



Appendix F – FM IBOC system evaluation matrix

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DAB Subcommittee Evaluation of the iBiquity Digital Corporation IBOC System		
Part 1 – FM IBOC		

Notes:

- A checkmark (“✓”) indicates that the results from a particular test are expected to apply to the indicated evaluation criteria.
- Test A (Calibration) provides a quality check on system testing as a whole and is not used directly for system evaluation.

TEST	DESCRIPTION	DIGITAL PERFORMANCE						COMPATIBILITY		
		UNIMPAIRED AUDIO QUALITY	SERVICE AREA	DURABILITY	ACQ. PERFORM.	AUX. DATA CAPACITY ⁴	BEHAVIOR AS SIGNAL DEGRADES	STEREO SEP	HOST SIGNAL IMPACT	NON-HOST SIGNAL IMPACT
B	IBOC system performance with AWGN									
1)	Linear channel		✓	✓		✓	✓	✓		
2)	Multipath fading channel									
C	IBOC system performance with special impairments									
1)	Impulse noise									
1.5)	Impulse noise, 1st-adjacent channel interference									
2)	Airplane flutter (Doppler)			✓		✓	✓	✓		
2.4)	Airplane flutter (Doppler), 1st-adjacent channel interference									
D	IBOC → IBOC digital performance									
1)	Co-channel interference									
2)	Single 1st-adjacent channel interference									
2.4)	Simultaneous upper and lower 1st-adjacent channel interference									
3)	Single 2nd-adjacent channel interference		✓	✓		✓	✓	✓		
3.4)	Single 2nd-adjacent channel interference w/1st adj. channel interference									
3.5)	Simultaneous upper and lower 2nd-adjacent channel interference									

⁴ See note 2.

TEST	DESCRIPTION	DIGITAL PERFORMANCE						COMPATIBILITY	
		UNIMPAIRED AUDIO QUALITY	SERVICE AREA	DURABILITY	ACQ. PERFORM.	AUX. DATA CAPACITY ⁵	BEHAVIOR AS SIGNAL DEGRADES	STEREO SEP	HOST SIGNAL IMPACT
E	IBOC → IBOC digital performance in a multipath fading channel								
1)	Co-channel interference								
2)	Single 1st-adjacent channel interference								
2.4)	Simultaneous upper and lower 1st-adjacent channel interference								
3)	Single 2nd-adjacent channel interference		✓	✓		✓	✓	✓	
3.4)	Single 2nd-adjacent channel interference w/1st adj. channel interference								
3.5)	Simultaneous upper and lower 2nd-adjacent channel interference								
F	IBOC → Analog compatibility performance								
1), 3)	Single 1st-adjacent channel interference								
2), 4)	Single 2nd-adjacent channel interference								✓
F/SC	IBOC → Analog (FM subcarriers) compatibility performance								
1), 5)	Single 1st-adjacent channel interference, analog subcarriers								
3)	Single 1st-adjacent channel interference, digital subcarriers								✓
2), 6)	Single 2nd-adjacent channel interference, analog subcarriers								
4)	Single 2nd-adjacent channel interference, digital subcarriers								
G	IBOC → Analog compatibility performance in a multipath fading channel								
1)	Single 1st-adjacent channel interference								✓

⁵ See note 2.

TEST	DESCRIPTION	DIGITAL PERFORMANCE							COMPATIBILITY	
		UNIMPAIRED AUDIO QUALITY	SERVICE AREA	DURA- BILITY	ACQ. PERFORM.	AUX. DATA CAPACITY ⁶	BEHAVIOR AS SIGNAL DEGRADES	STEREO SEP	HOST SIGNAL IMPACT	NON-HOST SIGNAL IMPACT
H	IBOC acquisition									
1)	Acquisition with varying signal level				✓					
I	IBOC quality									
1)	Quality transmission test	✓								
J	IBOC → host Analog compatibility performance									
1), 2)	Main channel audio performance versus presence or absence of IBOC digital signal energy									
4)	Analog subcarrier performance versus presence or absence of IBOC digital signal energy									
5)	RDS subcarrier performance versus presence or absence of IBOC digital signal energy								✓	
6)	HSSC performance versus presence or absence of IBOC digital signal energy									

⁶ See note 2.

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		UNIMPAIRED AUDIO QUALITY	SERVICE AREA	DURA- BILITY	ACQ. PERFORM.	AUX. DATA CAPACITY ⁷	BEHAVIOR AS SIGNAL DEGRADES	STEREO SEP	HOST SIGNAL IMPACT	NON-HOST SIGNAL IMPACT
B	System performance									
1)	Low interference and low multipath		✓	✓		✓	✓	✓		
2)	1st-adjacent interference									
3)	2nd-adjacent interference									
C	Compatibility									
1)	Host compatibility – main channel audio								✓	
2)	Host compatibility – analog and digital subcarriers									
3)	1st-adjacent channel compatibility									✓

⁷ See note 2.