NRSC REPORT

NATIONAL RADIO SYSTEMS COMMITTEE

NRSC-R58 Digital Audio Radio IBOC Laboratory Tests

Transmission Quality Failure Characterization and Analog Compatibility

August 11, 1995

Part V – Appendices AC through AG



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NRSC-R58

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NRSC-R58

FOREWORD

NRSC-R58, Digital Audio Radio IBOC Laboratory Tests – Transmission Quality Failure Characterization and Analog Compatibility, documents the first comprehensive testing of in-band/on-channel digital radio systems. This report was prepared for Working Group B and the Combined EIA DAR and NRSC DAB Subcommittees.

The NRSC is jointly sponsored by the Consumer Electronics Association and the National Association of Broadcasters. It serves as an industry-wide standards-setting body for technical aspects of terrestrial overthe-air radio broadcasting systems in the United States.

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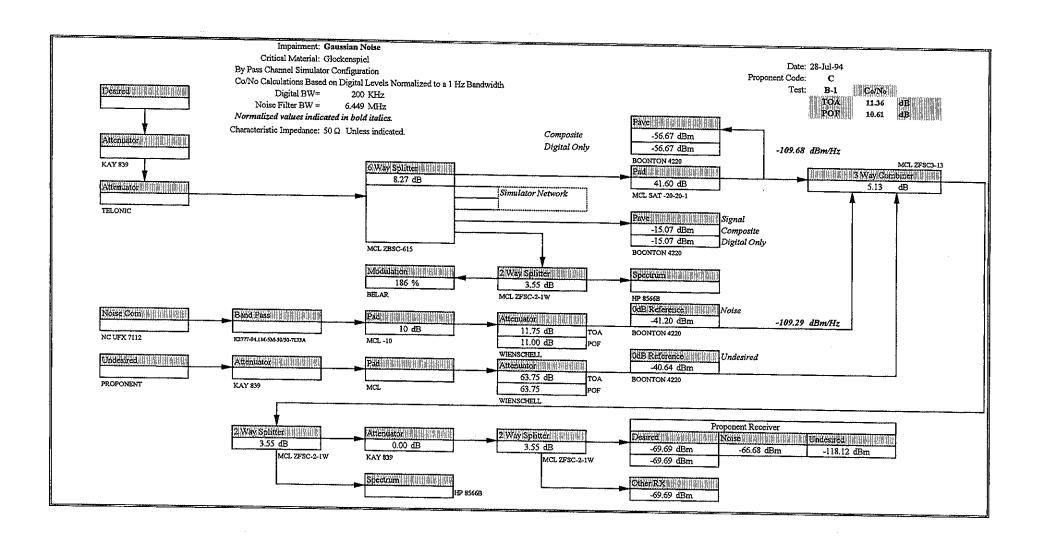
APPENDIX AC

Digital Test Results AT&T IBAC

Proponent: AT&T Code: С Digital Band Width: 2.00E+05 Hz Peak/Average: 6.03 dB

Test	B-1		
Proponent		Gaussian Noise	
Code:	C	Gaussian Hoise	
			Units
Glockenspiel		TOA POF	
	Attenuator	11.00	ď₿
	Co/No	11.36 10.61	dB
	TOA	0. 11.1	
EO&C		Small drop out.	
LOWC	POF	Excessive muting.	
	101	Excessive muting.	1
Soprano		TOA POF	
	Attenuator	11.50 10.75	diB
	Co/No	11.11 10.36	dB
	TOA	0. 11.1	
EO&C		Small drop out.	
LOAC	POF	Excessive muting.	[[
	101	Excessive munig.	
Clarinet		TOA POF	
	Attenuator	11.50 10.75	dB
	Co/No	11.11 10.36	dB
	TO 4		
EO&C	TOA	Small drop out.	
EO&C	POF	Francisco and	
	ror	Excessive muting.	
			l
	Recording l	Reference: DAR30213.DAT	
Notes:	Testers:	DML,ST,DS,EB	
	Date:	28-Jul-94	

File Name: DAR30803.XLS B-1



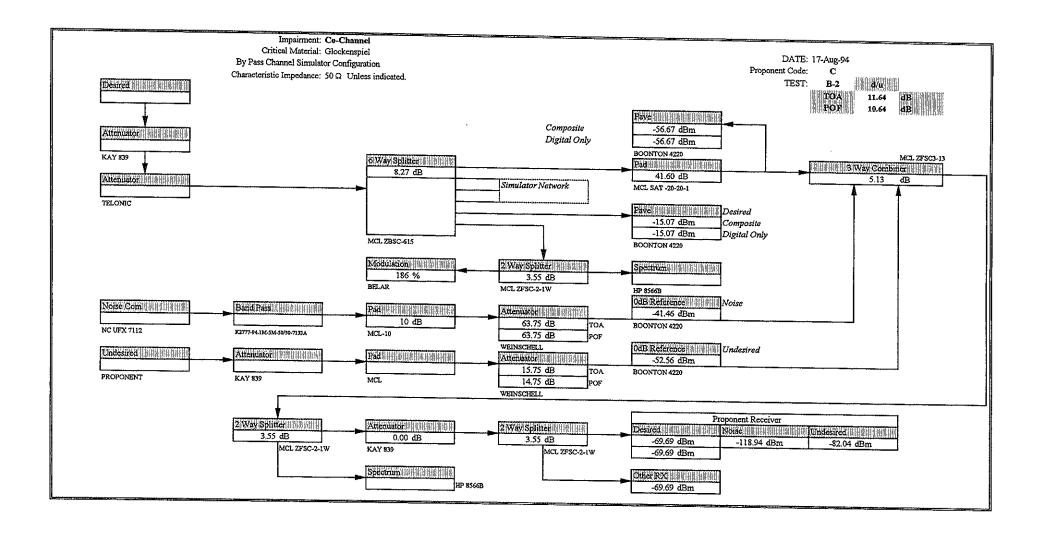
EIA Digital Audio Radio DAT Recording Log

DAT File Number	Time Start	Code Stop		Pro:	gram)#		Description	Attn
DAR30213.DAT			1	2		T	Glockenspiel Clear Channel	
28-Jul-94	***************************************	***************************************	3	4		+		63.75
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		5	6		·		13.25
		******************	7	8		1		12.75
		<u></u>	9	10	,,,,,,,	†	TOA lab	12.25 11.75
***************************************			11	12	*****	******	## ###################################	
***************************************			13	14	*****	*****	** ***********************************	11.50 11.25
************************************	******************		15	16		1	Sync	63.75
************************************	***************************************		17	18			POF lab	11.00
Marrosers.	***************************************		19	20		T		10:75
***************************************	***************************************				···	T	***	
****	***************************************		21	22			Soprano Clear Channel	63.75
******************************	H174 Property of the Commence		23	24			**************************************	13.00
***************************************	***************************************		25	26		1	***************************************	12.50
5+0+>===1=>==============================	***************************************		27	28		T	A. Marianten (1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1	12.00
L	***************************************		29	30			TOA lab	11.50
***************************************	***************************************		31				**************************************	11.25
*********************************	*********************		33	34		1	**************************************	11.00
	***********************	***************************************	35	36			Sync	63.75
***************************************	*********************	·	37	38			POF lab	10.75
*********************************	****************	***************	39	40				10.50
*************************************	*************	***************************************						
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	*******************	·····	41	42			Clarinet Clear Channel	63.75
************************************	*********		43	44				13.00
***************************************	****		45					12.50
**************************************			47	48				12.00
*****************************	*		49	50			TOA lab	11.50
************************************	***************************************	ļ	51	52				11.25
***************************************	***************************************		53	54				11.00
*************************	***************************************		55				Sync	63.75
	*******************		57			<u></u>	POF lab	10.75
***************************************	*******************		59	60		<u> </u>		10.50
*************************	***********							****
*********************************	*****************	ļ						****
************************************	****************							****
***********************************	************************	***************************************					(****
		L		[" "		1		····

Code: C Impairment: Gaussian Noise

File Name: DAR30803.XLS DAT B-1

Test	B-2			
Proponent		Co-Cha	mmal	
Code:	C	Со-Спа	nnei	
		İ		
				Units
Glockenspie		TOA	POF	
	Attenuator	1 20.75	14.75	dB
	d/u	11.64	10.64	dB
EO&0	TOA	Small drop out,		
Low	POF	Excessive muting.		
Soprano	A 44 4	TOA	POF	
	Attenuator d/u	12.50	14.75	dƁ
		11.39	10.64	d₿
	TOA	Small drop out.		
EO&0	2			
	POF	Excessive muting.		
				ĺ
Clarinet		TOA		
	Attenuator	15.75	POF	
	d/u	11.64	14.75 10.64	dB
		21.04	10.04	dB
TO 0.0	TOA	Small drop out.]
EO&C	POF	Para di		
	TOF	Excessive muting.		
· •	Recording I			
Notes:	Testers:	DML,DS		
	Date:	17-Aug-94		



File Name:DAR30803.XLS Levels B-2

EIA Digital Audio Radio DAT Recording Log

BAT File Number	Start	Code Stop		P	rogr: ID#			Description	
AR30234.DAT			1	2			l	Glockenspiel Clear Channel	Attn
17-Aug-94	**************************************	***************	3	4		*********	·····	Globiolispici Cical Chamiei	63.75
	***************************************	***************************************	5	6			 		17.25
***************************************	***************************************	***************************************	7	8	**********	**********	 		16.75
	***************************************	•	9	10	11	12	13	TOA lab	16.25
****************************	***************************************	***************************************	14	15			<u></u>		15.75
***************************************		***************************************	16	17		***********			15.50
·*************************************		***************************************	18	19	**********	••••••	ļ		15.25
***************************************	*************************		20	21	**********	**********		POF lab	15.00
*******************************	***************	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	22	23		********		***************************************	14.75
******************************	**********************		24	25				Sync	63.75
7	***************************************			23		**********	ļ		14.25
******************************	***************************************		26	27	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	********	 		
***************************************		.,	28	29		**********	ļ	Soprano Clear Channel	63.75
********************************	*************	**********************	30	31	н				17.00
***************************************	****************	****************	32	********	**********	************			16.50
	***************************************	***********************	**********	33 35	36		ļ <u></u>		16.00
***************************************			34 39	**********	- 30	37	38	TOA lab	15.50
***************************************	****	***************************************	**********	40	*******	*********	ļ	**************************************	15.25
***************************************	*************	********************	41	42				***************************************	15.00
***************************************	+2****************	***************************************	43	44		*******	*********	POF lab	14.75
***************************************	************************	***************************************	45	46	********			Sync	63.75
*****	******************	***************************************	47 49	48	**********		***********	***************************************	14.50
.>>>*********************************	***************	***************************************	49	50			***********	***************************************	14.25
	******************************						********		*******
	***************************************	***************************************	51	52			************	Clarinet Clear Channel	63.75
	***************************************		53	54					17.25
********************************		***************************************	55	56					16.75
***************************************	*****************	***************************************	57	58	,,,,,,,		*********		16.25
*****************		*****************	59	60				TOA lab	15.75
*****		*************	61	62]	**********		15.50
***************************************		**********	63	64			*4******		15.25
***************************************	**********************	***************************************	65	66]			15.00
*******************************	•	**************	67	68				POF lab	14.75
***************************************	****************		69	70				Sync	63.75
*******************************		***************************************	71	72					14.50
*******************************			73	74					14.25
							***********		14.43

Code: C

Impairment: Co-Channel

Test	B-3						····
Proponent Code:			Urb	an Slow Ra	yleigh		
Code:	C						
							Units
Glockenspiel	(O-Porto-porto) (Porto-porto-porto-porto-porto-porto-porto-porto-porto-porto-porto-porto-porto-porto-porto-por		TOA		POF	i i	Circo
	Attenuator		31 00		24 00		dB
	Co/No		31.64		24.64		d₿
	TOA	Small drop out.					
EO&C			· · · · · · · · · · · · · · · · · · ·				
				····			
	POF	Excessive mutir	ng.				
Soprano			TOA		POF	I I	-
	Attenuator		31.00		24 00		ďΒ
	Co/No		31.64		24.64		dB
	TOA	Small drop out.					
EO&C						·····	
	POF	Excessive mutir	ng.				****
Clarinet	000000000000000000000000000000000000000		TOA		POF		
	Attenuator		31.00		24 00		dΒ
ı	Co/No		31.64		24.64		dΒ
	TOA	Small drop out.					
EO&C							
	POF	Excessive mutin	ng.			·	
	Record	ling Reference:	DAR30255.DA	.т			
Notes:		Testers:	DML,DS				
		Test Date:					
			-				

File Name: DAR30803.XLS B-3 US

DAT File Number	Time Start	Code Stop		Pro	gran	ı ID	s	Description	
DAR30255.DAT			1	2	3	l	<u> </u>	Glockenspiel Clear Channel	Atm
23-Aug-94	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	***************************************	4	<u>2</u> 5	6	*******			63.75
····			7	8	9	10	·····	Disregard # 7	32.00 31.50
			11	12	13	********	†*****	TOA lab	31.00
***************************************		*****************************	14	15	16	*	†*****		30.50
***************************************			17				·	**************************************	29.00
			20	21	22 25		******		27.00
*************************************	***************************************		23	21 24	25			POF lab	24.00
++	***************************************			*********	********				24.00
******************	************			27	28	144411444		Soprano Clear Channel	63.75
***************************************	*****************	*******************************			31		<u> </u>	 	32.00
**************************************	*******************	***************************************	32	33			[<u></u>		31.50
N-++++++++++++++++++++++++++++++++++++	····		35		37		l	TOA lab	31.00
********************************		****************	38		40				30.50
	***************************************	***************************************	41	42					29.00
************************************			44		46				27.00
	***************************************		47	48	49			POF lab	24.00
**************************************	******************************	********							27.00
***************************************	**********	***************************************	50	51	52			Clarinet Clear Channel	63.75
-4+	***************************************	*******************************			55				32.00
************	***********	***************************************	56						31.50
************************************	********************	······	59		61	62		TOA lab	31.00
!**************************	*************		63		65	********			30.50
)****************	63449955444 449 55		66	67	68	/>*****	*****		29.00
*************************************	14>++	***************************************	69		71		******		27.00
\$ 	************	*************	72	73	74	,,,,,,,,		POF lab	24.00
>*************	**************	***************************************		*******					*******************
	~************								
***************************************	***************************************	******************************	*************************		*******				*****************************
***************************************	*************	***************************************							**************
***************************************	*************	***************************************	********						*************
	*******************	************************	********		*********	,,,,,,,,,,			**************
************************************	***********	***************************************			*******				******************************
************************************	****************					***********			*********
	*******								******************
(******/******************************	***************	*********************	********						***************************************
							L		******************

Proponent Code: C Impairment: Urban Slow Rayleigh

Test Proponent	B-3		**									
Code:	С		Urban Fast Rayleigh									
Glockenspiel			TOA		POF	1	Units					
	Attenuator		26.00		20:00		dB					
	Co/No		26.64		20.64		dB					
	TOA	Small drop out.				····						
EO&C	L				·							
20000	[· · · · · · · ·			·								
	POF	Excessive mutir	ıg.									
Soprano			TOA		POF							
	Attenuator		25 00		20.00		dВ					
	Co/No		26.64		20.64		dB					
	TOA	Small drop out.										
EO&C							···					
	POF	Excessive mutir	ng.				"-"					
Clarinet			TOA	r								
	Attenuator		25.50		POF							
	Co/No		26.14		20.00 20.64		dB dB					
	TOA	Small drop out.				<u> </u>	<u> </u>					
EO&C												
	POF	Excessive mutin	ig.	<u></u>			***************************************					
							_					
	Record	ling Reference:	DAR30256 DA	т			.ii					
Notes:	2,4-01,		DML,DS									
		Test Date:										
			5									

File Name: DAR30803.XLS B-3 UF

DAT File Number	Time Start	Code Stop		Pro	gran	D	•	Description	
DAR30256.DAT			1	2	3		T	Glockenspiel Clear Channel	Atto
23-Aug-94		***************************************	4	5	6	7	·······	Disregard #4	63.75
		***************************************	8	9	10			The state of the s	27.00
		***************************************	11	12	13	14	***********	TOA lab	26.50
•••	***************************************	*******************	14	15 19	16	17	·····		26.00
***************************************		***************************************	18	19	20	······	† ********		25.50
	***************************************		21		23				24.00
		***************************************	24	25	26	*******	·····	POF lab	22.00
	***************************************	***************************************	*******		********		ļ		20.00
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	***************************************	27	28	29	-70004000		Soprano Clear Channel	
		************************	30	31	32	33	***************************************	Disregard #30	63.75
***************************************		************************	34	35	36	*******	Ì'''''		27.00
***************************************		***************************************	37	38	39	*******	**********	TOA lab	26.50
***************************************			40	41	42		*********		26.00 25.50
***************************************	***************************************		43		45	*******		**************************************	24.00
***************************************			46		48	********			22.00
***************************************	4711		49	50	51	*******	********	POF lab	20.00
***************************************	*******			*********		*********	****		20.00
W++(+)+++++++++++++++++++++++++++++++++	The contraction to the contraction of the contracti		52	53 56	54	*********	******	Clarinet Clear Channel	63.75
***************************************	*************************		55	56	57	*********	*******		26.50
***************************************	************************	************		59	60	-1-11111		**************************************	26.00
***********************************	***************************************		61			*********	********	TOA lab	25.50
***************************************		***	64		66	*********	*******		25.00
***	4++++++	***************************************	67	68	69	*******	********		24.00
***********************************		***************************************	70	71	72	*******	******		22.00
***************************************	477		73	74	75	********	********	POF lab	20.00
*****************************	***************************************					********	*******		20.00
***************************************	***************************************								
******************************	***************************************	*				*******			***************************************
***************************************	******************	*******************				*********		**************************************	
*******************************								**************************************	***************************************
*************************	***************	***************************************					********		***************************************
***************************************	***************************************	***************************************							***************************************
	*************	*************							***************************************
**************************	····	*****************							***************************************
	************	***************************************	,,,,,,,						***************************************

Proponent Code: C Impairment: Urban Fast Rayleigh

File Name: DAR30803.XLS DAT UF

Test Proponent Code:			Rural Fast Rayleigh										
Coue:							Units						
Glockenspiel			TOA		POF		Omes						
	Attenuator		63 75		63.75		dΒ						
	Co/No		64.39		64.39		dB						
		Simulation with recovered audio	out added noi . Small infrequ	se produces defection attenuated at	ts in the	<u>* </u>							
EO&C					·····	· · · · · · · · · · · · · · · · · · ·	· ···						
	POF												
Soprano			TOA		POF								
	Attenuator		63.75		63.75		ďΒ						
	Co/No		64.39		64.39		dB						
	TOA	see DAT Log											
EO&C			· · · · · · · · · · · · · · · · · · ·										
	POF												
Clarinet			TOA		POF								
	Attenuator		63.75		63.75		dB						
	Co/No		64.39		64.39		dB						
	TOA	see DAT Log				<u> </u>	<u> </u>						
EO&C	I	······································				· · · · · · · · · · · · · · · · · · ·							
	POF						<u> </u>						
Notes:	Record	ling Reference: Testers: Test Date:	DML,DS	AT									

File Name: DAR30803.XLS B-3 RF

DAT File Number	Time Start	Code Stop	P	rag	ram	IDs	Description	Atm
DAR30257.DAT				2	3	T	Glockenspiel Clear Channel	63.75
23-Aug-94				5	6			30.50
***************************************		7	7	8	9	1	***************************************	30.00
**************		1	0]	11	12		TOA lab	29.50
			3	14	15			29.00
***************************************		*********************		*****	18			28.50
********************************		1			21			27.00
****		2	2 2	23	24		POF lab	25.50
*******************************		2	5 2	26 29	27	*******	Soprano Clear Channel	63.75
*******************************	***************************************	2	8 2	29	30			31.00
		3	1 3	32	33			30.50
***************************************		3	4 3	35	36		TOA lab	30.00
***************************************		3	7 3	38	39			29.50
**************************************	***************************************	4	0 2	11 14	42 45			28.50
······································	·	4						27.00
***************************************		4	6 4	17	48		POF lab	25.50
***************************************	************************	4		50			Clarinet Clear Channel	63.75
****	**********************	5	2 5	3	54			31.50
******************************	***************************************	5	5 5	53 56 59 52	57			31.00
*******************************	··········	5	8 .	59	60	,,	TOA lab	30.50
(******************************	***********************	6	1 6	52	63			30,00
******************************	************	. 6			66			29.00
******************************		6			69			27.50
***************************************		7	2	71	72		POF lab	25.50
***************************************	*********************	***************************************					See DAR30404,DAT E-Series recordings for	
****************************							See DAR30404 DAT E-Series recordings for Glockenspiel without added noise. 54 19 31 49	
		-A4++++++++++++++++++++++++++++++++++++	-	-			Soprano and Clarinet were not sent to CRC for evaluation.	
***************************************		***************************************					name and the second sec	

***************************************		***************************************		[.		[***************************************
	<u>J</u>	L L		ᆚ				

Proponent Code: C Impairment: Rural Fast Rayleigh

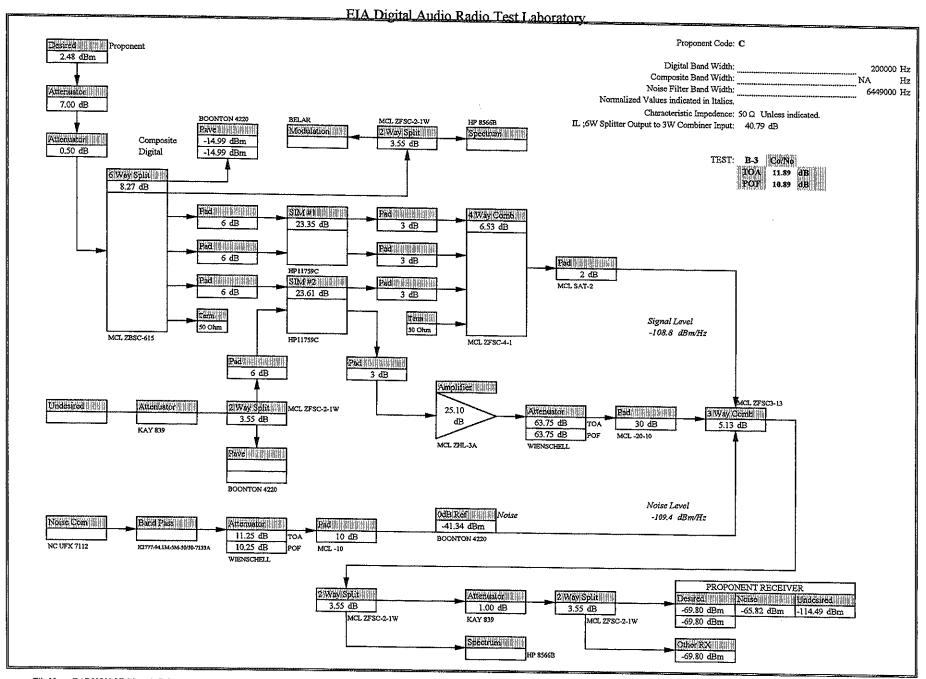
Test Proponent	B-3											
e roponent Code:	C		Terrain Obstructed Rayleigh									
							Units					
Glockenspiel			TOA		POF		Units					
	Attenuator		63.75		63.75		dB					
	Co/No		64.39		64.39		dB					
	TOA	Simulation proc in the recovered	duces defects (p d audio, without	oops,clicks and t added noise.	small drop outs)							
EO&C	,											
	POF						*					
	POF											
Soprano			TOA	<u> </u>	POF							
	Attenuator		63.75		63.75		ďΒ					
	Co/No		64.39		64.39		dB					
	TOA	in the recovered	duces defects (p daudio, without	ops, clicks and a tadded noise.	small drop outs)							
EO&C				· · · · · · · · · · · · · · · · · · ·			 -					
	POF											
Clarinet			TOĀ		POF							
···	Attenuator		24.00		2100		.tn					
	Co/No		24.64		21.64		dB dB					
	TOA	Small drop outs	and flutter.	· · · · · · · · · · · · · · · · · · ·		<u> </u>	<u> </u>					
EO&C												
	POF	Excessive mutir	ng and flutter.			· · · · · · · · · · · · · · · · · · ·	<u></u>					
	Recor	ding Reference:	DAR30258.DA	\T								
Notes:		l'esters.	DML DS									

File Name: DAR30803.XLS B-3 TO

DAT File Number	Time Start	Code Stop		Pro	erno	ı	s	Description	
DAR30258.DAT			1	2	3		Ī	Glockenspiel Clear Channel	Affn
23-Aug-94		******************	4	2 5	3 6	7	8	With multipath.	63.75
***************************************						*******	†		63.75
>*****************************	***************************************		9	10	11	12	ļ		ļ,
*************************	***************************************		13	14	15	16	17	Disregard #9-#17	-
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******************************	*********************		18	19 22	20			Sopranno Clear Channel	63.75
	*********		21	22	23	24	25	With Multipath.	63.75
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*********************************	*****************		26	27	28			Clarinet Clear Channel	63.75
>1000	*1*1***********************************	***************************************	29	30	31	32	33	Clarinet Clear Channel With Multipath. With Multipath. With Multipath.	63,75
***************************************	***************************************		34	35	36	37	38	With Multipath.	63.75
*******************************	*************************		39	40	41	42	43	With Multipath.	63.75
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	************************	*******************************	44	40	46	*******		Clarinet Clear Channel	63.75
*******************************	*************************	***************************************	47	48	49				25.00
***************************************	***************************************			51	52	********			24.50
***************************	***************************************	******************	53	54	55			TOA lab	24.00
*******************		***************************************		57		*******			23.00
*******************************		*********************	59		61	*******		**************************************	22.00
*************************************	***************************************		62	63	64			POF lab	21.00
	***************************************	***************************************				**********			***************************************
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	***************************************	******************************							

Proponent Code: C

Impairment: Terrain Obstructed Rayleigh



est C-1	Impulse Respons	se				
T&T rogram Material	Glockenspiel			1 Vp-p at atten 10.00 ns wide pulse	uator input.	
Pulse Repetition (Hz)		Attn t TOA	(Vp-p)	Attn at POF	(Vp-p)	EO&C
100		0.00	1.00	0.00	1.00	Could not achieve TOA or POF with this repetition rate.
200		0.00	1.00	0.00	1.00	Could not achieve TOA or POF with this repetition rate.
333		0.00	1.00	0.00	1.00	Could not achieve TOA or POF with this repetition rate.
666	1	10.50	0.30	0.00	1.00	TOA occasional drop out, POF could not be achieved.
1000	1	10.50	0.30	0.00	1.00	TOA occasional drop out, POF could not be achieved.
Additional Comment  Test Date: 27-Jul-9	The audio would but would not rep There appears to l	break up eat at tha	once at many discre t level. Attenuator s	ey. te levels on the attent witch transients may t a fast enough rate to	have caused these	e break ups. esults inconclusive.
Testers: DML,DS,S			Signal Level at Rec	ceiver: -85.00	lBm	

Test C-1	Impulse Response				
AT&T Program Material	Glockenspiel		Vp-p at atten ns wide pulse		
Pulse Repetition (Hz)	Attn at TOA	(Vp-p)	Attn at POF	(Vp-p)	EO&C
200 333	7.50 16.50	0.42 0.15	0.00 12.00	1.00 0.25	TOA occasional drop out, POF could not be achieved.  TOA occasional drop out, POF excessive muting.
	but would not repeat at tha There appears to be error of	TOA with consistency. once at many discrete levels t level. Attenuator switch tr orrection occuring at a fast o	ransients may	have caused the	ese breek une
Test Date: 27-Jul-9 Testers: DML,DS,S		Signal Level at Receiver:	-90.00	iBm	

File Name: DAR30803.XLS C-1 (2)

Page 18 of 50

Test	C-2	CW Respon	se		····		· · · · · · · · · · · · · · · · · · ·		
АТ&Т									
Program Ma	terial	Mozart (trac	k 67 SQAM I	Disk)					
	Frequency	LEV 1	LEV 2	LEV 3		Frequency	LEV 1	LEV 2	LEV 3
Test Point	MHz	POF	POF+6	POF+12	Test Point	MHz	POF	POF+6	POF+12
1	93.85				27	94.11	2	2	2
2	93.86				28	94.12		2	2
3	93.87				29	94.13	0	2	2
4	93.88				30	94.14	1	2	2
5	93.89				31	94.15	1	2	2
6	93.90				32	94.16	0	2	2
7	93.91				33	94.17	0	1	2
8	93.92			-	34	94.18	0	2	2
9	93.93			<del></del>	35	94.19	0	2	2
10	93.94				36	94.20	0	1	1
11	93.95	0	0	0	37	94.21	0	0	0
12	93.96	0	0	0	38	94.22	0	0	0
13	93,97	0	0	0	39	94.23	0	0	0
14	93.98	0	0	0	40	94.24	0	<del>  0</del>	<del>                                     </del>
15	93.99	0	0	0	41	94.25	0	0	0
16	94.00	0	0	2	42	94.26	<u> </u>		-
17	94.01	0	2	2	43	94.27			
18	94.02	0	1	2	44	94,28	<del> </del>		
19	94.03	2	1	2	45	94.29			
20	94.04	2	2	2	46	94.30			
21	94.05	2	1	2	47	94.31			· ·
22	94.06	0	2	2	48	94.32			
23	94,07	2	2	2	49	94.33			
24	94.08	0	2	2	50	94.34	<del></del>		
25	94.09	0	2	2	51	94,35	····		
26	94.10	0	2	2					<u> </u>
T . D	00.0								
Test Date:	F .				or Reference:		dBm		
Testers:	DML, TK		0=CLEAN A POF Attn=34		1=APPROXI			2 ≥ POF	
			i Oi. Willimor	davo.		POF d/u=	7.81	qR	

-56.62

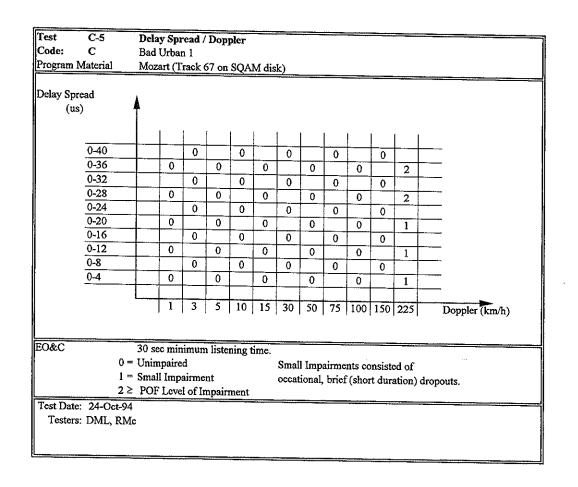
				Sind with the stand of
	Test	C-3 Airplane Flutt	er	
	AT&T	Maria orași		
	Program	Material Glockenspiel		
		Reflected Path		
-	Scenario	Renected Fath	,	EO&C
	. #			
1 yeur	#1	400 Km/h Doppler	/	
ting delay		27.5 μs Delay		
		8.00 dB	TOA	Small drop out.
try oruz		8.00 aB	5.60 dB	33. 41
, July	#2	200 Km/h Doppler		
`a.Hh		13.7 µs Delay		
			TOA	Attenuated attack on first note as well as
		6.00 dB	4.10 dB	small drop out.
	#3	100 Km/h Doppler		
	JII J	6.8 µs Delay		Attanuated attack on first note as well
		,	TOA	Attenuated attack on first note as well as small clicks and pops.
		4.00 dB	4.00 dB	3:30-8:45
				DAR30500.DAT ID #7-15
		28-Sep-94		
	Testers	s: DML,TK,ST,RMc		· .

Increasing level of reflected paths

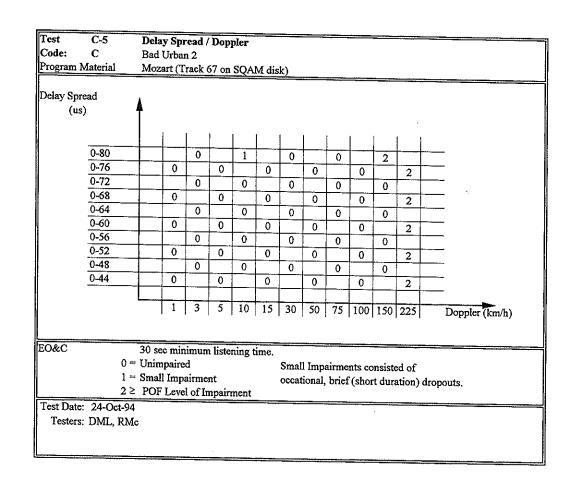
File Name: DAR30803.XLS C-3

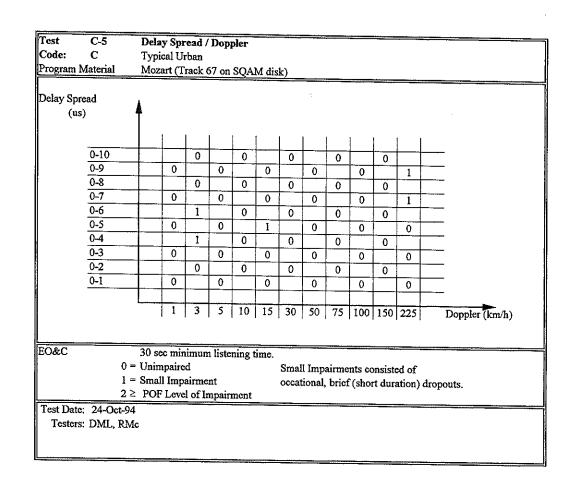
Page 20 of 50

Test C-4	Weak Signal Sensitivity
AT&T	
Program Material	Glockenspiel
	TOA (ID.)
	TOA (dBm) POF (dBm)
	$-106 \le TOA < -105$ $-107 < POF \le -106$
	·
T . T	
Test Date: 7-Sep-94 Testers: DML, ST	
<u> </u>	

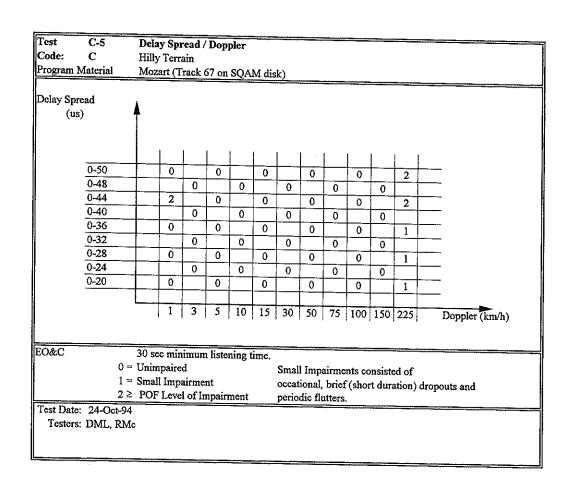


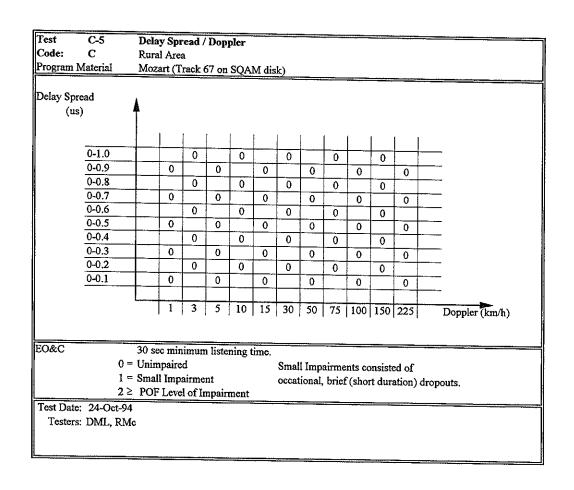
File Name: DAR30803.XLS C-5 BU1





File Name: DAR30803.XLS C-5 TU





File Name: DAR30803.XLS C-5 RA

Level TOA POF	28.00 20.00	Co/No 28.62 20.62	dB dB	EO&C  Small drop out at end of 1st arpeggio ID #7  Excessive muting.
TOA POF TOA	28.00	28.62	dB dB	Small drop out at end of 1st arpeggio ID #7
TOA POF TOA	28.00	28.62	dB dB	Small drop out at end of 1st arpeggio ID #7
POF	20.00	20.62	dB	ID #7
TOA				Excessive muting.
	15.50	16.12	4D	
	, [		u _D	Small flutter / drop out at end of 2nd Arpeggio ID #10
POF	13.50	14.12	ďΒ	Excessive flutter / drop outs.
TOA	17.00	17.62	dB	First note attack is attenuated ID #13, also drop out.
POF	12.00	12.62	dВ	Excessive flutter / drop outs.
TOA	16.50	17.12	dВ	Break up of first note ID #22
POF	14.50	15.12	dΒ	Excessive flutter / drop outs.
25-Oct-94 DML, RMc DAR30551		Signal IL	40.6	8 dBm 3 dB BW 6.45E+06 Hz
)	POF TOA POF 25-Oct-94 ML, RMc	POF 12.00  TOA 16.50  POF 14.50	POF 12.00 12.62  TOA 16.50 17.12  POF 14.50 15.12  25-Oct-94  ML, RMc Signal	POF 12.00 12.62 dB  TOA 16.50 17.12 dB  POF 14.50 15.12 dB  25-Oct-94 Desire ML, RMc Signal -15.0 AR30551.DAT IL 40.6

DAT File Number	Time Start	Code Stop		S	art I	Ds		Description:	
DAR30551.DAT			1	2			Ī		Attn
25-Oct-94		******************************	3	4	5	<b>†</b>		**************************************	Disregard
***************************************			6	7	8	1		Urban Slow Doppler, TOA	Disregard 28.00
	**********************								20.00
·	*************	***************************************	9	10	11			Urban Fast Doppler, TOA	15.50
*************************************	·····	*************************							13.30
****	************************	***************************************	12	13	14			Rural Fast Doppler, TOA	17.00
	**********************	***************************************	ļ		<u> </u>	<u></u>			
***************************************	***************************************		15	16	17	ļ	-1	Terrain Obstructed Doppler	17.50
	*****************		18		20	ļ			17.00
***************************************	***************************************		21	22	23	<b> </b>	ļ	Terrain Obstructed Doppler, TOA	16.50
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		<u></u>	<u>.          </u>			<u> </u>		Additional Multipath Doppler Simulations	

Additional Multipath Doppler Simulations

Code: C Test C-6

File Name: DAR30803.XLS C-6 DAT

Test AT&T	D-Series	Co-Channe	l, 1st and 21	nd Adjac	ent
Program Material:	Glockenspie	1			
	Level	Attn	D/U	Units	EO&C
D-1					
Co-Channel	TOA	15.25	11.40	dΒ	Small drop out.
	POF	14.25	10.40	dВ	Excessive muting.
D-2	TOA	8.50	-15.35	dB	Small drop outs or flutters.
Lower	İ				and the state of Matters.
1st Adjacent	POF	8.00	-15.85	dB	Excessive Muting.
Upper	TOA	6.00	-17.85	dB	Small drop outs or flutters.
1st Adjacent	POF	5.25	-18.60	ďΒ	Engagin Mark
D-3	TOA	0.00	-23.85	dB	Excessive Muting.  Not attainable with these hardware
Lower			23.55	QI)	settings.
2nd Adjacent	POF	0.00	-23.85	dΒ	i i i i i i i i i i i i i i i i i i i
	TOA	0.00	-23.85	đΒ	Not attainable with these hardware
Upper					settings.
2nd Adjacent	POF	0.00	-23.85	dB	
Addition	al Comments:				
n	AT Reference: I	3 4 D 2 0 4 0 1 T	<b>.</b>		
			DAI ulator Confi	ouration	:
Test Dat	te: 7-Sep-94	· · · · · · · · · · · · · · · · · · ·		Desired	Undesired
	rs: DML, ST	6	WOUT	-15.20	Olidesiled
		I	L	41.60	
		3	WIN	-56.80	dBm -52.95 dBm

DAT File Number	Time Start	Code Stop		S	art I	Ds		Description	Attn
DAR30401.DAT	**********	M	1	2				Glockenspiel Clear Channel	63.75
7-Sep-94	************************	***************************************	3	4	5	6	7	TOA, Co-Channel	15.25
	***************************************	***************************************	ļ <u>.</u>	ļ				***************************************	
***************************************		***************************************	8	ļ	17			Disregard #8-17	**********************
***************************************	********************	******************	18	19					*******************************
***************************************	) <del>***************</del>		20	21	22	23	24	Soprano Clear Channel TOA, Co-Channel	63,75
***************************************	***************************************	************************	1.20					TOA, Co-Channel	15.00
***************************************	**********************	***************************************	25	26	********	<b></b>		Clarinet Clear Channel	~~~~~
	***************************************	***************************************	27	28	29	**********		Beyond TOA	63.75
***************************************	*14*********************	***************************************		İ					15.00
			30	31				Clarinet Clear Channel	63.75
***************************************	*************************	a	32	33				Beyond TOA	15.25
}}}		*******************************			**********	····			***************************************
	·····	*****************	34	35	*********	*********	,	Clarinet Clear Channel	63.75
***************************************	******************************	**********************	36	37	38			TOA, Co-Channel	15.50
***************************************	.,	***********************	39	40	41	******			
*************************************	***************************************	***************************************	39	40	41			Glockenspiel Upper 1st Adjacent TOA	6.00
***************************************	A+	***************************************	42	43	44		**********	Soprano Upper 1st Adjacent TOA	***************************************
*******************************	)*************************************	**************	<u>:</u>				,	bopratio Opper 1st Adjacent TOA	6.00
	***************************************	***************************************	45	46	47		**********	Clarinet Upper 1st Adjacent TOA	6.25
	************************			************					0.23
********************************	******		48	49	50	51	52	Disregard #48-52	**************
*************************************	****************	***************************************							******************************
***************************************			53	54				Glockenspiel Lower 1st Adjacent TOA	8.50
***************************************	*****	***********************				**********	•••••		*******************************
***************************************	***************	************************	55	56		**********	********	Soprano Lower 1st Adjacent TOA	8.75
Pil+v(-stv=rally);;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;	***************************************	******************************							
***************************************	***************************************	***************************************	57	58	59	60	61	Clarinet Lower 1st Adjacent TOA	8.25
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Code: C

**D-Series Recordings** 

File Name: DAR30803.XLS D DAT

Test AT&T	E-1	Co-Chann	el with Mul	tipath (Ray	yleigh)
Program Material:	Glockensp	iel	·		
Scenario					
114	Level	Attn	D/U	Units	EO&C
#1 Urban Slow	TOA	49.75	40.71	dΒ	Small drop out or flutter. Without multipath audio is clean.
	POF	40.00	30.96	dB	Excessive Muting.
#2 Urban Fast	TOA	48.75	39.71	dВ	Small drop out. Without multipath audio is clean.
	POF	38.00	28.96	ďΒ	Excessive muting.
#3 Rural Fast	TOA	63.75	54.71	ďΒ	Simulation by itself produces defects in the recovered audio.  DAR30404.DAT ID # 1-3
	POF	63,75	54.71	ďВ	
#4 Ferrain Obstructed	TOA	63.75	54.71	dB	Simulation by itself produces defects in the recovered audio.  DAR30404.DAT ID # 4-6
	POF	63.75	54.71	dB	
Test Date	e: 28-Sep-94		1	Desired	Undesired
Tester	Testers: DML, RMc			-15.03 40.79 -55.82	dBm -15.28 dBm dB 31.50 dB

Test AT&T	E-2	Lower 1st	Adjacent w	ith Multip	ath (Rayleigh)	
A1&1 Program Material:	Glockenspie	al .				
Scenario						
	Level	Attn	D/U	Units	EO&C	
#1 Urban Slow	TOA	15.75	8.71	dВ	Small drop out or flui	tter.
	POF	5.75	-1.29	dΒ	Excessive Muting. Without multipath au	dio is clean
#2 Urban Fast	TOA	13.25	6.21	dВ	Small drop out.	
	POF	4.25	-2.79	dB	Excessive muting. Without multipath au	dio is clean.
#3 Rural Fast	TOA	63.75	56.71	ďB	Simulation by itself p the recovered audio. DAR30404.DAT	roduces defects in
	POF	63.75	56.71	dВ		
#4 Terrain Obstructed	TOA	63.75	56.71	ďΒ	Simulation by itself p the recovered audio. DAR30404.DAT	roduces defects in  ID # 4-6
	POF	63.75	56.71	dB		
	ate: 28-Sep-94 ers: DML, RMc		Signal IL 3WIN	Desired -15.03 40.79 -55.82	dB	Undesired -17.28 dBm 31.50 dB -48.78 dBm

Test AT&T	E-3	Lower 2nd	Adjacent w	vith Multip	oath (Rayleigh)	
Program Material:	Glockensp	oiel				
Scenario						
	Level	Attn	D/U	Units	EO&C	***************************************
#1 Urban Slow	TOA	0.00	-7.04	dB	Insufficient undesired Not attainable	signal level
	POF	0.00	-7.04	dΒ		
#2 Urban Fast	TOA	0.00	-7.04	dB	Insufficient undesired Not attainable	signal level
	POF	0.00	-7.04	dB		
#3 Rural Fast	TOA	63.75	56.71	dB	Simulation by itself protection the recovered audio.  DAR30404.DAT	roduces defects in
	POF	63.75	56.71	đВ		
#4 Ferrain Obstructed	TOA	63.75	56.71	dВ	Simulation by itself prothe recovered audio.  DAR30404.DAT	roduces defects in  ID # 4-6
	POF	63,75	56.71	dB		
Test D	ate: 28-Sep-94			Desired	<u> </u>	Undesired
	ters: DML, RM	c	Signal IL	-15.03 40.79	dBm dB	-17.28 dBm 31.50 dB
			3WIN	-55.82	dBm	-48.78 dBm

DAT File Number	Time Start	Code Stop		S	lart I	Ds		<b>Description</b>	
DAR30404.DAT			1	2	3	T		Rural Fast Rayleigh No Added Interference	Attn
28-Sep-94	***********************		·····	·····			,	Adulai Pasi Rayleigii No Added Interierence	63.75
***************************************	······	***************************************	4	5	6	······	·	Tomorio Olivini di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di Nationali di	***************************************
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Code: C Test E-Series

File Name: DAR30803.XLS E DAT

Test AT&T		E-1	Co-Chann	el with Mult	tipath (Doj	ppler)
Program Ma	aterial:	Glockenspi	<u>el</u>	· · · · · · · · · · · · · · · · · · ·		
Scenario						
		Level	Attn	D/U	Units	EO&C
#1 Urban Slow		TOA	25.75	29.47	ď₿	Small drop out.
		POF	15.00	18.72	ďВ	Excessive muting with some pops.
#2 Urban Fast		TOA	22.50	26.22	đВ	Small drop out.
		POF	17.00	20.72	dB	Excessive muting with some pops.
#3 Rural Fast		TOA	25.00	28.72	dB	Small drop out or flutter.
		POF	14.00	17.72	dB	Excessive muting
#4 Terrain Obstructed		TOA	26.50	30.22	dB	Small drop outs.
	_	POF	15.50	19.22	dB	Excessive muting.
	Test Date:	25-Oct-94			Desired	Undesired
	Testers:	DML, RMc		Signal	-15.08	<del> </del>
				IL	40.63	
				3WIN	-55.71	dBm -59.43 dBm

Test AT&T	E-2	Lower 1st	Adjacent w	ith Multipa	ath (Doppler)
Program Materia	d: Glockenspie	1			
Scenario					
	Level	Attn	D/U	Units	EO&C
#1 Urban Slow	TOA	24.00	1.22	dB	Small drop out.
	POF	8.50	-14.28	ďΒ	Excessive muting.
#2 Urban Fast	TOA	24.50	1.72	dВ	Small drop out.
	POF	9.50	-13.28	dB	Excessive muting with some pops.
#3 Rural Fast	TOA	25.50	2.72	dВ	Small drop out or flutter.
	POF	11.00	-11.78	ďΒ	Excessive muting
#4 Terrain Obstructed	TOA	26,00	3.22	dВ	Small drop outs.
	POF	10.50	-12.28	ďΒ	Excessive muting.
4	Date: 25-Oct-94 esters: DML, RMc		Signal IL 3WIN	Desired -15.08 40.63 -55.71	dBm -15.43 dBm dB 17.50 dB

Test AT&T	E-3	Lower 2nd	Adjacent v	vith Multip	oath (Doppler)	
Program Material:	Glockenspi	el				
Scenario						
<del>.</del>	Level	Attn	D/U	Units	EO&C	
#1 Urban Slow	TOA	0.00	-22.78	ď₿	Not attainable	
	POF	0.00	-22.78	dВ	Not attainable	
#2 Urban Fast	TOA	0.00	-22.78	dВ	Not attainable	
	POF	0.00	-22.78	đВ	Not attainable	
#3 Rural Fast	TOA	0.00	-22.78	dВ	Not attainable	, · · · · · · · · · · · · · · · · · · ·
	POF	0.00	-22.78	ďΒ	Not attainable	
#4 Terrain Obstructed	TOA	0.00	-22.78	ďВ	Small drop outs.	
	POF	0.00	-22.78	đВ	Not attainable	
	ate: 25-Oct-94			Desired	·	Undesired
Teste	ers: DML, RMc		Signal	-15.08	dBm	-15.43 dBm
			IL	40.63	dB	17.50 dB
		;	3WIN	-55.71	dBm	-32.93 dBm

Test AT&T	J-1	Re-Acquisition			
Program l	Material	Mozart (Track 67 o	n SQAM disk)		
	Toff(s)	POF-2	Re-Acquisition Time (s) POF-4	POF-6	
	30	1	1	11	
		1	1	1	
		1	1	1	
		1	1	1	
		1	1	1	
	Ачегаде	1	1	1	
		uator Setting :	10.50 dB	······································	
	Desired Sig	gnal Level :	-55.50 dBm		
	Noise U de	Reference :	-41.41 dBm		
Add	itional Comn		a time is the value listed $\pm 0.5$	seconds.	
Test Date	: 29-Sep-95				_
	: DML, RM			**	
	• "				

File Name: DAR30803.XLS J-1

	-2 R	e-Acquisition wi	th Multipath		
AT&T	U	rban Slow Raylei	gh		
rogram Materia	l M	lozart (Track 67 c	on SQAM disk)		
Test.	(-)	207.	Re-Acquisition Time (s)	•	•
1 511	n (s)	POF-2	POF-4	POF-6	
:	5	1	1		
	-		<u>-</u>	1	
1	0	1	1	0	
			,		
1	5	0	1	1	
•	0		··· <del>····</del>		
2	Ü	0		1	
2	5	1	1		
	-			1	
Avera	ige	0.6	1	0.8	
		or Setting :	18.50 dB		
	ed Signa		-55.50 dBm		
Noise	0 dB R	eference :	-41.41 dBm		
Additional (	Commen				
		Re-Acquisition	n time is the value listed $\pm 1$ se	cond.	
Test Date: 28-Se	m 04				
Testers: DML		DM ₀			
1 John Divid	, .m., D1	, KIVIC	•		

	-Acquisition with N ban Fast Rayleigh	Multipath		
	ozart (Track 67 on S	QAM disk)		
•		**		
Tsim (s)	POF-2	Re-Acquisition Time (s POF-4	POF-6	
5	1	2	1	
10	1	1	1	
15	1	1	1	
20	1	1	1	
25	1	1	1	
Average	11	1.2	1	
POF Attenuate		19.00 dB		
Desired Signal Noise 0 dB Re		-55.50 dBm		
Additional Commen		-41.41 dBm		
		me is the value listed ±	1 second.	
	4			
est Date: 28-Sep-94				
Testers: DML, TK, ST	, RMc			

File Name: DAR30803.XLS J-2 UFR

T&T	Re-Acquisition wit Lural Fast Rayleigh			
ogram Material N	Mozart (Track 67 o	n SQAM disk)		
		Re-Acquisition Time (s)		
Tsim (s)	POF-2	POF-4	POF-6	
5	1	1	1	
10	1	1	1	
15	1	1	1	
20	1	1	1	
25	1	1	1	
Average	1	1	1	
POF Attenua		30.75 dB		
Desired Signs		-55.50 dBm		
Noise 0 dB R	eference :	-41.41 dBm		
Additional Comme		time is the value listed ± 1 s	econd.	
est Date: 28-Sep-94	n na r			
Testers: DML, TK, S7	, RMc			

Test J-2 AT&T Program Material	Re-Acquisition wit	Rayleigh		
Frogram (waterial	Mozart (Track 67 o	n SQAM disk)		
Tsim (s)	POF-2	Re-Acquisition Time (s) POF-4	POF-6	
5	1	1	1	
10	1	1	11	
15	1	1	1	
20	1	1	1	
25	1	1	1	
Average	1	1	1	
Desired S	nuator Setting : ignal Level : B Reference :	21,50 dB -55,50 dBm -41,41 dBm		
Additional Com		n time is the value listed ± 1 so	econd.	-
Test Date: 28-Sep-9 Testers: DML, TK				

File Name: DAR30803.XLS J-2 TOR

Test J-2 AT&T Program Material	Re-Acquisition with Urban Slow Dopple Mozart (Track 67 c	न		
Tsim (s)	POF-2	Re-Acquisition Time (s) POF-4	POF-6	
5	1	1	<u> </u>	
10	1	1	1	
15	1	1	1	
.20	1	1	1	
25	1	1	1	
Average	1	1	1	
POF Attent Desired Sig Noise 0 dB		20.00 dB -55.71 dBm -41.18 dBm		
Additional Comm		n time is the value listed ± 1 se	econd.	
Test Date: 25-Oct-94 Testers: DML, RMc	:			

Test J-2 AT&T	Re-Acquisition with Multipath Urban Fast Doppler	
Program Material	Mozart (Track 67 on SQAM disk)	
Tsim (s)	Re-Acquisition Time (s) POF-2 POF-4 POF-6	
5	<u> </u>	
10	111	
15	1 1 1	
20	11	
25	<u> </u>	
Average	1 1 1 1	
Desired Si	nuator Setting         : 13.50 dB           signal Level         : -55.71 dBm           B Reference         : -41.18 dBm	
Additional Com	ments:  Re-Acquisition time is the value listed ± 1 second.	
Test Date: 25-Oct-94 Testers: DML, RM		

File Name: DAR30803,XLS J-2 UFD

Fest AT&T Program Ma	J-2	Re-Acquisition with Rural Fast Doppler	•		
Togram Ma	terrar	Mozart (Track 67 or	ii SQAIVI disk)		
	Tsim (s)	POF-2	Re-Acquisition Time (s) POF-4	POF-6	
	5	1	1	<u>!</u>	
	10	1	1	1	
	15	1	1	1	
	20	1	1	1	
	25	1	1	1	
	Average	1	1	1	
		uator Setting :	12.00 dB		
	_	gnal Level :	-55.71 dBm		
ı	Noise () dB	Reference :	-41.18 dBm		
Additio	onal Comn		time is the value listed ± 1 se	econd.	
Test Date:					
resters: 1	OML, RM	C			

Test J-2 AT&T Program Material	Re-Acquisition wi Terrain Obstructed Mozart (Track 67 o	Doppler		
		Re-Acquisition Time (s	· s)	
Tsim (	s) POF-2	POF-4	POF-6	
5	1	1	1	
10	1	1	1	
15	1	1	1	
20	1	1	1	
25	1	1	1	
Average		1	1	
	tenuator Setting :	14.50 dB		
	Signal Level :	-55.71 dBm		
Noise 0	dB Reference :	-41.18 dBm		
Additional Co	mments:			
	Re-Acquisitio	n time is the value listed $\pm$	l second.	
Test Date: 25-Oct	-94			
Testers: DML, I	- 1			
	74.74 W			

File Name: DAR30803,XLS J-2 TOD

Page 46 of 50

Test	B-1		Ancil	lary Data Cl	nannel							
Proponent				emonstratio								
Code:	C Gaussian Noise											
			_	BER								
				DEK			Units					
			TOA		POF		Onits					
	Attenuator	12.00	11.50	11.00	10.50		₫B					
	Co/No	11.85	11.35	10.85	10.35		dB					
	Log(BER)		-5.078	-2.509	-1.715							
	BER	0.00E+00	8.36E-06	3.10E-03	1.93E-02							
Test	B-2		Ancil	lary Data Cl	nannel							
				emonstratio								
				Co-Channel	i							
	<u> </u>			BER								
							Units					
				TOA		POF	CINE					
	Attenuator	26.50	26.00	25.50	25.00	24.50	₫B					
	d/u	13.21	12.71	12.21	11.71	11.21	dΒ					
	Log(BER)		-3.730	-2.649	-2.485	-1.535						
	BER	0.00E+00	1.86E-04	2.25E-03	3.27E-03	2.92E-02						
<b>.</b>												
Testers:	DML, RMc				approximated f	or						
Date:	13-Dec-94		this demonstrat	ion.								

Test	B-3	Ancillary D	ata Channel						
Proponent		Demonstration							
Code:	c	Multipath BER							
Urban Slow			pler	Units					
Ordan Slow	Attenuator	TOA	POF						
	Co/No	28.00	20.00	d₿					
		27.85	19.85	. dB					
	Log(BER) BER	-2.854	-2.253						
77 7	BEK	1.40E-03	5.58E-03						
Urban Fast		TOA	POF						
	Attenuator	15.50	13.50	₫B					
	Co/No	15.35	13.35	ď₿					
	Log(BER)	-2,447	-1.741						
	BER	3.57E-03	1.81E-02						
Rural Fast		TOA	POF						
	Attenuator	17.00	12.00	dB					
	Co/No	16.85	11,85	₫B					
i	Log(BER)	-1.681	-1.467						
	BER	2.09E-02	3.41E-02						
Terrain Obs	tructed	TOA	POF						
	Attenuator	16.50	14.50	dB					
	Co/No	16.35	14.35	ďΒ					
	Log(BER)	-1.704	-1.372	1					
	BER	1.98E-02	4.24E-02						
Testers:	DML, RMc	TOA and POF levels ha	ive been approximated for						
Date:	13-Dec-94	this demonstration.	**						

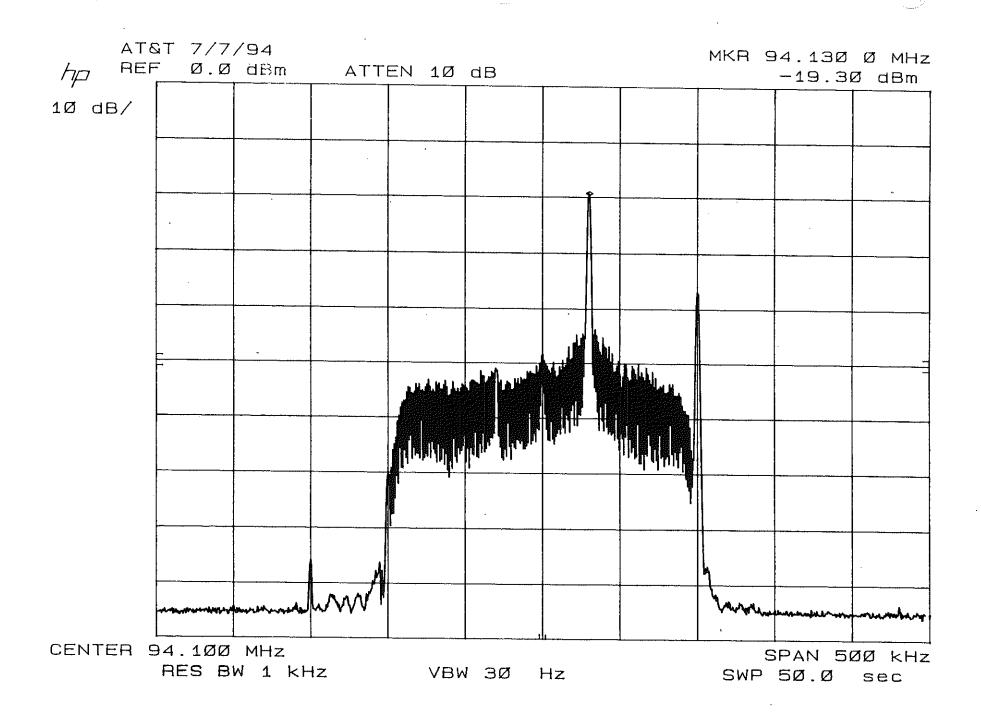
File Name: DAR30803,XLS BER D

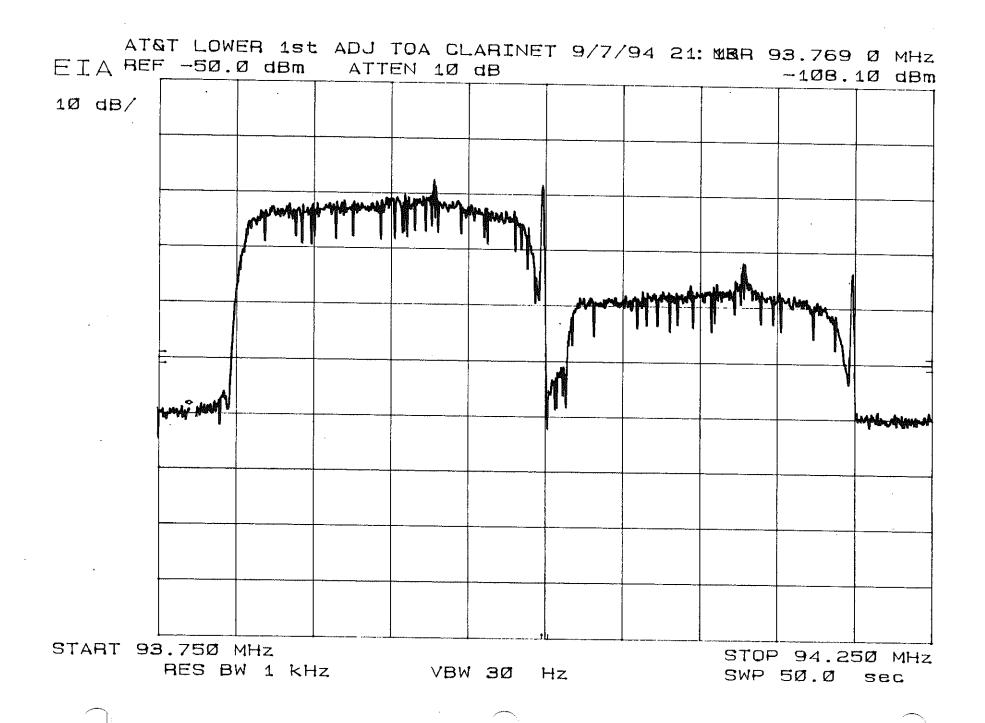
Test	B-3	Ancillary D	ata Channel						
Proponent			stration						
Code:	C	Multipath							
	_		ER						
	1								
			leigh	Units					
Urban Slow		TOA	POF						
	Attenuator	31.00	24.00	dB					
	Co/No	30.85	23.85	dB					
	Log(BER)	<b>-2</b> .908	-1.613						
	BER	1.24E-03	2.44E-02						
Urban Fast		TOA	POF						
	Attenuator	26.00	20.00	dB					
	Co/No	25.85	19.85	dB					
	Log(BER)	-2.060	-1.376						
	BER	8.71E-03	4.20E-02						
Rural Fast		TOA No Ado	ded Noise						
	Attenuator	63.75		dB					
	Co/No	63.60		dB					
	Log(BER)	-2.186							
	BER	6.51E-03							
Terrain Ob	structed	TOA No Ado	ded Noise						
	Attenuator	63.75		dB					
	Co/No	63.60		dB					
	Log(BER)	-1.573							
	BER	2.67E-02							
İ	· ·								
Testers:	DML, RMc	TOA and POF levels ha	ave been approximated for						
Date:	13-Dec-94	this demonstration.							

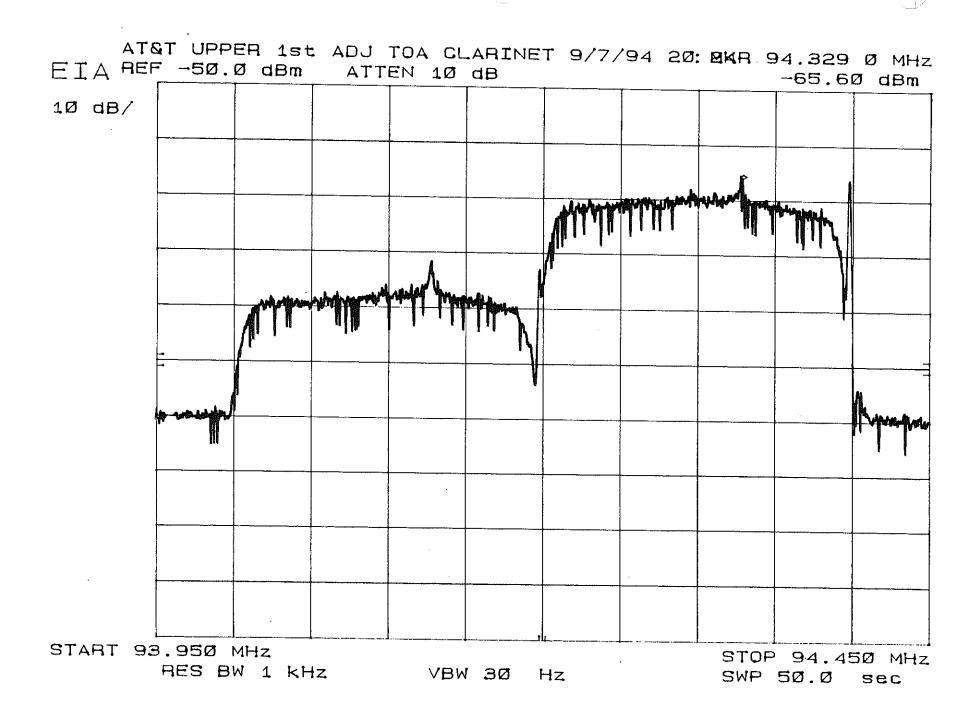
} eurs with no adoled more just fading.

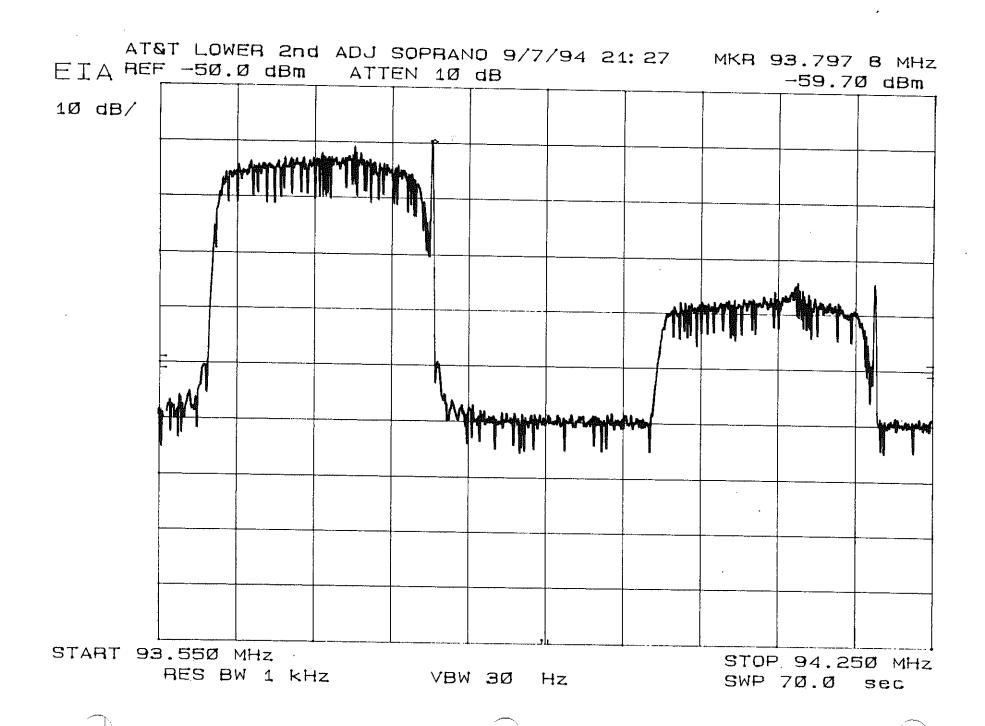
Test	B-3	Ancillary D	ata Channel								
Proponent		<del>-</del>	stration								
Code:	c	Multipath									
			•								
			ER								
			ecial	Units							
Obstructed		No Added Noise	(San Fran	4)							
	Attenuator	63.75		dB							
	Co/No	63.60		dB							
	Log(BER)	-3.178									
	BER	6.63E-04									
Rural Highy		TOA	POF (SLC)								
	Attenuator	12.75	11.75	dB							
	Co/No	12.60	11.60	dB							
	Log(BER)										
	BER										
Suburban		No Added Noise	(WSHW9	)							
	Attenuator	63.75		dB							
	Co/No	63.60		dB							
	Log(BER)	-2.311									
	BER	4.89E-03									
Terrain Obs	tructed	No Added Noise 5 min	No Noise Added 10 min								
	Attenuator	63.75	63.75	₫B							
	Co/No	63.60	63,60	dB							
	Log(BER)	-2.398	-1.930 (NOVA 4	1							
	BER	4.00E-03	1.18E-02								
Testers:	DML, RMc	TOA and POF levels ha	ave been approximated for								
Date:	13-Dec-94	this demonstration.	<del>= =</del>								

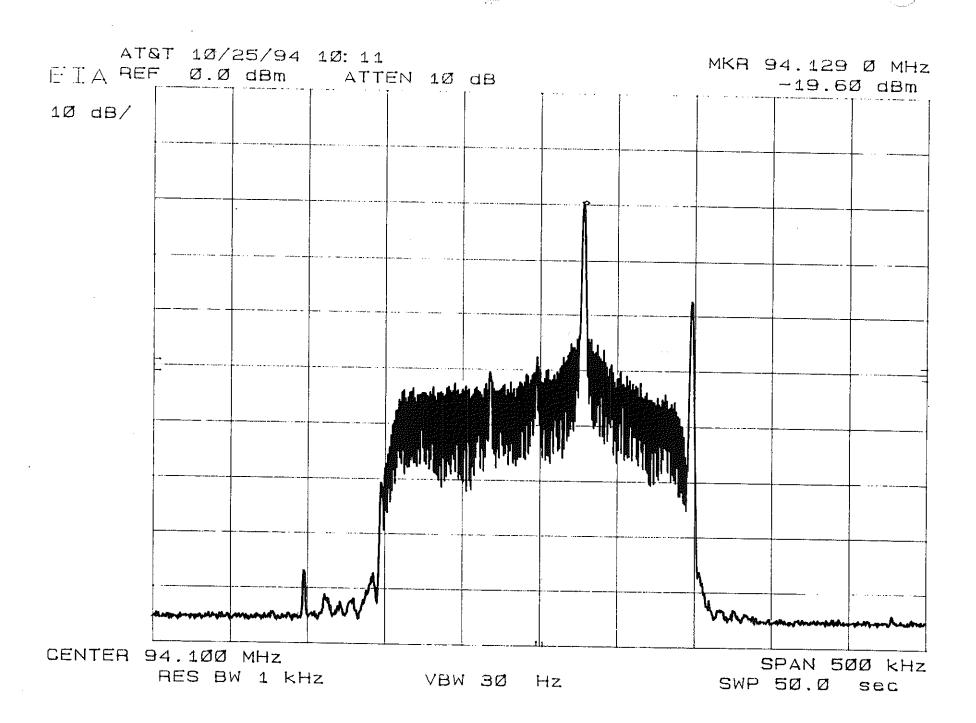
File Name: DAR30803,XLS BER S

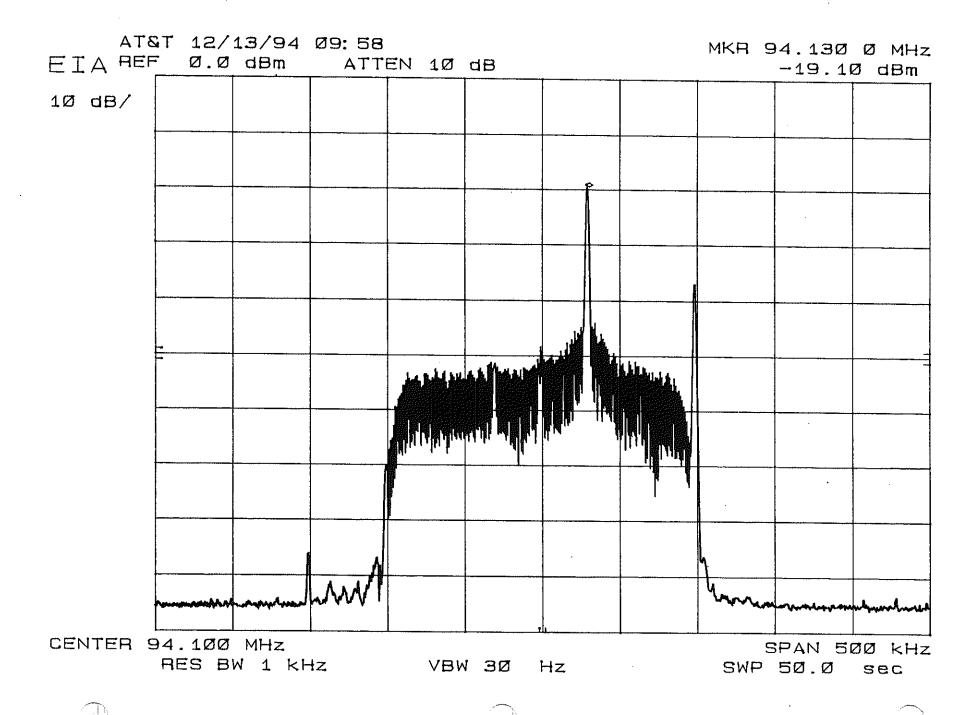












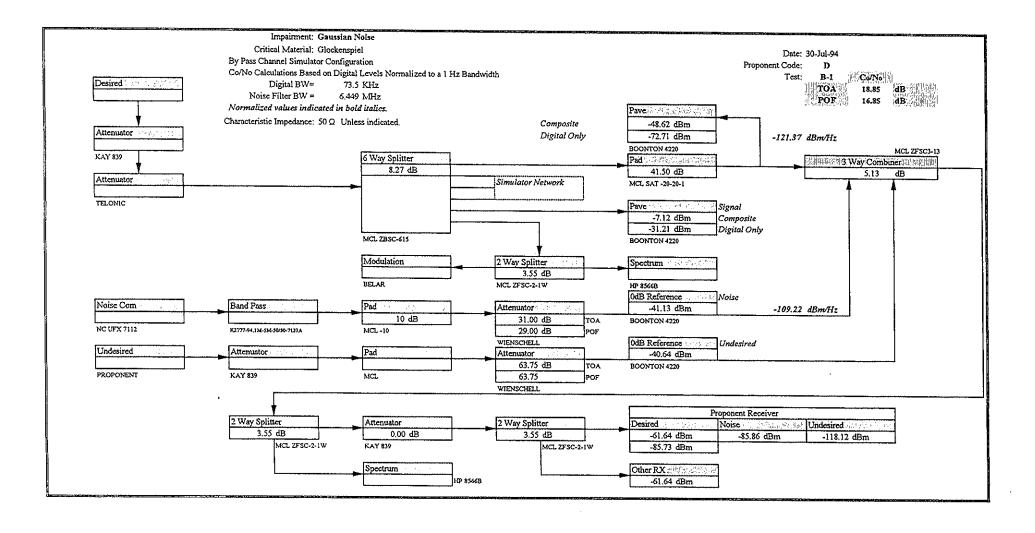
# **APPENDIX AD**

Digital Test Results AT&T/Amati IBOC LSB

Proponent: AT&T Amati LSB Code: D Digital Band Width: 7.35E+04 Hz Composite Band Width: 2.74E+05 Hz Peak/Average Composite: 1.67 dB Peak/Average Digital: 9.85 dB

Test	B-1			
Proponent		Gaussi	an Noise	
Code:	D			
				Units
Glockenspiel		TOA	POF	T
	Attenuator	31.00	29.00	dB
	Co/No	18.85	16.85	dB
		• "		
	<b></b>			
FO 4.0	TOA	Small drop out.		
EO&C		Manual Inc., and		
	POF	Many drop out or mutes.		
Soprano		TOA	POF	
	Attenuator	29.75	28.50	⊢ _{dB}
	Co/No	17.60	16.35	dB
			· · · · · · · · · · · · · · · · · · ·	"-
	TOA	Small drop out,		
EO&C				
	POF	Many drop out or mutes.		
Clarinet		TOA	POF	
Ciarmet	Attenuator	30.25	28.75	-  ,,,
	Co/No	18.10	16.60	dB dB
		10.10	10.00	ab ab
	TOA	Small drop out.		
EO&C		•		
ļ	POF	Many drop out or mutes.		
	Recording			
Notes:	Testers:	DML,ST		
1	Date:	30-Jul-94		
L				

File Name: DAR30804.XLS B-1

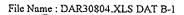


# EIA Digital Audio Radio DAT Recording Log

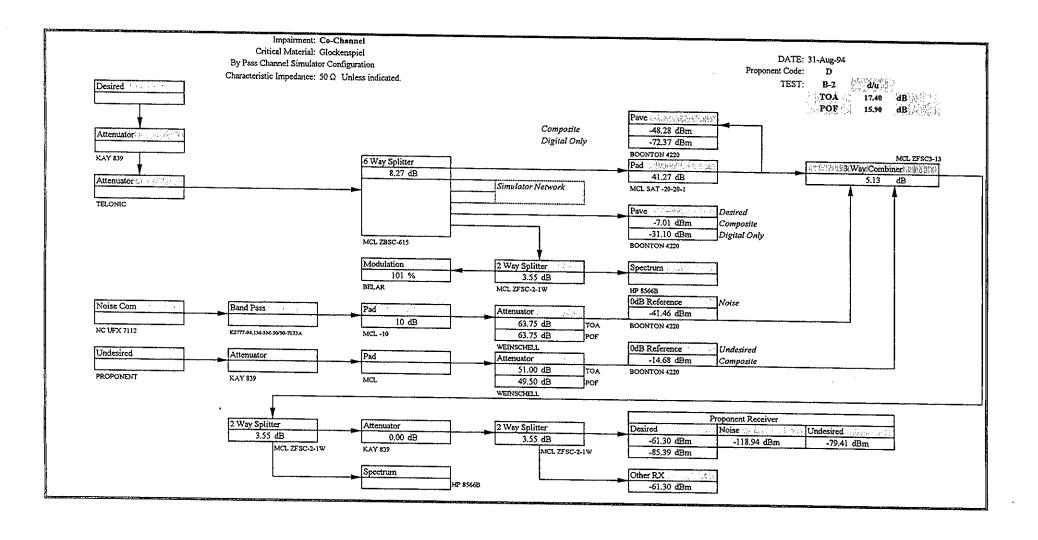
Number	Time Start	Code Stop			rogra ID#			Description	Attn
DAR30217.DAT			ı	2				Glockenspiel Clear Channel	63.75
30-Jul-94			3	4			**********	**************************************	32.50
*************	*******************************		5	6		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	*********		32.00
······································	*******************		7	8			*****		31.50
	************		9	10				TOA lab	31.00
***************************************	******************	***************************************	11	12					30.50
**************************************	***************************************	***************************************	13	14	*********				30.00
************************************	·		15	16	***********		*******		29.50
***************************************		ļ	17	18			*********	POF lab	29.00
***************************************	***************************************		19	20				Sync	63.75
***************************************	******************************		21	22					28.50
	***************************************	•					*******		
***************************************	******************		23	24 26	ļ	···········		Soprano Clear Channel	63.75
***************************************			25 27	28	ļ	<b></b>			31.25
***************************************		ļ	29	30	ļ				30.75
***************************************	<del></del>	·	31	32	ļ			TOA	30.25
( <u> </u>			33	34				TOA lab	29,75
***************************************	***************************************	****************	35	36		*********			29.25
[ <del>}</del>		•	37	38				POF lab	28.75
······································	***************************************	·	39	40	<b></b>		1177777777	Sync	28.50 63.75
		1	41	42	ļ				28.00
***************************************	***************************************	1	*******		ļ				20.00
***************************************		***************************************	43	44	ļ	ļ		Clarinet Clear Channel	63.75
		***************************************	45	46		1	ļ		31.75
***************************************			47	48		************	**********		31.25
***************************************			49	50		***********		***************************************	30.75
***************************************			51	52	53			TOA lab	30,25
		ļ	54	55					29.75
************************************			56	57					29.25
-149-144144-16444-1644-1644-1644-1644-16			58	59	<u> </u>		ļ	POF lab	28.75
·			60	61	ļ		ļ	Sync	63.75
\$\$ <del>\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$</del>		,	62	63	ļ				28,25
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Code: D

Impairment: Gaussian Noise



l'est	B-2			
roponent		Co-Cha	nnel	ļ
Code:	D I	00 0.ma		
	_			
				Units
Glockenspiel		TOA	POF	
	Attenuator	51.00	49.50	₫B
	d/u	17.40	15.90	dB
		Small drop out.		
EO&C				
	POF	Many mutes or drop outs.		
Soprano		TOA	POF	
	Attenuator	50.75	49.25	dB
	d/u	17.15	15.65	dB
	TOA	Small drop out.		
EO&C		Shan drop out.		
2000	POF	Many mutes or drop outs.		
Clarinet		TOA	POF	
Ciarmet	Attenuator		49.50	dB
	d/u		15.90	dB
		11.70	15.50	l db
	<b>**</b> 0.4			
EO&0	TOA	Small drop out.		1
EU&l	POF	Many mutes or drop outs,		
	101	lylany mutes of drop outs.		
		D 4 D 2 A 2 A 2 A 2 A 2 A 2 A 2 A 2 A 2 A 2		
	Recording			
Notes:	Testers: Date:	DML,DS		
	Date:	31-Aug-94		



# EIA Digital Audio Radio DAT Recording Log

DAT File Number	Time Start	Code Stop			rogra ID#			Description	Attn
DAR30237.DAT			1	2				Glockenspiel Clear Channel	63.75
31-Aug-94	***************************************		3	4					52.50
*************************************	******************		5	6			***********		52.00
**-***)******************************	******************************		7	8					51.50
***************************************	·	ļ	9	10				TOA lab	51.00
**************************************	*********************		11	12					50,50
***************************************	***************************************	ļ	13	14					50.00
***************************************	***************		15	16	<u> </u>			POF lab	49.50
*	****************	ļ	17	18				Sync	63.75
***************************************	***************************************	ļ	19	20					49.00
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***************************************		ļ	21	22	<u> </u>			Soprano Clear Channel	63.75
		ļ	23	24	ļ		<u> </u>		52.25
**************************************		ļ	25	26	ļ				51.75
			27	28					51,25
·	*******************	ļ	29	30	31	32	33	TOA lab	50.75
	***********************		34	35	***************************************	ļ			50.25
*******	***************************************		36 38	37 39	ļ	ļ			49.75
***************************************		ļ	*******	*********	ļ			POF lab	49,25
***************************************		<del> </del>	40	41	ļ			Sync	63.75
***************************************		ļ	42	43	ļ		ļ	***************************************	48.75
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***************************************		<b></b>	46	45 47	ļ		ļ	Clarinet Clear Channel	63.75
***************************************		ļ	48	47	ļ	ļ	ļ		52.50
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		<b></b>	52	53	<del> </del>	ļ	ļ	TOALL	51.50
			54	55	<del> </del> -		ļ	TOA lab	51.00
***************************************	ļ	<del></del>	56	57	<del> </del>		<del> </del>		50.50
· <del>/</del>	<del></del>	<del></del>	58	59	<b></b>		ļ	POF lab	50.00
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************************************	ļ		62	63	·	<del> </del>	ł	Sync	63,75
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Code: D

Impairment: Co-Channel

Test	B-3		****					
Proponent		Urban Slow Rayleigh						
Code:	D		Orba	an Slow Ray	leigh .			
coue.	D					ŀ		
Glockenspiel							Units	
Giockenspiei			TOA	and converse volume and an arrange	POF			
	Attenuator Co/No		63.75		63.75		dΒ	
	CO/NO		52.59		52.59		dB	
	TOA	Drop outs loss	Aban 1					
	IOA	Diop outs less	than I second in	duration.				
EO&C		L.,,,,		<del></del>	···			
	POF							
Soprano			TOA		POF	i i		
	Attenuator		63.75		63.75		dB	
	Co/No		52.59		52.59		dB	
						<del></del>		
	TOA	Drop outs less	than I second in	duration.				
FOAA	_		·					
EO&0	ن 							
	POF							
	ror							
Clarinet			TOA		7 505		· · · · · · · · · · · · · · · · · · ·	
	Attenuator		63.75		POF			
	Co/No		52.59		63.75		dB	
			32.39		52.59	<u> </u>	dΒ	
	TOA	Drop outs less	than I second in	duration				
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EO&0	5	· · · · · · · · · · · · · · · · · · ·						
	POF							
	Recor	ding Reference	: DAR30259.DA	.T				
Notes:		Testers	: DML,TK					
		Test Date	: 24-Aug-94					

File Name: DAR30804,XLS B-3 US

DAT File Number	Time s Start	Code Stop		Pro	ZI # 18	IDs		Description	Attn
DAR30259.DAT			1	2	3			Glockenspiel Clear Channel	63.75
24-Aug-94	**********************	1944-5414+	4	5	6	7	8	Urban Slow no added noise	63.75
J11-1		***************************************	*********		*********	**********	***********		
			9	10	11	**********	······	Soprano Clear Channel	63.75
********			12	13	14	15	16	Urban Slow no added noise	63.75
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************************************		r/********	17	18	19			Clarinet Clear Channel	63.75
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Proponent Code: D Impairment: Urban Slow Rayleigh

Proponent	B-3	Urban Fast Rayleigh						
Code:	D							
							Units	
Glockenspiel			TOA	///////////////////////////////////////	POF			
	Attenuator		63.75		63.75		₫B	
	Co/No		52.59	<u> </u>	52.59	<u> </u>	dB	
	TOA	Small to medium	duration dro	o outs.				
EO&C	>						*	
	POF							
Soprano			TOA		POF	r		
	Attenuator		63.75		63.75		dΒ	
	Co/No		52.59		52.59		ďΒ	
	TOA	Small to medium	n duration dro	p outs with occasi	onal pops or c	ick.		
EO&0		L.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,						
	-							
	POF							
Clarinet	POF		TOA	T I	POF			
Clarinet			TOA 63.75		POF 63-75		dR	
Clarinet	POF Attenuator Co/No		TOA 63.75 52.59		POF 63:75 52.59		dB dB	
Clarinet	Attenuator Co/No		53.75 52.59		63.75			
Clarinet	Attenuator		53.75 52.59	I in duration	63.75			
	Attenuator Co/No TOA		53.75 52.59	I in duration	63.75			
Clarinet EO&	Attenuator Co/No TOA		53.75 52.59	I in duration	63.75			
	Attenuator Co/No TOA		53.75 52.59	I in duration	63.75			
	Attenuator Co/No TOA		53.75 52.59	I in duration	63.75			
	Arenuator Co/No TOA	Pitch flutter less	63 75 52.59 than 1 second		63.75			
EO&0	Arenuator Co/No TOA	Pitch flutter less	63.75 52.59 than 1 second		63.75			
	Arenuator Co/No TOA	Pitch flutter less	63 75 52.59 than 1 second		63.75			

DAT File Number	Time Start	Code Stop		Pro	gran	IDs		Description	
DAR30260.DAT	************************		1	<u>2</u> 5	3			Glockenspiel Clear Channel	Attn
24-Aug-94			4	5	3 6	7	8	Urban Fast no added noise	63.75
***************************************	********			<u> </u>	İ	************			63.75
************************	**********************	47819444444444	9	10	11	**********		Soprano Clear Channel	
**********************	***!		12	13	14	15	16	Urban Fast no added noise	63.75
******************************				<u> </u>	************	*******	**********		63.75
***************************************			17	18	19			Clarinet Clear Channel	***************************************
			20	21	22	23	24	Urban Fast no added noise	63.75
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Proponent Code: D

Impairment: Urban Fast Rayleigh

Test	B-3					T	
Proponent			Rin	ral Fast Ray	leigh		
Code:	D			an a use realy	cign	ľ	
							Units
Glockenspiel			TOA		POF		Omis
	Attenuator		63.75		63 75		dB
	Co/No		52.59		52.59		dB
	<b>TO</b> .	Many short dro	p outs, level of	impairment app	roaching POF.	<del>'</del>	
	TOA	Continuaous fli	utter like sound	is coming from	an under		
EO&C	<u></u>	water source.					
EU&C	´ <del></del>						
	POF	•					
	FOF						
Soprano			TO 4	T			
oopi ano	Attenuator		TOA 63.75		POF		
	Co/No		52.59		63.75		dB
	00/110	Many short dro		l impairment appr	52.59		₫B
	TOA	Continuaous flu	tter like sound	is coming from	roaching PUF.		
		water source.	me bound	is coming from	an under		
EO&C	;			···			···
	POF						
Clarinet			TOA		POF		
	Attenuator		63.75		63.75		dΒ
	Co/No		52.59		52.59		dB
				·			
	TOA	Many short dro	p outs, level of	mpairment appr	oaching POF.		
	L				<b>J</b>		
EO&C	; 						<del></del>
					· · · · · · · · · · · · · · · · · · ·		
	POF						
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	Record	ding Reference:		T			
Notes:			DML TK				
		Test Date:	24-Aug-95				

File Name: DAR30804.XLS B-3 RF

DAT File Number	Time Start	Code Stop		Pro	græne	IDs		<u>.</u>	
DAR30261.DAT			1	2	3	i		Description (Classical Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control	Attn
24-Aug-95	***************************************	***************************************	4	5	6	7	8	Glockenspiel Clear Channel	63.75
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<u>  1888++++888-+979+994++9944+&gt;++2097+9944+&gt;++2004</u>	*************	***************************************	15	16	17	10	10	Soprano Clear Channel Rural Fast no added noise	63.75
***********************************	*******************************	*******		1		10	13	Rufai Fast no added noise	63.75
MD(	**************	***************************************	20	21	22		.,,,,,,,,,	Clarinet Clear Channel	
***************************************	*******************	***************************************	23	24	25	26	27	Urban Fast no added noise	63.75
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Proponent Code: D

Impairment: Rural Fast Rayleigh

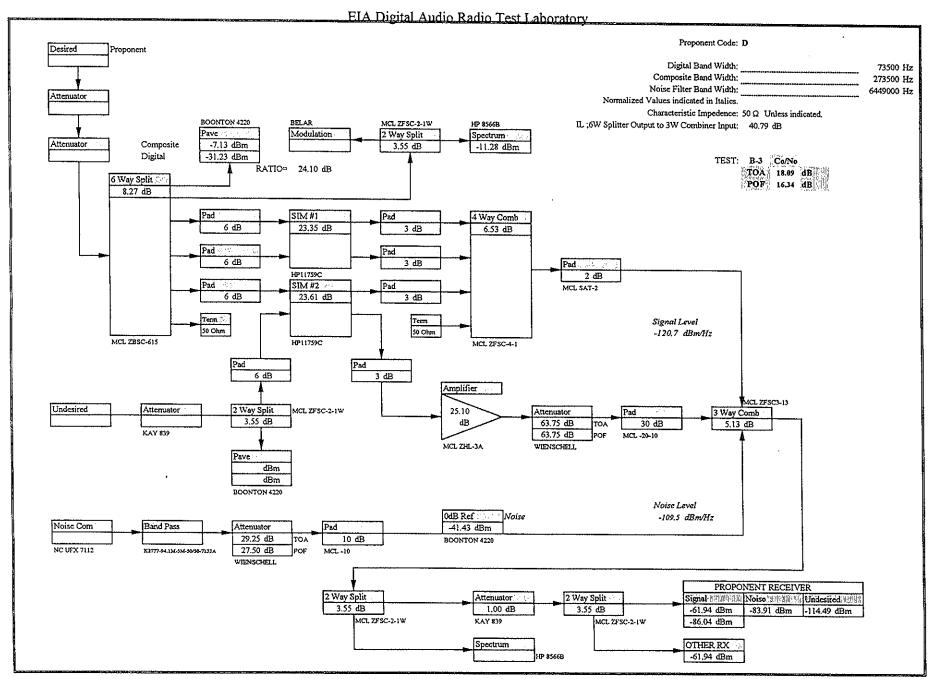
	B-3						
Proponent			Tarrai	o Obas	75		
Code:	D		Terrain	a Obstructed	Kayleign		
	D					1	
Glockenspiel			70.				Units
Old Chellspiel	Attenuator		TOA		POF		
	Co/No		63.75		63,75		dΒ
	COMO	Continuous flut	52.59		52.59	<u> </u>	dB
	TOA	Level of impair	with arop o	outs approaching	1 second in dura	ation.	
	1071	Level of impair	ment consiste	nt with POF.			
EO&C		L	<del> </del>		<del> </del>		
		Continuous flut	ter with drop	outs approaching	I managed to the	45	
	POF	Level of impair	ment consiste	nt with POE	i second in dura	ttion,	
			mone consiste	iit with FOP.			
Soprano			TOA	T	POF		
	Attenuator		63.75		63.75		
	Co/No		52.59		52.59		dB
		Continuous flut		outs approaching	32.39		dΒ
	TOA	Level of impair	ment consists	ous approaching	i second in dura	tion.	
	1		mont ootisiste	it with I OF.			
	1						
EO&C	;					·	
EO&C							
EO&C	POF						
EO&C							
			TOA		POF		
					POF		JD
	POF		63.75		63.75		dB
	POF Attenuator						dB dB
	POF Attenuator		63.75 52.59		63.75 52.59	ition	
	POF Attenuator Co/No	Continuous flut	63.75 52.59 ter with drop o	outs approaching	63.75 52.59	ution.	
	POF Attenuator Co/No TOA		63.75 52.59 ter with drop o	outs approaching	63.75 52.59	ation.	
Clarinet	POF Attenuator Co/No TOA	Continuous flut	63.75 52.59 ter with drop o	outs approaching	63.75 52.59	ation.	
Clarinet	POF Attenuator Co/No TOA	Continuous flut	63.75 52.59 ter with drop o	outs approaching	63.75 52.59	ation.	
Clarinet	POF Attenuator Co/No TOA	Continuous flut	63.75 52.59 ter with drop o	outs approaching	63.75 52.59	ation.	
Clarinet	POF Attenuator Co/No TOA	Continuous flut	63.75 52.59 ter with drop o	outs approaching	63.75 52.59	ation.	
Clarinet	POF Attenuator Co/No TOA POF	Continuous flut Level of impair	63.75 52.59 ter with drop or ment consister	outs approaching of with POF.	63.75 52.59	ation.	
Clarinet	POF Attenuator Co/No TOA POF	Continuous flut Level of impair	63.75 52.59 ter with drop of ment consister	outs approaching of with POF.	63.75 52.59	ation.	
Clarinet EO&C	POF Attenuator Co/No TOA POF	Continuous flut Level of impair	63.75 52.59 ter with drop of ment consister DAR30262.D DML,TK	outs approaching of with POF.	63.75 52.59	ation.	

File Name: DAR30804.XLS B-3 TO

Number	Time Start	Code Stop		Pro	g1 310	IDs		Description	
DAR30262.DAT			1	2	3	<u> </u>		Glockenspiel Clear Channel	63.75
24-Aug-95	***************************************		4	2 5	3 6	7	8	Suburban / Terrain Obstructed Fast no added noise	*************
-+	***************************************			**********	*******	· · · · · · · · · · · · · · · · · · ·	-+		63,75
	/		9	10	11		**********	Soprano Clear Channel	63.75
****			12	13	14	15	16	Suburban / Terrain Obstructed Fast no added noise	63.75
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***************************************	***************************************	*******************************	17	18	19		**********	Clarinet Clear Channel	63.75
***************************************	************	400100000000000000000000000000000000000	20	21	22	23	24	Suburban / Terrain Obstructed Fast no added noise	63.75
**********************************	*************************	***********************							03,73
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Proponent Code: D

Impairment: Terrain Obstructed Rayleigh



Test C-1	Impulse Response				
AT&T Amati LSB Program Material	Glockenspiel		5 Vp-p at atten 10.00 ns wide pulse	uator input.	
Pulse Repetition (Hz)	Attn at TOA (dB)	(Vp-p)	Attn at POF (dB)	(Vp-p)	EO&C
100	16.25	0.77	4.50	2.98	TOA small drop out, POF many drop outs.
200	18.00	0.63	16.75	0.73	TOA small drop out, POF many drop outs.
333	19.25	0.55	17.75	0.65	TOA small drop out, POF many drop outs.
666	20.00	0.50	18.75	0.58	TOA small drop out, POF many drop outs.
1000	21.00	0.45	19.25	0.55	TOA small drop out, POF many drop outs.
Additional Comments	s:				
Test Date: 26-Sep-9 Testers: DML, TK,					
<del></del>					

AT&T Amati		CW Respons	se						· · · · · · · · · · · · · · · · · · ·
	LSB	-							
Program Mate	rial	Mozart (track	: 67 SQAM I	isk)					
I .	Frequency	LEV I	LEV 2	LEV 3		Frequency	LEV 1	LEV 2	LEV 3
Test Point	MHz	POF	POF+6	POF+12	Test Point	MHz	POF	POF+6	POF+12
1	93.85	0	0	0	27	94.11	0	0	0
2	93.86	0	0	0	28	94.12	0	0	0
3	93.87	0	0	0	29	94.13	0	0	0
4	93.88	0	0	0	30	94.14	0	0	0
5	93.89	0	0	0	31	94.15	0	0	0
6	93.90	0	2	2	32	94.16	0	0	0
7	93.91	0	1	2	33	94.17	0	0	0
8	93.92	1	2	2	34	94.18	0	0	0
9	93.93	2	2	2	35	94.19	0	0	0
10	93,94	0	2	2	36	94.20	0	0	0
11	93.95	1	2	2	37	94.21	0	0	0
12	93.96	2	2	2	38	94.22	0	0	0
13	93.97	0	0	1	39	94.23	0	0	0
14	93.98	0	0	1	40	94.24	0	0	0
15	93.99	0	0	0	41	94.25	0	0	0
16	94.00	0	0	0	42	94.26	0	0	0
17	94.01	0	.0	0	43	94.27	0	0	0
18	94.02	0	0	0	44	94.28	0	0	0
19	94,03	0	0	0	45	94.29	0	0	0
20	94.04	0	0	0	46	94.30	0	0	0
21	94.05	0	0	0	47	94.31	0	0	0
22	94.06	0	0	0	48	94.32	0	0	0
23	94.07	0	0	0	49	94.33	0	0	0
24	94.08	0	0	0	50	94.34	0	0	0
25	94.09	0	0	0	51	94.35	0	0	0
26	94.10	0	0	0				ļ <u></u>	
Test Date:	27-Sep-94	<u> </u>	<u> </u>	O dB Attenus	tor Reference:	-30.4	4D		
	27-00p-74		0=CLEAN A			-30.4 IMATE TOA	man	2 ≥ POF	
			POF Attn=5	3.50dB		POF d/u=	35,45		

Test	C-3 Airplane Fl	utter	
AT&T Ai	mati LSB		
Program 1	Material Glockenspie	1	
	Reflected Pa	ith	
Scenario			EO&C
#1	400 Km/h Doppler		
	27.5 μs Delay		
		TOA	POF level of impairment.
	8,00 dB	8.00 dB	Many drop outs.
#2	200 Km/h Doppler	<del></del>	
	13.7 μs Delay		Ì
		TOA	TOA level of impairment. Small drop out
	6.00 dB	6.00 dB	or flutter. DAR30500.DAT
			#001-003
#3	100 Km/h Doppler		
	6.8 µs Delay		
		TOA	TOA level of impairment. Small drop out
	4.00 dB	4.00 dB	or flutter. DAR30500.DAT
T . D .			#004-006
	: 27-Sep-94		
Lesters	: DML, TK, RMc		
Tosters	. DIVIE, TR, RMIC		

Test C-4	Weak Signal Sensitivity
AT&T Amati LSB	
Program Material	Glockenspiel
	TOA (dBm) POF (dBm)
	-75 ≤ TOA < -74 -77 < POF ≤ -76
	•
Test Date: 20-Oct-94	4
Testers: DML, RMc	

File Name: DAR30804.XLS C-4

Test AT&T Amati LSB	C-6	Additional N	Multipath	Doppler Si	mulations	
Program Material:	Glockensp	oiel				
Scenario						
	Level	Attn	Co/No	Units	EO&C	
#1 Urban Slow	TOA	63.75	52.57	dΒ	Approximate 4 second	drop outs.
	POF	63.75	52,57	dB	TOA and POF are the	same.
#2 Urban Fast	TOA	63.75	52.57	dB	Small drop out.	
	POF	32.00	20,82	dB	Excessive flutter / drop	o outs.
#3 Rural Fast	TOA	38,00	26.82	₫B	Small drop out.	
	POF	33.00	21.82	dВ	Excessive flutter / drop	o outs.
#4 Terrain Obstructed	TOA	63.75	52.57	dB	Numerous medium to	long duration
	POF	63.75	52.57	₫B	same as TOA	
Test Date	: 20-Oct-9	<u> </u>		Desired	<u> </u>	Noise
Testers	: DML, RM	ic	Signal		dBm	140126
DAT Reference			IL			/ 6.45E+06 Hz
			3WIN		dBm 0dB Re	

DAT File Number	Time Start	Code Stop		St	art I	D₃		Description	Attn
DAR30550.DAT		DSB	I	2		T		Urban Slow	
20-Oct-94			3	4		·······		Urban Fast, TOA	63.75
			5	6		***********	<b> </b>	Rural Fast, TOA	29.00
***************************************		····	7	8		·····		Terrain Obstructed	26.75
/				**********					63.75
		LSB	9	10	*********	······	····	Urban Slow	63.75
•			11	12		**********		Urban Fast	*****************
		***************************************	13	14	**********	ļ'''''''		Rural Fast	63.75
***************************************		***************************************	15	16				Terrain Obstructed	38.00
	***************************************			**********	*********	ļ			63.75
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Additional Multipath Doppler Simulations

Code: D Test C-6

File Name: DAR30804.XLS C-6 DAT

Test	D-Series	Co-Channe	el, 1st and 2	nd Adjace	ent	
AT&T Amati LSB Program Material:	Glockenspi	el				
	Level	Attn	Davi	** **	12000	····
D-1	Cover	Atm	D/U	Units	EO&C	
Co-Channel	TOA	27.00	16.99	dB	Small drop out or	flutter.
	POF	25.50	15.49	dВ	Excessive muting.	· · · · · · · · · · · · · · · · · · ·
D-2	TOA	62.25	42,72	dB	Small drop outs or	r flutters
Lower					annu arop cats of	rations.
1 st Adjacent	POF	58.25	38.72	dB	Excessive Muting.	<u> </u>
Upper					374	
1st Adjacent					NA	
D-3	TOA	2.75	-16.78	ďВ	Small drop outs or	r flutters
Lower						Aronois.
2nd Adjacent	POF	0.00	-19.53	dB	Excessive Muting.	
Lower 2nd Adj	TOA	21.75	2,22	dB	Small drop outs or	r flutters.
Upper SB Mode Undesired	205	17.04				
Ondestred	POF	17.25	-2.28	₫B	Excessive Muting.	
	Undesired s	ignal for co-	-channel ≖		-38.63 dBm	
DA	T Reference:					
		By Pass Sir	nulator Conf	guration.		
	: 22-Sep-94			Desired	=	Undesired
Testers	: DML, TK,	ST, DS	6WOUT	-7.21	dBm	
			IL	41.43	3 dB	
,			3WIN	-48.64	dBm	-29.11 dBm
		<del></del>				1st & 2nd Adj

DAT File Number		Code Stop		S	art I	Ds		Description	
DAR30403.DAT			1	2	3			DSB Co-Channel TOA	Attn
22-Sep-94	************	***************************************			<del>-</del>		······	DOD GOODIAMIC TOX	20.50
			4	5	6	<b></b>		DSB Lower 1st Adj TOA	
***************************************						ļ			41.25
***************************************	********************		7	8	9	10	11	DSB Upper 1st Adj Disregard	41.50
······································	***************************************		12	13				Disregard	41.25
********************************		·	14	15	16			TOA	41.25
······································	/	*****	ļ	ļ					71,22
***************************************		, , <del>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</del>	17	18	19		<u> </u>	DSB Lower 2nd Adjacent TOA	4.00
***********************************	***********	·-··							
*********************************	******************************	***************************************	20	21	22			LSB Lower 2nd Adjacent TOA	2.75
<del> </del>	*******************		23						***************************************
***************************************	·····	***************************************	23	24	25	26		LSB Lower 2nd Adjacent USB undesired TOA	21.75
	***************************************	***************************************	27	28	29		<b></b>	T CD T	
***************************************	***************************************	******************	- 21		29		ļ	LSB Lower 1st Adjacent TOA	62.25
***************************************	***************************************	***************************************	30	31	32	ļ	······	LSB Co-Channel TOA	***************
***************************************		***************************************		·				LOD CO-Channel TOA	27.00
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Code: D

D-Series Recordings

File Name: DAR30804.XLS D DAT

Cest	E-Series			1000	
T&T Amati LSB					
rogram Material:	Glockenspiel				
	E-Series	tests were un	necessary due		
	to the eff	ected perform	ance of this systen	n with multipath	
	impairme	ent.		•	
					-
Test Date	: 22-Sep-94		Desired		Undesired
Testers	: DML, TK,ST, DS	Signal	-7.15 dBm		O HAOSHOU
		IL	40.79 dB		
		3WIN	-47.94 dBm		
	_				

Fest J-1 R	e-Acquisition			
	ozart (Track 67 on SQ	AM disk)		
	Q	e-Acquisition Time (s	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	
Toff(s)	POF-2	POF-4	POF-6	
30	3	2	2	
	3 .	3	1	
	1	2	1	
	3	4	2	
	3	3	1	
Average	2.6	2.8	1.4	
POF Attenuate Desired Signate Noise 0 dB R	d Level : -4	.00 dB .8.48 dBm .1.45 dBm		
Additional Commer		e is the value listed ±	0.5 seconds.	
Test Date: 26-Sep-95 Testers: DML, TK, R	Mc			

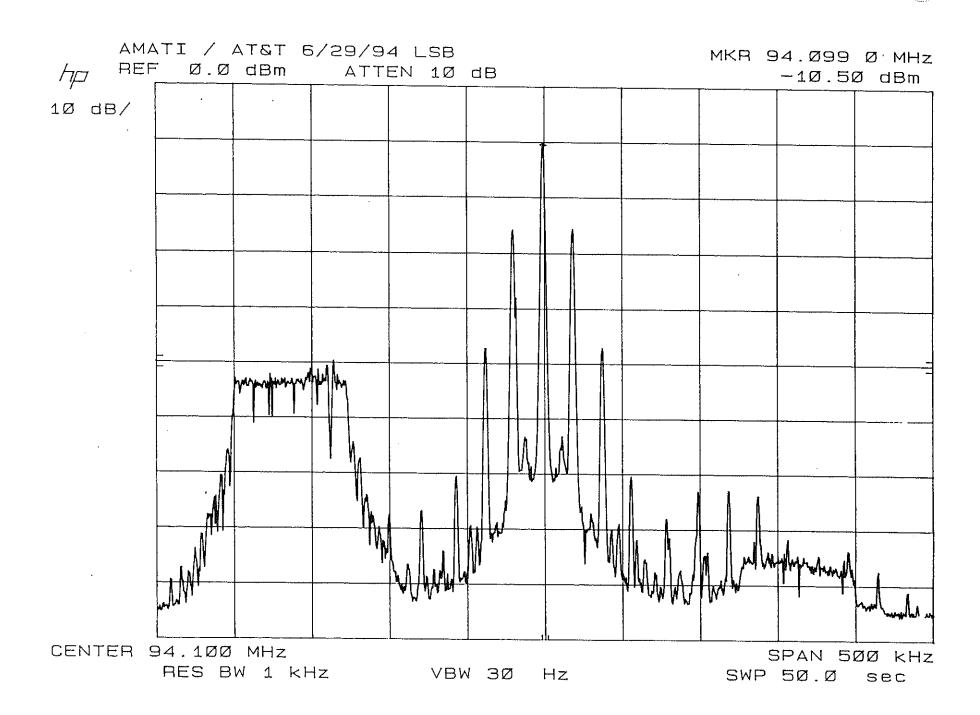
File Name: DAR30804.XLS J-1

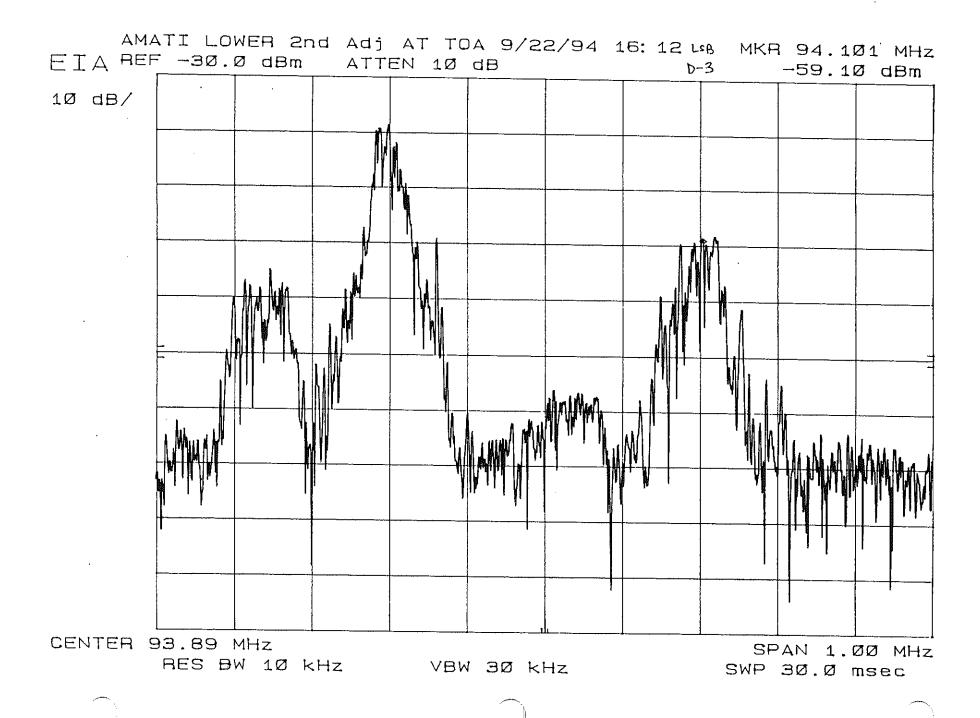
Test AT&T Am	J-2			h Multipath		
rogram M		Urban Slow		gn n SQAM disk)		
TOGIAM IV	accitat	Mozatt (11ac	K 0 / 0	n SQAM disk)		
				Re-Acquisition Time (s)		
	Tsim (s)	PC	F-2	POF-4	POF-6	
	5	<u> </u>				
	10					
	15	<u></u>				
	20				· · · · · · · · · · · · · · · · · · ·	
	25				-	
	Average		0	0	0	
	POF Atter	nuator Setting	:	63.75 dB		
		ignal Level	:			
	Noise 0 dl	B Reference	:	-41.42 dBm		
Addi	tional Com	ments:		100-100-100-100-100-100-100-100-100-100		
				OF or beyond with out adde	d noise.	
		It was	not fea	sible to take this data.		
Test Date:	27-Sep-9	4	·			
	DML, TK					
	•					

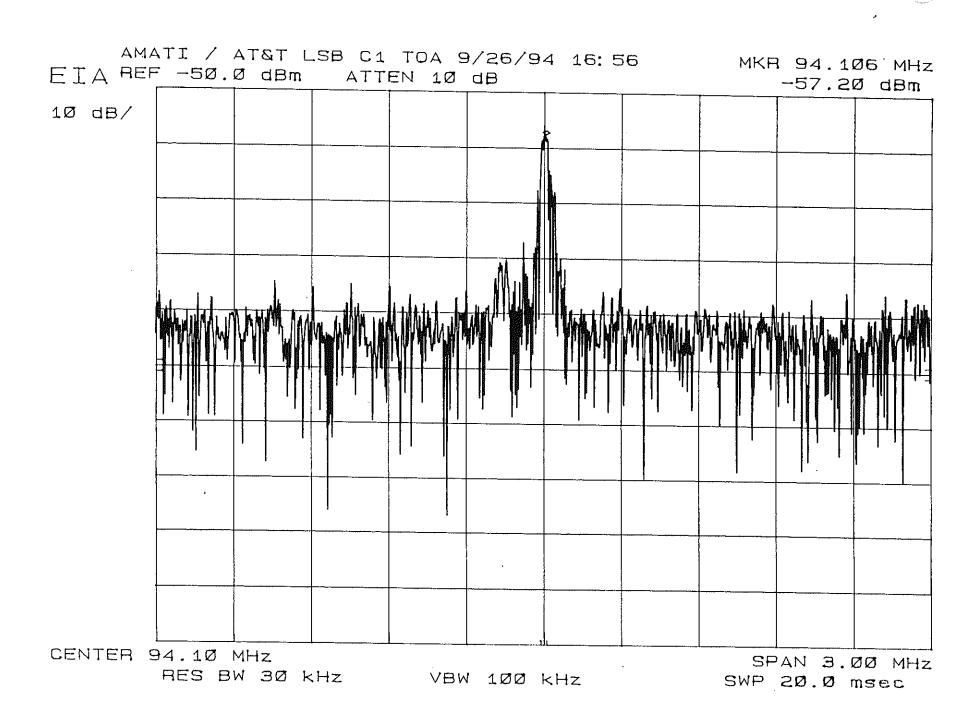
	Acquisition with			
	ın Fast Rayleigh			
Program Material Moz	art (Track 67 oi	n SQAM disk)		
Tsim (s)	POF-2	Re-Acquisition Time (s) POF-4	POF-6	
5	2	1	2	
10	2	3	3	
15	2	3	3	
20	2	2	2	
25	2	1	2	
Average	2.0	2,0	2.4	
POF Attenuator		45.75 dB		
Desired Signal I		-48.45 dBm		
Noise 0 dB Refe	rence ;	-41.42 dBm		
Additional Comments:				
- January Committee,		n time is the value listed ± 1 s	econd.	
	•			
Test Date: 27-Sep-94				
Testers: DML, TK, ST				

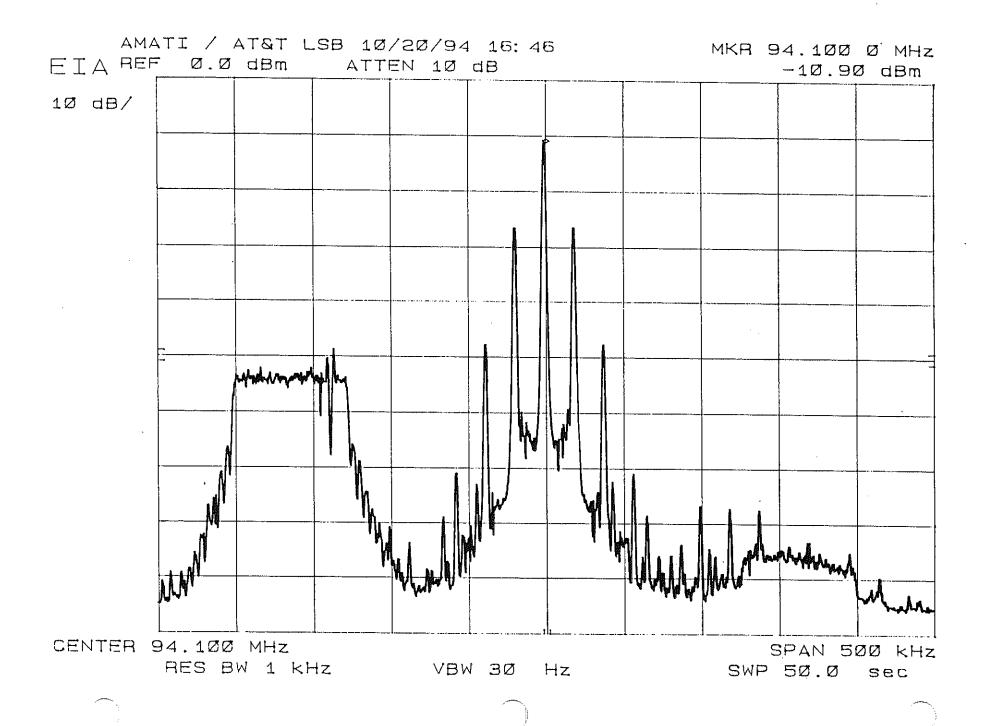
AT&T Amati LSB Ru	-Acquisition v ral Fast Raylei zart (Track 67	gh				***
		Re	-Acquisition T	ime (s)		
Tsim (s)			POF	(-)		
5			2	_		
10			1			
15			3			
20			1	<del></del>		
25			2	<del></del>		
Average			1.8			
POF Attenuate		63.7	75 dB			
Desired Signal		-48	.45 dBm			
Noise 0 dB Re	ference :	-41	.42 dBm			
Additional Comment		ion time	is the value lis	ted ± 1 second	1.	 
Test Date: 27-Sep-94			·····			
Testers: DML, TK, ST			erio tested at l vould impair t			

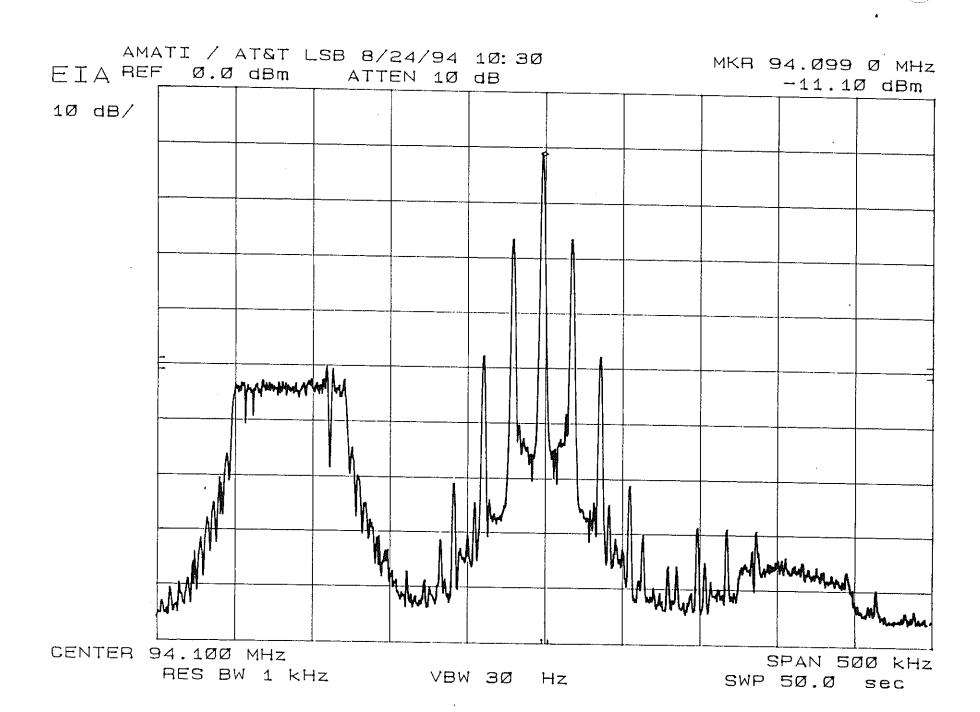
AT&T Amati LSB S		ith Multipath n Obstructed Rayleigh on SQAM disk)		
Tsim (s)	POF-2	Re-Acquisition Time (s) POF-4	POF-6	
5	<del></del>			
10				
15				
20				
25	<del></del>			
Average	0	0	0	
POF Attenua	tor Setting :	63.75 dB		
Desired Signa	al Level :	-48.45 dBm		
Noise 0 dB R	Reference :	-41.42 dBm		
Additional Comme				
		POF or beyond with out added	noise.	
	It was not fo	asible to take this data.		
Test Date: 27-Sep-94				
Testers: DML, TK, S	Т			
. ,				

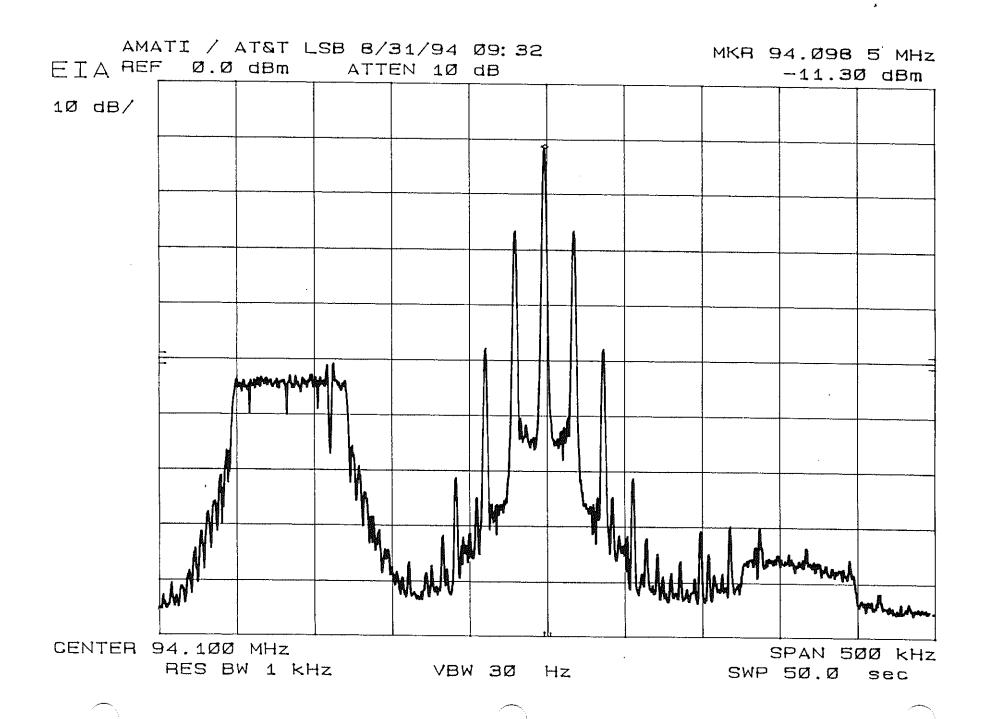


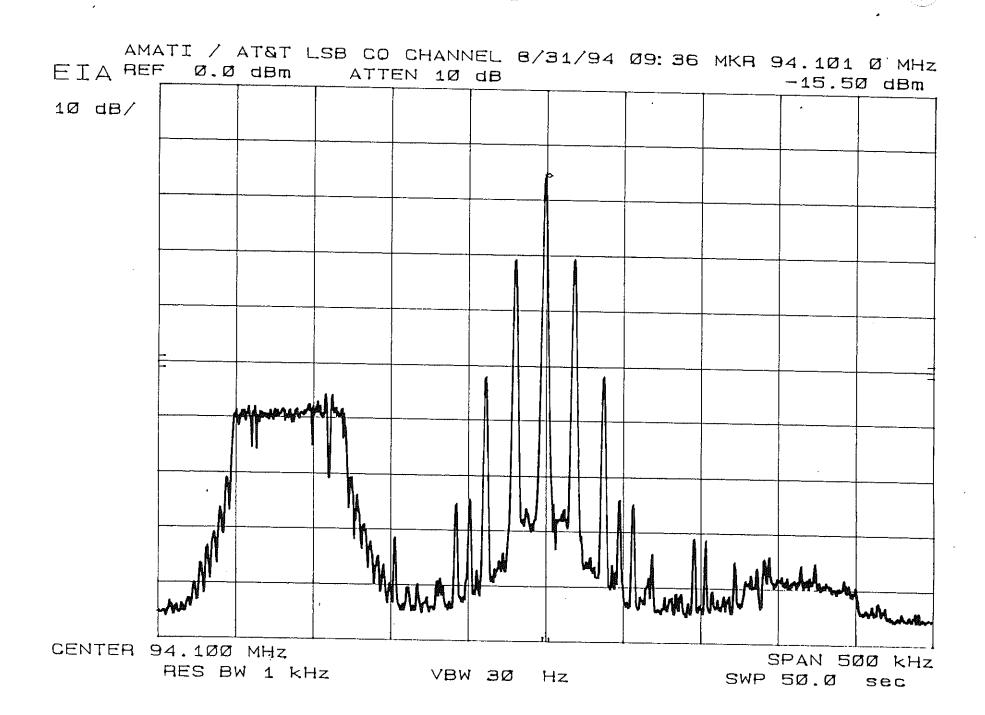


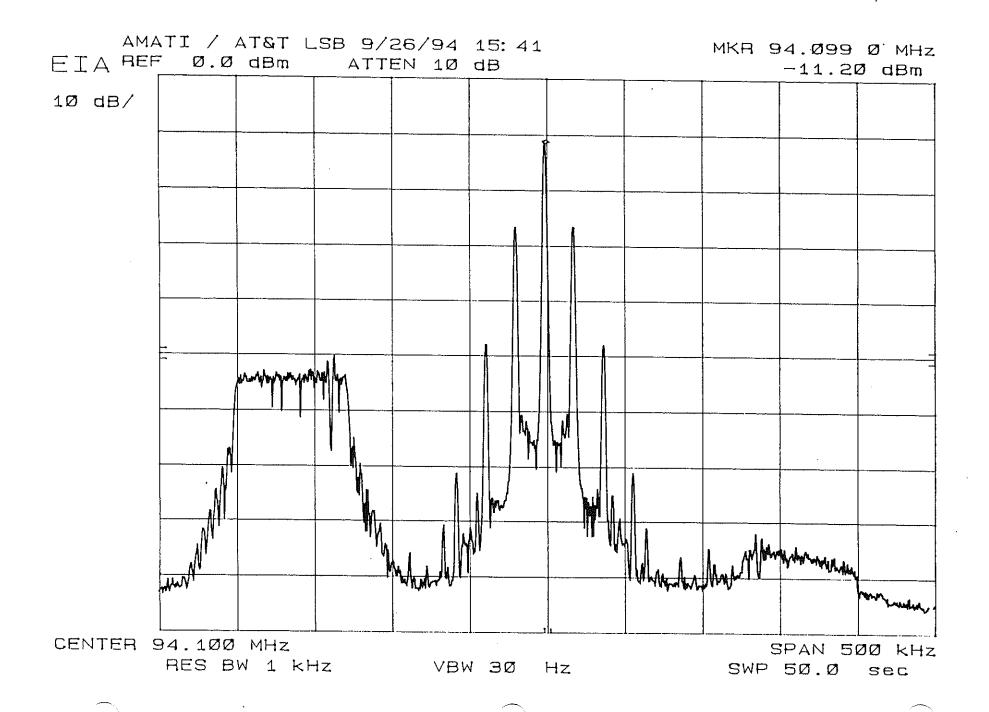










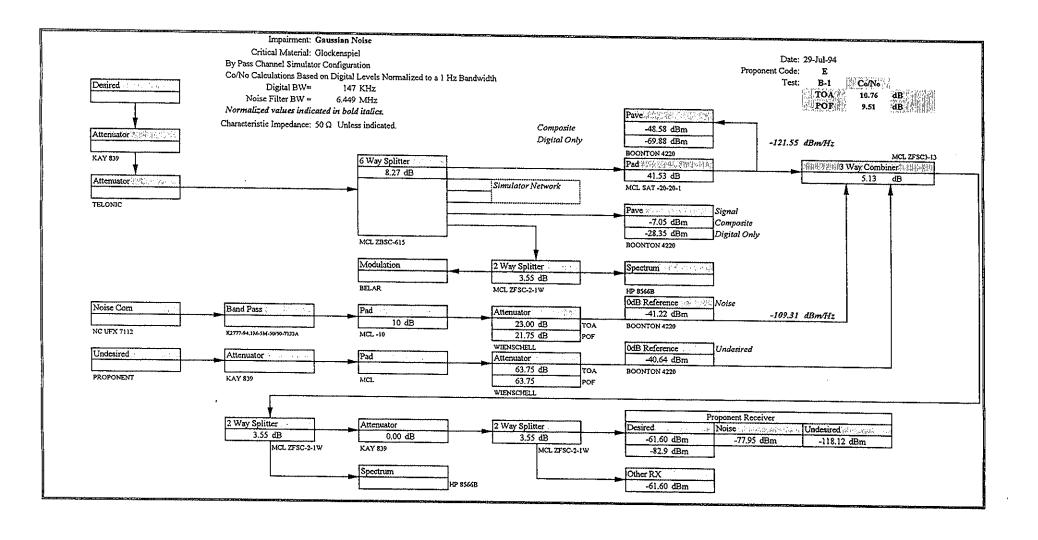


# **APPENDIX AE**

Digital Test Results AT&T/Amati IBOC DSB

Proponent: AT&T Amati DSB Rev A. Code: E Digital Band Width: 1.47E+05 Hz Composite Band Width: 4.00E+05 Hz Peak/Average Composite: 2.06 dB Peak/Average Digital: 11.76 dB

Test	B-1			
Proponent		Gaussian Noi	se	
Code:	E			
				Units
Glockenspiel		TOA	POF	
	Attenuator	23.00	21.75	dB
	Co/No	10.76	9.51	dB
	TOA	Small flutter or ringing and a small drop out,		
EO&C				
	POF	Big pop and much flutter or muting.		
Soprano		TOA	POF	
	Attenuator		21.75	dB
	Co/No	10.51	9.51	dB
	TOA	Small drop out.		
EO&C		•		
	POF	Big pops overload DAT level meters, many dro	op outs.	
Clarinet		TOA	POF	
	Attenuator	23.00	21.75	dB
İ	Co/No	10.76	9.51	₫B
	TOA	Small Drop out.		
EO&C		Sman Brop out.		
	POF	Many drop outs or mutes.		
	Danasdin -	DARROLL DAT		
Notes:	Recording Testers:			
troics.	Date:	DML,EB 29-Jul-94		
	Date.	27-JU(-74		
	<del></del>			



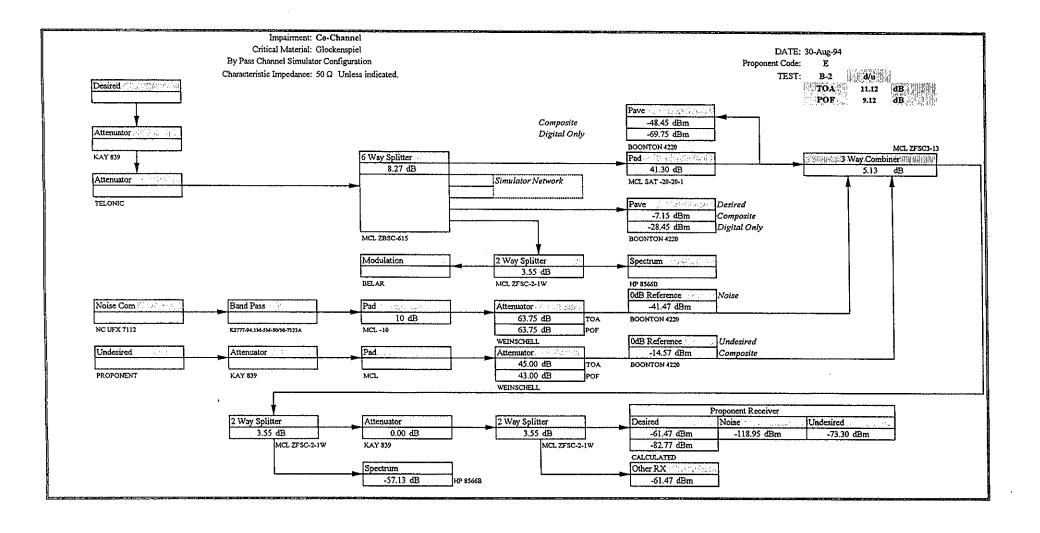
### EIA Digital Audio Radio DAT Recording Log

DAT File Number	Time Start	Code Stop			ogr. ID#			Description	Attn
AR30216,DAT			1	2				Glockenspiel Clear Channel	63.75
29-Jul-94	***************************************		3	4		*******		_	24.50
7******\\\\			5	6		********			24.00
***************************************			7	8			********	······································	23,50
***************************************			9	10	11			TOA lab	23.00
************************************	***************************************		12	13				**************************************	22.50
******************	*******		14	15				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	22.25
***********************************			16	17					22.00
*************************************			18					POF lab	21.75
***************************************	********		20	21				Sync	63.75
*************************************		+	22	23					21.50
		ļ				,			
*******************************	*******************	ļ	24	25			ļ	Soprano Clear Channel	63.75
·····	*************	• ************************************	26	27		*****			24.25
			28	29					23.75
***************************************	***************************************		30	31			ļ		23,25
	*****************		32	33	34	35	36	TOA lab	22.75
***************************************	***************************************	·	37	38		1	ļ		22.50
*******************************			39	40			ļ		22.25
!*************************************	***************************************		41	42	ļ		ļ		22.00
****************************		ļ	43	44	<b> </b>			POF lab	21.75
****************************	*************		45	********	ļ			Sync	63.75
******************************	******************		47	48					21.50
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***************************************			49	50 52		ļ	ļ	Clarinet Clear Channel	63.75
*****************************		ļ.,,,,,,,	51 53	52 54	<b> </b>		<b> </b>		24.50
Magattiiterdenerssaadissaadissaadenerssaadissaaden		· <del> </del>	55	56	ļ		ļ		24.00
			57	<u>20</u> 58	ļ		<b></b>	TOA lab	23.50
***************************************			59	60	<del> </del>	ļ	ł	I UM 120	23.00
***************************************		<b>.</b>	61	62	<del> </del>		ļ		22.50
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***************************************	<del> </del>		65	66	<del> </del>		ļ	POF lab	22.00
***************************************			67	68	<del> </del>	<del> </del>	ļ	Sync	21.75
**************		·	69		<del> </del>	·	ļ	ЭУПС	63.75
***************************************		<del></del>	1	<u>ا '''</u>	<del> </del>		·		21.50
***************************************		·	+	<b></b>	ļ	<del> </del>		***************************************	

Code: E

Impairment: Gaussian Noise

Test	B-2			
Proponent		Co-Chan	101	.
Code:	E	Co-Chain	ICI	
				Units
Glockenspiel	<del>-</del>	TOA	POF	
	Attenuator	45.00	43.00	dB
	d/u	11.12	9.12	dB
	TOA	Corall document		
EO&C		Small drop out.	•	1
2000	POF	Many drop outs or mutes.		1
		many grop outs of mutes,		
Soprano		TOA	POF	
	Attenuator	44.75	43.25	dB
	d/u	10,87	9.37	dB
			<del></del>	
	<b>~~</b>			
EO&C	TOA	Small drop out.		
LOWC	POF	Many drop outs or mutes.		
	. 0.	wany drop outs of mutes.		
Clarinet		TOA	POF	
	Attenuator	44.75	43.25	dB
	d/u	10.87	9.37	dB
	mo.			
EO&C	TOA	Small drop out.		
2000	POF	M		
	TOF	Many drop outs or mutes,		
	Recording :	Reference: DAR30236.DAT		
Notes:	Testers:	DML,ST		
	Date:	30-Aug-94		
		· ·		



File Name: DAR30805.XLS Levels B-2

Page 6 of 48

## EIA Digital Audio Radio DAT Recording Log

DAT File Number	Time Start	Code Stop			ogra ID#			Description	Atra
DAR30236.DAT			1	2				Glockenspiel Clear Channel	63.75
30-Aug-94			3	4		*********	*********	***************************************	46.50
941 <del>44444</del>	######################################		5	6		*********	*********	***************************************	46.00
)++ <del></del>	*************************		7	8		*******	***********	***************************************	45.50
***************************************		***************************************	9	10	11	12	13	TOA lab	45.00
***-**}*********************	****************		14	15	16		*********	**************************************	44.50
***************************************	***********		17	18	19				44.00
************************************	P-1		20	21					43.50
*****************	************************		22	23				POF lab	43.00
	*************		24	25				Sync	63.75
***************************************		***************************************	26	27					42.50
***************************************							[	**************************************	72.50
***************************************	**************************************		28	29	,		[	Soprano Clear Channel	63.75
**************************************	***************************************		30	31				***************************************	46.25
************************************	******************************		32	33					45.75
*******************	*		34	35				**************************************	45.25
**************************************			36	37	38	39	40	TOA lab	44.75
·			41	42			*******	\$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	44.25
***************************************	*******************		43	44			********	**************************************	43.75
			45	46			**********	POF lab	43.25
************************************	***************************************		47	48				Sync	63.75
*************************************	*************************		49	50					42.75
****************************	************	ļ	ļ						
*************************************			51	52				Clarinet Clear Channel	63.75
***************************************	·····		53	54					46.25
······································	·····		55	56					45.75
***************************************		******************************	57	58					45.25
	********************		59	60		<u></u>		TOA lab	44.75
************************************	***************************************		61	62	<b></b>	ļ <u>.</u>			44,25
***************************************	***************************************		63	64					43.75
***************************************	***************************************	ļ	65	66	<u></u>			POF lab	43.25
*******************************	······		67	68				Sync	63.75
·			69	70					42.75
N-++	(5124)								
	***************************************	***************************************		<u></u>					
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	<u></u>						1		<b>+</b>

Code: E

Impairment: Co-Channel

Test Proponent Code:	B-3 E		Urban Slow Rayleigh  Impairment Level								
Glockenspiel		L. I	TOA	POF		Units					
	Attenuator	***************************************	63.75	63.75		dB					
	Co/No		52.37	52.37		dB					
	TOA	Two drop outs a	and a small flutter.								
EO&C											
	POF										
Soprano			TOA	POF	1	T					
	Attenuator		63.75	63.75		dB					
	Co/No		52.37	52.37		dB					
	TOA	A small drop ou	t (< 1 second) and a	small click.							
EO&C											
	POF			1 3 11							
Clarinet			TOA	POF	T	T					
	Attenuator		63.75	63.75		dB					
	Co/No	A. 1 P. C. A. C. M. P. C. C. C. C. C. C. C. C. C. C. C. C. C.	52.37	52.37		dB					
	TOA	Small drop out a	nd and attenuated a	tack.							
EO&C											
	POF										
Notes:	Record		DAR30251.DAT DML,TK, ST 3-Aug-94	DAR30252.I DAR30253.I							

more means

fact pof observed

with no noise, due

to multipath alore

without noise.

DAT File Number	Time ( Start	Code Stop		Prog	)T#10	IDs		Description	Atm
DAR30251.DAT			1	2	3	Ī		Glockenspiel Clear Channel	63.75
3-Aug-94	***************************************	*************************************	4	5	6		*******	with multipath only	63.75
							*******		03.73
DAR30252.DAT			1	2	3	······	********	Soprano Clear Channel	63.75
3-Aug-94	*******************************	H	4	5	6		*******	with multipath only	63.75
***************************************	*************	******************************							
DAR30253.DAT	*******************		1	2	3		********	Clarinet Clear Channel	63.75
3-Aug-94	***************************************	*************************	4	5	6		*******	with multipath only	63.75
***************************************	***************************************		,,,,,,,,,,		.,,,,		******		***************************************
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Proponent Code: E

Impairment: Urban Slow Rayleigh

Test Proponent	B-3		Urban Fa	st Rayleigh	
croponent Code:	E		Impairn	nent Level	77.
Glockenspiel			TOA	POF	Units
	Attenuator		37 50	32.00	dB
	Co/No		26.12	20.62	dB
	TOA	Small drop out.			
EO&C	;				
	POF	Excessive mutir	ng and some static pop	s.	
Soprano			TOA	POF	
	Attenuator		36.25	30.50	₫B
	Co/No	· · · · · · · · · · · · · · · · · · ·	24.87	19.12	dB
	TOA	Small flutter or	warble.		
EO&C		······································			
	POF	Excessive muti	ng.		
Clarinet			TOA	POF	
	Attenuator		36.50	30 50	dB
	Co/No		25.12	19.12	dB
	TOA	Small pops or o	licks.		
EO&0	2				
	POF	Excessive muti	ng.		
Notes:	Recor	Testers:	DAR30254.DAT DML,TK,ST 25-Aug-94		

Number	Time Start			Pra	ğı. <del>s</del> ın	Шs		Description	Attn
DAR30254.DAT			1	2	3			Glockenspiel Clear Channel	63.75
25-Aug-94			4	2 5	6				38,50
	1		7	8	9	10	***********	Disregard #7	38.00
			11	12	13	10 14	15	TOA lab	37.50
			16	17	18		*********		37.00
***************************************			19	20	21		***********	**************************************	36,00
	******		22	23	24			**************************************	34.00
*/************************************			25	26	27			POF lab	32.00
	,**************	*******************************	28	29	30	<b></b>	*****	Soprano Clear Channel	63.75
***************************************	**********************		31	32	33	······		Solito State Office of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the stat	
***************************************	**********************		34	35	36	<b>†</b>	<b></b>		37.25 36.75
***************************************	***************************************	*************************	37	38	39	40	41	TOA lab	36.25
***************************************	~*************************************	***************************************	42	43	44				35.75
		,	45	46	47	**********			34.50
	*****************	***************************************	48	49	50	ļ		Disregard #49	32.50
***************************************	***************************************		51	52	53	<b>†</b>	ļ	POF lab	30.50
				· · · · · · · · · · · · · · · · · · ·	·	T		**************************************	
****			54	55	56	1	**********	Clarinet Clear Channel	63.75
***************************************	***************************************		57	58	59		Ī		37.50
	····		60	61	62				37.00
*******************************	***************		63	64	65	66	67	TOA lab	36.50
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······			74	75	76				32.50
4-1-1			77	78	79			POF lab	30.50
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Proponent Code: E

Impairment: Urban Fast Rayleigh

DAT File Number	Time t Start			Proj	(T.201H	IDs		Description	Attn
DAR30293.DAT			1	2 5	3			Glockenspiel Clear Channel	63.75
2-Dec-94	***************************************		4	5	6			***************************************	38.50
***************************************	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		7	8	9			TOA confirmed	38.00
************************	************************		10	11	12		**********	TOA lab	37.50
**************************************	*********		13	14	15				37.00
		*******************	16	17	18				36.50
**************************************	***************************************	************	19	20	21				36.00
··············		***********	22	23	24				35.00
************************************		***********	25	26	27		*********	***************************************	34.00
>++>**********************************	*1*****		28	29	30				33.00
***************************************	***********	*************	31	32	33			POF lab	32.00
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Proponent Code: E

Impairment: Urban Fast Rayleigh Retest Addendum

File Name: DAR30805.XLS DAT UF (2)

Test	B-3		Rural F	ast Rayleigh		
Proponent				- <del>-</del>		
Code:	E					
			Impair	ment Level		
						Units
Glockenspiel			TOA	POF		Onits
	Attenuator		43.00	36 50		dB
	Co/No		31.62	25.12		dB
		_				
	TOA	Small drop out.				
EO&C	<u>, L</u>					
T.O.C.C.	<u></u>					
	POF	Excessive mutin	10.			
	<u> L</u> .		·o-			
Soprano			TOA	POF	Ī	
	Attenuator		42.00	36.00		dB
	Co/No		30.62	24.62		dB
	TOA	Small noise bur	st.			
EO&0	<u> </u>		·······			
EO&C	<u></u>					
	POF	Excessive mutir	١٥.			
			.p.			
Clarinet	~~~		TOA	POF		
	Attenuator		42 00	36.00		dB
	Co/No		30.62	24.62		dB
	<b>TO</b> .					
	TOA	Small drop out.				
EO&0		<u> </u>				
EURI	<u> </u>	I				· · · · · · · · · · · · · · · · · · ·
	POF	Excessive mut	ing with some static j	oone		
			some static j	λυμs.		
	Recor	ding Reference:	DAR30263.DAT			
Notes:			DML,TK			
			25-Aug-95			
			<del>-</del>			

DAT File Number	Time Start	Code Stop		Pro	grain	Юs		Description	Attn
DAR30263.DAT			1	2	3			Glockenspiel Clear Channel	63.75
25-Aug-95			4	2 5	6	,		***************************************	44.00
			7	8	9	10		Disregard #8	43.50
			11	12	9 13	14	15	TOA lab	43.00
			16	17	18	19	************		42.50
			20	21	22	ļ		(*************************************	41.00
***************************************			23	24	25			***************************************	39.00
***************************************	***************************************		26	27	28	<u> </u>		POF lab	36.50
***************************************						ļ	<b></b>		***************************************
***************************************	***************************************	ļ	29 32	30	31	ļ		Soprano Clear Channel	63.75
***************************************	ļ	*******************************	********	33	34 37	ļ	ļ	Disregard #30	43.00
***************************************	}		35 38	36 39	40	ļ <u></u>	ļ <u></u>		42.50
>>>=====+.  -====================================	***************************************	ļ	*******	*********	L	41	42	TOA lab	42.00
	·····		43	44	45 48	ļ	<b></b>		41.50
***************************************		• •••••	49	50	51	ļ	ļ		40.00
	<b></b>		52	53	54	ł	ļ	POF lab	38.00
*************************************	***************************************		32	23	34		<b> </b>	FOF lab	36.00
***************************************	*******************	***************************************	55	56	57	**********	ļ	Clarinet Clear Channel	63,75
			58	59	60 63			(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	43.00
********************************			61	62	63				42.50
***************************************			64	65	66	67		Disregard 64-67	42.00
*************************************			68	69	70	71	<u></u>	TOA lab	42.00
*************************************			72	73	74				41.50
		***************************************	75	76	77	<u> </u>			40.00
***************************************			78	79 82	80				38.00
*			81	82	83	<u> </u>		POF lab	36.00
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Proponent Code: E

Impairment: Rural Fast Rayleigh

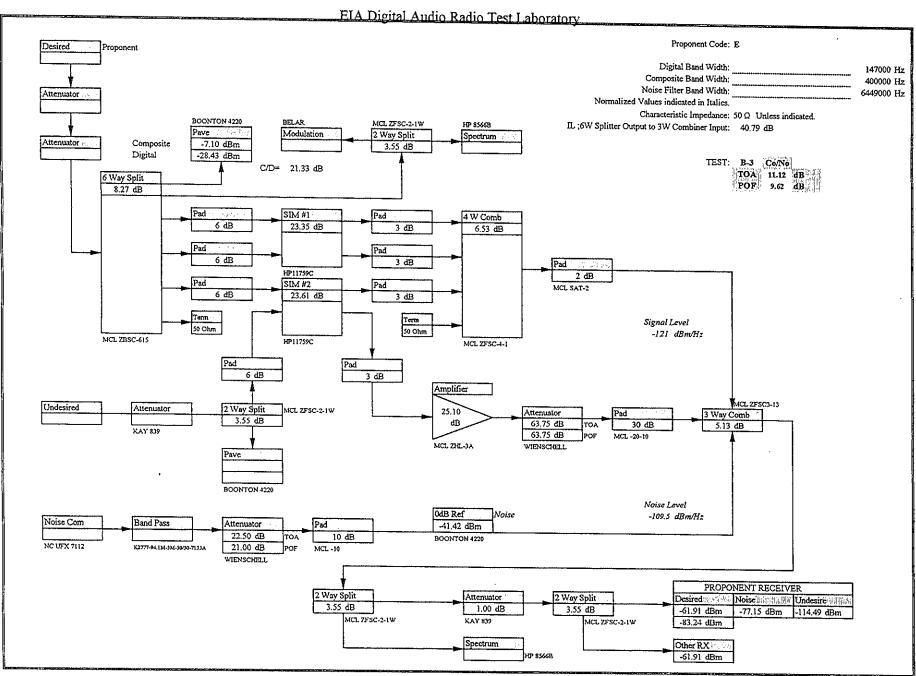
File Name: DAR30805.XLS DAT RF

Test Proponent	B-3		Terrain Ob	structed Rayleigh		
Code:	E		Impa	irment Level		
<del></del>						Units
Glockenspiel		000000000000000000000000000000000000000	TOA	POF	l l	
	Attenuator		63.75	63.75		dB
	Co/No		52.37	52.37		ďΒ
		Small drop out	and small flutter.			
EO&C	`	······································				
	POF					
Soprano			TOA	POF	1	
	Attenuator		63.75	63.75		dB
	Co/No		52.37	52.37		dB
	TOA	Small flutter.				
EO&C	; L					·····
	POF					
Clarinet			TOA	POF	1	
	Attenuator		63.75	63.75		dB
	Co/No		52.37	52.37		dB
	TOA	Small drop out	/ flutter.			
EO&C	:			· · · · · · · · · · · · · · · · · · ·		
	POF					,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Notes:	Recor		DAR30251.DAT DML,ST 3-Aug-95			

DAT File Number	Time Start	Code Stop		Pro	græm	IDs		Description	Attn
DAR30251.DAT			1	2	3			Glockenspiel Clear Channel	63.75
3-Aug-94		*******************	37	38	39			with multipath only	63.75
DAR30252.DAT	*****************	***************	ı	2	3			Soprano Clear Channel	63.75
3-Aug-94	***************************************	***************************************	37	38	39		***********	with multipath only	63.75
DAR30253.DAT	**************************************		1	2	3			Clarinet Clear Channel	63.75
3-Aug-94	***************************************	**********************	43	44	45		**********	with multipath only	63.75
		***************************************	•••••						
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Proponent Code: E

Impairment: Terrain Obstructed Rayleigh



Test C-1	Impulse Response			* · · · · · · · · · · · · · · · · · · ·	
AT&T Amati DSB Rev			5 Vp-p at attenu		
Program Material	Glockenspiel	Trimes	10.00 ns wide pulse		
Pulse	Attn		Attn		EO&C
Repetition (Hz)	at TOA	(Vp-p)	at POF	(Vp-p)	
100	0.00	5.00	NA		TOA small drop out, POF not attainable.
200	13.25	1.09	12.00	1.26	TOA small drop out, POF excessive drop outs / flutter.
333	14,75	0.92	13.25	1.09	TOA small drop out, POF excessive drop outs / flutter.
666	15.25	0.86	14.75	0.92	TOA small drop out, POF excessive drop outs / flutter.
1000	15.50	0.84	15.00	0.89	TOA small drop out, POF excessive drop outs / flutter.
Additional Comment	s:				
					•
Test Date: 26-Sep-9 Testers: DML, TK,					
<u> </u>					•

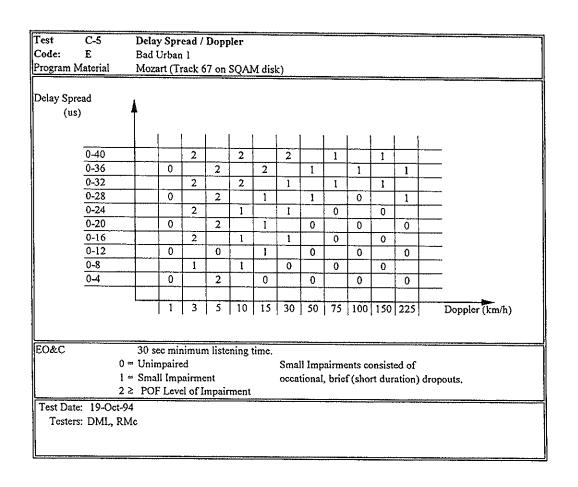
File Name: DAR30805.XLS C-1

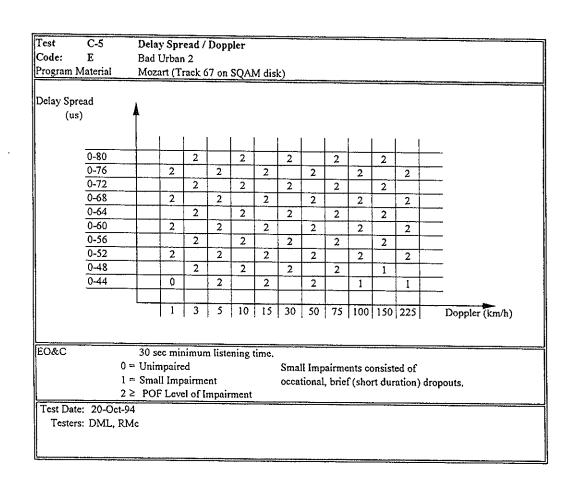
Page 18 of 48

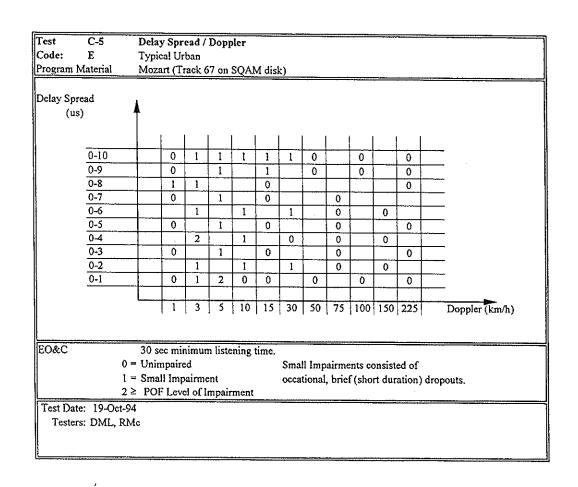
Test	C-2	CW Respon	se						
	ti DSB Rev A								
Program Mat	erial	Mozart (trac	<u>k 67 SQAM I</u>	Disk)					
	Frequency	LEV 1	LEV 2	LEV 3		Frequency	LEV 1	LEV 2	LEV 3
Test Point	MHz	POF	POF+6	POF+12	Test Point	MHz	POF	POF+6	POF+12
1	93,85	0	0	0	27	94.11	0	0	0
2	93.86	0	0	0	28	94.12	0	0	0
3	93.87	0	0	0	29	94.13	0	0	0
4	93.88	0	0	0	30	94.14	0	0	0
5	93.89	0	0	0	31	94.15	0	0	0
6	93.90	l	2	2	32	94.16	0	0	0
7	93.91	I	2	2	33	94.17	0	0	0
8	93.92	2	2	2	34	94.18	0	0	0
9	93.93	2	2	2	35	94.19	0	0	0
10	93.94	2	2	2	36	94.20	0	0	0
11	93.95	2	2	2	37	94,21	0	0	0
12	93.96	2	2	2	38	94.22	0	1	2
13	93.97	0	0	2	39	94.23	0	0	1
14	93.98	0	1	2	40	94.24	2	2	2
15	93.99	0	0	0	41	94.25	2	2	2
16	94.00	0	0	0	42	94.26	· 1	2	2
17	94.01	0	0	0	43	94.27	2	2	2
18	94.02	0	0	0	44	94.28	2	2	2
19	94.03	0	0	0	45	94.29	0	2	2
20	94.04	0	0	0	46	94.30	1	2	2
21	94.05	0	0	0	47	94.31	0	0	0
22	94.06	0	0	0	48	94.32	0	0	0
23	94.07	0	0	0	49	94.33	0	0	0
24	94.08	0	0	0	50	94,34	0	0	0
25	94.09	0	0	0	51	94,35	0	0	0
26	94.10	0	0	0					
Test Date:	1	J		0 dB Attenuat	or Reference:	-30.4	dBm		
			0=CLEAN A	UDIO	I=APPROX	IMATE TOA		2 ≥ POF	
			POF Attn=3	2.25dB		POF d/u=	14.2		

Program N	Material Glockenspiel			<del></del>
_	Reflected Par	:h		
Scenario			EO&C	
#1	400 Km/h Doppler			
	27.5 μs Delay			
		TOA	Small drop out or flutter.	
	8.00 dB	4.10 dB		
#2	200 Km/h Doppler			
	13.7 μs Delay			
		TOA	Small drop out or flutter.	
	8b 00.6	1.80 dB		
#3	100 Km/h Doppler			
ı	6.8 μs Delay			•
		TOA	Small drop out or flutter.	
	4.00 dB	0.30 dB		
Test Date	: 27-Sep-94			
	:: DML, TK, ST			

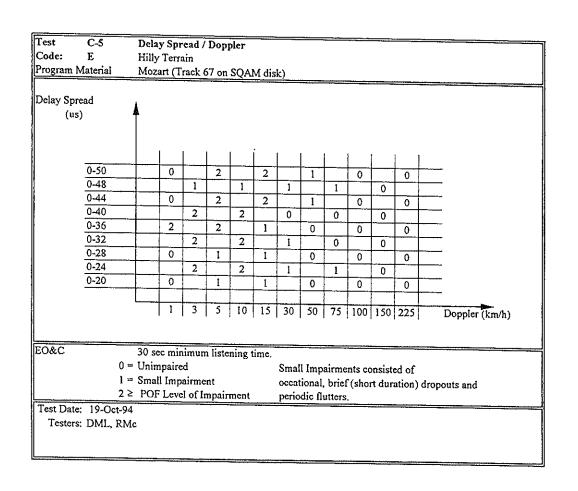
Test C-4	Weak Signal Sensitivity
AT&T Amati DSB Rev A	Α.
Program Material	Glockenspie!
	TOA (dBm) POF (dBm)
	-82 ≤ TOA < -81 -83 < POF ≤ -82
Test Date: 20-Oct-94	
Testers: DML,RMe	

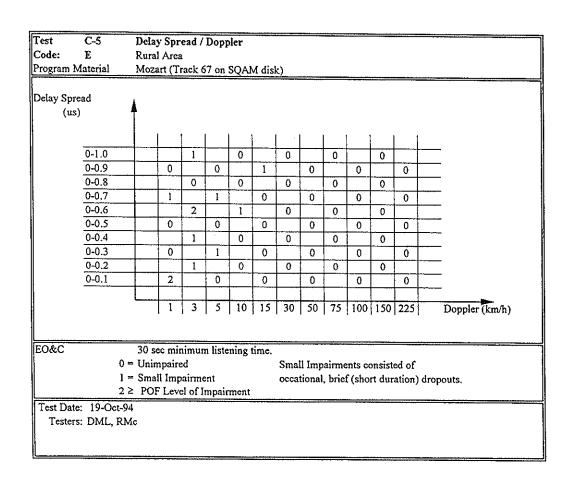






File Name: DAR30805.XLS C-5 TU





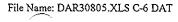
Test AT&T Amati DSB	C-6	Additional N	lultipath	Doppler Si	imulations
Program Material:	Glockenspie	:			
Scenario					
	Level	Attn	Co/No	Units	EO&C
#1 Urban Slow	TOA	63.75	52.38	dВ	No added noise, 1 to 2 sec drop out. followed by pop.
	POF	63.75	52.38	dΒ	Same as TOA.
#2 Urban Fast	TOA	29.00	17.63	dB	Small warble.
	POF	26.50	15.13	dВ	Excessive flutter / drop outs.
#3 Rural Fast	TOA	26,75	15.38	dB	Mild drop out
	POF	23.25	11.88	dВ	Excessive flutter / drop outs and a large pop.
#4 Terrain Obstructed	TOA	63.75	52.38	dΒ	Numerous short to medium duration drop outs.
	POF	30.50	19.13	dB	Excessive flutter / drop outs and a large pop.
Test Da	te: 20-Oct-94		···	Desired	
	rs: DML, RMc		Signal	-7.02	2 dBm
DAT Referen	ce: DAR30550	.DAT	IL 3WIN		9 dB BW 6.45E+06 Hz 1 dBm 0dB Ref 41.38 dBm

DAT File Number	Time Start			Si	art I)	)s		Description	Atta
DAR30550.DAT		DSB	1	2				Urban Slow	63.75
20-Oct-94	***************************************		3	4	****		*********	Urban Fast, TOA	29.00
			5	6	************	***********	************	Urban Fast, TOA Rural Fast, TOA	26.75
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	***************************************	7	8				Obstructed Fast	63.75
	***************************************	***************************************		-24144				<del></del>	05,75
		LSB	9	10	**********			Urban Slow	63.75
	· · · · · · · · · · · · · · · · · · ·		11	12	**********	************	**********	Urban Fast	63.75
	***************************************	***************************************	13	14	*********	************	**********	Rural Fast	38.00
	******************	***************************************	15	16				Obstructed Fast	63.75
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Additional Multipath Doppler Simulations

Code: E

Test C-6



Test	D-Series	Co-Channel	, 1st and 2	nd Adjace	ent	
AT&T Amati DSB	Rev A.			•		
Program Material:	Glockenspie	<u> </u>				
					ļ	
	Level	Attn	D/U	Units		EO&C
D-1						
Co-Channel	TOA	20.50	10.72	dB	Small drop o	out or flutter.
				···		
	707					
	POF	19.25	9.47	đВ	Excessive M	uting.
D-2	TOA	41.25	31.47	10		
Lower	10%	41.25	31.4/	ďΒ	Small drop o	outs or flutters.
1st Adjacent	POF	39.25	29.47	dΒ	Excessive M	tina
	TOA	41.25	31.31	dB	<del></del>	outs or flutters.
Upper	į				Januar Grop G	or Hatters.
1 st Adjacent	POF	39.25	29.31	dB	Excessive flu	atter or drop outs.
D-3	TOA	4.00	-15.47	dB		outs or flutters.
Lower						
2nd Adjacent	POF	0.00	-19.47	dB	Excessive flu	atter or drop outs.
	TOA					
	200				Not necessar	ry due to symmetry.
	POF					
	1 Industry		.1. 1 1		,	
	Undesired si Undesired si	gnal for Un-	channel and	LOW 1St 8	idj=	-38.80 dBm
	Undesired s	ignal for Lo	per ist Adja	cent =		-38.64 dBm
П	AT Reference:	DARROANS	ver zna Aaj Dat	acent -		-29.11 dBm
_		By Pass Sim		iguration		
Test Da	ate: 22-Sep-94	_ / 2		Desired	1	Undesired
	ers: DML, ST		SWOUT		dBm	Ondesired
	,		IL	41.43		
			SWIN		3 dBm	
				, 5.50		

DAT File Number	Time Start	Code Stop		St	art I	Dя		Description	Attn
DAR30403.DAT			1	2	3			DSB Co-Channel TOA	20.50
22-Sep-94	·········	**************************			**********				
***************************************		**********	4	5	6			DSB Lower 1st Adj TOA	41.25
	*****	***************************************							
		I+	7	8	9	10	11	DSB Upper 1st Adj	41.50
************************************	*******	······	14	13 15	16			Disregard TOA	41.25
***************************************	***************************************	***************************************			10			10A	41.25
	<del> </del>	*****************	17	18	19		*********	DSB Lower 2nd Adjacent TOA	4.00
	******************	A+						200 DO NOT 2110 TAGISTORY TOTAL	4.00
	***********************	************************	20	21	22			LSB Lower 2nd Adjacent TOA	2.75
							**********		·
		***************************************	23	24	25	26		LSB Lower 2nd Adjacent USB undesired TOA	21.75
77444415-1474 <del>3-1474</del> -1474-1474-1474-1474-1474-1474-147		444***********************************		**********	******************************		*********		***************************************
<u> </u>	*****************	*************************	27	28	29			LSB Lower 1st Adjacent TOA	62.25
***************************************	***************************************					ļ			******************************
,			30	31	32			LSB Co-Channel TOA	27.00
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Code: E

D-Series Recordings

File Name: DAR30805.XLS D DAT

Page 30 of 48

Test		E-1	Co-Chann	el with Mul	tipath (Ray	leigh)	
AT&T Amar							
Program Mat	terial:	Glockenspi	el				
Scenario							
	ŀ	Level	Attn	D/U	Units	EO&C	
#1			2 1001		Onics	Simulation by itself pr	roduces defeate in
Urban Slow	:	TOA	63.75	54.01	₫B	the recovered audio.	roduces defects in
		POF	63,75	54.01	đВ	NA	
#2 Urban Fast	′	TOA	43,00	33.26	ďВ	Small drop out,	
		POF	37.50	27.76	ďΒ	Excessive muting.	
#3 Rural Fast		TOA	63.75	54.01	ďВ	Simulation by itself paths the recovered audio.	roduces defects in
		POF	63.75	54.01	dB	NA	
#4 Terrain Obstructed		TOA	63.75	54.01	dВ	Simulation by itself protection the recovered audio.	roduces defects in
		POF	63.75	54.01	₫B	NA	
Ţ	est Date:	22-Sep-94	<u> </u>	<u>.                                    </u>	Desired	L	Undesired
		DML, TK,		Signal	-7.15	dBm	Ondestied
		. ,	•	IL	40.79		
				3WIN	-47.94	dBm	-38,20 dBm

l'est		Lower 1st A	Adjacent wi	th Multip	ath (Rayleigh)	
AT&T Amati DSB						
Program Material:	Glockenspie	i				
Scenario						
	Level	Attn	D/U	Units	EO&C	
<i>‡</i> I						itself produces defects in
Urban Slow	TOA	63.75	54.01	dB	the recovered	
	POF	63.75	54.01	ďΒ	NA	
¥2					<u> </u>	
Urban Fast	TOA	58,50	48.76	dB	Small drop ou	t.
	POF	49.50	39.76	ďВ	Excessive mut	ing.
#3 Rural Fast	TOA	63.75	54.01	ďВ	Simulation by the recovered	itself produces defects in audio.
	POF	63.75	54.01	dB	NA	
#4 Теттаin Obstructed	ТОА	63.75	54.01	dΒ	Simulation by the recovered	itself produces defects in audio.
	POF	63.75	54.01	dΒ	NA	
Test D	ate: 22-Sep-94	<u>!</u>	<del></del>	Desired		Undesired
	ers: DML, TK,	ST, DS	Signal IL		5 dBm 19 dB	
			3WIN		94 dBm	-38.20 dBm

l'est		E-3	Lower 2nd	Adjacent w	ith Multip	ath (Rayleigh)	
	ti DSB Rev A						
rogram Mat	erial: Glo	ockenspie					
· · · · · ·							
Scenario		<del>, , , ,</del>					
¥1		Level	Attn	D/U	Units	EO&C	
Jrban Slow		TOA	63.75	54.01	dB	Simulation by itself; the recovered audio.	produces defects in
		POF	63.75	54.01	dB	NA	
#2	<del></del>				<del></del>		
Urban Fast		TOA	18.25	8.51	dB	Small drop out.	
		POF	9.25	-0.49	dΒ	Excessive muting.	
#3 Rural Fast		TOA	63.75	54.01	dΒ	Simulation by itself the recovered audio.	produces defects in
		POF	63.75	54.01	dВ	NA	
#4						Simulation by itself	produces defects in
Terrain Obstructed		TOA	63.75	54.01	dΒ	the recovered audio.	
		POF	63.75	54.01	dB	NA	
	Fest Date: 22	2-Sep-94			Desired		Undesired
·	Testers: Di	-	ST, DS	Signal		5 dBm	Olideallen
				IL	40.79		
				3WIN		4 dBm	-38.20 dBm

Test	E-1	Co-Channe	l with Mult	ipath (Dop	pler)
AT&T Amati DSF	B Rev A.				
Program Material:	Glockenspie	1			
			,		
Scenario					
	Level	Attn	D/U]	Units	EO&C
#1		******			
Urban Slow	TOA	63.75	67.30	dΒ	Impairment detected with simulation.
	POF	63.75	67.30	dB	NA
#2					
Urban Fast	TOA	19.75	23.30	dB	Small drop out.
	POF	13.75	17.30	dB	Excessive drop outs and flutter.
#3 Rural Fast	TOA	14.50	18.05	đВ	Small drop out or flutter.
	POF	12.00	15.55	dВ	Excessive drop outs and flutter.
#4 Terrain Obstructed	TOA	63.75	67.30	đВ	Impairment detected with simulation.
	POF	63.75	67.30	dB	NA
Test D	ate: 21-Oct-94	· · · · · · · · · · · · · · · · · · ·		Desired	Undesired
	ers: DML, RM,	ST	Signal		dBm
	,,		IL	40.79	<del></del>
			3WIN	-47.85	

Test		E-2	Lower 1st	Adjacent wi	th Multipa	th (Doppler)	
	ati DSB Rev						
Program Ma	aterial: Gl	ockenspie	<u> </u>				
Scenario							
	<u> </u>	Level	Attn	וו/מ	Units	EO&C	
#1			1 1111	2,0	Omts	LORC	
Urban		TOA	63.75	67.30	ďΒ	Impairment detected with:	zimulation
Slow						, and the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second	maanon,
					·	· · · · · · · · · · · · · · · · · · ·	
		POF	63.75	67.30	dB	NA	
#2			<del></del>				
72 Urban		TOA	34.25	37.80	dB		
Fast		IOA	34.23	37,80	ав	Small drop out.	
							·
		POF	28.25	31.80	dB	Excessive drop outs and flo	utter.
200							
#3 Rural		TOA	34.75	20.20	100		
Fast		IOA	34.73	38.30	dB	Small drop out or flutter.	
-						<u></u>	<del></del>
		POF	28.25	31.80	dB	Excessive drop outs and flu	utter.
			····			•	
#4 Terrain		<b>70.</b>			_		
Terrain Obstructed		TOA	63.75	67.30	dB	Impairment detected with :	simulation.
Obstructor.	-				<del></del>		<del></del>
		POF	63.75	67.30	ďВ	NA	
			322		~~	1	
	Test Date: 2	1-Oct-94		<u>~</u>	Desired	Ui	ndesired
	Testers: Di	ML, RM,	ST	Signal	-7.06	dBm	
				IL	40.79	dB	
				3WIN	-47.85	dBm	-51.40 dBm

Test	E-3	Lower 2nd	Adjacent w	ith Multip	path (Doppler)	
AT&T Amati DSB R	tev A.					
Program Material:	Glockenspie	1				
Scenario						
	Level	Attn	D/U	Units	EO&C	***********
#1 Urban Slow	TOA	63.75	40.90	dΒ	Impairment detected with simul	ation.
	POF	63.75	40.90	dB	NA	
#2 Urban Fast	TOA	23.00	0.15	dB	Small drop out.	
	POF	15.50	-7.35	dВ	Excessive drop outs and flutter.	
#3 Rural Fast	TOA	16.50	-6,35	dВ	Small drop out or flutter.	
· 	POF	11.00	-11.85	dВ	Excessive drop outs and flutter.	
#4 Terrain Obstructed	TOA	63.75	40.90	dB	Impairment detected with simul	ation.
	POF	63.75	40.90	dВ	NA	
	:: 21-Oct-94 s: DML, RM,		Signal IL 3WIN	40.79	6 dBm 9 dB	red .00 dBm

ım Material Mozart	(Track 67 on St	Avragative)		
Toff(s)	POF-2	Re-Acquisition Time (s POF-4	POF-6	
30	44	3	4	
<del></del>	2	2	2	
	4	5	5	
_	22	2	1	
_	1	6	4	
Average	2.6	3.6	3.2	
POF Attenuator Set Desired Signal Leve Noise 0 dB Referen	el ; -	1.25 dB 48.57 dBm 41.45 dBm		
Additional Comments:	e-Acquisition tir	ne is the value listed ±	0.5 seconds.	
Date: 26-Sep-94	<del></del>			
sters: DML, RMc				

rogram Material Mo	zart (Track 67 o	n SQAIVI disk)		
Tsim (s)	POF-2	Re-Acquisition Time (s) POF-4	POF-6	
5	1	<u></u>	<u>l</u>	
10	6	6	4	
15	3	3	2	
20	3	1	2	
25	5	5	7	
Average	3.6	3.6	3.2	
POF Attenuato Desired Signal Noise 0 dB Res	Level :	25.75dB -48.45 dBm -41.42 dBm		
Additional Comment		n time is the value listed ± 1 s	second.	
Test Date: 27-Sep-94				

File Name: DAR30805.XLS J-2 USR

Test J-2 Re- AT&T Amati DSB R Urb	Acquisition with M	ultipath		
rogram Material Mo	an Past Rayleigh zart (Track 67 on SC	AM dieta		
3	carr ( Track or on 50	And nizk)		
	F	Re-Acquisition Time (s	)	
Tsim (s)	POF-2	POF-4	POF-6	
5	2	1	4	
10	5	1	4	
15	2	1	1	
20	3	1	4	
25	6	3	1	
Average	3,6	1.4	2.8	
POF Attenuato		0,00 dB	······································	
Desired Signal		18.45 dBm		
Noise 0 dB Ref	erence : -4	11,42 dBm		
Additional Comments		e is the value listed ±	1 second.	
Test Date: 27-Sep-94				·····
Testers: DML, TK, ST				

	R	e-Acquisition Time (s	4	
Tsim (s)	POF-2	POF-4	POF-6	
5	1	2	1	
10	2	5	6	
15	5	5	2	
20	1	1	5	
25	2	2	2	
Average	2.2	3	3.2	
POF Attenuator Desired Signal Noise 0 dB Ref	Level : -4	,00 dB 8.45 dBm 1.42 dBm		
Additional Comments		e is the value listed ±	1 second.	

File Name: DAR30805.XLS J-2 RFR

Test J-2 Re-Acc AT&T Amati DSB R Terrain	quisition with	h Multipath		
		n SQAM disk)		
17,024()	(Track or or	ii advin nisk)		
		Re-Acquisition Time (s)		
Tsim (s)	POF-2	POF-4	POF-6	
5	1	1	1	
10 _	2	3	2	
15 _	4	1	3	
20	2	1	5	
25	4	5	2	
Average	2,6	2.2	2.6	
POF Attenuator Se		33.00 dB		
Desired Signal Lev		-48.45 dBm		
Noise 0 dB Referen	nce :	-41.42 dBm		
Additional Comments:				
	le-Acquisition	n time is the value listed ± 1	second.	
	•			
Test Date: 27-Sep-94				
Testers: DML, TK, ST				

Test J-2 Re-Acquisitio AT&T Amati DSB R Urban Slow D	on with	Multipath		
Program Material Mozart (Track				
1,000,000		- DQ7 d41 d13k)		
Tsim (s)		Re-Acquisition Time (s) POF		
5		2		
10		1		
15		3		
20		2		
25		1		
Average		1.8		
POF Attenuator Setting	:	63.75 dB	······································	
Desired Signal Level	:	-47.85 dBm		
Noise 0 dB Reference	:	-41.40 dBm		
Additional Comments: Re-Acqu	uisition	time is the value listed ± 1	second.	
Test Date: 21-Oct-94	<del>,</del>			
Testers: DML, ST				

est J-2 Re- T&T Amati DSB R Urb	Acquisition wit an Fast Doppler	n Muuupatn		
	zart (Track 67 o			
		Da Appulaisian Time (		
Tsim (s)	POF-2	Re-Acquisition Time (s POF-4	POF-6	
5	5	2	3	
10	3	3	3	
15	4	4	2	
20	2	2	2	
25	2	3	2	
Average	3.2	2.8	2.4	
POF Attenuato Desired Signal Noise 0 dB Ref	Level :	24.75 dB -47.85 dBm -41.40 dBm		
Additional Comments		n time is the value listed ±	l second.	
est Date: 21-Oct-94				
Testers: DML, ST				

Test J-2	Re-Acquisition with	Multipath		
AT&T Amati DSB R	Rural Fast Doppler	•		
	Mozart (Track 67 on	SQAM disk)		
		Re-Acquisition Time (s)		
Tsim (s)	POF-2	POF-4	POF-6	
5	2	2	6	
10	5	4	1	
15	2	2	4	
20	2	3	2	
25	5	6	1	
Average	3.2	3.4	2.8	
POF Attenu	ator Setting :	21.75 dB		
Desired Sig		-47.85 dBm		
Noise 0 dB	Reference :	-41.40 dBm		
Additional Comm	ents:			
		time is the value listed ±	I second.	
T-1D-1-010-01				
Test Date: 21-Oct-94				
Testers: DML, ST				

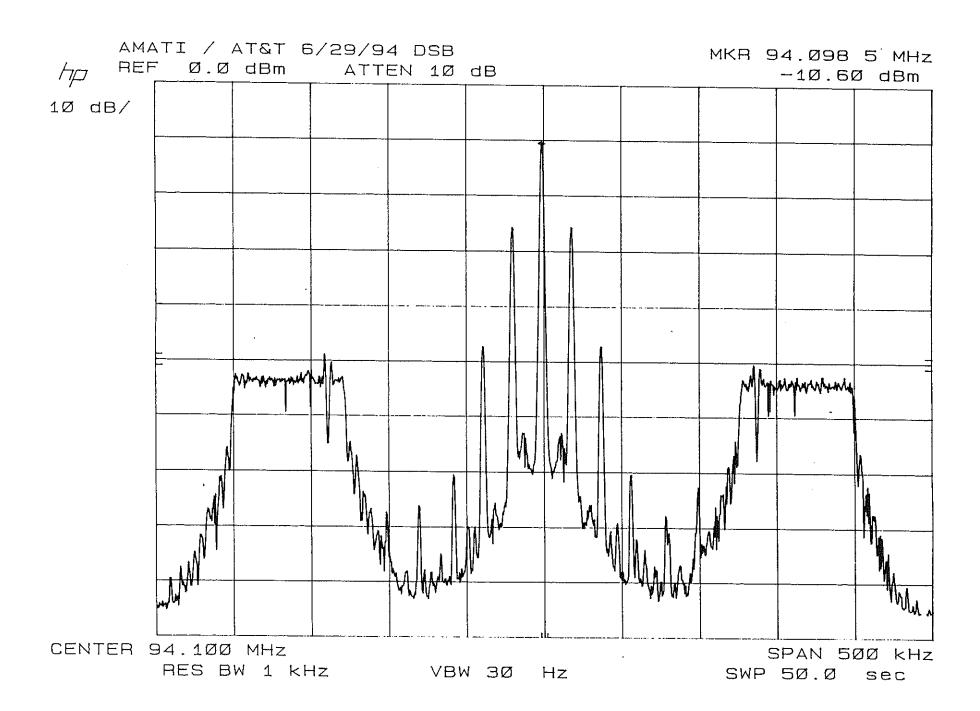
AT&T Amati DSB R Terrair	quisition with n Obstructed 1	Doppler		
Program Material Mozar	t (Track 67 or	1 SQAM disk)		
Tsim (s)	POF-2	Re-Acquisition Time (s)		,
13iii (3)	101-2	ror-4	POF-6	
5	1	1	1	
10 _	1	1	1	
15 _	1	1	1	
20 _	1	1	1	
25	1	1	1	
Average	1	1	1	
POF Attenuator S		27.00 dB		
Desired Signal Le		-47.85 dBm		
Noise 0 dB Refere	nce :	-41.40 dBm		
Additional Comments:				
ŀ	ce-Acquisition	time is the value listed ± 1	second.	
Test Date: 21-Oct-94				
Testers: DML, ST				

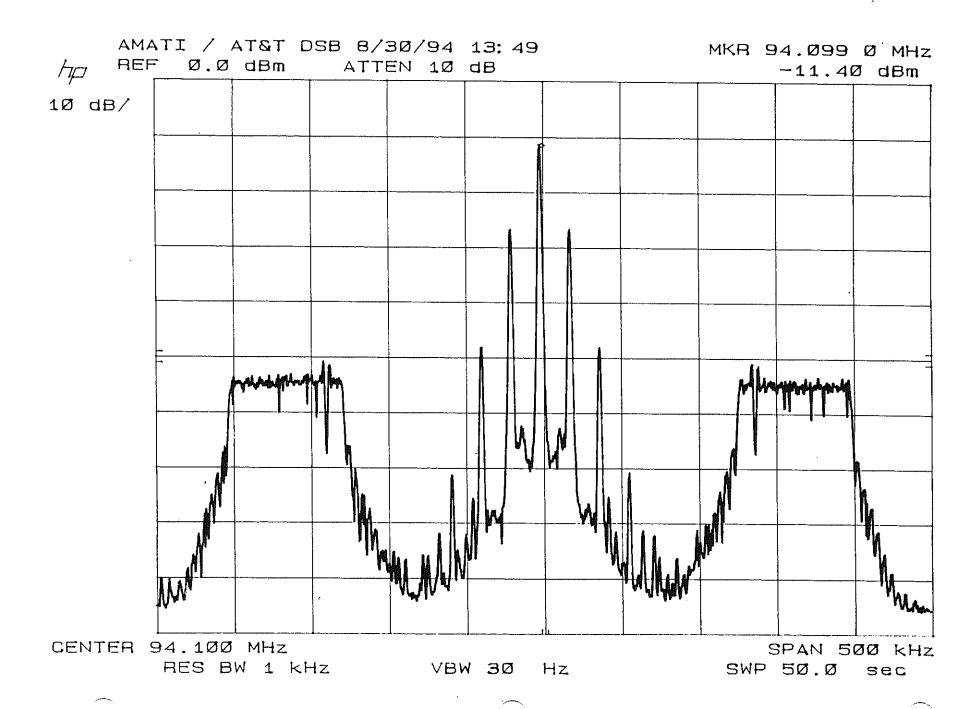
Γest	B-1		Ancill	ary Data Ch	Ancillary Data Channel										
Proponent	Demonstration														
Code:	E		G	aussian Nois	se	-									
	_		Ŭ	BER	30										
				DER			Units								
· · · · · · · · · · · · · · · · · · ·			TOA			POF	Othis								
	Attenuator	22.50	22,25	22.00	21.50	21.00	dB								
	Co/No	11.25	11.00	10.75	10.25	9.75	dB								
	Log(BER)		-4.194	-3.283	-2.415	-1.861									
	BER	0.00E+00	6.39E-05	5.21E-04	3.85E-03	1.38E-02									
Test	B-2	Ancillary Data Channel													
	ļ		Demonstration												
		Co-Channel													
	1	BER													
			TOA			POF	Units								
	Attenuator	10.50	9.75	9,50	9.00	8.50	₫B								
	d/u	10.97	10.22	9.97	9.47	8.97	dB								
	Log(BER)		-3.420	-3.784	-2.193	-1.549	\ \frac{1}{2}								
	BER	0.00E+00	3.80E-04	1.64E-04	6.42E-03	2.83E-02	1								
							<u> </u>								
Testers;	DML, RMc		TOA and POF	levels have been	approximated f	or									
Date:	9-Dec-94														

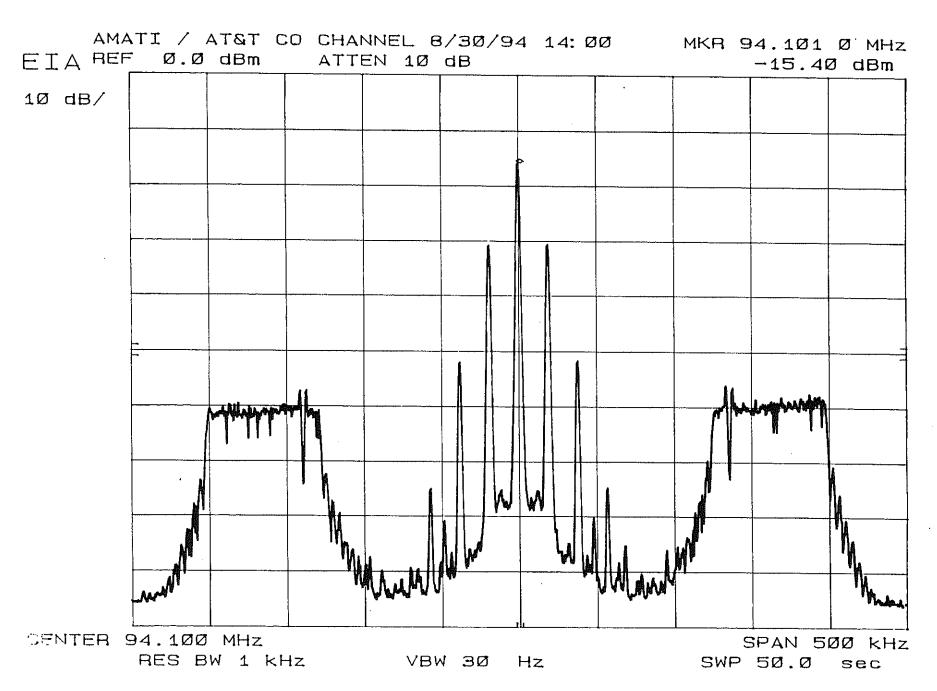
File Name: DAR30805.XLS BER

Test	B-3	Ancillary Da	ita Channel							
Proponent		Demons								
Code:	E	Multi	nath							
		BE	•							
		Doppler								
Urban Slov	v	No Added Noise	hrer	Units						
0101110101	Attenuator	63.75								
	Co/No	52.50		dB dB						
	Log(BER)	-2.019		dB						
	BER	9.58E-03								
Urban Fast	t	TOA	POF							
	Attenuator	29.00	26.50	dB						
	Co/No	17.75	15.25	dB						
	Log(BER)	-2.843	-1.703							
	BER	1.44E-03	1.98E-02	ŀ						
Rural Fast		TOA	POF							
	Attenuator	26.75	23.25	dB						
	Co/No	15.50	12.00	dB						
	Log(BER)	-3.292	-2.146							
	BER	5.11E-04	7.15E-03	1						
Terrain Ol	ostructed	No Added Noise								
	Attenuator	63.75		dB						
	Co/No	52.50		dB						
	Log(BER)	-1.553								
	BER	2.80E-02								
		, , , , , , , , , , , , , , , , , , , ,								
T4	DM DM	may thone								
Testers:	DML, RMc		ve been approximated for							
Date:	9-Dec-94	this demonstration.								

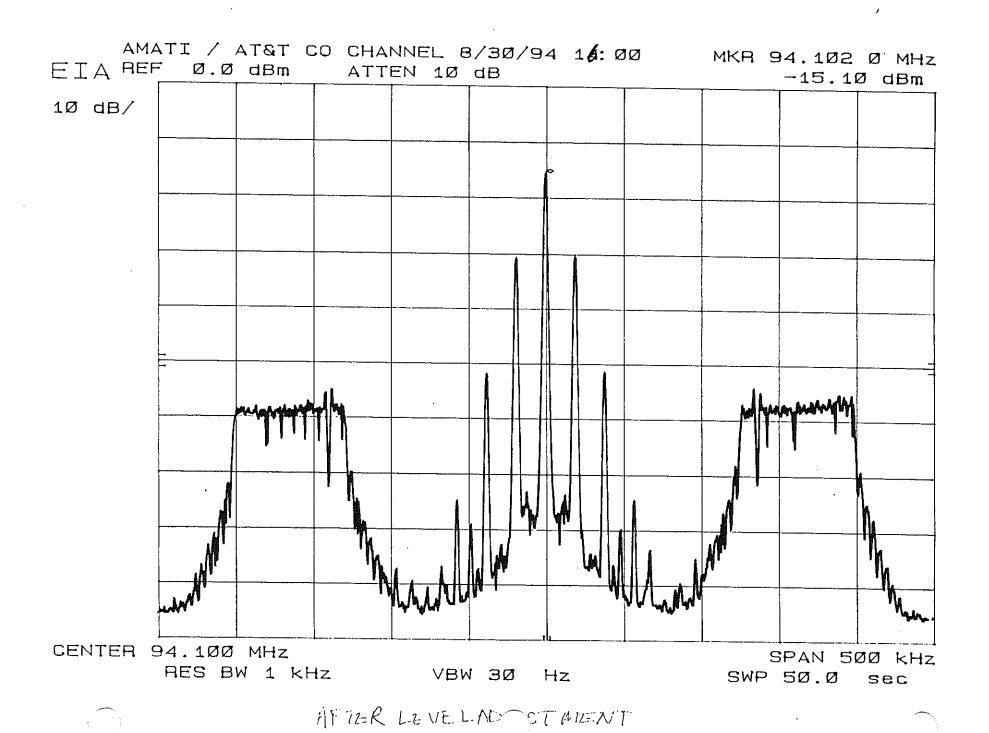
			į.							
	Ancillary Data Channel Demonstration									
E	Multip	ath								
~	<del>-</del>									
	· · · · · · · · · · · · · · · · · · ·									
				Units						
		POF	(San Fran 4)							
		27.75		dB						
	32.10	27,60		dB						
	-2.346	-1.710								
	4.50E-03	1.95E-02								
ay	TOA	POF	(SLC)							
Attenuator	24.00	22.50		dB						
Co/No	23.85	22,35		dB						
Log(BER)	-3.084	-1.947								
BER	8.24E-04	1.13E-02								
	TOA	POF	(WSHW9)							
Attenuator	34.75	29.75		dΒ						
Co/No	34.60	29.60		dΒ						
Log(BER)	-∞	-1.999								
BER	0.00E+00	1.00E-02								
ructed	TOA	POF	(NOVA 4)							
Attenuator	33.25	28.75		dB						
Co/No	33.10	28.60	1	dB						
Log(BER)	-2.119	-1.725								
BER	7.60E-03	1.88E-02								
	Co/No Log(BER) BER  Attenuator Co/No Log(BER) BER  ructed Attenuator Co/No Log(BER)	ath         TOA           Attenuator         32.25           Co/No         32.10           Log(BER)         -2.346           BER         4.50E-03           ay         TOA           Attenuator         24.00           Co/No         23.85           Log(BER)         -3.084           BER         8.24E-04           TOA         Attenuator           Co/No         34.60           Log(BER)         -∞           BER         0.00E+00           rructed         TOA           Attenuator         33.25           Co/No         33.10           Log(BER)         -2.119	Attenuator         32.25         27.75           Co/No         32.10         27.60           Log(BER)         -2.346         -1.710           BER         4.50E-03         1.95E-02           ay         TOA         POF           Attenuator         24.00         22.50           Co/No         23.85         22.35           Log(BER)         -3.084         -1.947           BER         8.24E-04         1.13E-02           TOA         POF           Attenuator         34.75         29.75           Co/No         34.60         29.60           Log(BER)         -∞         -1.999           BER         0.00E+00         1.00E-02           rructed         TOA         POF           Attenuator         33.25         28.75           Co/No         33.10         28.60           Log(BER)         -2.119         -1.725	Special           ath         TOA         POF         (San Fran 4)           Attenuator         32.25         27.75           Co/No         32.10         27.60           Log(BER)         -2.346         -1.710           BER         4.50E-03         1.95E-02           ay         TOA         POF         (SLC)           Attenuator         24.00         22.50         2.00           Co/No         23.85         22.35         2.235           Log(BER)         -3.084         -1.947         -1.947           BER         8.24E-04         1.13E-02           TOA         POF         (WSHW9)           Attenuator         34.75         29.75           Co/No         34.60         29.60           Log(BER)         -∞         -1.999           BER         0.00E+00         1.00E-02           tructed         TOA         POF         (NOVA 4)           Attenuator         33.25         28.75           Co/No         33.10         28.60           Log(BER)         -2.119         -1.725						

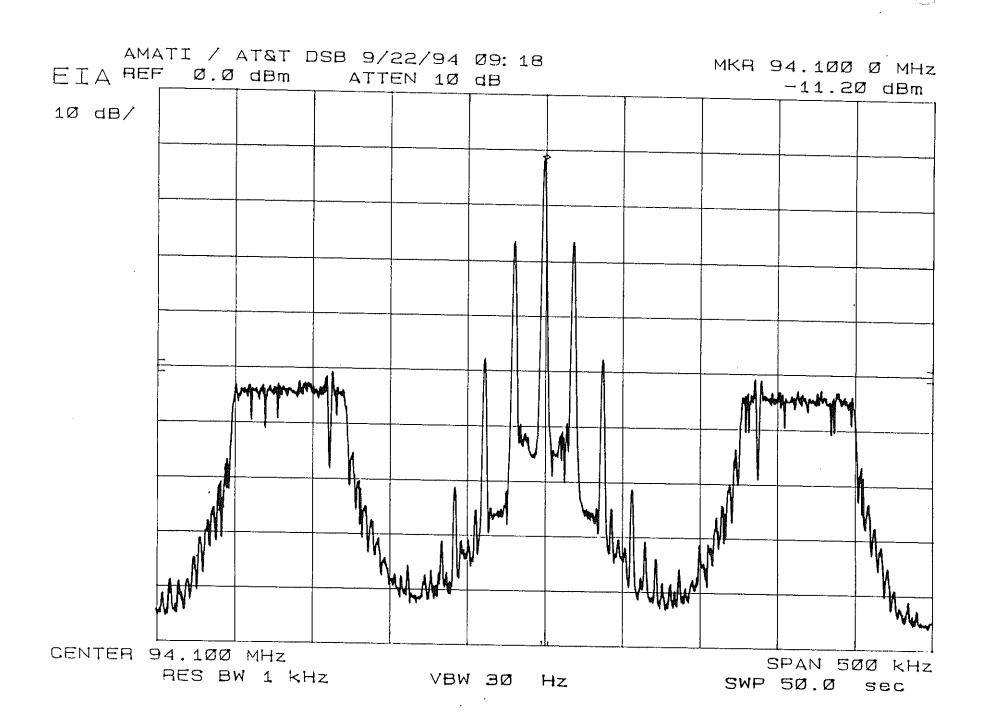


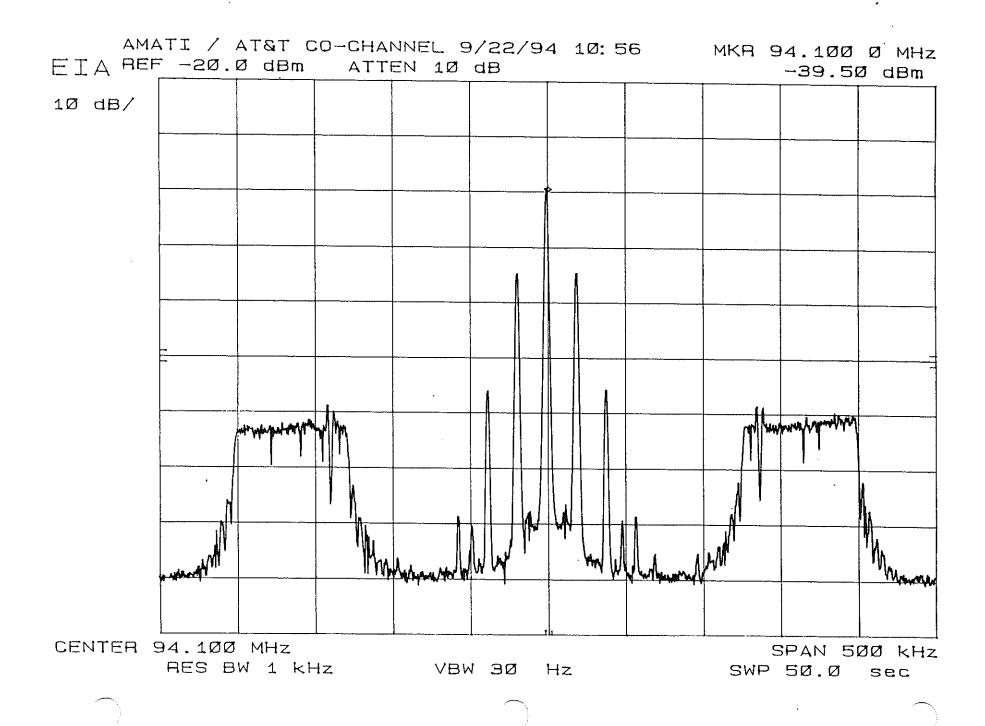


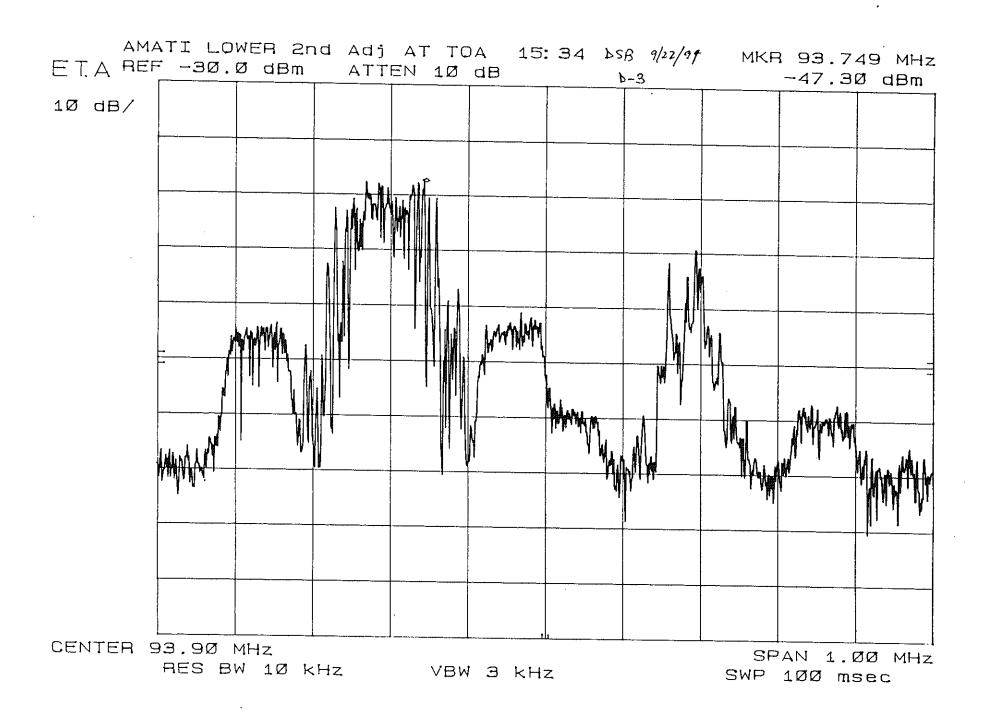


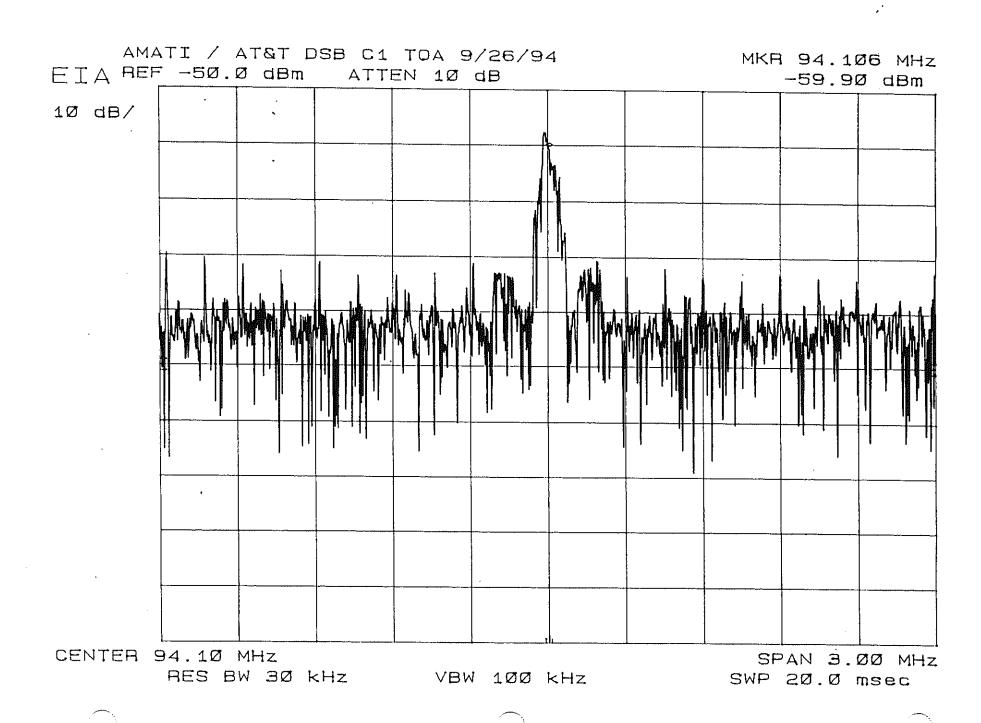
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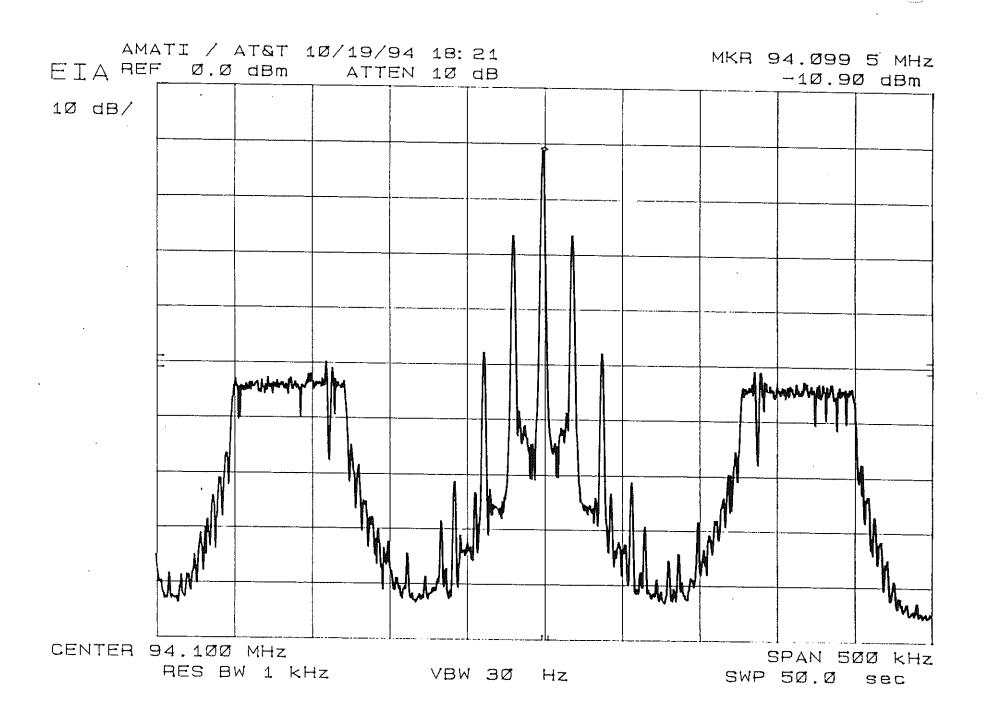


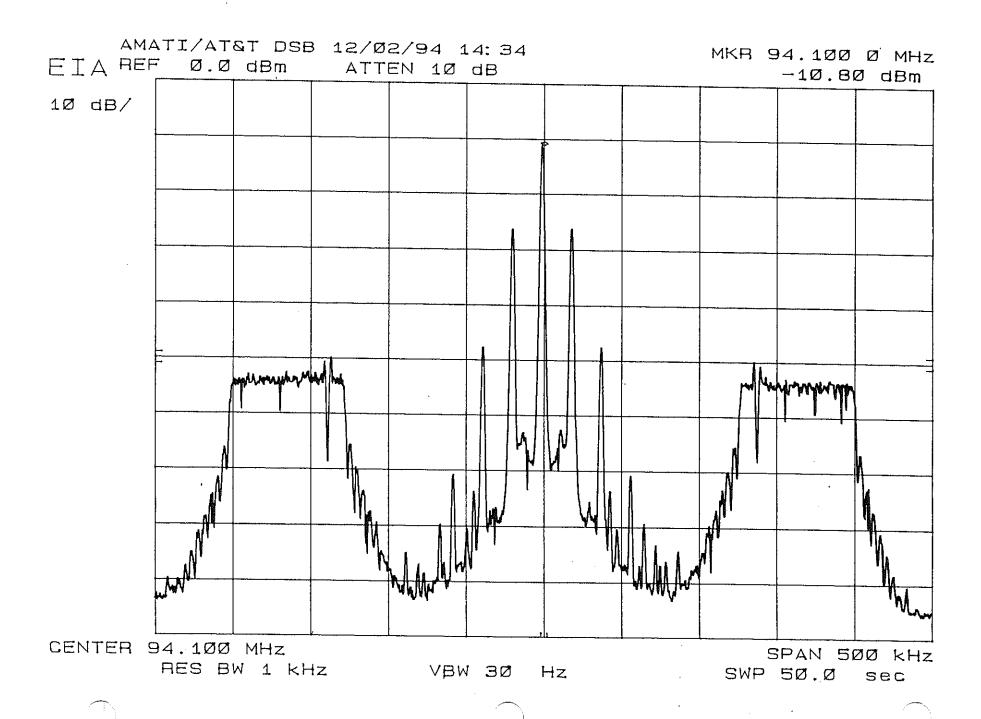










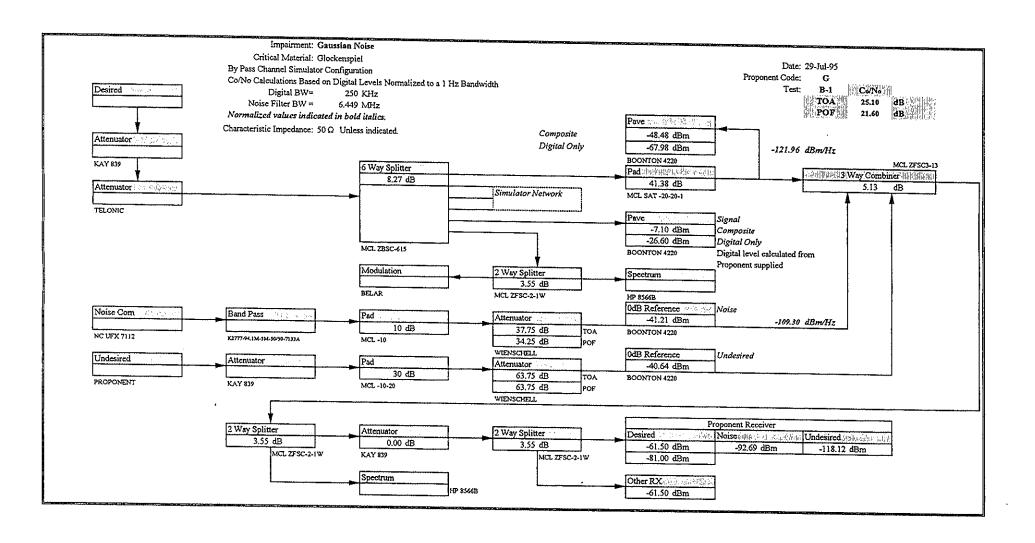


# **APPENDIX AG**

Digital Test Results USA Digital Radio FM 2

Proponent: USADR FM2 Code; G Digital Band Width: 2.50E+05 Hz Composite Band Width: 2.50E+05 Hz Peak/Average: 2.05 dB

Test	B-1			<del></del>
Proponent		Gaussian Nois	<b>.</b>	
Code:	G	Gaussian Nois	SC	
	•			
				Units
Glockenspiel		TOA	POF	
	Attenuator	37.75	34.25	⊟ _{dB}
	Co/No	25.10	21.60	dB
	TOA	Occasional pops and clicks.		
EO&C		p p p m z m z m m m m m m m m m m m m m		1
	POF	Severely distorted audio with warbles, snaps an	d pops.	
		•	• •	
Soprano	<del></del>	TOA	DOL	
)	Attenuator	37.75	POF 34.00	-l ., l
	Co/No	25.10	21.35	dB dB
		22.10	41.33	^{ab}
				1
	TOA	Small pops and clicks with some high cut.		
EO&C				
	POF	Many pops and clicks, heavy distortion and hig	h cut.	
Clarinet		TOA	POF	
	Attenuator	39.00	35.00	dB
	Co/No	26,35	22.35	dB
,				
	TOA	Total desired and the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of		
EO&C		Intermittent pops and clicks ( warbles).		
2000	POF	High Frequency roll off, many pops and clicks,	hoosily distanted	
	. 01	rings requestey for our many pops and eners,	neavily distorted.	
	Recording			
Notes:	Testers:	DML,DS,EB		
	Date:	29-Jul-95		
			<u> </u>	



# EIA Digital Audio Radio DAT Recording Log

Number	Time Code Start S	top	P	rogran ID#	2		Description	
DAR30215.DAT		l	2	Π	100000		Glockenspiel Clear Channel	Attu
29-Jul-95		3	2 4			*********	Olokonspiel Clear Channel	63,75
		5	6		******	••••••		39,25
***************************************	***************************************	7	8		••••••	**********		38.75
		9	10		******	**********	TOAlab	38.25
	***************************************	11	12	·	********	**********	1 07 1130	37.75
	***************************************	13	14			*********		37.25
	***************************************	15	16					36.75
	***************************************	17	18			*****		36.25
	***************************************	19	20					35.75
	***************************************	21	22		•	**********		35.25
	***************************************	23	24	<del>  </del>		~········	Sync	34.75
	***************************************	25	26	<del> </del>		********	POFlab	63.75
***************************************		27	28		••••••	*********	I CJ (30	34.25
***************************************	***************************************	······	† <del>-</del>		•••••••	*********		33.75
******	***************************************	29	30			********	Soprano Clear Channel	*******************************
***********	***************************************	31	32	<b> </b>	•••••	*********	poprano ciear channei	63.75
***************************************		33	34	ļ		H######		39.25
***************************************	***************************************	35	36					38.75
***************************************	*********************	37	38	<del>  </del>		*********	TO A	38.25
***************************************	***************************************	39	40			**********	TOAlab	37,75
************************************	***************************************	41	42					37.25
***************************************		43	44			************	***************************************	36.75
**************************		45	46	ļ	,,,,,,,,		***************************************	36.25
***************************************	***************************************	47	48		······			35,75
		49	50				***************************************	35.25
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	***************************************	51	52				A	34.50
***************************************		53	54				Sync	63.75
***************************************	tr***tn********************************	55	56				POFlab	34.00
***************************************	***************************************	1 33	70					33.50
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								***************************************

Code: G

Impairment: Gaussian Noise

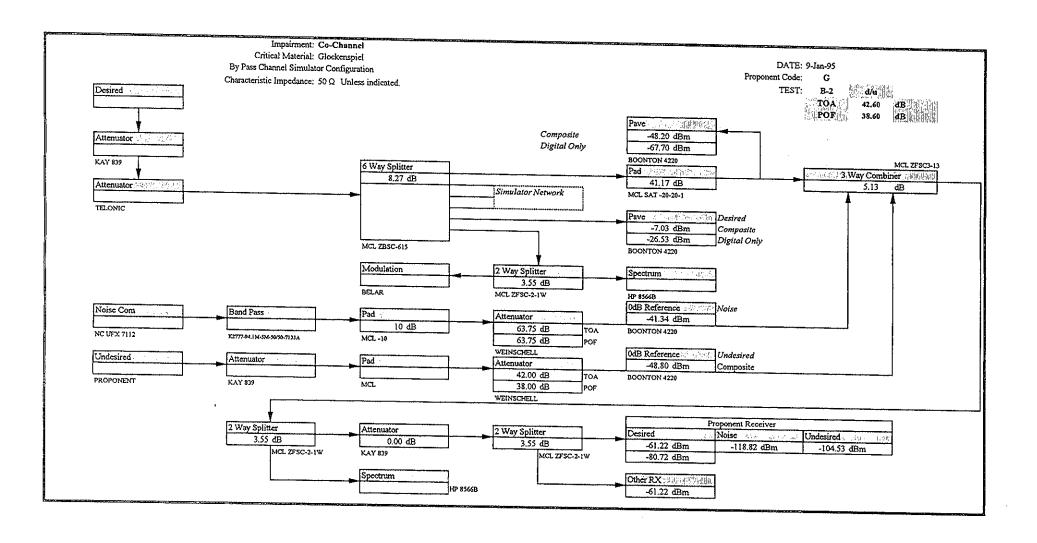
# EIA Digital Audio Radio DAT Recording Log

DAT File Number	Time Start	Code Stop		₽	rogr ID#			Description	
DAR30215.DAT		1	57	58		T	T	Clarinet Clear Channel	Atm
29-Jul-95		***************************************	59	60	·····	* *********	<b></b>		63.75
			61	62	ļ	********	†		40.50
		***************************************	63	64	······		<b></b>	***************************************	40.00
	***********************	***************************************	65	66	ļ	<del> </del>	·	TOAlab	39.50
***************************************	***************************************	***************************************	67	68	************	<b></b>	····	107480	39.00
	*************		69	70					38.50
	******************	**************************	71						38.00
	***************************************	******************	73	72 74	ļ		·····		37.50
	**/****	***************************************	75	76	·····	·	<del> </del>		37.00
***************************************	******************	······································	77	78	ļ	·	<del> </del>		36.50
	-1	**********	79	80	t	<del> </del>	<del> </del>		36.00
	***************************************	******************************	81		ļ		<del> </del>	Sync	35.50
	************************	***************************************	83	82 84	ļ	<del> </del>	ļ	POFlab	63.75
*		***************************************	85	86		ļ		T OF 180	35.00
************************************		······				·		***************************************	34.50
*************************************	******************************					,	**********	***************************************	
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Code: G

Impairment: Gaussian Noise

Test	B-2			
Proponent		Co-Char	inel	
Code:	G	00 0,,,,,	11104	
				Units
Glockenspiel		TOA	POF	
	Attenuator	42.00	38.00	dB
	d/u	42.60	38.60	₫B
	TOA	Small warble.		
EO&C				
	POF	High cut, heavy distortion and background	noise.	
Soprano		TOA	POF	
	Attenuator	40,50	38.00	dB
	d/u	41.10	38.60	dB
•	TOA	Small warble and high cut.		
EO&C		The state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the s		
	POF	Static pops, high cut and background noise	e.	
Clarinet		TOA	POF	
0.21.0101	Attenuator		38.50	dB
	d/u	42.60	39.10	dB
	**			, "B
	<b>770.</b> 4			
EO&C	TOA	Small warble.		
E0&C	POF	High cut and heavy distortion.		
	ror	right cut and neavy distortion.		
	Recording	Reference: DAR30243.DAT	DAR30244.DAT	
Notes:	Testers:	DML,RMC	DAKSU244.DAT	
	Date:	9-Jan-95		
		> 20th >2		



# EIA Digital Audio Radio DAT Recording Log

DAT File Number	Time Start	Code Stop		P	rogr. ID#			Description	
DAR30243.DAT			1	2	3			Description Glockenspiel Clear Channel	Attn
9-Jan-95	***************************************	***************************************	4	5	6	***********		Totokonspici Orea Gnatinei	63.75
	***************************************	<del></del>	7	8	9	*********	• • • • • • • • • • • • • • • • • • • •		43.00
			10	11	12		<del> </del>	TOAlab	42.50
	*************************		13	14	15	*********	<del> </del>	1 O A January	42.00
	*********************	***************************************	16	17	18	********	·········		41.50
	*************************	***************************************	19	20	21	**********			41.00
***************************************	***************************************	***************************************	22	23		•••н•••••	***************************************		40.50
	***************************************		25	26	24 27	*****	**********		40.00
***************************************	*************************		28	29	30		ļ	***************************************	39.50
***************************************	**********************	*********************	31	32	33				39.00
,	**************	·····	34	35	36		<b></b>	POFlab	38.50
************************************		P*************************************	37	38	39		ļ	IFOTIAO	38.00
***********************************	<del>/</del>	······································	<del> </del>				<b></b>		37.50
***************************************	***********	**************	40	41	42			S	
/ F.	*******	***************************************	43	44	45		**********	Soprano Clear Channel	63.75
***************************************	*************************	***************************************	46	47	48	********	**********		43.00
**	***************************************	***************************************	49	50	51	*********			42.50
***************************************	******************	***************************************	52	53	54	55		D	42.00
***************************************	····	*****	57	58	59	60	20	Possible High Cut	41.50
***************************************	******************		62	63	64		01	Possible High Cut	41.00
***************************************	***************		65	66	67	***********		TOAlab	40.50
***************************************		******************************	68	69	70	•••••	*******		40,00
***************************************		*******************	71	72	73	********	********		39.50
***************************************	***************************************	******	74	75	76	*********	*********		39.00
***************************************	***************************************		77	78	79	********		DOF.	38.50
	*************************	***************************************	80	81	82	************	ļ	POFlab	38.00
	********		-00	01			ļ		37.50
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***************************************		******************			********	**********	ļ		*****************
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Code: G Impairment: Co-Channel

## EIA Digital Audio Radio DAT Recording Log

DAT File Number	Time Start	Code Stop		P	rogra ID#	ım			
DAR30244.DAT			1	2	3	·	**********	Description (Claim Cl. Cl. Cl. Cl. Cl. Cl. Cl. Cl. Cl. Cl.	Attn
9-Jan-95	·	ļ	4		6			Clarinet Clear Channel	63.75
70+(************************************	******************	***************************************	<del>                                     </del>	5 8	9		************		43.00
***************************************	*****************	***************************************	10	11	12			TOALL	42.50
***************************************	***********************		13	14	15	************		TOAlab	42.00
***************************************	*****************		16	17	18	···			41.50
**  ***  /*********  *********  ***  **  **	****************	***************************************	19	20	21				41.00
***************************************	***************************************	·····	22						40.50
***************************************	*****************	***************************************	25	23 26	24 27				40.00
***************************************	************	***************************************	28	29	30				39.50
***************************************	*********************		31	32	33			POFlab	39.00
***************************************	*****	***************************************	34	35	36	37		disregard #36	38.50
1	****************************	************	38	39	40	<u> </u>		ararekara 400	38.00
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		***************************************	41	42	43				37.50
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									***************************************

Code: G

Impairment: Co-Channel

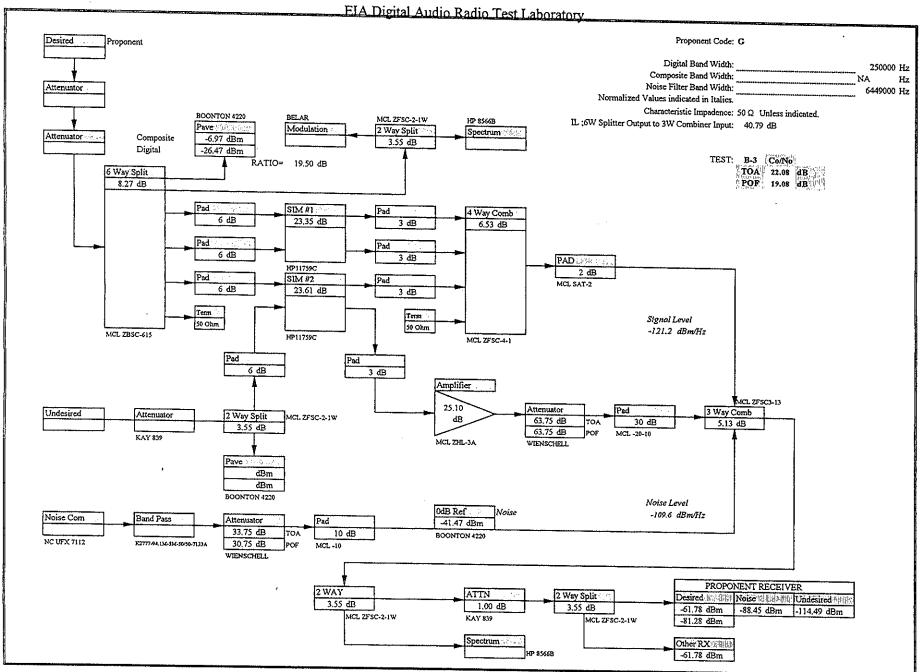
Test Proponent	B-3		Urb	an Slow Ray	yleigh		
Code:	G			•	J		
							Units
Glockenspiel		***************************************	TOA		POF		
	Attenuator Co/No						
	3077.0	La cara	was allowed to	run 5 minutes d		<u> </u>	
	TOA ·	no recovered as	ıdio was observ	run 5 minutes c red.	iuring which		
EO&C	<u>, L</u>	<u> </u>					
2000	<u></u>		- ·				
	POF						
Soprano			TOA	<del>7</del>			
	Attenuator		IOA		POF		
	Co/No						<del></del>
			ance as indicate	d above this tes	t was assumed to	<u>l</u>	
	TOA	be unnecessary				,	
EO&C							
				·			
	POF						
Clarinet			T. T.	<u> </u>	,		
Ciarulet	Attenuator		TOA		POF	Woodaaaaaaaaaa	
	Co/No						
	20/110		ance as indicate	d above this tas	t was assumed to		
	TOA	be unnecessary	40 11101041	w roote mis ter	a was assumed to	)	
EO&C	}						
	POF						
	_						
Masar	Recor	ding Reference:					
Notes:	Recor	Testers:	None DML, RMc 15-Dec-94				

Test	B-3						<del></del>
Proponent	_ +	Urban Fost Davisial					
Code:	G	Urban Fast Rayleigh					
	_						
Glockenspiel	<del></del>		TOA	1	POF	r	Units
	Attenuator				POF		
	Co/No						
		The simulation	was allowed to	run 5 minutes d	uring which		
	TOA	no recovered at	idio was observe	ed.	<b>g</b>		
EO&C							
EU&C							
	POF					-	
	. 01						
Soprano			TOA		POF		
	Attenuator				FOF		·
	Co/No						
		Due to perform	ance as indicate	d above this test	was assumed to	<b>&gt;</b>	
	TOA	be unnecessary.					
EO&C	L		<del></del>				
Lowe						1	
	POF						
Clarinet			TOA		POF		
	Attenuator				101		
	Co/No						
	TO.	Due to perform:	ance as indicate	above this test	was assumed to		
	TOA	be unnecessary.					
EO&C	L	·					<del></del>
			<del></del>				
	POF						
			······································				
	Record	ling Reference:	None				
Notes:		Testers:	DML, RMc				i
		Test Date:					

Test	B-3						
Proponent	<b>D</b> -3		<b>D</b>	al 172 and 10 and 1			
Code:	G		Kur	al Fast Rayl	eign		
	3						
Glockenspiel			TOA				Units
Grockerspier	Attenuator		IOA		POF		
	Co/No						
	00/110	The simulation	was allowed to		L	l	
	TOA	no recovered au	was allowed to	inu o minutes di	uring which		
		10 1000 10100 20	idio was obscive	·u.			
EO&C			<del></del>				
						·	
	POF						1
							1
Soprano			TOA		POF		
	Attenuator						
	Co/No						
		Due to perform	ance as indicate	d above this test	was assumed to		
ŀ	TOA	be unnecessary	•				
EO&C	L		<del></del>				
EU&C	<u></u>						
	POF						
	101						1
Clarinet			TOA		POF		
	Attenuator		104		PUF		
	Co/No						
		Due to perform	ance as indicate	above this test	was assumed to		
	TOA	be unnecessary.			assumed to		1
EO&C					**		
	POF						
	Recor	ding Reference:	None				1
Notes:			DML, RMc				
		Test Date:	15-Dec-94				į

File Name: DAR30807.XLS B-3 RF

Glockenspiel TO  Attenuator Co/No The simulation was allo no recovered audio was  EO&C POF  Soprano TO Attenuator Co/No Due to performance as it	ved to run 5 minutes o	POF		Units
Glockenspiel  Glockenspiel  Attenuator  Co/No  TOA  The simulation was allow no recovered audio was  EO&C  POF  Soprano  Attenuator  Co/No  Due to performance as in	A A ved to run 5 minutes o	POF		Units
Glockenspiel  Attenuator  Co/No  TOA  The simulation was allown or recovered audio was  EO&C  POF  Soprano  Attenuator  Co/No  Due to performance as in	ved to run 5 minutes o			Units
Attenuator Co/No TOA The simulation was allow no recovered audio was  EO&C  POF  Soprano TO  Attenuator Co/No Due to performance as it	ved to run 5 minutes o			Units
Attenuator Co/No TOA The simulation was allow no recovered audio was  EO&C  POF  Soprano TO  Attenuator Co/No Due to performance as it	ved to run 5 minutes o			Units
Attenuator  Co/No  TOA The simulation was allow no recovered audio was  EO&C  POF  Soprano TO  Attenuator  Co/No  Due to performance as it	ved to run 5 minutes o			
CO/No TOA The simulation was allow no recovered audio was  EO&C  POF  Soprano TO  Attenuator CO/No Due to performance as it	ved to run 5 minutes of	during which		
TOA The simulation was allow no recovered audio was  EO&C  POF  Soprano TO  Attenuator  Co/No  Due to performance as it	ved to run 5 minutes of observed.	during which		
FO&C   no recovered audio was  FOF   POF    Soprano   TO    Attenuator    Co/No    Due to performance as it	ved to run 5 minutes observed.	during which	·	
FO&C   no recovered audio was  FOF   POF    Soprano   TO    Attenuator    Co/No    Due to performance as it	observed.			
POF  Soprano TO  Attenuator  Co/No  Due to performance as it				
POF  Soprano TO  Attenuator  Co/No  Due to performance as it				
Soprano TO  Attenuator  Co/No  Due to performance as it				<del></del>
Soprano TO  Attenuator  Co/No  Due to performance as it			· · · · · · · · · · · · · · · · · · ·	
Attenuator Co/No Due to performance as it				
Attenuator Co/No Due to performance as it				
Co/No  Due to performance as it	A	POF		· · · · · · · · · · · · · · · · · · ·
Due to performance as i				
Due to performance as it				
	idicated above this ter	st was assumed to		······
TOA be unnecessary.				
EO&C		<del></del>		
POF				
Clarinet TO	A	POF		<del></del>
Attenuator				
Co/No				
Due to performance as i	idicated above this tes	st was assumed to	· · · · · · · · · · · · · · · · · · ·	
TOA be unnecessary.				
EO&C		<del></del>	<del></del>	
POF				
Recording Reference: None				
Notes: Testers: DML, R				
Test Date: 15-Dec-	Mc			
1031 Date: 13-Dec-				



Test C-1	Impulse Response				
USADR FM2 Program Material	Glockenspiel		1.00 Vp-p at atten 10.00 ns wide pulse	uator input.	
Pulse Repetition (Hz)	Attn at TOA	(Vp-p)	Attn at POF	(Vp-p)	EO&C
100	20.75	0.09	13.00	0.22	TOA random chirping, POF excessive noise and high cut.
200	19.75	0.10	12.75	0.23	TOA random chirping, POF excessive noise and high cut.
333	20.75	0.09	13.50	0.21	TOA small pops and clicks, POF excessive noise and high cut.
666	21.75	80.0	16.00	0.16	TOA small pops and clicks, POF excessive noise and high cut.
1000	22.75	0.07	16.00	0.16	TOA small pops and clicks, POF excessive noise and high cut.
Additional Comment	ts:				
Test Date: 29-Jul-9					
Testers: DML, DS,	EB	Signal Level at	t Receiver: -62.00	dBm	
<u> </u>					

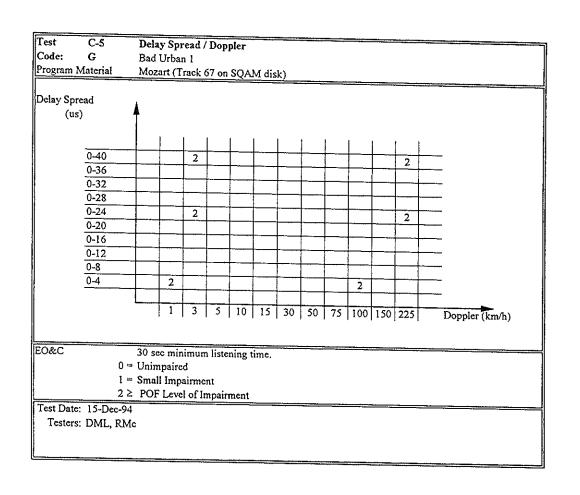
JSADR FM Program Mai	<del>_</del> '	CW Respon							
TOGIZIII IVIZI			k 67 SQAM I						
Test Point	Frequency	1	LEV 2	LEV 3		Frequency	LEV 1	LEV 2	LEV 3
	MHz	POF	POF+6	POF+12	Test Point	MHz	POF	POF+6	POF+12
1 2	93.85	0	0	l	27	94.11	2	2	2
2 3	93.86	0	0	1	28	94.12	2	2	2
	93.87	0	0	1	29	94.13	2	2	2
4	93.88	0	0	0	30	94.14	2	2	2
5	93.89	0	0	0	31	94.15	2	2	2
6	93.90	0	0	0	32	94.16	1	2	2
7	93.91	0	0	1	33	94.17	1	2	2
8	93.92	0	0	1	34	94.18	i	2	2
9	93.93	0	0	2	35	94.19	1	2	2
10	93.94	0	1	2	36	94.20	1	2	2
<u> </u>	93.95	0	1	2	37	94.21	1	2	2
12	93.96	0	I	2	38	94.22	I	2	2
13	93.97	1	2	2	39	94.23	1	1	2
14	93.98	1	2	2	40	94.24	0	1	2
15	93.99	1	2	2	41	94,25	0	1	2
16	94.00	1	2	2	42	94.26	0	1	2
17	94.01	1	2	2	43	94.27	0	0	2
18	94.02	1	2	2	44	94.28	0	0	1
19	94.03	1	2	2	45	94.29	0	0	i
20	94.04	1	2	2	46	94,30	0	0	0
21	94.05	1	2	2	47	94.31	0	0	0
22	94.06	1	2	2	48	94.32	0	0	1
23	94.07	2	2	2	49	94.33	0	0	1
24	94.08	2	2	2	50	94,34	0	Ö	1
25	94.09	2	2	2	51	94.35	0	0	1
26	94.10	2	2	2					
Test Date:	5-Oct-94				or Reference:		dBm		
Cesters:	DML, RMc		0=CLEAN A POF Attn=56		i=APPROXI	MATE TOA POF d/u=	38.72	2 ≥ POF dB	

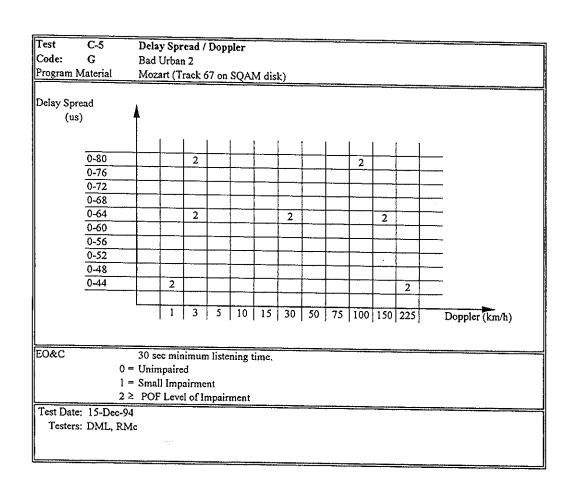
Test	C-3 Airplane Fl	utter	
USADR I			
Program 1	Material Glockenspie	1	
Scenario	Reflected Pa	ith	EO&C
#1	400 Km/h Doppler		
	27.5 μs Delay		
	8.00 dB	TOA 8.00 dB	No recovered audio.  Level of reflected path must be reduced by  43 dB for clean audio to be recovered.
#2	200 Km/h Doppler		45 db for clean audio to be recovered.
	13.7 μs Delay		
	6.00 dB	TOA 6.00 dB	No recovered audio.
#3	100 Km/h Doppler 6.8 μs Delay		
	4.00 dB	TOA 4.00 dB	No recovered audio.
Test Date	: 15-Dec-94		
Testers	: DML,RMc		

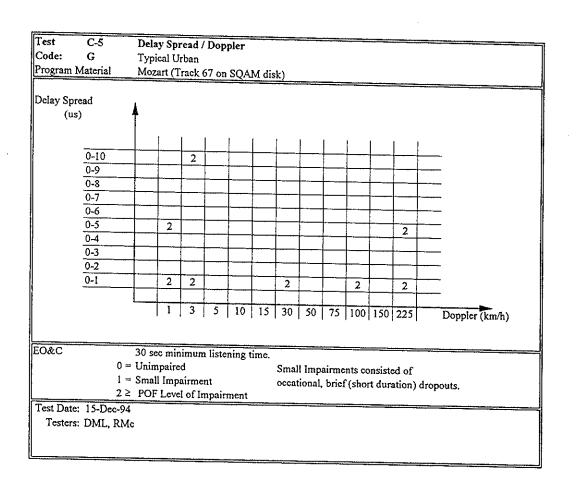
Test C-4	Weak Signal Sensitivity
USADR FM2	
Program Material	Glockenspiel
	TOA (dBm) POF (dBm)
	-74 ≤ TOA < -73 -76 < POF ≤ -75
Test Date: 15-Dec-94	1
Testers: DML, RMe	
, ******	

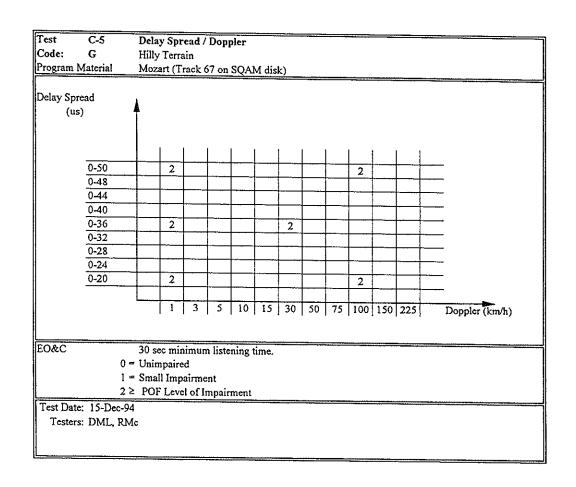
File Name: DAR30807.XLS C-4

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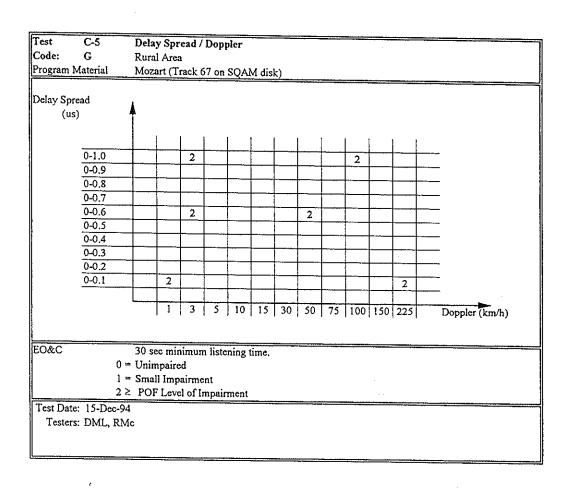








File Name: DAR30807.XLS C-5 HT



Test USADR FM2	C-6	Additional !	Multipath	Doppler Si	imulation	ns	
Program Material:	Glockensp	iel	<u> </u>				
Scenario							
	Level	Attn	Co/No	Units	EO&C		· · · · · · · · · · · · · · · · · · ·
#1 Urban Slow	TOA	63.75	52.08	dB	No reco	vered audio.	
	POF	63.75	52.08	dB			
#2 Urban Fast	TOA	63.75	52.08	dB	No reco	vered audio.	
	POF	63.75	52.08	dВ			
#3 Rural Fast	TOA	63.75	52.08	dB	No reco	vered audio.	
	POF	63.75	52.08	dB			
#4 Terrain Obstructed	TOA	63,75	52.08	dB	No гесо	vered audio.	
Fast	POF	63.75	52.08	dB		· · · · · · · · · · · · · · · · · · ·	V
Test Da	te: 15-Dec-94			Desired	L		Noise
Testers: DML, RMc			Signal		dBm		NOISE
DAT Reference: None			IL	40.79		вw	6.45E+06 Hz
			3WIN	-47.76		0dB Ref	-41.47 dBm

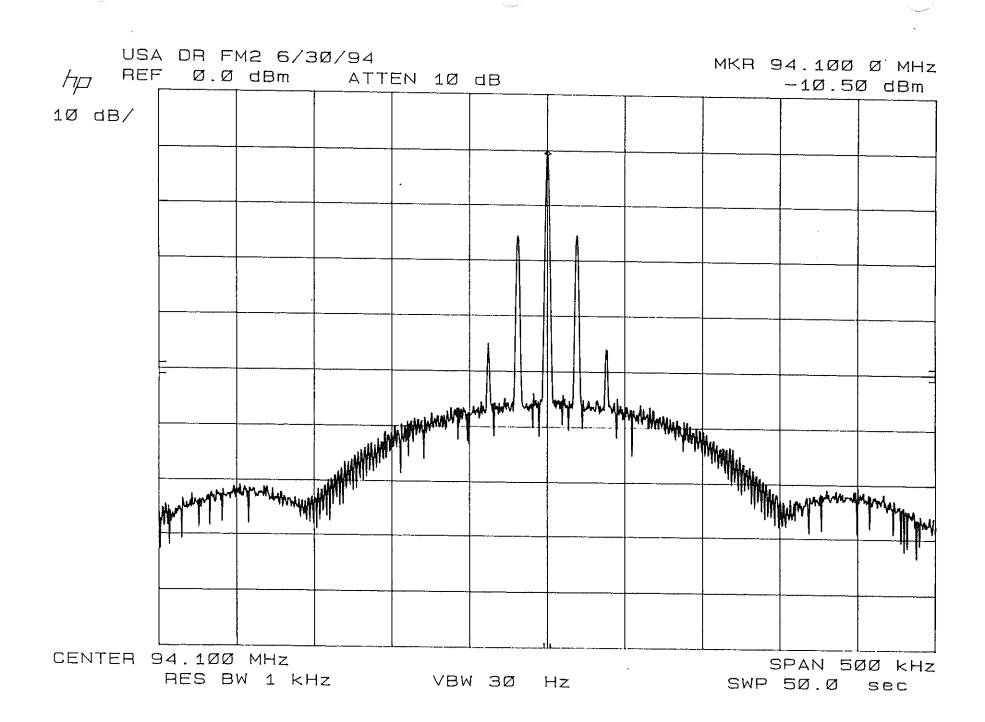
Test USADR FM2	D-Series	Co-Channe	l, 1st and 2	nd Adjac	ent	
Program Material:	Glockenspie	el		,		
<del></del>	Level	Attn	D/U	Units	EO&C	
D-1 Co-Channel	TOA	51.00	44.31	ďВ	Small warbles,	
	POF	47.50	40.81	dB	Excessive noise.	
D-2 Lower	TOA	36.75	30.06	dB	Drop out.	
1st Adjacent	POF	35.50	28.81	ďΒ	Excessive muting.	
Upper	TOA	37.00	30.31	dB	Drop out.	<del> </del>
Ist Adjacent	POF	35.75	29.06		Excessive muting.	
D-3	TOA				Excessive muting,	
Lower 2nd Adjacent	POF	f	ſ		Symmetry exists.	
· · · · · · · · · · · · · · · · · · ·	TOA	37.25	30.56	<del></del>	Drop out.	
Upper 2nd Adjacent	POF	35.50			Excessive muting.	
Addition	nal Comments:				· · · · · · · · · · · · · · · · · · ·	
D	AT Reference; 1	No Recordin By Pass Sim		ouration		
Test Da	te: 16-Dcc-95			Desired		Undesired
Teste	rs: DML, RMc	6	WOUT	-7.00	dBm	Officestica
		-	L	41.07	dB	
		3	WIN	-48.07	dBm	-41.38 dBm

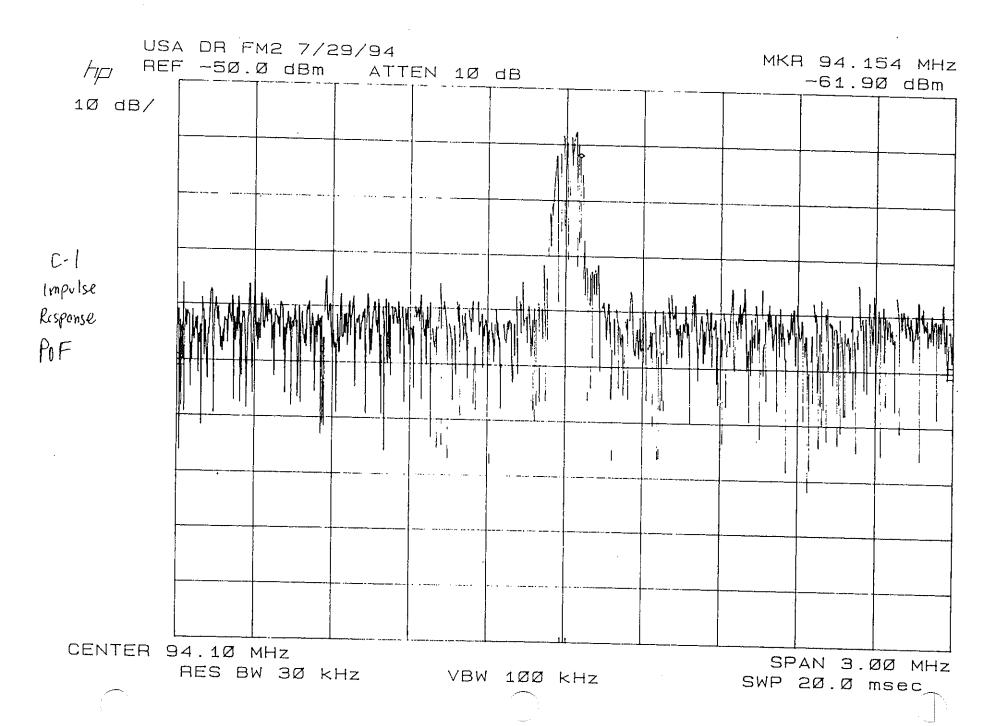
Test	E-Series
USADR FM2	J-Series
	E-1, E-2 and E-3 in both Rayleigh and Doppler simulation modes
	were unnecessary due to system performance with
	multipath simulations in tests B-3 and C-6 (see B-3 and C-6).
	,
	For similar reasons the J-2 tests for both Rayleigh and Doppler
	simulations were unnecessary.
,	

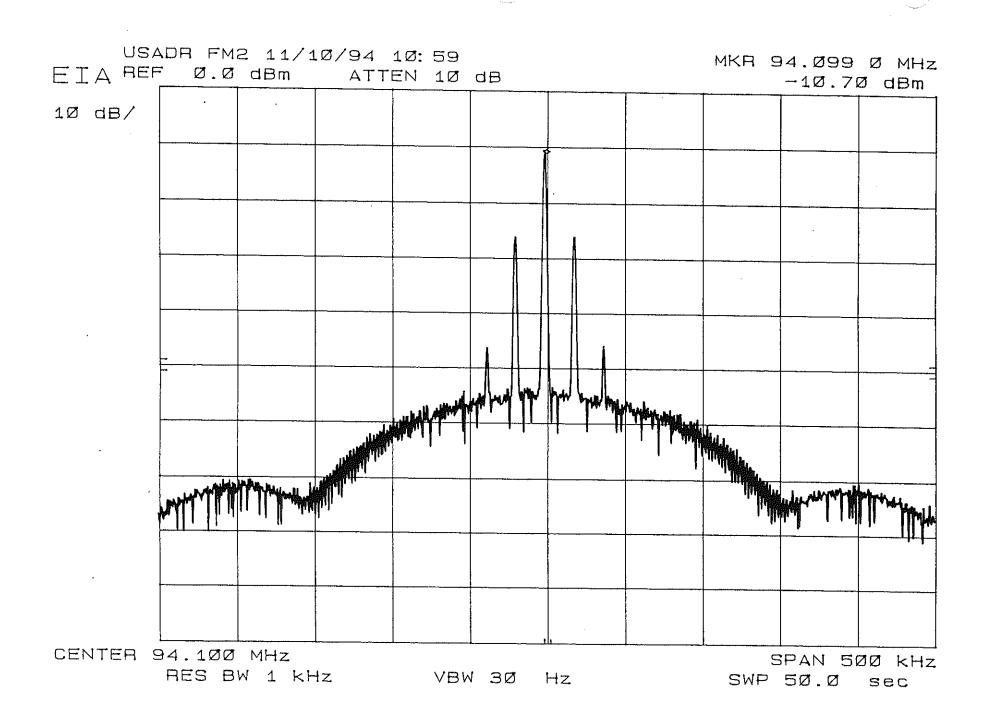
Cest	J-1	Re-Acquisition			<del> </del>		
JSADR FM2 Program Mate		Mozart (Track 67	on SOAM diele)				
		***************************************	on bQALW disk)				
	Toff(s)	POF-2		ion Time (s) F-4	POF-6		
	30	6		<u> </u>	3	•	
		4	· · · · · · · · · · · · · · · · · · ·	<u> </u>	4		
		4		9	10		
		4	1	1	2		
		3		3	2		
<u>A</u> :	verage	4.2	5	.6	4.2		
P	OF Atten	uator Setting :	31.00 dB				
		gnal Level :	-48.59 dBm				
N	oise 0 dE	Reference :	-41.34 dBm				
Addition	nal Comm	nents:	<del></del>				<del></del>
		Re-Acquisit	on time is the val	ue listed ± 0.5 seco	nds.		
Test Date:	5-Oct-94				·		
Testers: D							
193(013. D	4-4L, ICIVI	•					

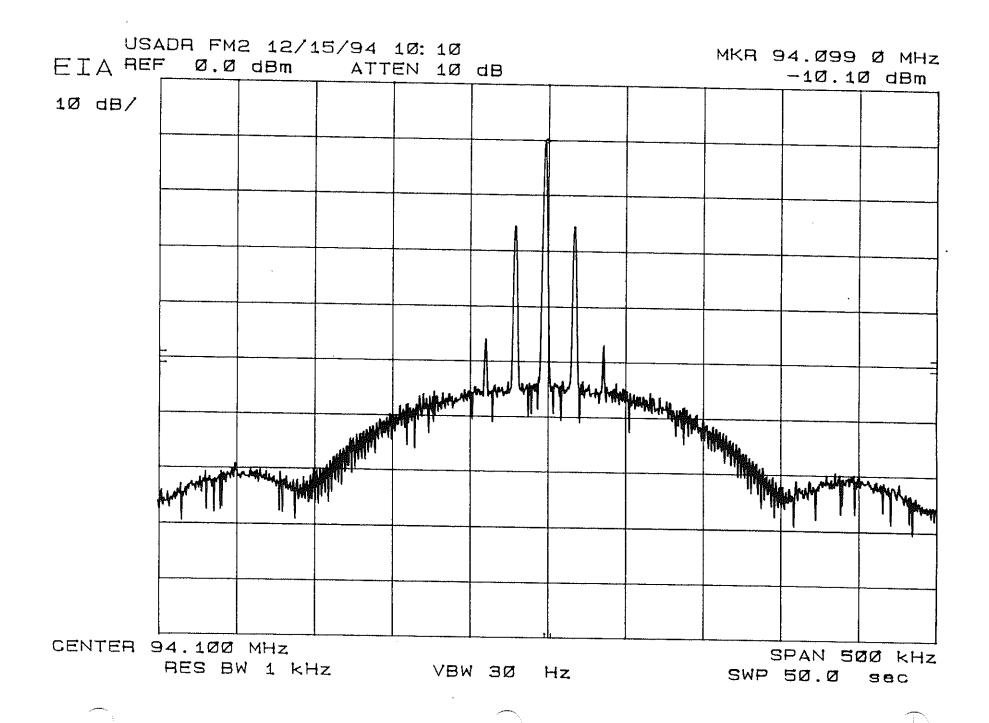
Test	B-1 Ancillary Data Channel							
Proponent								
Code:	G							
		Gaussian Noise						
				BER				
						Units		
		<del></del>	TOA		POF			
	Attenuator	34.75	33.75	32.25	30.75	dB		
	Co/No	23.08	22.08	20.58	19.08	₫B		
	Log(BER)		-4.153	-2.590	-1.519			
	BER	0.00E+00	7.04E-05	2.57E-03	3.03E-02			
Test	B-2	Ancillary Data Channel						
		BER						
						Units		
			TOA		POF			
	Attenuator		51.00		47.50	₫B		
	d/u		44.31		40.81	dB		
	Log(BER)		-3.205		-1,398			
	BER		6.23E-04		4.00E-02			
Testers:	DML, RMc		TO 4 4 DOD					
Date:	15-Dec-95							
Date:	13-Dec-32							

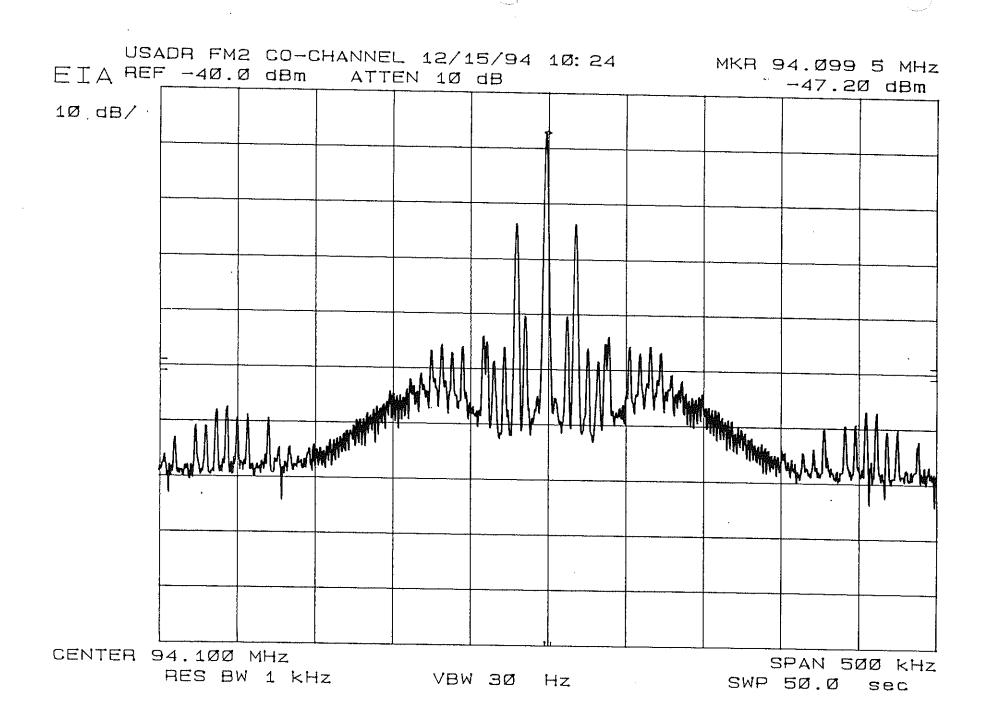
File Name: DAR30807.XLS BER

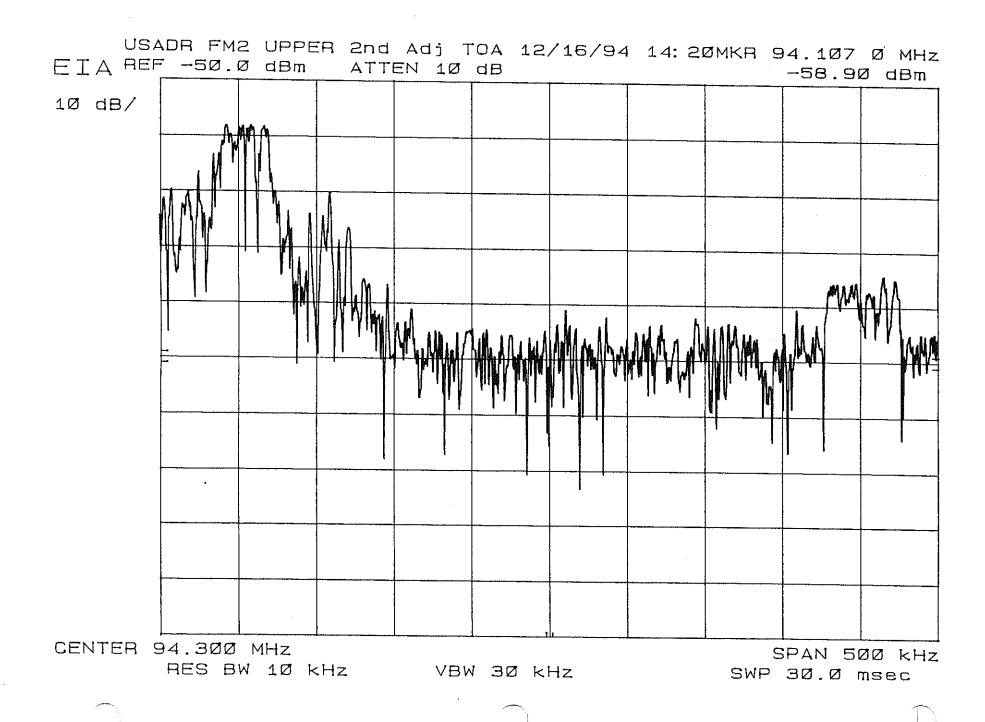


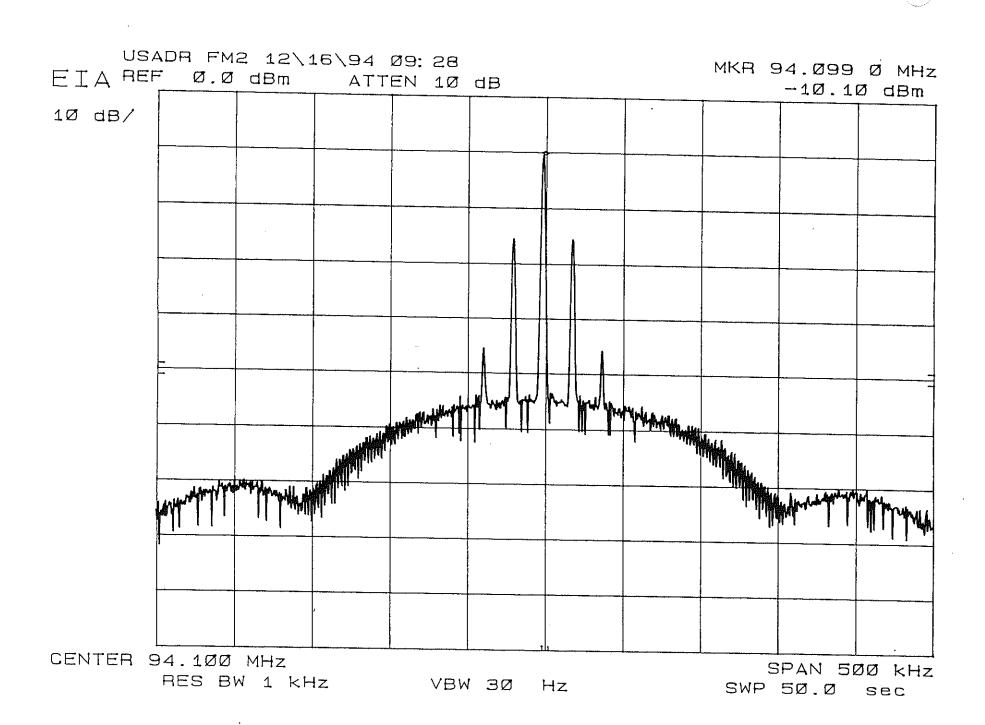


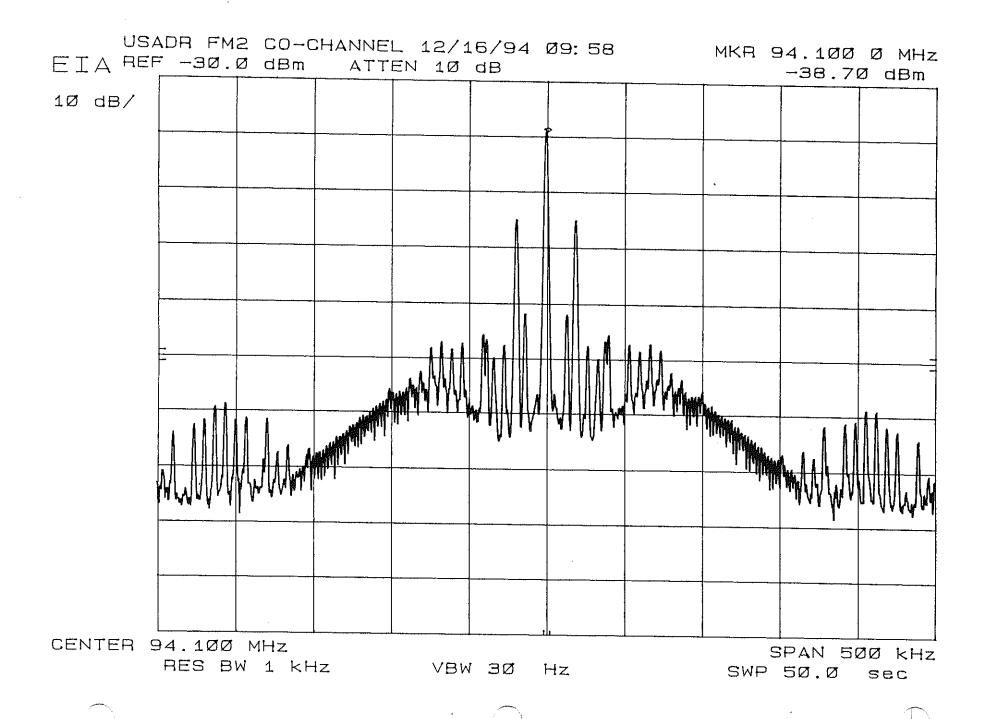


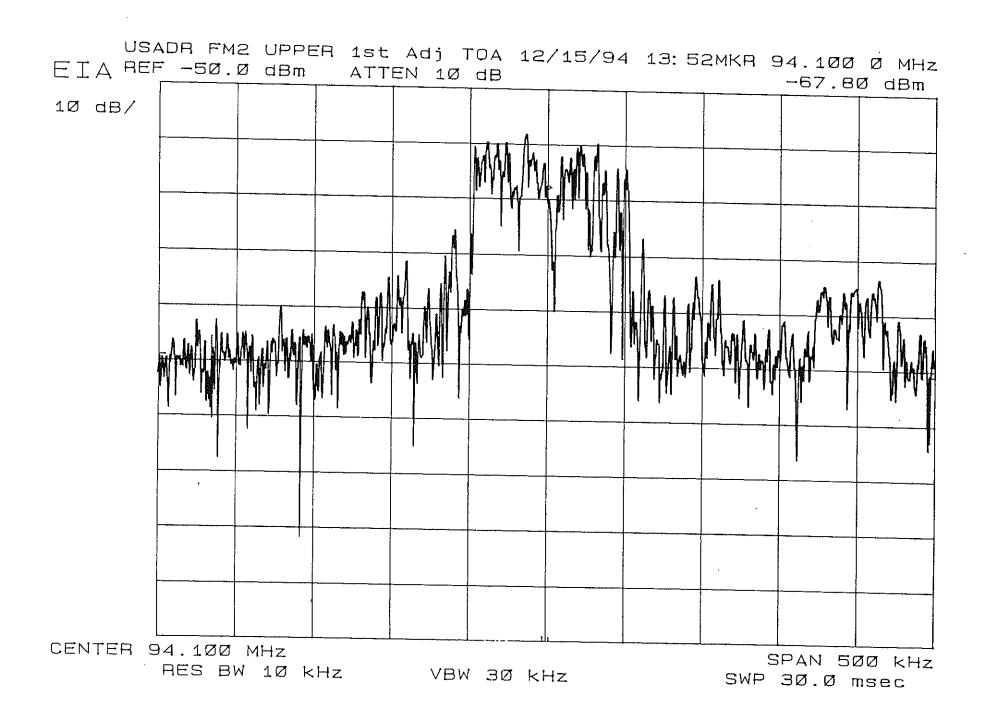


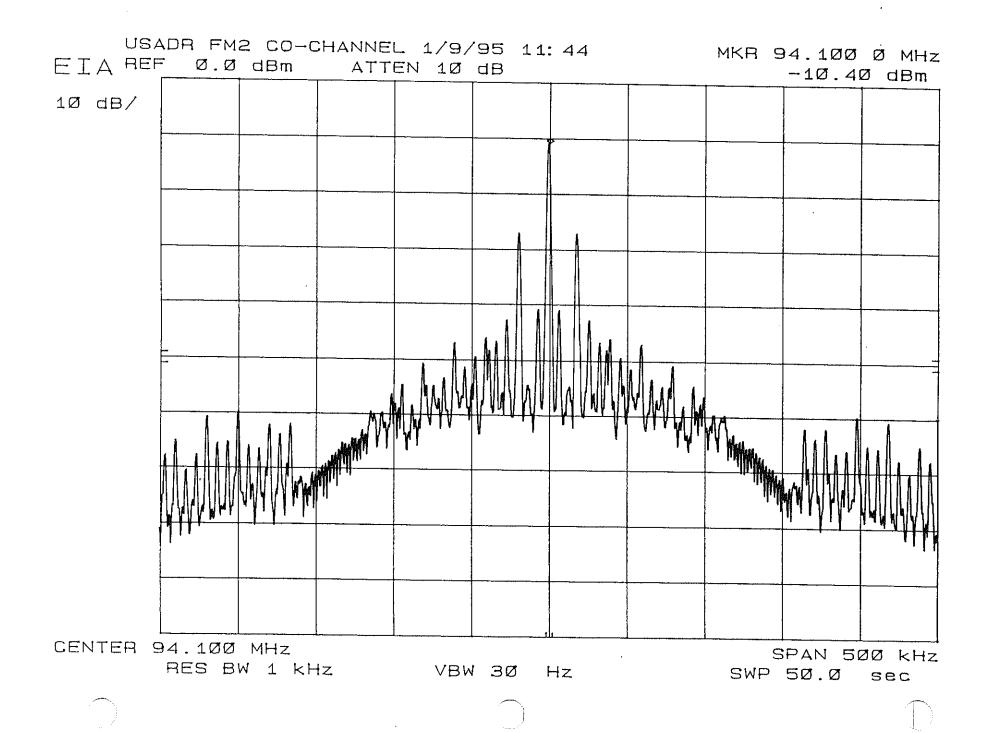


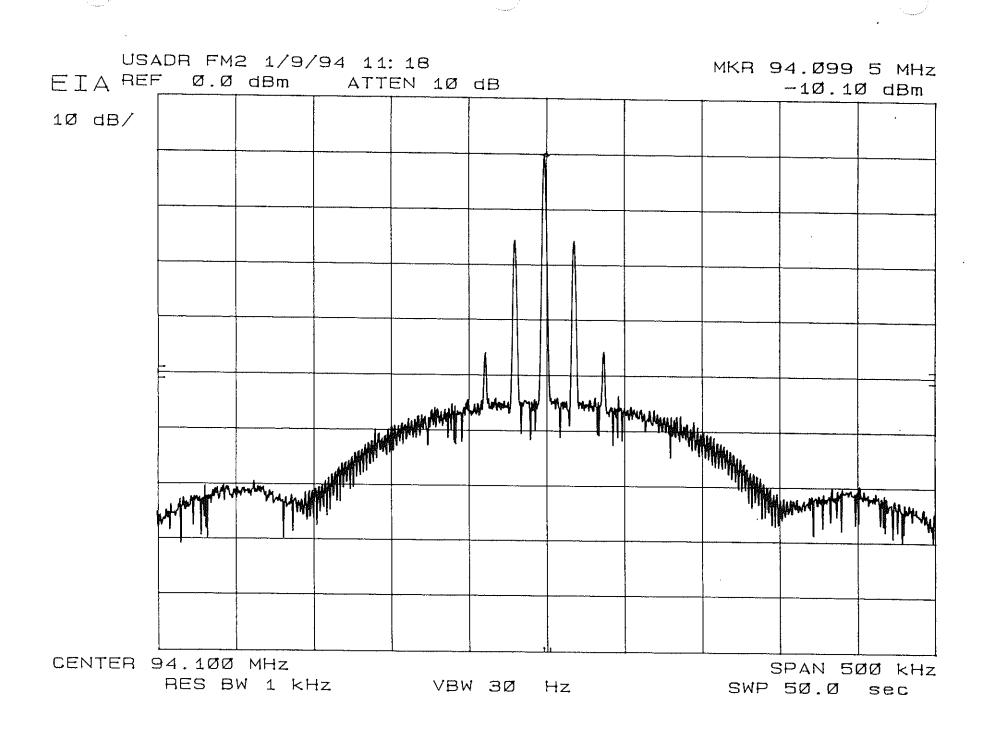












#### NRSC-R58

#### **NRSC Document Improvement Proposal**

If in the review or use of this document a potential change appears needed for safety, health or technical reasons, please fill in the appropriate information below and email, mail or fax to:

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Immediate		At next revision
		<del></del>
PROBLEM AREA (ATTACH ADDIT	TIONAL SHEETS IF NECESSARY)	:
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#### NRSC-R58

a. Clause Number and/or Drawing:						
b. Recommended Changes:						
c. Reason/Rationale for Recommendation	n:					
ADDITIONAL REMARKS:						
SIGNATURE:	DATE:					
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