Engineering Exhibit

AMENDMENT TO THE APPLICATION FOR MODIFICATION OF A CONSTRUCTION PERMIT FOR A DIGITAL TELEVISION STATION

prepared for

Multimedia Holdings Corporation

KUSA-DT Denver, Colorado

Facility ID 23074
Ch. 9 45 kW (MAX-DA) 352.4 m

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SECTION III-D - DTV Engineering

Complete Questions 1-5, and provide all data and information for the proposed facility, as requested in Technical Specifications, Items 1-13.

Pre-Transition Certification Checklist: An application concerning a pre-transition channel must complete questions 1(a)-(c), and 2-5. A correct answer of "Yes" to all of the questions will ensure an expeditious grant of a construction permit application to change pre-transition facilities. However, if the proposed facility is located within the Canadian or Mexican borders, coordination of the proposal under the appropriate treaties may be required prior to grant of the application. An answer of "No" will require additional evaluation of the applicable information in this form before a construction permit can be granted.

Post-Transition Expedited Processing. An application concerning a post-transition channel must complete questions 1(a), (d)-(e), and 2-5. A station applying for a construction permit to build its post-transition channel will receive expedited processing if its application (1) does not seek to expand the noise-limited service contour in any direction beyond that established by Appendix B of the Seventh Report and Order in MB Docket No. 87-268 establishing the new DTV Table of Allotments in 47 C.F.R. § 73.622(i) ("new DTV Table Appendix B"); (2) specifies facilities that match or closely approximate those defined in the new DTV Table Appendix B facilities; and (3) is filed within 45 days of the effective date of Section 73.616 of the rules adopted in the Report and Order in the Third DTV Periodic Review proceeding, MB Docket No. 07-91.

1.	The proposed DTV facility complies with 47 C.F.R. Section 73.622 in the following respects:	
	(a) It will operate on the DTV channel for this station as established in 47 C.F.R. Section 73.622.	(●) Yes ( ) No
	(b) It will operate a pre-transition facility from a transmitting antenna located within 5.0 km (3.1 miles) of the DTV reference site for this station as established in 47 C.F.R. Section 73.622.	( ) Yes ( ) No
	(c) It will operate a pre-transition facility with an effective radiated power (ERP) and antenna height above average terrain (HAAT) that do not exceed the DTV reference ERP and HAAT for this station as established in 47 C.F.R. Section 73.622.	( ) Yes ( ) No
	(d) It will operate at post-transition facilities that do not expand the noise-limited service contour in any direction beyond that established by Appendix B of the Seventh Report and Order in MB Docket No. 87-268 establishing the new DTV Table of Allotments in 47 C.F.R. § 73.622(i) ("new DTV Table Appendix B").	( ) Yes (●) No ( ) N/A
	(e) It will operate at post-transition facilities that match or reduce by no more than five percent with respect to predicted population from those defined in the new DTV Table Appendix B.	(●) Yes ( ) No ( ) N/A
2.	The proposed facility will not have a significant environmental impact, including exposure of workers or the general public to levels of RF radiation exceeding the applicable health and safety guidelines, and therefore will not come within 47 C.F.R. Section 1.1307. Applicant must **submit the Exhibit** called for in Item 13.	(●) Yes ( ) No
3.	Pursuant to 47 C.F.R. Section 73.625, the DTV coverage contour of the proposed facility will encompass the allotted principal community.	(●) Yes ( ) No
4.	The requirements of 47 C.F.R. Section 73.1030 regarding notification to radio astronomy installations, radio receiving installations and FCC monitoring stations have either been satisfied or are not applicable.	(●) Yes ( ) No
5.	The antenna structure to be used by this facility has been registered by the Commission and will not require registration to support the proposed antenna, OR the FAA has previously determined that the proposed structure will not adversely effect safety in air navigation and this structure qualifies for later registration under the Commission's phased registration plan, OR the proposed installation on this structure does not require notification to the FAA pursuant to 47 C.F.R. Section 17.7.	(●) Yes ( ) No

SECTION III-D - DTV Engineering

TECHNICAL SPECIFICATIONS
Ensure that the specifications below are accurate. Contradicting data found elsewhere in this application will be disregarded. All items must be completed. The response "on file" is not acceptable.

TECH BOX

1.	Channel Number: DTV 9 Analog TV, if any 9	
2.	Zone: ( ) I (●) II ( ) III	
3.	Antenna Location Coordinates: (NAD 27) Latitude: Degrees 39 Minutes 43 Seconds 50.6 (●) North ( ) South Longitude: Degrees 105 Minutes 13 Seconds 53.6 (●) West ( ) East	
4.	Antenna Structure Registration Number: 1058328 ☐ Not Applicable ☐ Notification filed with FAA	
5.	Antenna Location Site Elevation Above Mean Sea Level:	2170 meters
6.	Overall Tower Height Above Ground Level:	222.5 meters
7.	Height of Radiation Center Above Ground Level:	192 meters
8.	Height of Radiation Center Above Average Terrain :	352.4 meters
9.	Maximum Effective Radiated Power (average power):	45 kW
10.	Antenna Specifications: a. Manufacturer DIE Model DCBR-C3-4HA/12H-2-B b. Electrical Beam Tilt: 1 degrees ☐ Not Applicable c. Mechanical Beam Tilt: degrees toward azimuth degrees True ☑ Not Applicable Attach as an Exhibit all data specified in 47 C.F.R. Section 73.625(c). [Exhibit 42] d. Polorization:	

○ Horizontal ◉ Circular ○ Elliptical

e. Directional Antenna Relative Field Values: ☐ Not applicable (Nondirectional)

[For a composite directional (not off-the-shelf) antenna, press the following button to fill in the relative field values subform.]
[Relative Field Values]

10e. Directional Antenna Relative Field Values

[Fill in this subform for a composite directional (not off-the-shelf) antenna, only.]

e. Directional Antenna Relative Field Values:

Rotation (Degrees): 0 ☑ No Rotation

Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value
0	1	10	0.944	20	0.779	30	0.77	40	0.963	50	0.963
60	0.77	70	0.779	80	0.944	90	1	100	0.944	110	0.779
120	0.77	130	0.963	140	0.963	150	0.77	160	0.779	170	0.944
180	1	190	0.97	200	0.883	210	0.75	220	0.587	230	0.413
240	0.25	250	0.117	260	0.03	270	0.001	280	0.03	290	0.117
300	0.25	310	0.413	320	0.587	330	0.75	340	0.883	350	0.97
Additional Azimuths		25	0.733	45	1	65	0.733	115	0.733	135	1

Relative Field Polar Plot

If a directional antenna is proposed, the requirements of 47 C.F.R. Sections 73.625(c) must be satisfied. **Exhibit required.** [Exhibit 43]

11. Does the proposed facility satisfy the pre-transition interference protection provisions of 47 C.F.R. Section 73.623(a) (Applicable only if **Certification Checklist** Items 1(a), (b), or (c) are answered "No.") and/or the post-transition interference protection provisions of 47 C.F.R. Section 73.616? ◉ Yes ○ No

If "No," attach as an Exhibit justification therefor, including a summary of any related previously granted waivers. [Exhibit 44]

12. If the proposed facility will not satisfy the coverage requirement of 47 C.F.R. Section 73.625, attach as an Exhibit justification therefore. (Applicable only if **Certification Checklist** item 3 is answered "No.") [Exhibit 45]

13. **Environmental Protection Act. Submit in an Exhibit** the following: [Exhibit 46]

If **Certification Checklist** Item 2 is answered "Yes," a brief explanation of why an Environmental Assessment is not required. Also describe in the Exhibit the steps that will be taken to limit RF radiation exposure to the public and to persons authorized access to the tower site.

By checking "Yes" to **Certification Checklist** Item 2, the applicant also certifies that it, in coordination with other users of the site, will reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency electromagnetic exposure in excess of FCC guidelines.

If **Certification Checklist** Item 2 is answered "No," an Environmental Assessment as required by 47 C.F.R Section 1.1311.

PREPARERS CERTIFICATION ON SECTION III MUST BE COMPLETED AND SIGNED.

SECTION III - PREPARER'S CERTIFICATION

I certify that I have prepared Section III (Engineering Data) on behalf of the applicant, and that after such preparation, I have examined and found it to be accurate and true to the best of my knowledge and belief.

Name RICHARD H. MERTZ		Relationship to Applicant (e.g., Consulting Engineer) CONSULTANT
Signature		Date 11/11/2008
Mailing Address CAVELL, MERTZ & ASSOCIATES, INC. 7839 ASHTON AVENUE		
City MANASSAS	State or Country (if foreign address) VA	Zip Code 20109 -
Telephone Number (include area code) 7033929090	E-Mail Address (if available) RMERTZ@CAVELLMERTZ.COM	

WILLFUL FALSE STATEMENTS ON THIS FORM ARE PUNISHABLE BY FINE AND/OR IMPRISONMENT (U.S. CODE, TITLE 18, SECTION 1001), AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION PERMIT (U.S. CODE, TITLE 47, SECTION 312(a)(1)), AND/OR FORFEITURE (U.S. CODE, TITLE 47, SECTION 503).

Exhibits

Exhibit 1
Description: NATURE OF AMENDMENT

Description: NATURE OF AMENDMENT

11/11/2008 -- THIS AMENDMENT CONSISTS OF A SUPPLEMENT TO THE ENGINEERING STATEMENT SUBMITTED WITH THE INITIAL KUSA MAXIMIZATION APPLICATION. THE STATEMENT ADDRESSES IN DETAIL CERTAIN MATTERS RAISED BY STAFF REVIEWING THE APPLICATION. SPECIFICALLY, IT RESPONDS TO STAFF'S REQUEST FOR AN ANALYSIS OF THE APPARENT 'LOSS' AREA TO THE WEST OF THE KUSA PROPOSED TRANSMITTER SITE.

AS EXPLAINED IN THE STATEMENT, THE 'LOSS' IS DUE TO USE OF A DIRECTIONAL ANTENNA FOR THE DIGITAL OPERATION, WHICH WHEN COMPARED TO THE PREDICTED CONTOUR OF THE NONDIRECTIONAL ANALOG ANTENNA, BASED ON THE COMMISSION'S STANDARD CONTOUR PREDICTION METHODOLOGY, RESULTS IN AN APPARENT 'LOSS' AREA BETWEEN THE ANALOG GRADE B CONTOUR AND THE DIGITAL INTERFERENCE-FREE SERVICE CONTOUR. FOR SEVERAL REASONS, THE 'LOSS,' IF IT EXISTS AT ALL, IS DE MINIMIS AND NOT OF DECISIONAL SIGNIFICANCE.

FIRST, THE POPULATION CENTERS IN THE 'LOSS' AREA ARE SHIELDED BY MOUNTAINS. BASED ON AN OET-69 'LONGLEY-RICE' ANALYSIS, MUCH OF THE SO-CALLED LOSS AREA DOES NOT CURRENTLY RECEIVE ANALOG SERVICE (FIGURE 2). TERRAIN PROFILES (FIGURES 3-8) DEMONSTRATE THAT THE SIGNAL IS BLOCKED THROUGHOUT THE AREA BY HIGH, MOUNTAINOUS TERRAIN. POPULATED AREAS, WHICH ARE LOCATED IN THE VALLEYS, TO NOT RECEIVE OVER-THE-AIR SERVICE. THIS IS DRAMATICALLY CONFIRMED BY THE FACT THAT CABLE/SATELLITE PENETRATION IN EVERY COUNTY COMPRISING THE 'LOSS' AREA IS 100%.

SECOND, KUSA CURRENTLY HOLDS A CP FOR FACILITIES THAT WOULD CAUSE MORE THAN TWICE THE LOSS OF SERVICE AS THE FACILITY PROPOSED IN THIS APPLICATION. SPECIFICALLY, THE FACILITY AUTHORIZED IN THE CURRENT CP WOULD RESULT IN A LOSS AREA THAT LINES THE ENTIRE CIRCUMFERENCE OF THE GRADE B CONTOUR (FIGURE 2A), FAR EXCEEDING THE SMALL TRIANGLE OF 'LOSS' AREA TO THE WEST OF DENVER (FIGURE 1). THERE ARE 5,383 PERSONS WITHIN THIS 'DONUT' WHO ARE PREDICTED TO LOSE SERVICE. THE MAXIMIZED FACILITY PROPOSED HERE, WOULD REDUCE THAT 'LOSS' TO 2,298 PERSONS, ALL OF WHOM, ACCORDING TO NEILSEN DATA, CURRENTLY RECEIVE THEIR SERVICE VIA CABLE OR SATELLITE.

STAFF HAS ALSO REQUESTED A LETTER FROM TABLE MOUNTAIN RADIO RECEIVING ZONE CONSENTING TO THE PROPOSED MAXIMIZED FACILITY, WHICH WILL DELIVER A SIGNAL STRENGTH OF 13.1 MV/M AT THE RECEIVING ZONE, COMPARED TO 29.8 MV/M FROM THE EXISTING ANALOG OPERATION. EFFORTS ARE UNDER WAY TO OBTAIN THAT CONSENT LETTER, WHICH WILL BE SUBMITTED VIA A SEPARATE AMENDMENT, UPON RECEIPT.

Attachment 1

Description
Engineering Statement

Exhibit 43
Description: KUSA-TV EXHIBIT 43

PLEASE SEE EXHIBIT 44

Attachment 43

Exhibit 44
Description: KUSA-TV EXHIBIT 44

EXHIBIT 44 CONTAINS STATEMENT A, NATURE OF THE PROPOSAL/PROPOSED ANTENNA SYSTEM, FIGURES 1-3, AND TABLE I

Attachment 44

Description
KUSA-TV Exhibit 44

Exhibit 46
Description: KUSA-TV EXHIBIT 46

EXHIBIT 46 CONTAINS STATEMENT B, ENVIRONMENTAL CONSIDERATIONS

Attachment 46

Description
KUSA-TV Exhibit 46

Exhibit 46 - Statement B

ENVIRONMENTAL CONSIDERATIONS

prepared for

Multimedia Holdings Corporation

KUSA-TV Denver, Colorado

Facility ID 23074

Ch. 9 45 kW (MAX-DA) 352.4 m

The instant proposal is not believed to have a significant environmental impact as defined under Section 1.1306 of the Commission's Rules. Consequently, preparation of an Environmental Assessment is not required.

Nature of The Proposal

Multimedia Holdings Corporation ("Multimedia") herein proposes to operate its post-transition Channel 9 digital operation for KUSA-TV from a tower (Antenna Structure Registration No. 1058328) recently constructed on Lookout Mountain overlooking Denver. A new Channel 9 antenna directional antenna will be installed for the post-transition KUSA-TV operation. The use of existing transmitting locations has been characterized as being environmentally preferable by the Commission, according to Note 1 of §1.1306 of the FCC Rules. Since no change in overall structure height is proposed, no change in current structure marking and lighting requirements is anticipated.

Human Exposure to Radiofrequency Radiation

The proposed operation was evaluated for human exposure to radiofrequency energy using the procedures outlined in the Commission's OET Bulletin No. 65 ("OET 65"). OET 65 describes a means of determining whether a proposed facility exceeds the radiofrequency exposure guidelines adopted in §1.1310. Under present Commission policy, a facility may be presumed to comply with the limits specified in §1.1310 if it satisfies the exposure criteria set forth in OET 65. Based upon that methodology, and as demonstrated in the following, the proposed transmitting system will comply with the cited adopted guidelines.

The proposed KUSA-TV antenna that will be employed for the proposed post-transition operation will have a center of radiation 192 meters above ground level. An ERP of 45 kilowatts, horizontally polarized, will be employed. Based on information provided by the antenna manufacturer, the antenna has a maximum vertical plane (elevation) relative filed of 23.9 percent or

less from 15 to 90 degrees below the horizontal plane (i.e.: below the antenna). Thus, a value of 23.9 percent relative field is used for this calculation. The "uncontrolled/general population" limit specified in §1.1310 for Channel 9 (center frequency 189 MHz) is 200 μW/cm².

OET-65's formula for television transmitting antennas is based on the NTSC transmission standards, where the average power is normally much less than the peak power. For the DTV facility in the instant proposal, the peak-to-average ratio is different than the NTSC ratio. The DTV ERP figure herein refers to the *average* power level. The formula used for calculating DTV signal density in this analysis is essentially the same as equation (9) in OET-65.

$$S = (33.4098) (F^2) (ERP) / D^2$$

Where:

S	=	power density in microwatts/cm^2
ERP	=	total (average) ERP in Watts
F	=	relative field factor
D	=	distance in meters

Using this formula, the proposed facility would contribute a power density of 4.8 μW/cm² at two meters above ground level near antenna support structure, or 2.4 percent of the general population/uncontrolled limit. At ground level locations away from the base of the tower, the calculated RF power density is even lower, due to the increasing distance from the transmitting antenna.

§1.1307(b)(3) states that facilities at locations with multiple transmitters (such as the case at hand) are categorically excluded from responsibility for taking any corrective action in the areas where their contribution is less than five percent. Since the instant situation meets the five percent exclusion test at all ground level areas, the impact of the any other facilities using this site may be considered independently from this proposal. Accordingly, it is believed that the impact of the proposed operation should not be considered to be a factor at or near ground level as defined under §1.1307(b).

Safety of Tower Workers and the General Public

As demonstrated herein, excessive levels of RF energy attributable to the proposal will not be caused at publicly accessible areas at ground level near the antenna supporting structure. Consequently, members of the general public will not be exposed to RF levels in excess of the Commission's guidelines. Nevertheless, tower access will continue to be restricted and controlled through the use of a locked fence. Additionally, appropriate RF exposure warning signs will continue to be posted.

With respect to worker safety, it is believed that based on the preceding analysis, excessive exposure would not occur in areas at ground level. A site exposure policy will continue to be employed protecting maintenance workers from excessive exposure when work must be performed on the tower in areas where high RF levels may be present. Such protective measures may include, but will not be limited to, restriction of access to areas where levels in excess of the guidelines may be expected, power reduction, or the complete shutdown of facilities when work or inspections must be performed in areas where the exposure guidelines will be exceeded. On-site RF exposure measurements may also be undertaken to establish the bounds of safe working areas. The applicant will coordinate exposure procedures with all pertinent stations.

Conclusion

Based on the preceding, it is believed that the instant proposal may be categorically excluded from environmental processing under Section 1.1306 of the Rules, hence preparation of an Environmental Assessment is not required.