Flom Test Labs
EMI, EMC, RF Testing Experts Since 1963
toll-free: (866) 311-3268
fax: (480) 926-3598
http://www.flomlabs.com
info@flomlabs.com

Transmitter Certification

of

FCC ID: P7QRHV-8
Model: Type RHV-8

to

Federal Communications Commission

Rule Parts 22H, 24E, 15.247

Date Of Report: June 28, 2006

On the Behalf of the Applicant:

Vertu

At the Request of:

Vertu
Beacon Hill Road
Church Crookham, Hampshire GU52 8DY UK

Attention of: Mark Pope, Certification and Compliance Manager
+44 1252 611135; FAX: -611302
Mobile: +44 7774 8158594
mark.pope@vertu.com

Supervised By: Fred Chastain

List of Exhibits
(FCC **Certification** (Cellular Transmitters) - Revised 9/28/98)

Applicant: Vertu

FCC ID: P7QRHV-8

By Applicant:

1. Letter of Authorization

2. Identification Drawings, 2.1033(c)(11)
   - Label
   - Location of Label
   - Compliance Statement
   - Location of Compliance Statement

3. Photographs, 2.1033(c)(12)

4. Confidentiality Request: 0.457 And 0.459

5. Documentation: 2.1033(c)
   - (3) User Manual
   - (9) Tune Up Info
   - (10) Schematic Diagram
   - (10) Circuit Description
     - Block Diagram
     - Parts List
     - Active Devices

6. Attestation: ESN: Section 22.919

7. Attestation: OET: Section 22.933

8. SAR Report

By M.F.A. Inc.

A. Testimonial & Statement of Certification

The applicant has been cautioned as to the following:

15.21 Information to User.

The users manual or instruction manual for an intentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

15.27(a) Special Accessories.

Equipment marketed to a consumer must be capable of complying with the necessary regulations in the configuration in which the equipment is marketed. Where special accessories, such as shielded cables and/or special connectors are required to enable an unintentional or intentional radiator to comply with the emission limits in this part, the equipment must be marketed with, i.e. shipped and sold with, those special accessories. However, in lieu of shipping or packaging the special accessories with the unintentional or intentional radiator, the responsible party may employ other methods of ensuring that the special accessories are provided to the consumer, without additional charge.

Information detailing any alternative method used to supply the special accessories for a grant of equipment authorization or retained in the verification records, as appropriate. The party responsible for the equipment, as detailed in § 2.909 of this chapter, shall ensure that these special accessories are provided with the equipment. The instruction manual for such devices shall include appropriate instructions on the first page of text concerned with the installation of the device that these special accessories must be used with the device. It is the responsibility of the user to use the needed special accessories supplied with the equipment.

Table of Contents

Required information per ISO/IEC Guide 25-1990, paragraph 13.2:

a) **Test Report**

b) Laboratory: M. Flom Associates, Inc.
(FCC: 31040/SIT) 3356 N. San Marcos Place, Suite 107
(Canada: IC 2044) Chandler, AZ 85225

c) Report Number: d0660027

d) Client: Vertu
Beacon Hill Road
Church Crookham, Hampshire GU52 8DY UK

e) Identification: Type RHV-8
FCC ID: P7QRHV-8
Description: Quad Band GSM cell phone with Bluetooth, supporting 850 and 1900 Bands in USA

f) EUT Condition: Not required unless specified in individual tests.

g) Report Date: June 28, 2006
EUT Received: 2006-Jun-26

h, j, k): As indicated in individual tests.

i) Sampling method: No sampling procedure used.

l) Uncertainty: In accordance with MFA internal quality manual.

m) Supervised by:

Fred Chastain

n) Results: The results presented in this report relate only to the item tested.

o) Reproduction: This report must not be reproduced, except in full, without written permission from this laboratory.

Accessories Used During Testing:

Type	Quantity	Manufacturer	Model	Serial No	FCC ID:
Battery	1	Vertu	BL--5V	none	
Headset	1	Vertu	HS-32V	Prototype	
Data Cable	1	Vertu	CA-61DV	108382528401	
AC Charger	1	Vertu	ACP-12UV	001476	
DC Charger	1	Vertu	LCV-A	02095A	
Adapter Cable	1	Vertu	CAV-B	none	

Standard Test Conditions and Engineering Practices

Except as noted herein, the following conditions and procedures were observed during the testing. In addition, the EUT was configured to operate GSM with the bluetooth transmitter.

In accordance with ANSI C63.4-2003 Draft, section 6.1.9, and unless otherwise indicated in the specific measurement results, the ambient temperature of the actual EUT was maintained within the range of 10° to 40°C (50° to 104 °F) unless the particular equipment requirements specify testing over a different temperature range. Also, unless otherwise indicated, the humidity levels were in the range of 10% to 90% relative humidity.

Prior to testing, the EUT was tuned up in accordance with the manufacturer's alignment procedures. All external gain controls were maintained at the position of maximum and/or optimum gain throughout the testing.

Measurement results, unless otherwise noted, are worst-case measurements.

THE AMERICAN
ASSOCIATION
FOR LABORATORY
ACCREDITATION

ACCREDITED LABORATORY

A2LA has accredited

M. FLOM ASSOCIATES, INC.
Chandler, AZ

for technical competence in the field of

Electrical Testing

The accreditation covers the specific tests and types of tests listed on the agreed scope of accreditation. This laboratory meets the requirements of ISO/IEC 17025 - 1999 "General Requirements for the Competence of Testing and Calibration Laboratories" and any additional program requirements in the identified field of testing.

Presented this 14th day of June 2004.

President
For the Accreditation Council
Certificate Number 2152-01
Valid to August 31, 2006

A2LA

For tests or types of tests to which this accreditation applies, please refer to the laboratory's Electrical Scope of Accreditation.

A2LA

"A2LA has accredited M. Flom Associates, Inc. Chandler, AZ for technical competence in the field of Electrical Testing. The accreditation covers the specific tests and types of tests listed on the agreed scope of accreditation. This laboratory meets the requirements of ISO/IEC 17025 – 1999 'General Requirements for the Competence of Testing and Calibration Laboratories' and any additional program requirements in the identified field of testing."

Certificate Number: **2152-01**

List of General Information Required for Certification

In Accordance with FCC Rules and Regulations,
Volume II, Part 2 and to 22H, 24E, 15.247

Sub-Part 2.1033

(c)(1): **Name and Address of Applicant**:

Vertu
Beacon Hill Road
Church Crookham, Hampshire GU52 8DY UK

Manufacturer:

Vertu
Beacon Hill Road
Church Crookham, Hampshire GU52 8DY UK

(c)(2): **FCC ID**: P7QRHV-8

Model Number: Type RHV-8

(c)(3): **Instruction Manual(s)**:

Please See Attached Exhibits

(c)(4): **Type of Emission**: 256KGXW GSM850/1900
GFSK Bluetooth

(c)(5): **Frequency Range, MHz**: 824-849 GSM850
1850-1910 GSM1900
2400-2483.5 Bluetooth

(c)(6): **Power Rating, Watts**: 1.096 ERP GSM850
0.995 EIRP GSM1900
0.631 EIRP Bluetooth

____ Switchable __X__ Variable ____ N/A

(c)(7): **Maximum Power Rating, Watts**: 7.0 for Part 22H
2.0 for Part 24E
0.250 for Part 15.247

Additional Information Supplied by Applicant:

The new Phone Model Constellation is a solidly constructed, hand assembled and crafted product of unique design, designed for a low volume bespoken market.

The construction is such that the Engine module is shielded on both sides, which defines the performance of the phone, from an EMC perspective.

The frame of the phone is of a Solid metal construction; more commonly associated with watches/ jewelry etc. This compares with most phones, where plastics are more extensively used. The metal Bezel frames provide only secondary shielding from an EMC perspective

The mechanical construction of this phone is now proven, having previously been used on the Vertu Model: MMII and Ascent products.

The specialty nature of this product, its high price and exclusivity, means that it will only ever be sold in Limited Volumes. This Luxury market presents high customer demands in terms of additional exclusivity and service. The materials used in the phone are somewhat unique, for example: Metals – various, Ceramics, Leathers, Sapphire Glass, Diamond, colors, polished and matte finish etc.

From a Test perspective, The Engineering models are (and can only from an economic point of view), be constructed from Entry Level Materials (largely Stainless Steel). This is possible as the performance of stainless steel, acting as secondary screening only, is no worse than when other materials are used.

For some exclusive customers, the Stainless Steal metal parts may be replaced by other Yellow and White metals – eg Gold/Silver/Platinum etc. Being a fashion item, correspondingly ceramics and leathers may also change be fitted in differing shades of Finish (Matte to Polished) and colors. All of these things may be in mix and match combination, with the general Rule that Metal is only replaced by Metal, and Ceramic, by Ceramic.

The exception to this rule is the Keypad area, where we have followed a worst case test strategy. The test model phones were all fitted with ceramic keypads (Ceramic being a radio transparent material). Some customer models may be fitted with metal keys instead, (potentially offering better shielding). Regardless of keypad and finish, all phone finishes will have the same FCC ID.

The Most exclusive Customers may request the additional use of decorative diamonds, on the outer surface of the metals. This may be in different degrees to suit customer requirements and taste.

All of the above finishes will be sold using a single model Name: Constellation, and FCCID: P7QRHV-8 to fulfill the requirements of this unique and very limited volume market, as they all offer the same performance and are electrically identical.

Subpart 2.1033 (continued)

(c)(8): Voltages & Currents in All Elements in Final RF Stage, Including Final Transistor or Solid State Device:

Collector Current, A	=	per manual
Collector Voltage, Vdc	=	per manual
Supply Voltage, Vdc	=	4.2 (Max)

(c)(9): **Tune-Up Procedure**:

Please See Attached Exhibits

(c)(10): **Circuit Diagram/Circuit Description**:

Including description of circuitry & devices provided for determining and stabilizing frequency, for suppression of spurious radiation, for limiting modulation and limiting power.

Please See Attached Exhibits

(c)(11): **Label Information**:

Please See Attached Exhibits

(c)(12): **Photographs**:

Please See Attached Exhibits

(c)(13): **Digital Modulation Description**:

___ Attached Exhibits
_x_ N/A

(c)(14): **Test and Measurement Data**:

Follows

Sub-part
2.1033(c)(14): **Test and Measurement Data**

All tests and measurement data shown were performed in accordance with FCC Rules and Regulations, Volume II; Part 2, Sub-part J, Sections 2.947, 2.1033(c), 2.1041, 2.1046, 2.1047, 2.1079, 2.1051, 2.1053, 2.1055, 2.1057 and the following individual Parts:

x 15.247–
____ 21 – Domestic Public Fixed Radio Services
____ 22 – Public Mobile Services
x 22 Subpart H - Cellular Radiotelephone Service
____ 22.901(d) - Alternative technologies and auxiliary services
____ 23 – International Fixed Public Radiocommunication services
x 24 – Personal Communications Services
____ 74 Subpart H - Low Power Auxiliary Stations
____ 80 – Stations in the Maritime Services
____ 80 Subpart E - General Technical Standards
____ 80 Subpart F - Equipment Authorization for Compulsory Ships
____ 80 Subpart K - Private Coast Stations and Marine Utility Stations
____ 80 Subpart S - Compulsory Radiotelephone Installations for Small Passenger Boats
____ 80 Subpart T - Radiotelephone Installation Required for Vessels on the Great Lakes
____ 80 Subpart U - Radiotelephone Installations Required by the Bridge-to-Bridge Act
____ 80 Subpart V - Emergency Position Indicating Radiobeacons (EPIRB'S)
____ 80 Subpart W - Global Maritime Distress and Safety System (GMDSS)
____ 80 Subpart X - Voluntary Radio Installations
____ 87 – Aviation Services
____ 90 – Private Land Mobile Radio Services
____ 94 – Private Operational-Fixed Microwave Service
____ 95 Subpart A - General Mobile Radio Service (GMRS)
____ 95 Subpart C - Radio Control (R/C) Radio Service
____ 95 Subpart D - Citizens Band (CB) Radio Service
____ 95 Subpart E - Family Radio Service
____ 95 Subpart F - Interactive Video and Data Service (IVDS)
____ 97 - Amateur Radio Service
____ 101 – Fixed Microwave Services

Name of Test: Field Strength of Spurious Radiation

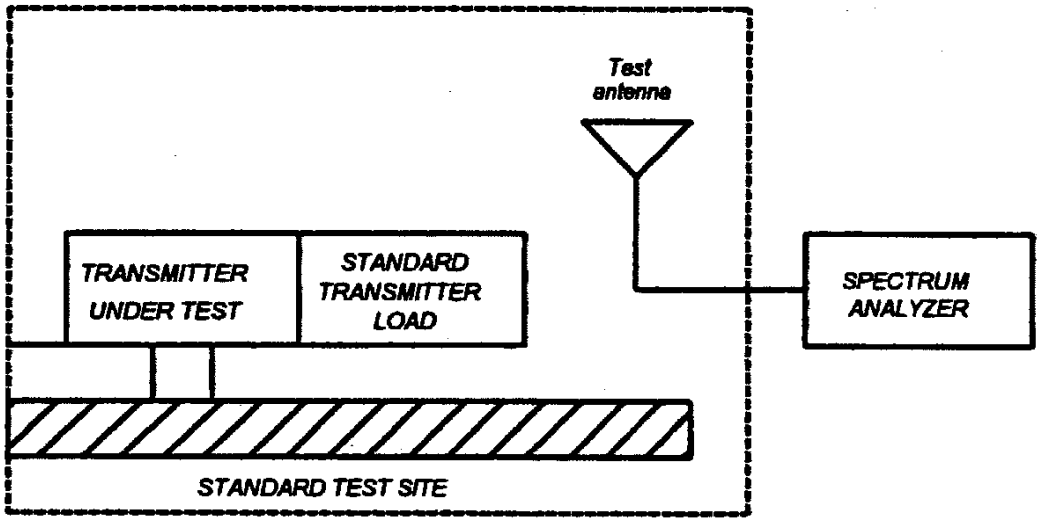
Specification: 47 CFR 2.1053(a)

Guide: ANSI/TIA/EIA-603-C

Measurement Procedure

Definition:
Radiated spurious emissions are emissions from the equipment when transmitting into a non-radiating load on a frequency or frequencies which are outside an occupied band sufficient to ensure transmission of information of required quality for the class of communications desired.

Method of Measurement:
A) Connect the equipment as illustrated
B) Adjust the spectrum analyzer for the following settings:
1) Resolution Bandwidth 100 kHz (<1 GHZ), 1 MHZ (> 1GHz).
2) Video Bandwidth = 3 times Resolution Bandwidth, or 30 kHz (22.917)
3) Sweep Speed ≤2000 Hz/second
4) Detector Mode = Mean or Average Power
C) Place the transmitter to be tested on the turntable in the standard test site. The transmitter is transmitting into a non-radiating load that is placed on the turntable. The RF cable to this load should be of minimum length.

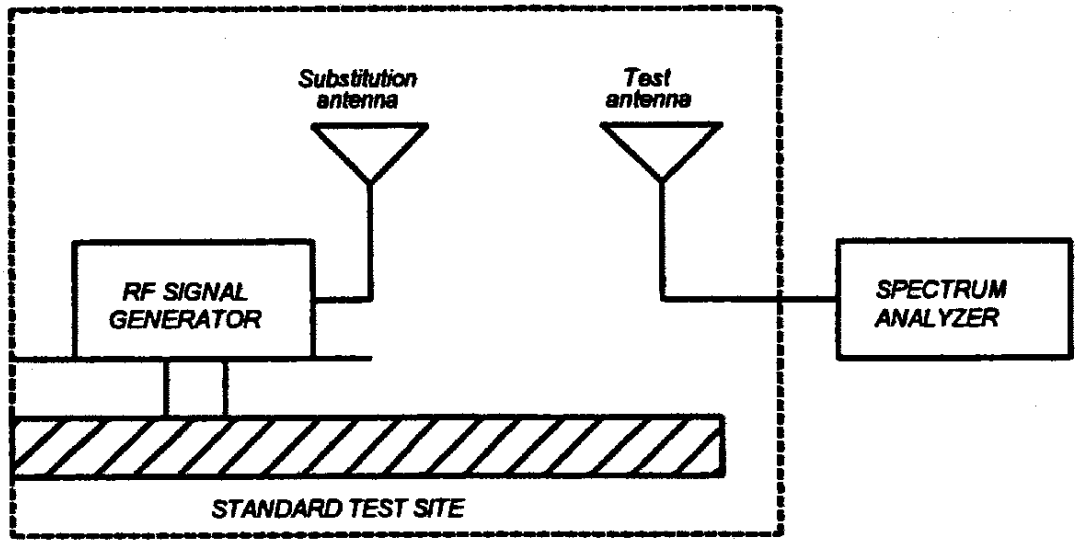


Name of Test: Field Strength of Spurious Radiation (Cont.)

D) For each spurious measurement the test antenna should be adjusted to the correct length for the frequency involved. This length may be determined from a calibration ruler supplied with the equipment. Measurements shall be made from the lowest radio frequency generated in the equipment to the tenth harmonic of the carrier, except for the region close to the carrier equal to ± the test bandwidth (see section 1.3.4.4).

E) For each spurious frequency, raise and lower the test antenna from 1 m to 4 m to obtain a maximum reading on the spectrum analyzer with the test antenna at horizontal polarity. Repeat this procedure to obtain the highest possible reading. Record this maximum reading.

F) Repeat step E) for each spurious frequency with the test antenna polarized vertically.



G) Reconnect the equipment as illustrated.

H) Keep the spectrum analyzer adjusted as in step B).

I) Remove the transmitter and replace it with a substitution antenna (the antenna should be half-wavelength for each frequency involved). The center of the substitution antenna should be approximately at the same location as the center of the transmitter. At lower frequencies, where the substitution antenna is very long, this will be impossible to achieve when the antenna is polarized vertically. In such case the lower end of the antenna should be 0.3 m above the ground.

Name of Test: Field Strength of Spurious Radiation (Cont.)

J) Feed the substitution antenna at the transmitter end with a signal generator connected to the antenna by means of a non-radiating cable. With the antennas at both ends horizontally polarized and with the signal generator tuned to a particular spurious frequency, raise and lower the test antenna to obtain a maximum reading at the spectrum analyzer. Adjust the level of the signal generator output until the previously recorded maximum reading for this set of conditions is obtained. This should be done carefully repeating the adjustment of the test antenna and generator output.

K) Repeat step J) with both antennas vertically polarized for each spurious frequency.

L) Calculate power in dBm into a reference ideal half-wave dipole antenna by reducing the readings obtained in steps J) and K) by the power loss in the cable between the generator and the antenna and further corrected for the gain of the substitution antenna used relative to an ideal half-wave dipole antenna.

M) The levels recorded in step L) are absolute levels of radiated spurious emissions in dBm. The radiated spurious emissions in dB can be calculated by the following:

Radiated spurious emissions dB =

$10\log_{10}$(TX power in watts/0.001) – the levels in step l)

NOTE: It is permissible that other antennas provided can be referenced to a dipole.

Test Equipment

	Asset	Description	s/n	Cycle	Last Cal
Transducer					
	i00088	EMCO 3109-B 25MHz-300MHz	2336	24 mo.	Sep-05
X	i00089	Aprel 2001 200MHz-1GHz	001500	24 mo.	Sep-05
X	i00103	EMCO 3115 1GHz-18GHz	9208-3925	24 mo.	Jan-05
Amplifier					
	i00028	HP 8449A	2749A00121	12 mo.	May-05
Spectrum Analyzer					
X	i00029	HP 8563E	3213A00104	12 mo.	Jan-06
X	i00033	HP 85462A	3625A00357	12 mo.	Sep-05
Substitution Generator					
X	i00286	SMT 03, R&S, Signal Generator	826211/005	12 mo.	Jul-05
Substitution Antenna					
X	i00091	APREL 3115 1GHz-18GHz	001469	24 mo.	Sep-04

Name of Test: Field Strength of Spurious Radiation
g0660169: 2006-Jun-27 Tue 09:00:00
State: 2:High Power GSM850 Single Slot Mode

Frequency Tuned, MHz	Frequency Emission, MHz	Meter, dBuV	CF, dB	ERP, dBm	Margin, dB
824.200000	1648.400000	26.33	29.35	-41.7	-28.7
824.200000	2472.600000	27.17	34.02	-36.2	-23.2
824.200000	3296.800000	25.17	37.07	-35.1	-22.2
824.200000	4121.000000	25.17	40.15	-32.1	-19.1
824.200000	4945.200000	24.67	42.37	-30.3	-17.4
824.200000	5769.400000	24.33	44.72	-28.3	-15.4
824.200000	6593.600000	23.83	46.07	-27.5	-14.5
824.200000	7417.800000	21.5	48.15	-27.7	-14.8
824.200000	8242.000000	20.67	49.6	-27.1	-14.1

Name of Test: Field Strength of Spurious Radiation
g0660170: 2006-Jun-27 Tue 09:15:00
State: 2:High Power GSM850 2 Slot Mode

Frequency Tuned, MHz	Frequency Emission, MHz	Meter, dBuV	CF, dB	ERP, dBm	Margin, dB
824.200000	1648.400000	26.83	29.35	-41.2	-28.2
824.200000	2472.600000	28	34.02	-35.4	-22.4
824.200000	3296.800000	26.33	37.07	-34	-21
824.200000	4121.000000	25.33	40.15	-31.9	-18.9
824.200000	4945.200000	23.83	42.37	-31.2	-18.2
824.200000	5769.400000	25.17	44.72	-27.5	-14.5
824.200000	6593.600000	22.17	46.07	-29.1	-16.2
824.200000	7417.800000	24.67	48.15	-24.6	-11.6
824.200000	8242.000000	19.67	49.6	-28.1	-15.1

Name of Test: Field Strength of Spurious Radiation
g0660166: 2006-Jun-26 Mon 11:34:00
STATE: 2:High Power GSM Edge

Frequency Tuned, MHz	Frequency Emission, MHz	Meter, dBuV	CF, dB	EIRP, dBm	Margin, dB
1850.200000	3700.400000	27.6	38.77	-28.9	-15.8
1880.000000	3760.000000	25.6	39.03	-30.6	-17.6
1909.800000	3819.600000	24.77	39.29	-31.2	-18.1
1850.200000	5550.600000	23.77	44.18	-27.3	-14.3
1880.000000	5640.000000	21.6	44.4	-29.2	-16.2
1909.800000	5729.400000	15.77	44.63	-34.8	-21.8
1850.200000	7400.800000	21.27	48.09	-25.9	-12.8
1880.000000	7520.000000	21.93	48.47	-24.8	-11.8
1909.800000	7639.200000	21.93	48.63	-24.7	-11.6
1850.200000	9251.000000	14.77	51.26	-29.2	-16.2
1880.000000	9400.000000	18.27	51.52	-25.4	-12.4
1909.800000	9549.000000	13.27	51.76	-30.2	-17.2
1850.200000	11101.200000	15.6	52.98	-26.6	-13.6
1880.000000	11280.000000	14.77	53.13	-27.3	-14.3
1909.800000	11458.800000	17.1	53.27	-24.9	-11.8
1850.200000	12951.400000	12.93	53.65	-28.6	-15.6
1880.000000	13160.000000	12.43	53.67	-29.1	-16.1
1850.200000	14801.600000	11.27	54.8	-29.2	-16.1
1880.000000	15040.049833	12.6	54.87	-27.8	-14.7
1909.800000	15278.400000	16.77	54.1	-24.4	-11.3
1850.200000	16651.800000	14.77	54.39	-26.1	-13
1880.000000	16920.049833	11.93	55.25	-28	-15
1909.800000	17188.200000	11.77	56.45	-27	-14
1850.200000	18502.000000	14.1	58.11	-23	-10
1880.000000	18800.049833	12.27	58.08	-24.9	-11.9
1909.800000	19098.000000	13.93	58.2	-23.1	-10.1

Performed By: Fred Chastain

Name of Test: Field Strength of Spurious Radiation
g0660167: 2006-Jun-26 Mon 12:10:00
STATE: 2:High Power GSM

Frequency Tuned, MHz	Frequency Emission, MHz	Meter, dBuV	CF, dB	EIRP, dBm	Margin, dB
1850.200000	3700.400000	26.77	38.77	-29.7	-16.7
1880.000000	3760.000000	25.77	39.03	-30.4	-17.4
1909.800000	3819.600000	25.6	39.29	-30.3	-17.3
1850.200000	5550.600000	24.43	44.18	-26.6	-13.6
1880.000000	5640.000000	22.6	44.4	-28.2	-15.2
1909.800000	5729.400000	21.43	44.63	-29.2	-16.1
1850.200000	7400.800000	18.6	48.09	-28.5	-15.5
1880.000000	7520.000000	18.6	48.47	-28.2	-15.1
1909.800000	7639.200000	20.77	48.63	-25.8	-12.8
1850.200000	9251.000000	14.1	51.26	-29.9	-16.8
1880.000000	9400.000000	19.43	51.52	-24.3	-11.3
1909.800000	9549.000000	18.1	51.76	-25.4	-12.3
1850.200000	11101.200000	16.93	52.98	-25.3	-12.3
1880.000000	11280.000000	14.43	53.13	-27.7	-14.6
1909.800000	11458.800000	11.1	53.27	-30.9	-17.8
1850.200000	12951.400000	15.1	53.65	-26.5	-13.5
1880.000000	13160.000000	13.1	53.67	-28.5	-15.4
1909.800000	13368.600000	12.93	53.63	-28.7	-15.6
1850.200000	14801.600000	13.43	54.8	-27	-14
1880.000000	15040.000000	12.6	54.87	-27.8	-14.7
1909.800000	15278.400000	14.27	54.1	-26.9	-13.8
1850.200000	16651.800000	12.93	54.39	-27.9	-14.9
1880.000000	16920.000000	11.77	55.25	-28.2	-15.2
1909.800000	17188.200000	13.6	56.45	-25.2	-12.2
1850.200000	18502.000000	13.1	58.11	-24	-11
1880.000000	18800.000000	12.43	58.08	-24.7	-11.7
1909.800000	19098.000000	7.43	58.2	-29.6	-16.6

Performed By: Fred Chastain
END OF TEST REPORT

Testimonial
and
Statement of Certification

This is to certify that:

1. **That** the application was prepared either by, or under the direct supervision of, the undersigned.
2. **That** the technical data supplied with the application was taken under my direction and supervision.
3. **That** the data was obtained on representative units, randomly selected.
4. **That**, to the best of my knowledge and belief, the facts set forth in the application and accompanying technical data are true and correct.

Certifying Engineer: Fred Chastain