



**Albert Shuldiner**  
**Senior VP & General Counsel**

August 5, 2011

Mr. Dom Bordonaro  
Chair  
IBOC Standards Development Working Group

Mr. Michael Bergman  
Mr. Andy Laird  
Co-Chairmen  
DRB Subcommittee

National Radio Systems Committee  
c/o National Association of Broadcasters  
1771 N Street, N.W.  
Washington, D.C. 20036

Gentlemen:

On behalf of iBiquity Digital Corporation, I am providing this letter in conjunction with the update to the NRSC-5 standard expected to be adopted at the 2011 NAB Radio Show. This letter supplements my letter dated April 13, 2005 and provides iBiquity's latest commitment to adhere to the NRSC patent policy. Enclosed you will find new Attachments that supersede Attachment A and Attachment B to my April 13, 2005 letter. All remaining aspects of the April 13, 2005 letter remain valid.

iBiquity appreciates the effort the NRSC has devoted to the most recent update of the NRSC-5 standard. We look forward to continuing to work with you on the ongoing rollout of the HD Radio™ system.

Please do not hesitate to contact me if you have questions about this material or any aspect of the NRSC standard.

Sincerely,

A handwritten signature in black ink, appearing to read "Albert Shuldiner", written in a cursive style.

cc: Milford Smith, Chair, NRSC  
David Layer, NAB  
David Wilson, CEA

## Attachment A

### iBiquity Digital Corporation Transmission Patent Portfolio for NRSC-5

Patent No.	Title
5,465,396	In-Band On-Channel Digital Broadcasting
5,523,726	Digital Quadrature-Shift Keying Modulator
5,588,022	Method and Apparatus For AM Compatible Digital Broadcasting
5,606,576	Adaptive Mode Control System For AM Compatible Digital Broadcast
5,757,854	In-Band On-Channel Digital Broadcasting
5,850,415	In-Band On-Channel Digital Broadcasting
5,859,876	Method And Apparatus For Improving AM Compatible Digital Broadcast Analog Fidelity
5,898,732	Data Service Channel for AM Compatible Broadcast System
5,903,598	Method And System For Simultaneously Broadcasting And Receiving Digital And Analog Signals
5,930,687	Apparatus And Method For Generating An AM Compatible Digital Broadcast Waveform
5,949,813	Method And System For Simultaneously Broadcasting And Receiving Digital And Analog Signals
5,956,373	AM Compatible Digital Audio Broadcasting Signal Transmission Using Digitally Modulated Orthogonal Noise-Like Sequences
5,956,624	Method And System For Simultaneously Broadcasting And Receiving Digital And Analog Signals
6,014,407	Method And System For Simultaneously Broadcasting And Receiving Digital And Analog Signals
6,108,810	Digital Audio Broadcasting Method Using Puncturable Convolutional Code
6,128,334	Receiver Addressable AM Compatible Digital Broadcast System
6,128,350	Method And Apparatus For Reducing Peak To Average Power Ratio In Digital audio Broadcasting Systems
6,148,007	Method For Data Transmission In A Digital Audio Broadcasting System
6,178,317	System and Method for Mitigating Intermittent Interruptions in an Audio Radio Broadcast System
6,243,424	Method And Apparatus For AM Digital Broadcasting
6,292,917	Unequal Error Protection For Digital Broadcasting Using Channel Classification
6,345,377	Digital Audio Broadcasting Method Using Puncturable Convolutional Code
6,353,637	Multistream In-Band On-Channel Systems
6,366,888	Technique For Multi-Rate Coding Of A Signal Containing Information
6,405,338	Unequal Error Protection For Perceptual Audio Coders
6,430,227	FM In-Band On-Channel Audio Broadcasting Method and System
6,430,401	Technique For Effectively Communicating Multiple Digital Representations Of A Signal
6,452,977	Method and Apparatus for AM Compatible Digital Broadcasting
6,510,175	In-Band On-Channel Digital Broadcasting
6,523,147	Method and Apparatus for Forward Error Correction Coding for an AM In-Band On-Channel Digital Audio Broadcasting System
6,539,063	System And Method For Recovering Symbol Timing Offset And Carrier Frequency Error In An OFDM Digital Audio Broadcast System
6,549,544	Method & Apparatus for Transmission & Reception of FM In-Band On-Channel Digital Audio Broadcasting
6,556,639	Method & Apparatus for Determining Transmission Mode & Synchronization for A Digital Audio Broadcasting Signal
6,563,880	Method and System for Simultaneously Broadcasting and Receiving Digital and Analog Signals
6,639,949	Method & Apparatus for Pulse Overlap Pre-Compensation in Digitally Modulated Signals
6,721,337	Method & Apparatus for Transmission & Reception of Compressed Audio Frames with Prioritized Messages for Digital Audio Broadcasting

6,735,257	Audio Blend Method and Apparatus for AM and FM In Band On Channel Digital Audio Broadcasting
6,798,849	AM Digital Audio Broadcasting with Analog Signal Pre-Compensation
6,895,060	Adaptive Weighting Method For Orthogonal Frequency Division Multiplexed Soft Symbols Using Channel State Information Estimates
6,898,249	Method and Apparatus for AM Digital Audio Broadcasting with Amplitude Scaled Tertiary Subcarriers
6,901,242	A System And Method For Mitigating Intermittent Interruptions In An Audio Radio Broadcast System
6,982,948	Method And Apparatus For Transmission And Reception Of FM In-Band On-Channel Digital Audio Broadcasting
7,043,681	Digital Audio Broadcasting Method And Apparatus Using Complementary Pattern-Mapped Convolutional Codes
7,191,136	Efficient Coding of High Frequency Signal Information In A Signal Using a Linear/Non-Linear Prediction Model Based on a Low Pass Baseband
7,305,043	Method And Apparatus For Formatting Signals For Digital Audio Broadcasting Transmission And Reception
7,340,010	Forward Error Correction Coding For Hybrid AM In-Band On-Channel Digital Audio Broadcasting Systems
7,352,817	Method And Apparatus For Interleaving Signal Bits In A Digital Audio Broadcasting System
7,464,324	Method And Apparatus For Forward Error Correction Coding For An AM In-Band On-Channel Digital Audio Broadcasting System
7,474,707	Bandwidth Reduction Of An FM Broadcast Signal Using A Baseband Precompensation Technique
7,512,175	Method For Synchronizing Exporter And Exciter Clocks
7,542,517	Peak-To-Average Power Reduction For FM OFDM Transmission
7,706,468	Transmitter With Forward Error Correction Coding For Hybrid AM In-Band On-Channel Digital Audio Broadcasting Systems
7,873,120	Forward Error Correction Coding For AM 9khz And 10khz In-Band On-Channel Digital Audio Broadcasting Systems

## Attachment B

### iBiquity Digital Corporation Receiver (Non-Transmission) Patent Portfolio

Patent No.	Title
5,517,535	Numerically Controlled Oscillator With Complex Exponential Outputs Using Recursion Technique
5,559,830	Equalization System for AM Compatible Digital Receiver
5,566,214	Automatic Noise Normalization And Reacquisition Control For A QPSK Demodulator Tracking Loop
5,579,345	Carrier Tracking Loop For QPSK Demodulator
5,633,896	AM Compatible Digital Waveform Demodulation Using a Dual FFT
5,703,954	Method and Apparatus For Improving The Quality Of AM Compatible Digital Broadcast System Signals In The Presence Of Distortion
5,745,525	Method And Apparatus For Simultaneously Broadcasting And Receiving Digital And Analog Signals
5,764,706	AM Compatible Digital Waveform Frame Timing Recovery and Frame Synchronous Power Measurement
5,809,065	Method and Apparatus For Improving The Quality Of AM Compatible Digital Broadcast System Signals In The Presence Of Distortion
5,828,705	Carrier Acquisition Technique And Apparatus Having Automatic Flywheel/Tracking/Reacquisition Control And Extended Signal To Noise Ratio
5,878,089	Coherent Signal Detector For AM-Compatible Digital Audio Broadcast Waveform Recovery
6,259,893	Method And Apparatus For Reduction Of FM Interference For FM In-Band On-Channel Digital Audio Broadcasting System
6,292,511	Method For Equalization Of Complementary Carriers In An AM Compatible Digital Audio Broadcasting System
6,295,317	Method And Apparatus For Demodulating And Equalizing An AM Compatible Digital Audio Broadcast Signal
6,317,470	Adaptive Weighting For OFDM Soft Symbols Using Channel State Information Estimates
6,400,758	Method And Apparatus For Training Sequence Identification In An AM Compatible Digital Audio Broadcasting System
6,480,536	Method And Apparatus For Demodulating And Equalizing An AM Compatible Digital Audio Broadcast Signal
6,487,256	Method and Apparatus for AM Digital Broadcasting
6,532,258	Method for Estimating Signal-To-Noise Ratio of Digital Carriers in an AM Compatible Digital Audio Broadcasting System
6,570,943	Method for Equalization of Complementary Carriers in an AM Compatible Digital Audio Broadcast System
6,590,944	Audio Blend Method and Apparatus for AM and FM In Band On Channel Digital Audio Broadcasting
6,622,008	Method & Apparatus for Reduction of FM Interference for FM In-Band-On-Channel Digital Audio Broadcasting System
6,671,340	Method & Apparatus for Reduction of Interference in FM In-Band-On-Channel Digital Audio Broadcasting Receivers
6,891,898	System And Method For Recovering Symbol Timing Offset And Carrier Frequency Error In An OFDM Digital Audio Broadcast System
6,970,685	Method & Apparatus for Dynamic Filter Selection in Radio Receivers

7,127,008	Coherent AM Demodulator Using Weighted LSB/USB Sum For Interference Mitigation
7,221,688	Method And Apparatus For Receiving A Digital Audio Broadcasting Signal
7,221,917	Adjacent Channel Interference Mitigation For FM Digital Audio Broadcasting Receivers
7,546,088	Method And Apparatus For Blending An Audio Signal In An In-Band On-Channel Radio System
7,551,675	Method And Apparatus For Synchronized Transmission And Reception Of Data In A Digital Audio Broadcasting System
7,680,201	Forward Error Correction Coding For AM 9khz And 10khz In-Band On-Channel Digital Audio Broadcasting Systems