electronics Co. Ltd.

COFCO Mansion, Room 1001-1004, No.440 ZhongShan Road(S.2), ShangHai , China

FCC ID: PIT-8018

April 1, 2005

This Report Concerns:	**Equipment Type:**
☒ Original Report	USB STICK TYPE R/W

Test Engineer:	Lisa Zhu
Report Number:	RSH05021653
Test Date:	February 28-March 7, 2005
Reviewed By:	Chris Zeng
Prepared By:	Bay Area Compliance Lab Corp. (ShenZhen) 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone, ShenZhen, GuangDong 518038, P.R.China Tel: +86-755-33320018 Fax: +86-755-33320008

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GENERAL INFORMATION

Product Description for Equipment Under Test (EUT)

The *ShangHai Jujo Electronics Co. Ltd.* 's product, FCC ID: PIT-8018 or the "EUT" as referred to in this report was a USB STICK TYPE R/W which measures approximately 6.0 cm L x 1.7 cm W x 0.8 cm H, rated input voltage: DC 5 V.

** The test data gathered are from production sample, serial number: TS05-00002210, provided by the manufacturer.*

Objective

The following test report is prepared on behalf of *ShangHai Jujo Electronics Co. Ltd.* in accordance with Part 2, Subpart J, and Part 15, Subparts A and B of the Federal Communication Commissions rules.

The objective of the manufacturer is to determine compliance with FCC Part 15 Class B.

Related Submittal(s)/Grant(s)

No related submittal(s).

Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2003, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

All radiated and conducted emissions measurement was performed at Bay Area Compliance Lab Corp. (ShenZhen). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Test Facility

The Test site used by Bay Area Compliance Lab Corp. (ShenZhen) to collect radiated and conducted emission measurement data is located in the 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone, ShenZhen, GuangDong 518038, P.R.China.

Test site at Bay Area Compliance Lab Corp. (ShenZhen) has been fully described in reports submitted to the Federal Communication Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on November 04, 2004. The facility also complies with the radiated and AC line conducted test site criteria set forth in CISPR 16-1: 2002, CISPR16-2: 2002.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 382179. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

Host System Configuration List and Details

Manufacturer	Description	Model	Serial Number	FCC ID
IBM	Motherboard	ES-8176	F19R0703	DoC
IBM	Switch Power Supply	HIPRO-A2307F3T	M4251101720	DoC
IBM	HardDisk 80G	24P3783	W2XROOYJ8	N/A
ALPS	3.5”Floppy	06P5226	W25375957	DoC
LITE-ON	CD-ROM	LTN-486S	7819500457-A	DoC
Conexnt	Ethernet	RD01-D270	0325-02-1382	DoC

Local Support Equipment List and Details

Manufacturer	Description	Model	Serial Number	FCC ID
IBM	System PC	IBM8176	99Y5681	DoC
IBM	Keyboard	SK-8815	08532907	DoC
IBM	Mouse	MO28UO	080198	DoC
IBM	Monitor	6737-66N	23-P3242	BEJT17HD
HP	Laser Jet5L	C3941A	JPTVOB2337	DoC
SAST	Modem	AEM-2100	0293	DoC

External I/O Cable

Cable Description	Length (M)	From/Port	To
Shielded Detachable Keyboard Cable	1.50	Keyboard Port / Host	Keyboard
Shielded Detachable Mouse Cable	1.50	Mouse Port / Host	Mouse
Shielded Detachable Printer Cable	1.20	Parallel Port / Host	Printer
Shielded Detachable Serial Cable	1.20	Serial Port / Host	Modem
Shielded Detachable VGA Cable	1.50	VGA Port / Host	Monitor
Shielded Detachable USB Cable	1.20	EUT	PC

SYSTEM TEST CONFIGURATION

Justification

The system was configured for testing in a typical fashion (as normally used by a typical user).

EUT Exercise Software

The EUT exercising program used during radiated and conducted testing was designed to exercise the various system components in a manner similar to a typical use. The software offered by manufacture can exercise the EUT as data transferring between the EUT and the host.

Special Accessories

N/A

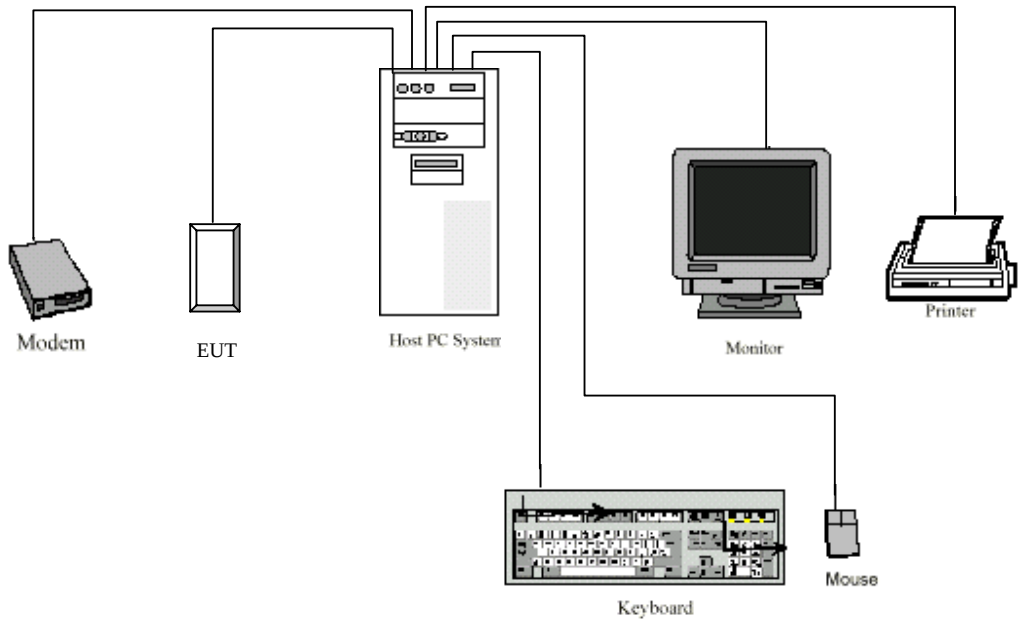
Block Diagram/Schematics

Please refer to the Exhibit C.

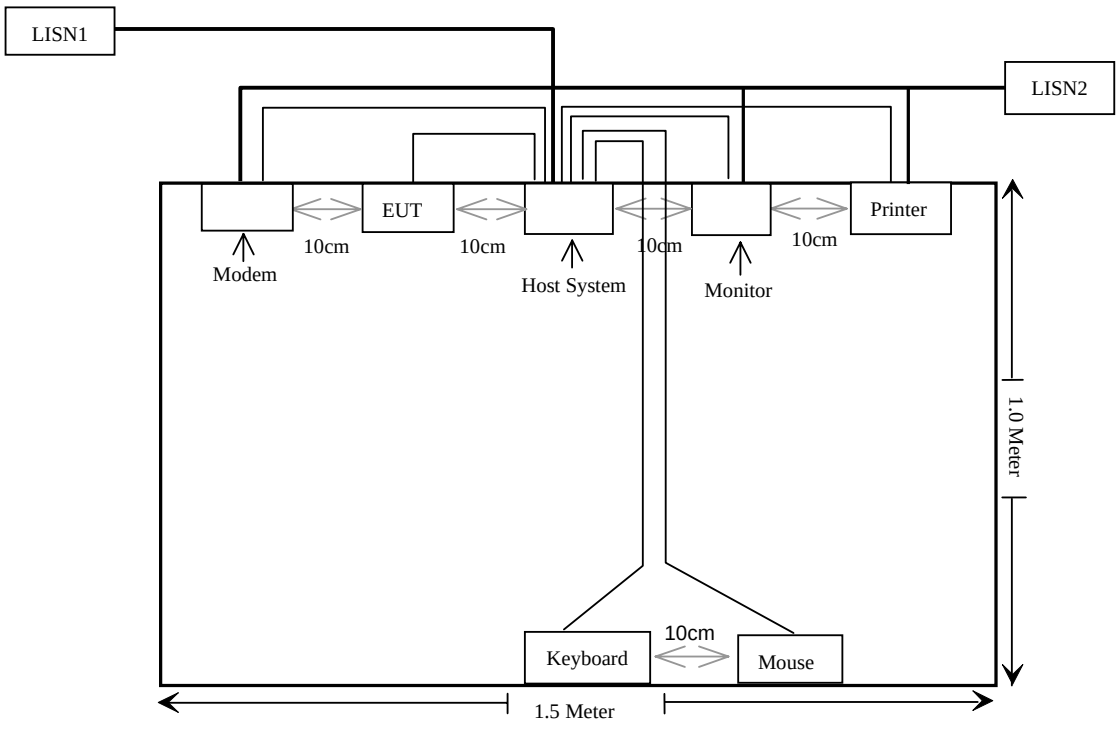
Equipment Modifications

BACL has not done any modification on the EUT.

Configuration of Test Setup



Block Diagram of Test Setup



SUMMARY OF TEST REPORT

RULE	DESCRIPTION	RESULTS
§ 15.107	Conducted Emissions	Compliant
§ 15.109	Radiated Emissions	Compliant

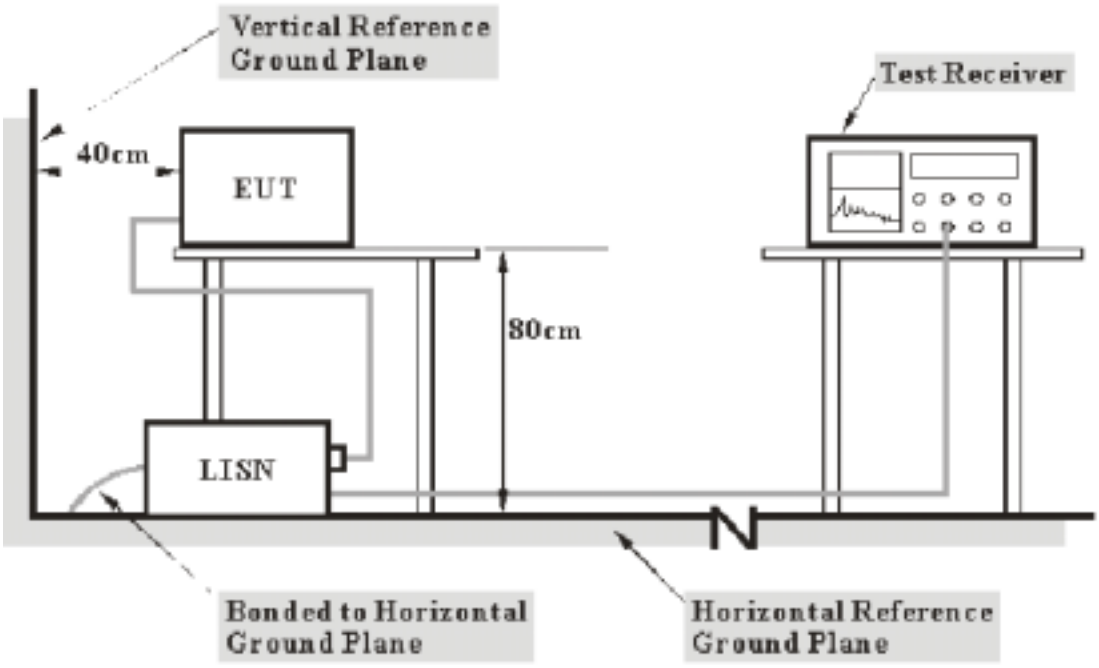
§15.107 - CONDUCTED EMISSION

Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, and LISN.

Based on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement at BACL is ±2.4 dB.

EUT Setup



Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with per ANSI C63.4-2003 measurement procedure. The specification used was with the FCC Part 15 Class B limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.

The host PC was connected to a 120 VAC/60 Hz power source.

Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	***IFBW***
150 kHz – 30 MHz	9 kHz

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Com-Power	L.I.S.N.	LI-200	12005	N/A	N/A
Com-Power	L.I.S.N.	LI-200	12008	N/A	N/A
Rohde & Schwarz	Test Receiver	ESCS30	830245/006	2005-01-26	2006-01-26
Rohde & Schwarz	L.I.S.N.	ESH2-Z5	892107/021	2005-02-28	2006-02-27
Rohde & Schwarz	Pulse Limiter	ESH3Z2	DE25985	2004-09-01	2005-08-31

***** Com-Power's LISN were used as the supporting equipment.
*** Statement of Traceability: BACL** attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Procedure

During the conducted emission test, the host PC system power cord was connected to the outlet of the first LISN, the monitor and all other support equipment power cords connected to the outlet of the second LISN.

Maximizing procedure were performed on the six (6) highest emissions of the EUT.

All data was recorded in the Quasi-peak and average detection mode.

Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC Part 15 Class B, with the worst margin reading of:

-0.80 dB at **0.565 MHz** in the **Line** conductor mode.

Test Data

Environmental Conditions

Temperature:	25° C
Relative Humidity:	50%
ATM Pressure:	940mbar

Testing was performed by Lisa Zhu on 2005-02-28.

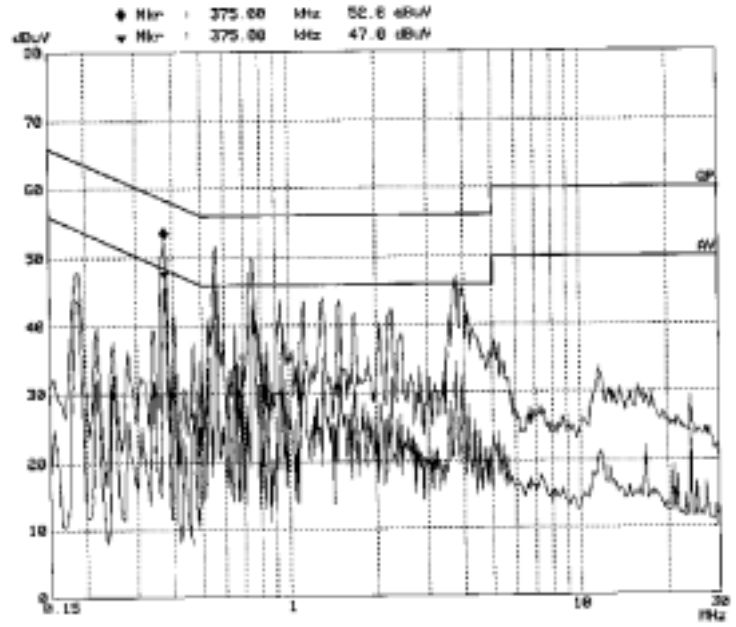
Test mode: Running

LINE CONDUCTED EMISSIONS				FCC PART 15 CLASS B	
Frequency MHz	Amplitude dBµV	Detector QP/AV	Phase Line/Neutral	Limit dBµV	Margin dB
0.565	45.20	AV	Line	46.00	-0.80
0.375	47.50	AV	Neutral	48.39	-0.89
0.375	47.10	AV	Line	48.39	-1.29
0.565	43.50	AV	Neutral	46.00	-2.50
0.750	43.00	AV	Line	46.00	-3.00
0.750	42.70	AV	Neutral	46.00	-3.30
0.565	51.70	QP	Line	56.00	-4.30
0.565	51.40	QP	Neutral	56.00	-4.60
0.375	52.60	QP	Line	58.39	-5.79
0.750	49.90	QP	Line	56.00	-6.10
0.375	52.20	QP	Neutral	58.39	-6.19
0.750	49.20	QP	Neutral	56.00	-6.80
3.765	47.20	QP	Neutral	56.00	-8.80
3.770	47.20	QP	Line	56.00	-8.80
0.185	44.70	AV	Neutral	54.26	-9.56
0.940	36.00	AV	Line	46.00	-10.00
0.190	43.40	AV	Line	54.04	-10.64
3.765	35.10	AV	Neutral	46.00	-10.90
1.310	34.90	AV	Neutral	46.00	-11.10
0.940	43.80	QP	Line	56.00	-12.20
1.310	43.40	QP	Neutral	56.00	-12.60
0.185	49.60	QP	Neutral	64.26	-14.66
0.190	48.20	QP	Line	64.04	-15.84
3.770	24.40	AV	Line	46.00	-21.60

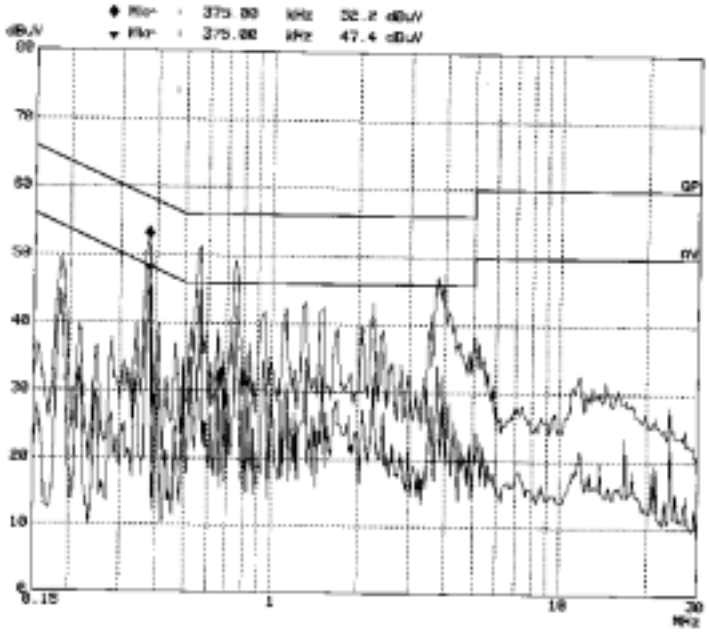
Plot(s) of Test Data

Plot(s) of Test Data is presented hereinafter as reference.

Line:



Neutral:



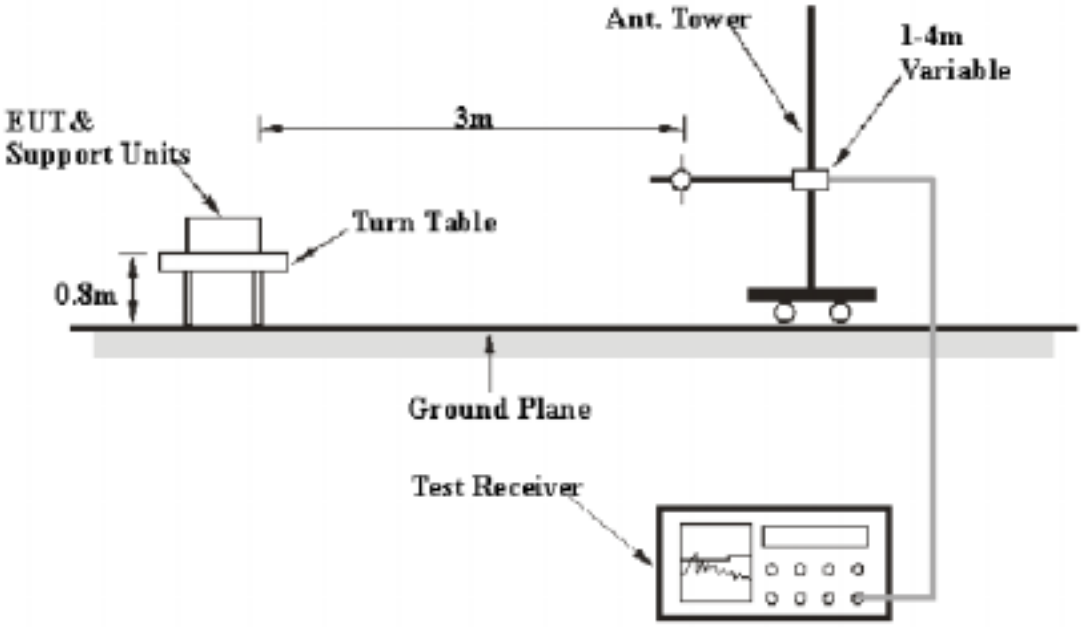
§15.109 - RADIATED EMISSION

Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

Based on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of a radiation emissions measurement at BACL is ±4.0 dB.

EUT Setup



The radiated emission tests were performed in the 3 meters chamber A test site, using the setup accordance with the ANSI C63.4-2003. The specification used was the FCC Part 15 Class B limits.

Test Receiver Setup

The system was investigated from 30 MHz to 1000 MHz.

During the radiated emission test, the EMI test receiver was set with the following configurations:

Frequency Range	***RBW***	***Video B/W***
30 – 1000 MHz	100 kHz	100 kHz

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
HP	Amplifier	8447E	1937A01046	2004-09-01	2005-08-31
Rohde & Schwarz	Test Receiver	ESCI	100035	2004-09-15	2005-09-14
Sunol Sciences	Bilog Antenna	JB1	A040904-2	2004-04-19	2005-04-18

*** Statement of Traceability: BACL** attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

All data was recorded in the Quasi-peak detection mode.

Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

Corr. Ampl. = Indicated Reading + Antenna Factor + Cable Factor - Amplifier Gain

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -7dB means the emission is 7dB below the maximum limit for Class B. The equation for margin calculation is as follows:

Margin = Corr. Ampl. – Class B Limit

Test Results Summary

According to the data in the following table, the EUT complied with the FCC Part 15 Class B, with the worst margin reading of:

-4.70 dB at **280.98 MHz** in the **Vertical** polarization.

Test Data

Environmental Conditions

Temperature:	25° C
Relative Humidity:	50%
ATM Pressure:	940mbar

Testing was performed by Lisa Zhu on 2005-03-07.

Test mode: Running

INDICATED		TABLE	ANTENNA		CORRECTION FACTOR			CORRECTED AMPLITUDE	FCC PART 15 CLASS B	
Frequency MHz	Ampl. dBµV/m	Angle Degree	Height Meter	Polar H/ V	Antenna dB/m	Cable dB	Amp. dB	Corr. Ampl. dBµV/m	Limit dBµV/m	Margin dB
280.98	53.56	60	3.0	v	13.8	1.5	27.6	41.3	46.0	-4.7
191.88	53.66	361	46.9	h	11.8	1.3	28.0	38.8	43.5	-4.7
384.54	51.39	361	46.9	h	15.6	1.9	27.9	41.0	46.0	-5.0
31.88	36.00	61	3.1	v	24.1	0.6	28.8	31.9	40.0	-8.1
191.68	50.35	270	1.0	v	11.8	1.3	28.0	35.5	43.5	-8.1
47.86	47.86	361	46.9	v	10.8	0.6	28.8	30.4	40.0	-9.6
287.64	48.08	154	3.1	h	13.8	1.5	27.6	35.8	46.0	-10.2
60.08	49.12	60	1.2	v	8.1	0.8	28.7	29.3	40.0	-10.7
167.94	46.97	154	3.1	h	12.5	1.2	28.3	32.4	43.5	-11.1
38.46	37.00	154	3.1	v	17.7	0.6	28.8	26.5	40.0	-13.5
215.82	44.17	60	1.2	h	11.4	1.3	27.8	29.1	43.5	-14.4
59.64	44.89	61	3.1	h	7.9	0.7	28.7	24.8	40.0	-15.2