FCC PART 15.247
RSS-GEN ISSUE 5, MARCH 2019 AMENDMENT 1
RSS-247, ISSUE 2, FEBRUARY 2017

TEST REPORT

For

Meizhou Guo Wei Electronics Co., Ltd.

AD1 Section, Economic Development Area, Dongsheng Industrial District, Meizhou, Guangdong, China.

FCC ID: 2ARRB-VM65PU
IC: 20353-VM65PU

Report Type:	**Product Type:**
Original Report	Video baby monitor

Report Number:	SZ1210218-04515ED
Report Date:	2021-04-13
Reviewed By:	Jimmy Xiao RF Engineer
Prepared By:	Bay Area Compliance Laboratories Corp. (Shenzhen) 5F(B-West) ,6F,7F,the 3rd Phase of Wan Li Industrial Building D,Shihua Rd, FuTian Free Trade Zone, Shenzhen, China Tel: +86-755-33320018 Fax: +86-755-33320008 www.baclcorp.com.cn

Note: This report may contain data that are not covered by the A2LA accreditation and are marked with an asterisk "★".

BACL is not responsible for the authenticity of any test data provided by the applicant. Data included from the applicant that may affect test results are marked with an asterisk '*'. Customer model name, addresses, names, trademarks etc. are not considered data.

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Product	Video baby monitor
Tested Model	VM65 CONNECTPU
Multiple Models	VM60 CONNECTPU, VM65X CONNECTPU, VM35PU
Model Differences	Refer to the DoS letter
HVIN	VM65PU
Frequency Range	2402~2477MHz
Maximum conducted Peak output power	14.96dBm
Modulation Technique	GFSK
Antenna Specification*	0dBi (It is provided by the applicant)
Voltage Range	3.8V from battery or DC 5.0V from adapter
Date of Test	2021-03-03 to 2021-04-07
Sample serial number	SZ1210218-04515E-RF-S1 (Assigned by BACL, Shenzhen)
Received date	2021-02-18
Sample/EUT Status	Good condition
Adapter1 information	Model: BQ05A-0501000-U Input: 100-240V,50/60Hz Max, 300mA Output: DC 5.0V, 1000mA
Adapter2 information	Model: YWK-AD050100-U Input: 100-240V, 50/60Hz, 0.3A Output: DC 5.0V, 1000mA

Objective

This test report is in accordance with Part 2-Subpart J, Part 15-Subparts A and C of the Federal Communication Commissions rules and RSS-GEN Issue 5, March 2019 Amendment 1 and RSS-247, Issue 2, February 2017 of the Innovation, Science and Economic Development Canada rules

The tests were performed in order to determine compliance with FCC Part 15, Subpart C, section 15.203, 15.205, 15.207, 15.209, 15.247 rules and RSS-GEN, RSS-247.

Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2013, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices and RSS-GEN Issue 5, March 2019 Amendment 1 and RSS-247, Issue 2, February 2017.

For Radiated Emissions testing, please refer to DA 00-705 Released March 30, 2000, Filing and Measurement Guidelines for Frequency Hopping Spread Spectrum Systems.

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

Measurement Uncertainty

Parameter		Uncertainty
Occupied Channel Bandwidth		±5%
RF Output Power with Power meter		±0.73dB
RF conducted test with spectrum		±1.6dB
AC Power Lines Conducted Emissions		±1.95dB
Emissions, Radiated	Below 1GHz	±4.75dB
	Above 1GHz	±4.88dB
Temperature		±1℃
Humidity		±6%
Supply voltages		±0.4%

Note: The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval.Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect test data is located on the 5F(B-West) ,6F,7F,the 3rd Phase of Wan Li Industrial Building D,Shihua Rd, FuTian Free Trade Zone, Shenzhen, China.

The test site has been approved by the FCC under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No.: 342867, the FCC Designation No.: CN1221.

The lab has been recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements, the CAB identifier: CN0023.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in an engineering mode.

Frequency List

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2402	12	2445
2	2404	13	2450
3	2406	14	2455
4	2408	15	2460
5	2410	16	2465
6	2415	17	2467
7	2420	18	2469
8	2425	19	2471
9	2430	20	2473
10	2435	21	2475
11	2440	22	2477

EUT was tested with Channel 1, 11 and 22.

EUT Exercise Software

“Teraterm”* software was used and the power level is default*. The software and power level was provided by the applicant.

Special Accessories

No special accessory.

Equipment Modifications

No modification was made to the EUT tested.

Support Equipment List and Details

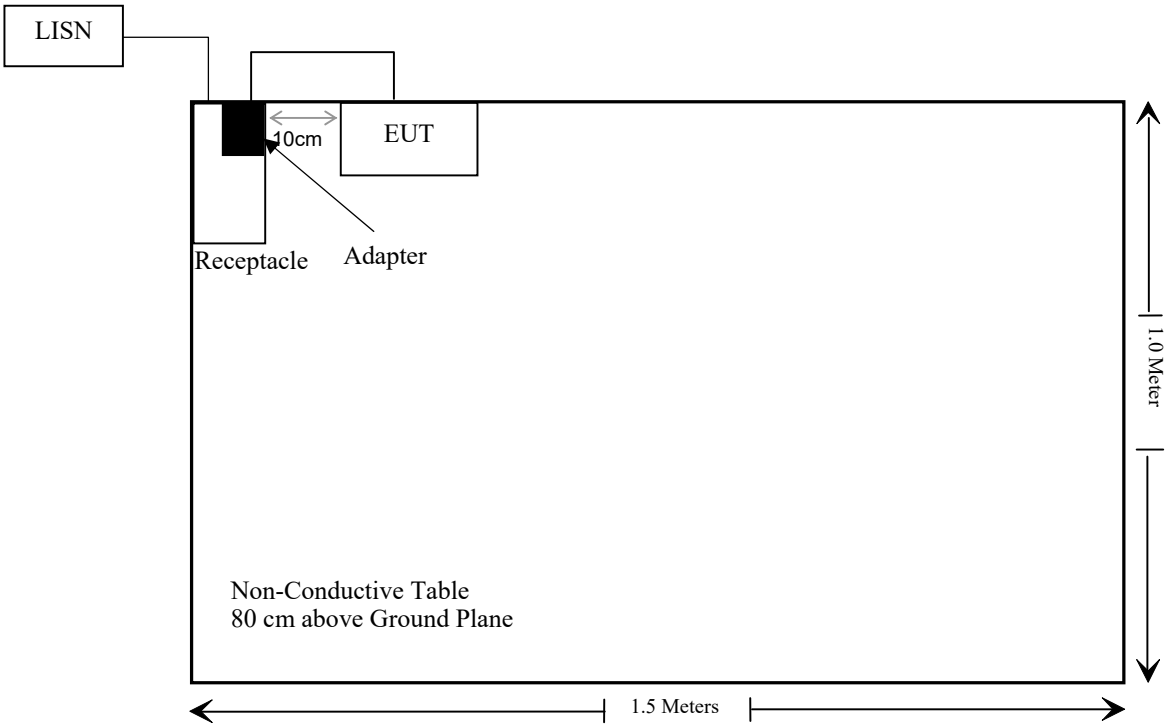
Manufacturer	Description	Model	Serial Number
/	/	/	/

External I/O Cable

Cable Description	Length (m)	From Port	To
Unshielded Un-detachable DC Cable	1.0	EUT	Adapter

Block Diagram of Test Setup

For conducted emission:



SUMMARY OF TEST RESULTS

FCC Rules	RSS-247/RSS-Gen Rules	Description of Test	Result
§ 1.1307 , §2.1093	RSS-102	RF Exposure (SAR)	Compliance*
§15.203	RSS-Gen §6.8	Antenna Requirement	Compliance
§15.207(a)	RSS-Gen §8.8	AC Line Conducted Emissions	Compliance**
§15.205, §15.209 & §15.247(d)	RSS-247 § 5.5	Radiated Emissions	Compliance** (note)
§15.247(a)(1)	RSS- Gen§6.7, RSS-247 § 5.1 (a)	99% OCCUPIED BANDWIDTH & 20 dB Emission Bandwidth	Compliance**
§15.247(a)(1)	RSS-247 § 5.1 (b)	Channel Separation Test	Compliance**
§15.247(a)(1)(iii)	RSS-247 § 5.1 (d)	Time of Occupancy (Dwell Time)	Compliance**
§15.247(a)(1)(iii)	RSS-247 § 5.1 (d)	Quantity of hopping channel Test	Compliance**
§15.247(b)(1)	RSS-247 § 5.1(b) &§ 5.4(b)	Peak Output Power Measurement	Compliance**
§15.247(d)	RSS-247 § 5.5	Band edges	Compliance**

Compliance*: Please refer to SAR report issued by BACL, report number: SZ1210218-04515E-20B.
Compliance**(note): The EUT is identical with the device (FCC ID: 2ARRB-VM64PU & IC: 20353-VM64PU) except the size of the screen. So the “Radiated emission below 1GHz” was tested, all other data were refer to the report SZ1210218-04515EC issued on 2021-04-13 by Bay Area Compliance Laboratories Corp. (Shenzhen).

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Radiated Emission Test					
R&S	EMI Test Receiver	ESR3	102455	2020/08/04	2021/08/03
Sonoma instrument	Pre-amplifier	310 N	186238	2020/08/04	2021/08/03
Sunol Sciences	Broadband Antenna	JB1	A040904-2	2020/12/22	2023/12/21
Unknown	Cable 2	RF Cable 2	F-03-EM197	2020/11/29	2021/11/28
Unknown	Cable	Chamber Cable 1	F-03-EM236	2020/11/29	2021/11/28
Rohde & Schwarz	Auto test software	EMC 32	V9.10	NCR	NCR

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

FCC §1.1307(b) & §2.1093 - RF EXPOSURE INFORMATION

Applicable Standard

FCC§1.1310 and §2.1093.

Test Result

Compliance, please refer to the SAR report: SZ1210218-04515E-20B.

RSS-102 – RF EXPOSURE

Applicable Standard

According to RSS-102, systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

Result: Compliance.

Please refer to SAR Report *Number:* SZ1210218-04515E-20B.

FCC §15.203 & RSS-Gen §6.8– ANTENNA REQUIREMENT

Applicable Standard

According to FCC § 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

The applicant for equipment certification shall provide a list of all antenna types that may be used with the transmitter, where applicable (i.e. for transmitters with detachable antenna), indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna. The test report shall demonstrate the compliance of the transmitter with the limit for maximum equivalent isotropically radiated power (e.i.r.p.) specified in the applicable RSS, when the transmitter is equipped with any antenna type, selected from this list.

For expediting the testing, measurements may be performed using only the antenna with highest gain of each combination of transmitter and antenna type, with the transmitter output power set at the maximum level. However, the transmitter shall comply with the applicable requirements under all operational conditions and when in combination with any type of antenna from the list provided in the test report (and in the notice to be included in the user manual, provided below).

When measurements at the antenna port are used to determine the RF output power, the effective gain of the device's antenna shall be stated, based on a measurement or on data from the antenna's manufacturer.

The test report shall state the RF power, output power setting and spurious emission measurements with each antenna type that is used with the transmitter being tested.

For licence-exempt equipment with detachable antennas, the user manual shall also contain the following notice in a conspicuous location:

This radio transmitter [enter the device's ISED certification number] has been approved by Innovation, Science and Economic Development Canada to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device. Immediately following the above notice, the manufacturer shall provide a list of all antenna types which can be used with the transmitter, indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna type.

Antenna Connector Construction

The EUT has one integral antenna arrangement, which was permanently attached and the antenna gain is 0dBi, fulfill the requirement of this section. Please refer to the EUT photos.

Type	Antenna Gain	Impedance
Monopole	0dBi	50 Ω

Result: Pass

FCC §15.205, §15.209 & §15.247(d) & RSS-247 § 5.5– RADIATED EMISSIONS

Applicable Standard

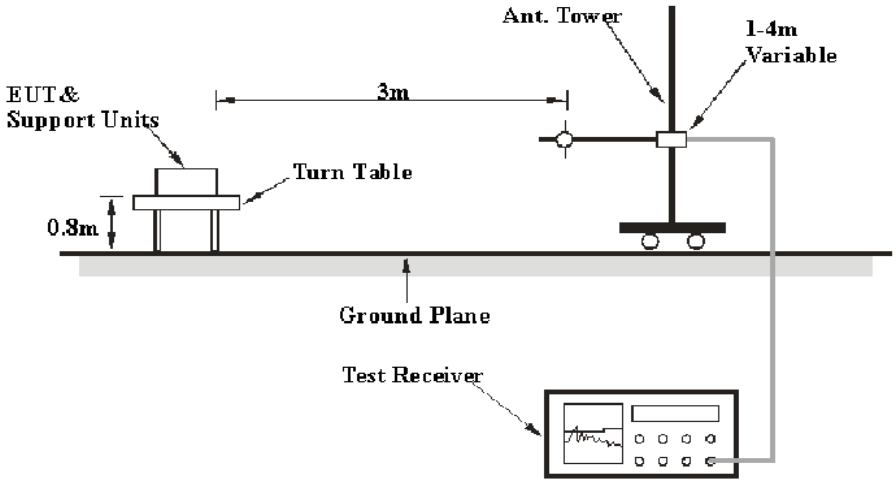
FCC §15.205; §15.209; §15.247(d)

According to RSS-247 §5.5

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under Section 5.4(d), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

EUT Setup

Below 1 GHz:



The radiated emission tests were performed in the 3 meters, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC 15.209 and FCC 15.247 & RSS-247/RSS-Gen limits.

EMI Test Receiver & Spectrum Analyzer Setup

During the radiated emission test, according to the DA 00-705 Released March 30, 2000, the EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:

Frequency Range	RBW	Video B/W	IF B/W	Measurement
30 MHz – 1000 MHz	100 kHz	300 kHz	120 kHz	QP

Test Procedure

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

All final data was recorded in Quasi-peak detection mode for frequency range of 30 MHz -1 GHz.

Corrected Amplitude & Margin Calculation

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

Corrected Amplitude = Meter Reading + Antenna Factor + Cable Loss - 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 limit. The equation for margin calculation is as follows:

Margin = Limit – Corrected Amplitude

Test Data

Environmental Conditions

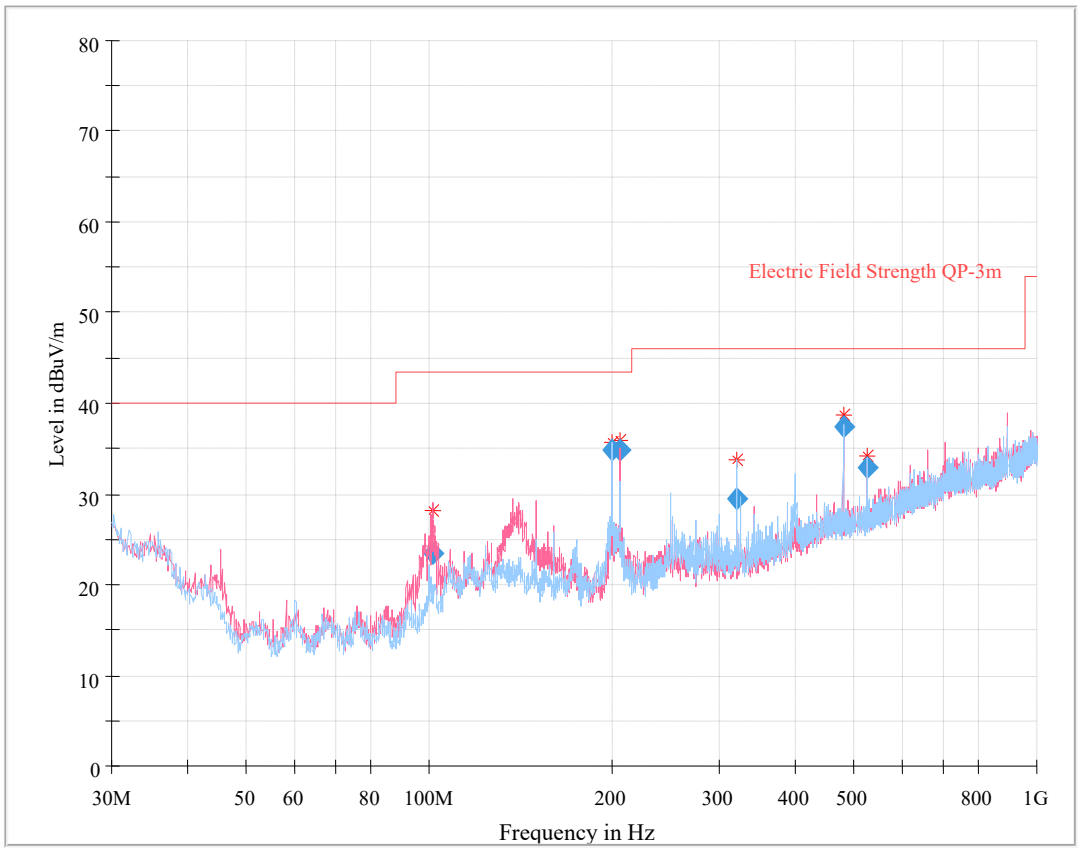
Temperature:	21~24.1 ℃
Relative Humidity:	44~52 %
ATM Pressure:	101.0~101.1 kPa

The testing was performed by Andy Yu on 2021-03-03.

EUT operation mode: Transmitting

30 MHz~1 GHz: (Low channel was worst case)

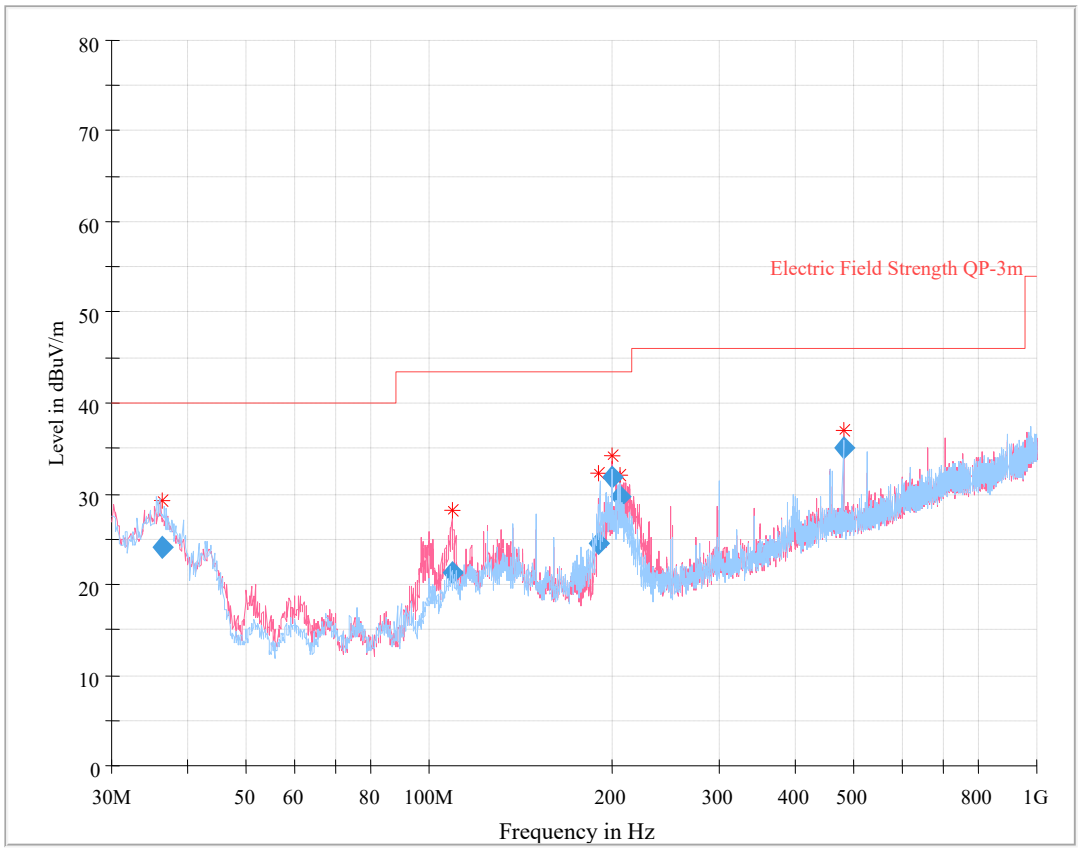
Adapter1-Model: BQ05A-0501000-U



Final_Result

Frequency (MHz)	QuasiPeak (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
101.111375	23.40	43.50	20.10	104.0	V	94.0	-7.4
200.030375	34.85	43.50	8.65	179.0	H	321.0	-5.0
205.733125	34.81	43.50	8.69	103.0	V	14.0	-5.1
320.005250	29.44	46.00	16.56	130.0	H	20.0	-3.5
480.031000	37.42	46.00	8.58	203.0	H	0.0	0.7
525.721125	32.92	46.00	13.08	192.0	H	0.0	1.2

Adapter2-Model: YWK-AD050100-U



Final_Result

Frequency (MHz)	QuasiPeak (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
36.242500	24.18	40.00	15.82	206.0	H	333.0	-2.1
108.903500	21.24	43.50	22.26	106.0	V	86.0	-5.4
190.567500	24.50	43.50	19.00	188.0	H	325.0	-6.2
200.030500	31.90	43.50	11.60	109.0	V	239.0	-5.0
205.770875	29.77	43.50	13.73	105.0	V	20.0	-5.1
480.032750	35.06	46.00	10.94	200.0	H	0.0	0.7

******* END OF REPORT *******