

TECHNICAL EXHIBIT – RF RADIATION MEASUREMENTS
FCC CP CONDITION 3 & 4
KBLL-FM BXPH-20121212AAI HELENA, MONTANA
KBMI-FM BXPH-20121212AAH EAST HELENA, MONTANA
FEBRUARY 2015

This statement has been prepared to satisfy conditions 3 and 4 on the above noted construction permit authorizations for identical auxiliary FM facilities. The FM antenna installed is a broadband antenna designed to be used by both KBLL and KBMI. However, there is no combiner system so only one station can transmit at a time.

The equipment employed for the electromagnetic RF field strength measurements is listed below. Both instruments have been calibrated within the last two years.

Beehive Electronics model 100C probe, serial number 541.

Aaronia AG Spectran HF-4060 spectrum analyzer serial number 02486

The KBLL-FM/KBMI-FM antennas are mounted on a tower mounted on the flat roof of a building with minimum dimensions to the edge of the roof from the tower base of 24 feet. No adjacent structures have a greater height than the building roof. With the stations operating in accordance with the CP the maximum measured signal levels found on the roof were:

KBLL-FM 99.5 MHz

-30 dbm 18ft from base of tower on a 45 degree radial on the roof.

-42 dbm 12ft from base of tower on a 315 degree radial on the roof.

KBMI-FM 104.1 MHz

-31 dbm 18ft from base of tower on a 315 degree radial on the roof.

-43 dbm 12ft from base of tower on a 315 degree radial on the roof.

A conversion formula, supplied by Beehive, was used to convert dBm to microwatts per centimeter squared. The microwatt per centimeter squared values are found on the following page:

KBLL-FM 99.5 MHz

-30 dbm 18ft from base of tower on a 45 degree radial on the roof.

37 mirowatts per centimeter squared at 99.5 MHz

-42 dbm 12ft from base of tower on a 315 degree radial on the roof.

2.3 mirowatts per centimeter squared at 99.5 MHz

KBMI-FM 104.1 MHz

-31 dbm 18ft from base of tower on a 315 degree radial on the roof.

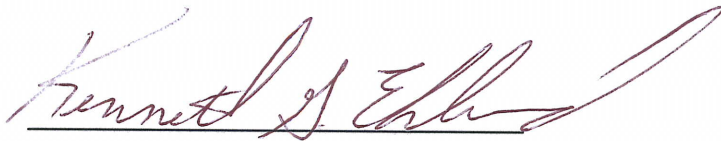
28.9 mirowatts per centimeter squared at 104.1 MHz

-43 dbm 12ft from base of tower on a 315 degree radial on the roof.

1.8 mirowatts per centimeter squared at 104.1 MHz

All measurements were taken on August 15, 2014 for KBLL-FM and on January 9, 2015 for KBMI-FM by Ken Eklund, Director of Engineering, Cherry Creek Radio, Helena, Montana. The measured data is believed to be fully compliant with OET-65 Public exposure guidelines. The permittee will reduce power or cease operation as necessary to comply with OET-65 Worker exposure guidelines.

Submitted by,

A handwritten signature in dark ink, appearing to read "Kenneth Eklund", written over a horizontal line.

Kenneth Eklund

February 10, 2015

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info@beehive-electronics.com

Calibration Certificate

Model number: 100C
Serial number: 541
Calibration date: 7/3/2013 time: 10:12 AM

Calibration Equipment Used

Manufacturer	Model	Description	Tracking number	Cal Due Date
Hewlett-Packard	8714C	Vector network analyzer	107	10/12/2013
Hewlett-Packard	85052D	3.5 mm cal kit	121	5/15/2014

<u>Frequency (MHz)</u>	<u>Output power at 1 microtesla field strength (dBm)</u>
1.00	-34.58
3.00	-25.83
6.78	-18.98
10.00	-15.66
20.00	-9.93
27.12	-7.54
30	-6.73
100	-0.82
300	-1.56



AARONIA AG

WWW.AARONIA.DE

Kalibrierschein

Calibration Certificate

Geräte- und Hardware Optionen

Device and Hardware Options

Device: SPECTRAN HF-4060 Serial No.: 02486

Die folgenden Optionen sind bereits im Gerät installiert und können verwendet werden.
The following options are already installed and ready to use.

Gegenstand
Item

SPECTRAN

Hersteller
Manufacturer

EMC-Measurement device

Typ
Type

Aaronia AG

Serien Nr.
Serial No.

SPECTRAN HF-4060

Auftraggeber
Customer

Dieser Kalibrierschein dokumentiert, dass der genannte Gegenstand nach festgelegten Vorgaben geprüft und gemessen wurde. Die Messwerte lagen im Regelfall mit einer Wahrscheinlichkeit von annähernd 95% im zugeordneten Werteintervall (Erweiterte Messunsicherheit mit $k=2$). Die Kalibrierung erfolgte mit Messmitteln und Normalen, die direkt oder indirekt durch Ableitung mittels anerkannter Kalibriertechniken rückgeführt sind auf Normale der PTB/DKD oder anderer nationaler/internationaler Standards zur Darstellung der physikalischen Einheiten in Übereinstimmung mit dem Internationalen Einheitensystem (SI). Wenn keine Normale existieren, erfolgt die Rückführung auf Bezugsnormale der Aaronia-Laboratorien. Dieser Kalibrierschein darf nur vollständig und unverändert weiterverbreitet werden. Kalibrierscheine ohne Signifizierung sind ungültig. Für die Einhaltung einer angemessenen Frist zur Wiederholung der Kalibrierung ist der Benutzer verantwortlich.

This calibration certificate documents, that the named item is tested and measured against defined specifications.. Measurement results are located usually in the corresponding interval with a probability of approx. 95% (coverage factor $k=2$). Calibration is performed with test equipment and standards directly or indirectly traceable by means of approved calibration techniques to the PTB/DKD or other national / international standards, which realize the physical units of measurement according to the International System of Units (SI). In all cases where no standards are available, measurements are referenced to standards of the Aaronia laboratories. This certificate may not be reproduced other than in full. Calibration certificates without signature are not valid. The user is obliged to have the object recalibrated at appropriate intervals

Bestell Nr.
Order No.

Ort/Datum der Kalibrierung
Place and date of calibration

Strickscheid, 14.03.2013

Umfang der Kalibrierung
Scope of calibration

Standard Calibration

Eingangsprüfung
Performance of receipt

Kalibrierergebnis
Result of calibration

Measurement results within specifications

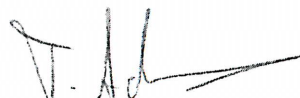
Umfang des Kalibrierscheins
Extent of the certificate

5 pages incl. this

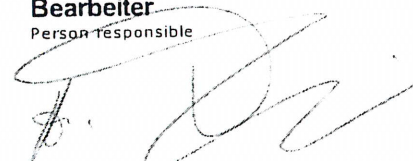
Ausstellungsdatum
Date of Issue

14.03.2013

Laborleitung
Head of laboratory


T. Adams

Bearbeiter
Person responsible


A. Pietzonka

Alle Messungen basieren auf dem Rohde & Schwarz NRP-Z31 Power Sensor, SN 101650 sowie der Aaronia Helmholtz Spule HHS1 SN ARHS04.
All measurements are based on the Rohde & Schwarz NRP-Z31 Power Sensor, SN101650 and the Aaronia Helmholtz Coil HHS1 SN ARHS04

Kalibrieranweisung Calibration instruction	1137.6000.01-T-12.00	Eingangsdatum Date of receipt	2009-09-07
Umgebungstemperatur Ambient temperature	23°C (+/-1)	Relative Luftfeuchte Relative humidity	20% - 60%

Gegenstand Item	Typ Type	Serien Nr. Serial No.	Kalibrierschein Nr. Certificate number	Kalibriert bis Calibrated due
Power Sensor	NRP-Z31	101650	1137.6000.01-T-12.00	2014-08-24
Helmholtz Spule	HHS1	ARHS04	87664	2014-09-06

Die Konformitätsaussagen berücksichtigen die Messunsicherheiten
Conformity Statements take the measurement uncertainties into account

Anmerkungen
Notes

Installierte Optionen wurden in die Kalibrierung einbezogen. Je nach installierten Optionen, kann die Anzahl der Seiten nicht aufeinander folgend sein.
Installed Options are included in calibration. Depending on installed options-, numbers of pages of the Record are not consecutive.

Device Serial:	SweepTime:	Span:	RBW:	Attenuator:	Frq-Offset:	Power :
02486	160 ms	10 MHz	3 MHz	0 dB	0 MHz	-20 dBm

Frequency (MHz)	Value (dBm)	Difference (dBm)	Powerlevel (dBm)
100	-20.1518	0.151751	-20
200	-19.9582	-0.0418053	-20
300	-20.1164	0.116436	-20
400	-19.8738	-0.126186	-20
500	-20.0353	0.0353279	-20
600	-19.9564	-0.0435677	-20
700	-20.0587	0.0586796	-20
800	-19.9778	-0.0221825	-20
900	-20.0461	0.046133	-20
1000	-19.8353	-0.164709	-20
1100	-20.0077	0.00774384	-20
1200	-20.0018	0.00180054	-20
1300	-20.3099	0.309919	-20
1400	-19.9987	-0.00133896	-20
1500	-20.119	0.119022	-20
1600	-20.1002	0.100246	-20
1700	-19.8775	-0.122534	-20
1800	-20.205	0.205006	-20
1900	-19.9799	-0.0201225	-20
2000	-19.8998	-0.100235	-20
2100	-20.0126	0.0126171	-20
2200	-20.0112	0.0111904	-20
2300	-20.0371	0.0371208	-20
2400	-20.0666	0.0665722	-20
2500	-20.3735	0.373545	-20
2600	-20.1035	0.103458	-20
2700	-20.0959	0.0958805	-20
2800	-20.1807	0.180723	-20
2900	-19.8938	-0.10618	-20
3000	-20.6242	0.624168	-20
3100	-20.3217	0.321671	-20
3200	-20.0974	0.0973911	-20
3300	-20.034	0.0340481	-20
3400	-20.1089	0.108948	-20
3500	-19.9394	-0.060585	-20

Device Serial:	SweepTime:	Span:	RBW:	Attenuator:	Frq-Offset:	Power :
02486	160 ms	10 MHz	3 MHz	0 dB	0 MHz	-20 dBm

Frequency (MHz)	Value (dBm)	Difference (dBm)	Powerlevel (dBm)
3600	-19.9614	-0.0385571	-20
3700	-19.9331	-0.0668678	-20
3800	-20.1062	0.106203	-20
3900	-20.0215	0.0215378	-20
4000	-19.8696	-0.130377	-20
4100	-19.8832	-0.116798	-20
4200	-20.0111	0.0111408	-20
4300	-20.1025	0.102499	-20
4400	-20.0258	0.0257587	-20
4500	-19.9509	-0.0490608	-20
4600	-20.036	0.0359707	-20
4700	-19.9923	-0.00767326	-20
4800	-19.9832	-0.0168133	-20
4900	-20.0889	0.0888519	-20
5000	-20.0128	0.0128441	-20
5100	-19.927	-0.0730038	-20
5200	-19.9975	-0.00252151	-20
5300	-19.9455	-0.0544815	-20
5400	-20.0378	0.0377712	-20
5500	-19.923	-0.076973	-20
5600	-20.009	0.00897217	-20
5700	-20.0564	0.0563984	-20
5800	-20.0169	0.0168591	-20
5900	-20.0608	0.0607681	-20
6000	-19.7874	-0.212646	-20