

REQUEST FOR SPECIAL TEMPORARY AUTHORIZATION TO OPERATE AN EXPERIMENTAL DIGITAL TELEVISION FACILITY - TECHNICAL EXHIBIT

OVERVIEW

This exhibit supports the request to operate an experimental television facility under Special Temporary Authority to evaluate performance of a variety of ATSC 3.0 devices, receivers, to ensure compatibility with the standard and ATSC 1.0 and content applications.

The proposed facility will be located at the lower roof level of Licensee's headquarters building in Hunt Valley, Maryland. A directional UHF panel antenna, TUA-01/01, will be mounted on a pedestal with its radiation center at 24.4 meters above ground level pointed at 80° true north and will generate 900W ERP.

FREQUENCY SELECTION

Channel 24 (530-536 MHz) was selected for this facility because of its predicted incoming and outgoing interference performance.

A Co-channel LPTV station, WWDD-LD Ch.24 has been recently granted to construct a facility in Aberdeen, MD (File#0000129562) and while the 51dBu contour of the proposed facility overlaps with WWDD's 51dBu contour, the calculated interference to the new WWDD facility is only 0.78% which is below the 2.0% interference limit for LPTV. A contour map is attached in Exhibit A.

This proposed facility is also predicted to cause 0.11% interference to an adjacent channel Class A station WMJF-CD Channel 23 which is below the 0.5% interference limit.

TVStudy (v2.2.5) was used to verify these interferences, the results of which are attached in Exhibit B.

The licensee will cease operation at the end of the term allotted for the STA or if it has been proven to causes harmful interference to the facilities mentioned above or any other stations.

PUBLIC INTEREST BENEFIT

This site has been chosen due to the proximity to the "ONE Media Labs" facility. The lab and its operators have been instrumental parties engaged in the development of the ATSC 3.0 broadcast standard. The facility is uniquely furnished and staffed to further the work and development of mobile and portable receive devices that will provide the public with access to free, over-the-air television services. The transmit capabilities being sought through this STA will provide an important backdrop in understanding the role of extremely low power transmit facilities in the schema of DTS/SFN deployments.

This work will, upon completion, lead to extended activity in other markets where this development activity and its results will provide benefits in qualitatively better levels of broadcast service reception.

RADIO FREQUENCY IMPACT & OCCUPATIONAL SAFETY

This proposed facility has been evaluated in accordance with the FCC guidelines for human exposure to RF Electromagnetic fields.

The Power Density (S) near the ground level is calculated to be $3.98 \times 10^{-5} \mu\text{W}/\text{cm}^2$ and $0.08 \mu\text{W}/\text{cm}^2$ at the roof level, which is below the Occupational/Controlled Exposure limit of $1776.67 \mu\text{W}/\text{cm}^2$ for this channel 24 facility and will be noted by yellow tape

It also generates less than $0.027 \mu\text{W}/\text{cm}^2$ at any point on the ground which is below the $355 \mu\text{W}/\text{cm}^2$ maximum permissible limit for the General Population/Uncontrolled Exposure for channel 24. The licensee will reduce power or cease operation to protect any person from excessive RF exposure if necessary.

SUMMARY

This proposed facility will be instrumental in understanding the performance and limitations of a variety of ATSC 3.0 devices, receivers and content applications.

It is submitted that the application for this experimental STA complies with the appropriate Rules, Regulations and Policies of the Federal Communications Commission.



KATHLEAH OBRERO
RF Planning Engineer, STG New Technology
Sinclair Broadcast Group, Inc.