There was discussion of the future effort of this task force. The group felt that refining the data input and defining the output (the Final Report outline) will provide guidance in designing a data reduction method.

Because the ATTC data is a major input to WP4, continued work with ATTC to complete the data forms was considered important. It was agreed that SS/WP4 should review more of the data forms in order to determine whether the data format from ATTC is suitable for SS/ WP4 needs.

We must also wait for further development of the output definition before attempting to describe a data reduction procedure.

We suggest to ATTC that, to the extent NTSC is tested, such tests be documented using the standard data forms as an aid to evaluation of these forms and comparisons between the NTSC and the ATV systems.

7.0 Other Business

A letter (SS/WP4-0041) from Mr. Larry Goldberg of The Caption Center to Mr. Wiley regarding closed captioning was distributed.

8.0 Next Meeting

Dr. Hopkins will advise the members of location and time of the next meeting which is expected to be held early in 1991. Dr. Hopkins adjourned the meeting at 3:00 pm.

III. Agenda

1. Approve Agenda

2. Consideration of minutes of the seventh meeting.

3. Report from the Working Party on Spectrum Utilization and Alternatives (PS/WP3).

4. Report from the Task Force on the Recommendation Method.

5. Report from the Task Force on Report Drafting.

6. Report from the Task Force on Data Format.

7. Other business.

8. Adjournment

IV. Summary of Open Action Items

Assigned	Action Expected
Mr. Sidran	Prepare a data flow diagram and schedule.
	Proceed to have Task Force write individual section outlines in more detail. Begin writing Section 7.
Mr. Gaggioni	Work with ATTC to complete data forms.

Name	Organization	Telephone	Fax
Mr. William Schreiber	MIT	617-253-2579	
Mr. Bruce Sidran	Bellcore	201-758-4646	201-758-0199
Mr. Alan Stilwell	FCC	202-653-8162	202-653-8773
Mr. William Zou	PBS	703-739-5475	703-739-8938

II. List of Attendees

Name	Organization	Telephone	Fax
Mr. Virgil Conanan	HBO	212-512-5309	212-512-5598
Mr. Joe Donahue	Thompson	202-872-0670	202-872-0674
Mr. James G. Ennis	Fletcher Heald & Hildreth	202-828-5700	202-828-5786
Mr. Bruce Franca	FCC	202-632-7060	
Mr. Hugo Gaggioni	Sony	201-833-5715	201-833-9455
Mr. James Gaspar	CBS		
Mr. Ronald Gnidziejko	NBC	212-664-3153	212-581-6687
Dr. Robert Hopkins	ATSC	202-828-3130	202-828-3131
Mr. Robert Hurst	DSRC	609-486-5097	609-486-5226
Mr. Brian James	Cable Labs	703-739-3870	202-739-5750
Mr. Robert Keeler	AT&T Bell Labs	202-949-7982	201-949-5775
Mr. Thomas Keller	Consultant/Cable Labs	203-567-3135	
Mr. Bernie Lechner	Consultant		
Mr. Bill Litzinger	Southwestern Bell	314-529-7516	314-529-7573
Dr. Yun-Foo Lum	CRC	613-990-4490	613-993-9950
Mr. Wayne Luplow	Zenith	312-391-7873	
Ms. Marilyn Mohrman-Gillis	Assoc. of Public B'casting	202-887-1700	
Mr. William Nichols	CBS	212-975-5646	212-975-1715
Mr. Shigeo Ogawa	Toshiba	201-628-8000	201-628-1875
Mr. Detlev Otto	Philips Cons. Elec.	615-521-4763	615-521-4728
Mr. Robert O'Connor	JBTI	609-921-6574	
Ms. Loretta Polk	NCTA	202-775-3664	202-775-3605
Mr. Gerald Robinson	Scientific Atlanta	404-925-5835	404-925-6372

V. List of Documents distributed at the Meeting

SS/WP4-0029	Outline of Final Report (revised 19 Oct. 1990)
SS/WP4-0032	Project Schedule (unofficial draft)
SS/WP4-0038	Letter from Mr. Bruce Sidran to Dr. Hopkins
SS/WP4-0039	Status report from the Task Force on Data Format
SS/WP4-0040	Status report from the Task Force on the Recommendation Method
SS/WP4-0041	Letter from Mr. Larry Goldberg to Mr. Richard Wiley
SS/WP4-0042	Letters from Mr. Irwin Dorros to Mr. Richard Wiley, from Mr. Wiley to Mr. Dorros, and from Mr. Jerry Pearlman to Mr. Wiley
SS/WP4-0043	Letter from Mr. Richard Wiley to Dr. Hopkins
SS/WP4-0044	Letter from Mr. George Theus to Dr. Hopkins
SS/WP4-0045	Letter from Mr. Dale Hatfield to Dr. Hopkins with PS/WP3 statement on spectrum criteria attached.

VI. Historical List of Points of Agreement by the Members:

25 Oct 1990 The information and form proposed by the Planning Subcommittee/Working Party 3 in the document PS/WP3-0140 (SS/WP4-0045) seems to be acceptable for use by Systems Subcommittee/Working Party 4. However, some future additions may be requested by SS/WP4.

14 Jun 1990 The membership chooses not to engage a consultant for Value Engineering analysis at the present time. The option will remain on the table.

14 Jun 1990 A Task Force on the Recommendation Method will be formed with the charter to propose a recommendation procedure to the working party for use in selecting the recommended system. The chair will appoint a task force chairman. [Mr. Ron Gnidziejko subsequently appointed.]

14 Jun 1990 SS/WP4 will make every effort to meet the FCC scheduled deadline of September 30, 1992 for the final report. The report may reflect work remaining such as field testing.

14 Jun 1990 SS/WP4 is prepared to accept the task of certification for field testing and requests authority for such certification from the Systems Subcommittee.

19 Apr 1990 Two new Task Forces will be formed. The Task Force on Data Format will be Chaired by Mr. Gaggioni. The Task Force on Report Drafting will be Chaired by Mr. Sidran.

12 Jul 1989 SS/WP4 will send document SS/WP4-0019, ATV System Models, to the Systems Subcommittee, the ATSC and the EIA. The following text is contained in that document:

> SS/WP4 reaffirms its recognition of the importance of inter-operability between alternative media and terrestrial broadcast standards, and the desirability for consumer ATV receivers to accommodate alternative media inputs.
>
> SS/WP4 encourages the ATSC and the EIA to develop specifications for an appropriate interface that could lead to a voluntary industry standard
>
> The input documents on ATV System Models will be forwarded to both the EIA and the ATSC. Figure 1 of document SS/WP4-0019 (also see document SS/WP4-0018) can serve as an ATV systems model. Figure 2 of document SS/WP4-0019 (see also document SS/WP4-0016) can serve as a model for an ATV receiver.
>
> SS/WP4 will maintain liaison with the EIA and the ATSC on an ongoing regular basis.

11 Apr 1989 SS/WP4 intends to make recommendations based only on consensus. Determination of consensus will be left to the officers. For consensus to exist there must be substantial agreement among the members of the Working Party, and general agreement that consensus exists. If consensus does not exist, but there is a large body of opinion, it will be reported along with any minority opinions.

11 Apr 1989 The primary intention of SS/WP4 is to make a recommendation for the terrestrial broadcast of ATV.

11 Apr 1989 SS/WP4 does not anticipate making recommendations for transmission of ATV on alternative media, but does anticipate other organizations will do so. SS/WP4 will consider inputs from other organizations in its deliberations.

11 Apr 1989 The primary intention of SS/WP4 is to recommend a single standard for the terrestrial transmission of ATV.

11 Apr 1989 Whatever system is recommended for terrestrial broadcast must be capable of being carried by cable systems as well.

11 Apr 1989 SS/WP4 recognizes the importance of inter-operability between alternative media and terrestrial broadcast standards, and the desirability for consumer ATV receivers to accommodate alternative media inputs. However, it does not anticipate making recommendations in these areas, but does anticipate other organizations doing so. SS/WP4 will consider inputs from other organizations in its deliberations.

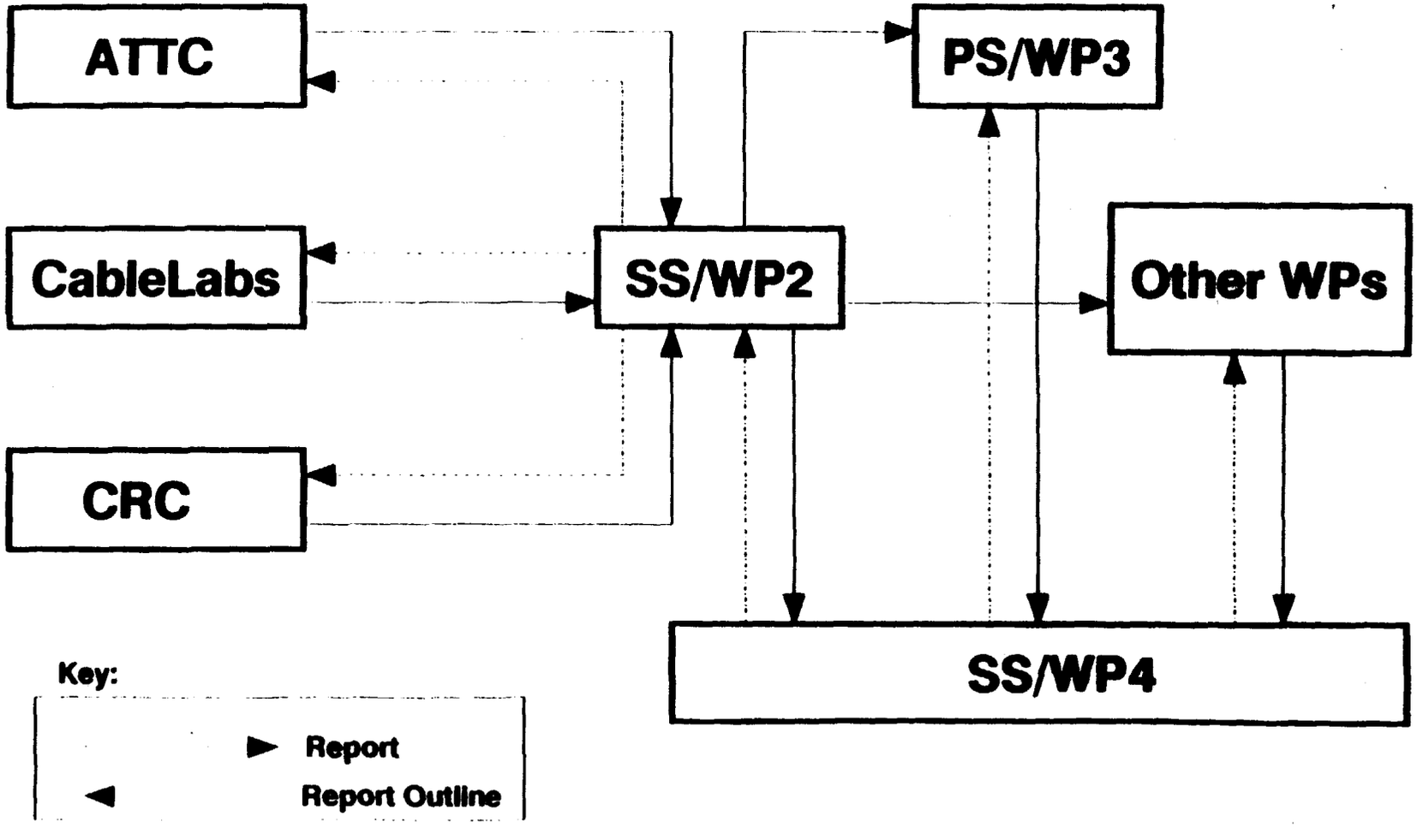
11 Apr 1989 SS/WP4 will not document a standard in the manner of SMPTE or EIA, rather its role is to recommend a standard documented by others.

17 Jan 1989 The Charter was amended to read: "The Working Party on System Standards shall recommend standards for the transmission of ATV based upon information supplied by any and all other Working Parties in the Advisory Committee."

17 Jan 1989 If it is deemed to be appropriate as part of the decision process to assign weights (or levels of importance) to various findings of the other Working Parties, SS/WP4 alone shall do so.

Information Flow

In the Advisory Committee



SS/WP4-0049
22 Jan 1991

The Task Force on Report Drafting has suggested (in its outline for the final report) that the data available to WP4 be bundled into four broad categories for analysis. The four are: policy and regulatory issues, spectrum utilization issues, economic issues and technology considerations. This appears to be a complete set, meaning that all the planned data can be fit into one of those categories.

A careful examination will reveal that a decision method is implied in the outline. In fact, the outline was created with this in mind. The key to this method is a very simple observation: the data can be linearly decomposed along orthogonal axes. Results along each axis can be analyzed independently and recombined, because the axes are orthogonal. In theory, the decomposition can be done in an arbitrary number of successively finer steps, as many as necessary to reach a conclusion. In practice, two or three will probably be enough.

The concept is actually a lot simpler than the words used to describe it. Perhaps an example will help illustrate the point. Recall that Chapter 7, Selection Criteria, is intended to be the yardstick against which we will measure the performance of the actual systems. The four main sections of Chapter 7 can form a "decision tree". If the members of the Working Party can agree that the four categories are in the proper order we are well on our way. (This approach will work equally well for any finite number of categories in any specific order.) Once the systems are analyzed for "policy and regulatory issues", "spectrum utilization", "economics" and "technology", the "best" system can be determined because we've already decided that spectrum utilization is more important (to the FCC) than the specific technology used. But how to decide which system makes the "best" use of the spectrum? The next level of detail (which has yet to be written) will help. We must decide that some measures (hopefully a small number) are absolutely critical. Appropriate experts will help write this section, but I can imagine it might contain items such as coverage area, station "reach", percentage of stations accomodated, minimum antenna spacing, and required D/U. The measure of "importance", discussed earlier, will help us decide the proper order for the items. The candidate systems will then be compared on those items, and the "best" system or technology selected for spectrum use. That candidate is then compared to the other systems selected in the other categories, and eventually, an informed recommendation can be made.

If the members of WP4 accept this approach, the fourth interim report presents a unique opportunity to circulate the concept more widely for comment.

Best regards,

Bruce

B. P. Sidran
Chair,
Task Force on Report Drafting

PLANNING FACTORS FOR ATV SERVICE GRADE____ DOC. 80-10_____, _____

PLANNING FACTORS		UNITS	CHANNELS 2-6 ZONE I	CHANNELS 2-6 ZONES II&III	CHANNELS 7-13 ZONE I	CHANNELS 7-13 ZONES II&III	CHANNELS 14-6 ZONE I	CHANNELS 14-6 ZONES II&III
1. Hgt. above avg. terrain		feet	1000					
2. Geometric mean freq.		MHz	69					
3. Power		dBk	20					
4. Thermal noise		dB/uV	7					
5. Receiver noise figure		dB	12					
6. S/N ratio (ref. to car.)		dB	30					
7. Line loss		dB	1					
8. Rec. antenna gain		dB	6					
9. Dipole factor		dB	3					
10. Location Prob.(L)		%	50					
11. Local field F(L,90)		dBuV/m	NA					
12. Location Prob. factor		dB	0					
13. F(50,90) field		dBuV/m	NA					
14. Time probability		%	90					
15. Time prob. factor		dB	6					
16. F(50,50) field		dBuV/m	47					
17. To overcome urban noise		dB	NA					
18. To overcome rural noise		dB	NC					
19. Atmospheric noise		dB	NC					
20. Required median field		dBuV/m	47					
21. Rec. ant. discrimination		dB	NC					
22. Cross pol. factor		dB	NC					
23. (Coch. D/U (no offset NTSC-NTSC	a. ATV-NTSC	dB	45					
	b. NTSC-ATV	dB						
	c. ATV-ATV	dB						
24. (Coch. D/U " (nominal (offset	a. ATV-NTSC	dB	28					
	b. NTSC-ATV	dB						
	c. ATV-ATV	dB						
25. (Coch. D/U " (precise (offset	a. ATV-NTSC	dB	NC					
	b. NTSC-ATV	dB						
	c. ATV-ATV	dB						
26. (Adjch. D/U " (Lower	a. ATV-NTSC	dB	0					
	b. NTSC-ATV	dB						
	c. ATV-ATV	dB						
27. (Adjch. D/U " (Upper	a. ATV-NTSC	dB	0					
	b. NTSC-ATV	dB						
	c. ATV-ATV	dB						
28. Taboos							SEPERATE LIST	

NTSC ILLUSTRATIVE EXAMPLE

Grade B contour Chs. 2-6 47dBuV/m

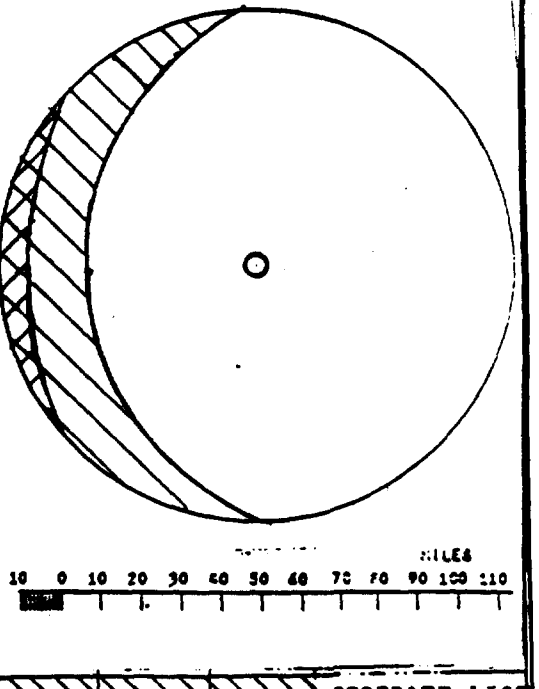
Receiver-noise-limited service, the outer limits where service is available at least 90% of the time, at the best 50% of locations

Service categorized by the median observer-back in the '50s- as being of "passable" quality, impairement ("snow") is noticeable but not objectionable.

Effect of cochannel interference:

Total "cresent" area caused by one neighbor 170 miles away

Double-cross-hatched area caused by one neighbor 228 miles away *



NA not applicable; NC not considered

* reported average for Zone I

Bellcore
Bell Communications Research

SS/WP4-0048
16 Jan 1991

16 January 1991

Dr. Robert Hopkins
Chair, SS/WP4
ATSC
1776 K Street, NW
Washington, DC 20006

Dear Bob:

The critical issue of how WP4 will select an ATV system has been debated in both WP4 and the Task Force on the Recommendation Method. The result of those extensive discussions was the same: consensus is the only method on which there is consensus. While philosophically satisfying, that result is insufficient unto itself to guide our actions. This letter presents some further thoughts for consideration of the members and discussion at your next meeting.

Let me digress for a moment to comment briefly on a general structure for the Advisory Committee's work. It appears that at least three different types of documents, containing three different levels of data, will be needed. First, the laboratory reports, written by the ATTC, Cable Labs and the CRC, and delivered to SS/WP2 as the body responsible for test administration. These reports will contain the voluminous "raw" data. Second, Working Party reports written as contributions to the WP4 report (including somewhat reduced summaries of the data), and third, the WP4 final report (the *executive* summary). This scenario suggests that all the test data will be delivered to SS/WP2 as the single point of contact for the Advisory Committee. WP2 will then be responsible for distributing the information to other bodies in the Advisory Committee, including SS/WP4, as necessary. Since WP2 will have first access to the "raw" data, it seems logical for them to do most of the first level of data reduction (except for the items to be done by PS/WP3), under the guidance of WP4. The outline for their report, including instructions from the Task Force on Data Format, will provide that guidance.

At this point, only one of the documents, the SS/WP4 final report, has been started. The Task Force on Report Drafting is responsible for both the WP4 final report, and for outlines of the Working Party reports. I suggest that SS/WP2 should create outlines for the three laboratory reports, based upon the Test Management Plan, the Test Procedures Plans, and the outline we supply to them.

As for the substantive work of WP4, analysis of the systems will be simplified if we notice that only differences make a difference. If, for example, it turns out that the cost to realize all the candidate systems in hardware is approximately the same, that issue becomes moot. The information will be documented in the final report, but it needn't be part of the selection process. Our first job will be to determine (based upon the test data and analyses available from other Working Parties) which items are similar between systems, and which are different. It seems intuitively correct that items which are "very" different are more significant than items which are "a little bit different". We should then create a metric of "importance" based on how much a value varies from system to system. This notion of "importance" is very different than the *a priori* weighting of attributes, to which many people have objected, because the ordering is done as part of the analysis process, after all the data is collected.

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Post Office Box 7030
Red Bank, New Jersey 07701-7030
201. 758. 2000

SONY

Sony Advanced Systems
Business and Professional Group
3 Paragon Drive
Montvale, New Jersey 07645
Telephone (201) 930-1000

DRAFT

SS/WP4-0050
Jan. 25 1991

FCC ADVISORY COMMITTEE ON ADVANCED TELEVISION SERVICE

SYSTEMS SUBCOMMITTEE

WORKING PARTY ON SYSTEMS STANDARDS (SS/WP4)

STATUS REPORT OF THE TASK FORCE ON DATA FORMAT

The Task Force on Data Format met on January 23, 1991 at NBC, New York City to evaluate the information supplied by the ATTC for use in the ATV testing program and the subsequent presentation of test results.

The enclosed draft "ATTC Test and Data Matrix" is intended as a quick reference to various aspects of the ATV testing program, in particular the cross-reference of ATTC tests to the approved ATV test procedures, signals to be used, and type of results expected of the individual tests.

The Task Force on Data Format endorses this work as it represents a valuable tool for the coordination of test resources during the implementation phase of the ATV testing program.

The Task Force on Data Format has recently received information relating to the collection and presentation of test results from the following organizations (information enclosed) :

- Cable Labs
- Advanced Television Evaluation Laboratory (Communications Research Center)

At this time the Group has not been able to complete the study of said information. A report with possible recommendations is expected to be produced in time for the next meeting of the Task Force.

The members of the Task Force on Data Format look forward to collaborating with the ATTC in the future preparation of "generic data sheets" for the collection and presentation of the test data.

The next meeting of the Task Force will be held during the month of March (date and place to be determined) in New York City.

Hugo Gaggioni
Manager
High Definition Video Systems
Sony Advanced Systems

ADVANCED TELEVISION TEST CENTER, INC.

1330 BRADDOCK PLACE SUITE 200 ALEXANDRIA, VIRGINIA 22314-1650
703/739-3850 FAX 703/739-3230

January 7, 1991

Hugo Gaggioni
Chairman, SS/WP-4 Task Force on Data
c/o Sony Advanced Systems
3 Paragon Drive
M.D. 2N70
Montvale, New Jersey 07645-1735

Dear Hugo:

The Test Center has prepared a summary of certain important aspects of the ATV testing program defined in the approved test procedures. The enclosed draft "ATTC Test & Data Matrix" may be used as a quick reference for the following areas:

- Identification of all ATV system tests to be undertaken at ATTC with cross-reference to approved test procedure documents;
- Signals to be used in tests, as specified in test procedures or by PS/WP-6;
- Expected results.

The summary covers objective tests, including tests to be jointly conducted by ATTC and CableLabs. It also includes those subjective tests to be conducted with expert observers. Preparation of tapes for subjective viewing tests with non-expert viewers and audio listening tests is shown, but the tests will be not conducted, nor will data be prepared, by ATTC. Specifically, the summary does not include cable-only results to be taken by CableLabs nor does it include results of the subjective testing to be done by the Advanced Television Evaluation Laboratory (Canada).

It is important to note that this summary does not include system-specific tests. The Test Center has, at the request of SS/WP-2, reserved one (1) day for such tests, but the attributes to be tested and the procedures and test signals to be used in testing will be developed by SS/WP-2 only after the final technical analysis and certification have been

completed by SS/WP-1 60 days prior to start of testing of the specific system. It should also be noted that much of the development of the approved procedures and test signals, reflected in the enclosed document, was done before the comparatively recent announcement of all-digital systems. Even at present, little technical information is available about such systems. As information becomes available and analyses are performed, the effort devoted to system specific tests may take on greater significance.

Information in the matrix is taken from the documents cited on the cover sheet. Considered together with the different types of expected results, as described in my earlier letter (October 19, 1990), these represent an overview of the ATV system data to be gathered at ATTC during the coming laboratory tests. If you have any questions about an item, first check the source document to determine if the matrix conforms. Please review the matrix and let me have your comments by January 25, 1991.

Sincerely,

E. B. Crutchfield
Program Officer

Encl.

cc: Irwin Dorros
Robert Hopkins
Mark Richer
Joseph Flaherty
Alex Felker
Charles Rhodes
ATTC Technical Committee

DRAFT

ATTC Test & Data Matrix

1/4/91

Time Line Cross Ref.	TEST ID	TYPE	Resource Utilization						Test Signals	Results				Notes
			PIXAR	RFTB	HDD VTR	D2VTR	Experts	Display	S=still, M=motion seq Tutest pattern	Numerical Taken/Reported	Graph	Photo	Tape	

Summary of results from the test. Numbers in lower right corners (*e.g.*: 18/6) indicate number of data points taken and number to be reported. The notation "x2(E)" indicates twice as many points for an Enhanced NTSC system.

Test signals used in the test. See attached "Official Test Material Pictures, Test Patterns, and Audio Signals"

Major resources used. Note that the RF Test Bed is used in all tests but is checked only where it is used to introduce an impairment or interference. The Pixar provides still pictures and some test signals to prepare source tapes but is not used during actual testing.

Test types are defined in "ATV Test Procedures: Video Subjective Tests (SS/WP2-0390). Video and audio rating tests will be conducted "off line" at a site other than ATTC. A summary of these tests (Section 8) is attached.

Number and title of test from "ATV Test Procedures: Objective and Transmission Tests" (SS/WP2-0189) except for preparation of video quality and audio impairment rating tapes, as noted. Joint ATTC/CableLabs tests are included, but cable-only tests are not listed.

Cross reference to ATTC scheduling plan.

"(E)" indicates that a test is applicable only to Enhanced NTSC systems.

ATTC Test & Data Matrix

Objective Test Procedures, Sect. 1, 2: Image Resolution, System Performance

(Sect. 2. System Performance Verification: Procedures used to detect any changes in system under test, no other use of data.)

Time Line Cross Ref.	TEST ID	TYPE	Resource Utilization: PIXAR	RFTB	HDD VTR	D2VTR	Experts	Display	Test Signals: S=still, M=motion seq T=test pattern	Results: Numerical Tabs/Renamed	Graph	Photo	Tape	Notes
XV.1 XVI.5	1.3.1 Luminance Static Horiz. Res. ATV	EO&C Obj	--	--	1	--	5	--	T11 (zone plate)	Lim. H res. 5/1 x3(E) Half-ampl. H res. 1 x3(E)	---	Pic mon Wvfm mon	Archive	Repeat for side panels if applicable. (E) Also log ZPG settings
XV.1	1.3.2 Luminance Static Vert. Res ATV.	EO&C	--	--	1	--	5	--	T11 (zone plate)	Lim. V res. 5/1 x3(E)	---	Pic mon	Archive	Repeat for side panels if applicable. (E) Also log ZPG settings
XV.1	1.3.3 Luminance Static Diag. Res. ATV	EO&C	--	--	1	--	5		T11 (zone plate)	Lim. Diag. res. 5/1 x3(E)	---	Pic mon	Archive	Repeat for side panels if applicable. (E) Also log ZPG settings
XV(E).1 XVI(E).5	1.3.4 Luminance Static Horiz. Res. NTSC Rcvr (E)	EO&C Obj	--	--	--	1	5	--	T11 (zone plate)	Lim. H res. 5/1 (E) Half-ampl. H res. 1 (E)	---	Pic mon Wvfm mon	Archive	Also log ZPG settings
XV(E).1	1.3.5 Luminance Static Vert. Res. NTSC Rcvr (E)	EO&C	--	--	--	1	5	--	T11 (zone plate)	Lim. V res. 5/1 (E)	---	Pic mon	Archive	Also log ZPG settings
XV(E).1	1.3.6 Luminance Static Diag. Res. NTSC Rcvr (E)	EO&C	--	--	--	1	5	--	T11 (zone plate)	Lim. Diag. res. 5/1 (E)	---	Pic mon	Archive	Also log ZPG settings
XV.1 XVI.4a	1.3.7 Luminance Dynamic Horiz. Res. ATV	EO&C	--	--	1	--	5	--	T11 (zone plate, moving)	Lim. H res.20/4 x3(E) Half-ampl. H res. 4 x3(E)	---	Pic mon Wvfm mon (Gate 1 fr.)	Archive	Repeat for side panels if applicable. (E) Also log ZPG settings
XV.1	1.3.8 Luminance Dynamic Vert. Res ATV.	EO&C	--	--	1	--	5	--	T11 (zone plate, moving)	Lim. V res. 20/4 x3(E)	---	Pic mon (Gate 1 fr.)	Archive	Repeat for side panels if applicable. (E) Also log ZPG settings
XV.1	1.3.9 Luminance Dynamic Diag. Res. ATV	EO&C	--	--	1	--	5	--	T11 (zone plate, moving)	Lim. Diag. res. 20/4 x3(E)	---	Pic mon (Gate 1 fr.)	Archive	Repeat for side panels if applicable. (E) Also log ZPG settings
XV(E).1 XVI(E).4a	1.3.10 Luminance Dynamic Horiz. Res. NTSC Rcvr (E)	EO&C Obj	--	--	--	1	5	--	T11 (zone plate, moving)	Lim. H res. 20/4 Half-ampl. H res 4	---	Pic mon Wvfm mon (Gate 1 fr.)	Archive	Also log ZPG settings
XV(E).1	1.3.11 Luminance Dynamic Vert. Res. NTSC Rcvr (E)	EO&C	--	--	--	1	5	--	T11 (zone plate, moving)	Lim. V res. 20/4	---	Pic mon (Gate 1 fr.)	Archive	Also log ZPG settings
XV(E).1	1.3.12 Luminance Dynamic Diag. Res. NTSC Rcvr (E)	EO&C	--	--	--	1	5	--	T11 (zone plate, moving)	Lim. Diag. res. 20/4	---	Pic mon (Gate 1 fr.)	Archive	Also log ZPG settings
XV.2	1.3.13 Dynamic Res. Camera-generated Signal	EO&C	--	--	1	--	5	LS	M21, M22, M23 M24, M25 M26	(Expert comment only)	---	(As needed)		Experts look for, document temporal artifacts.

RF Test Bed is used in all tests but is checked only where it is used to introduce impairment or interference.

Display: 24=24 NTSC Rcvrs; LS=Large Scrn NTSC; ATV=Hitachi

(E): applies to Enhanced NTSC systems, only

Objective Test Procedures, Sect. 3-5, Transient Response; Chromaticity/Colorimetry Characteristics; VCR Compatibility

Time Line Cross Ref.	TEST ID	TYPE	Resource Utilization: POLAR	RFTB	HDD VTR	D2VTR	Experts	Display	Test Signals: S=still, M=motion seq T=test pattern	Results: Numerical Tabs/Spreadsh	Graph	Photo	Tape	Notes
XVI.1b	3.3.1.2.1. Lumin. Resp. to Stationary Step: Horiz. Resp.	Obj Meas	✓	--	1	1(E)	--	--	T10 (static windows)	Risetime; Ringing: period, ampl; Overshs: ampl, time; Undrshs: ampl, time. 72/72 x2(E)	--	Wvfm: 8 x2(E)	Archive HD, D2(E)	Data normalized to pic.
XVI.1b	3.3.1.2.2. Lumin. Resp. to Stationary Step: Vert. Resp.	Obj Meas	✓	--	1	1(E)	--	--	T10 (static windows)	Transient ampl, line no. 72/72 x2(E)	--	Wvfm: 8 x2(E)	Archive HD, D2(E)	Measure transient ampls, if any, at top & bottom of pic. Data normalized to pic.
XVI.1b	3.3.2.2.1. Lumin. Resp. to Moving Step: Horiz. Resp.	Obj Meas	✓	--	1	1(E)			T10 (moving windows @3 H rates)	Risetime; Ringing: period, ampl; Overshs: ampl, time; Undrshs: ampl, time 216/216 x2(E)		Pic: 24 ATV + 24 NTSC(E)	Archive HD, D2(E)	Data normalized to pic.
XVI.1b	3.3.2.2.2. Lumin. Resp. to Moving Step: Vert. Resp.	Obj Meas	✓	--	1	1(E)	--	--	T10 (moving windows @3 V rates)	Risetime; Ringing: period, ampl; Overshs: ampl, time; Undrshs: ampl, time.216?/216 x2(E)	--	Pic: 24 ATV + 24 NTSC(E)	Archive HD, D2(E)	Data normalized to pic.
XVI.2b XVI.3a	3.3.3.2.1. Chrom. Resp. to Stationary Step: Horiz. Resp.	Obj Meas	✓	--	1	1(E)	--	--	T10 (static windows)	Risetime; Ringing: period, ampl; Overshs: ampl, time; Undrshs: ampl, time. 144/144 x2(E)	--	Wvfm: 16 x2(E)	Archive HD, D2(E)	Measure transient ampls, if any, at top & bottom of pic, R&B Data normalized to pic.
XVI.2b XVI.3a	3.3.3.2.2. Chrom. Resp. to Stationary Step: Vert. Resp.	Obj Meas	✓	--	1	1(E)	--	--	T10 (static windows)	Transient ampl, line no 144?/144 x2(E)	--	Wvfm: 16 x2(E)	Archive HD, D2(E)	Measure both R & B channels. Data normalized to pic.
XVI.2b XVI.3a	3.3.4.2.1. Chrom. Resp. to Moving Step: Horiz. Resp.	Obj Meas	✓	--	1	1(E)	--	--	T10 (moving windows @3 H rates)	Risetime; Ring: period, ampl; Overshs: ampl, time; Undrshs: ampl, time. 432/432 x2(E)	--	Pic: 48 ATV 48 NTSC(E)	Archive HD, D2(E)	Measure both color component channels. Data normalized to pic.
XVI.2b XVI.3a	3.3.4.2.2. Chrom. Resp. to Moving Step: Vert. Resp.	Obj Meas	✓	--	1	1(E)	--	--	T10 (moving windows @3 V rates)	Risetime; Ring: period, ampl; Overshs: ampl, time; Undrshs: ampl, time. 432?/432 x2(E)	--	Pic: 48 ATV 48 NTSC(E)	Archive HD, D2(E)	Measure both color component channels. Data normalized to pic.
XVI.1b	3.3.5. Luminance Temporal Response	Obj Meas	✓	--	1	1(E)	--	--	T10G (static windows, gated) T5G (radial res., gated)	(Photos, only)	--	Pic & Wvfm: 16 ATV + 16 NTSC(E)	Archive HD, D2(E)	Photo sets of both test patterns.
XVI.2b XVI.3a	3.3.6. Chrominance Temporal Response	Obj Meas	✓	--	1	1(E)	--	--	T10G (static windows, gated) T5G (radial res., gated)	(Photos, only)	--	Pic & Wvfm: 32 ATV + 32 NTSC(E)	Archive HD, D2(E)	Photo sets of both test patterns, for R & B channels
XVI(E).6	4.3.1. Color Difference Compatibility (E)	Obj Meas	✓	--	--	1(E)	--	--	T7 (color bars)	Vector ampl, phase differences. 10/10 (E)	--	Wvfm: 4 Vector-scope: 4	Archive D2	Compare vector (ref G) ampls, phases with 1 dB input change, photo before & after.
XVI.2a	4.3.2. Chrominance Component Dynamic Range	Obj Meas	✓	--	1	--	--	--	T4 (line-rate ramp)	Input atn to elim. any nonlinearity, 3/3	--	Wvfm: 6	Archive HD	Observe nonlinearity in ramp introd by system, photo both conditions.
XX.	5. VCR Compatibility for Enhanced NTSC (E)	EO&C	--	--	1(E)	1(E)	5	LS	5 min. video & audio material	(Comment, only)	--	--	8 NTSC video cassettes	Output is written expert commentary on diff between ENTSC & NTSC replays on VCRs

RF Test Bed is used in all tests but is checked only where it is used to introduce impairment or interference.

Display: 24=24 NTSC Rcvrs; LS=Large Scrn NTSC; ATV=Hitachi

(E) = applies to Enhanced NTSC systems, only.
"x2(E)" = double number for Enhanced NTSC system

ATTC Test & Data Matrix

Objective Test Procedures, Sect. 6-12: Tx Spectrum, Degrad. to BTSC Audio, Audio

Time Line Cross Ref.	TEST ID	TYPE	Resource Utilization: FIXAR	RFTB	HDD VTR	D2VTR	Exports	Display	Test Signals (S=still, M=motion seq, T=test pattern)	Results: Numerical (Tabus/Reported)	Graph	Photo	Tape	Notes
XVI.1a	6. Transmitted Spectrum	Obj Meas	✓	✓	--	--	--	--	T8 (matrix pattern) Audio material? Pseudorandom data	--	--	Spectrum analyzer display	--	Spectrum used by ATV system with all channels fully loaded.
XVIII.3a, -.3b, -.3c, -.3d	7.1.1.2 Degradation to BTSC Audio ATV -> NTSC	Obj Meas	✓	✓	--	--	--	6-10 BTSC Rcvrs	8 kHz tone; 20-15,000 sweep; audio program material; D: T8 (matrix) U: T8G (matrix gated)	THD+N @ coch., upper adj, lin & non-lin taboo calibr. 710/7 LR sep. 47/4	Plot spectral distr 20Hz - 15kHz left output. 1	--	--	THD+N from left channel of all pairs.
XIX.1	7.2. Degradation of Ancillary VBI Services ATV -> NTSC	Obj Meas	✓	✓	--	--	--		D: T1 (flat field) U: T8G (matrix, gated)	RMS noise on lines 12, 21 cochnl 12/12	Plot spectral distr of signal comps lines 12, 21. 1	--	--	Cochannel D=-55 U= 6 levels
XIX.2	7.2. Degradation of Ancillary VBI Services ATV (E)	Obj Meas	✓	✓	--	--	--		T8 (matrix)	RMS noise on lines 12, 21 2/2	Plot spectral distr of signal comps lines 12, 21. 1	--	--	
--	8. Audio, General Considerations		This section gives some general considerations for the following sections on audio testing. No test procedures are included in Section 8.											
XVIII.1f	9. E-NTSC Audio Signal-to-Noise (E)	Obj Meas	--	--	--	--	--	--	1 kHz audio tone T7 (NTSC color bars)	S/N unweighted S/N weighted 4/4 (E)	Plot broad-band noise spectrum. 1 (E)	--	--	BTSC main audio channels, only. (E)
XVIII.1a	10. Dynamic Range	Obj Meas	--	--	--	--	--	--	1 kHz audio tone	fTHD+N -70dB 4/4		--	--	All audio channels. (Assume 4)
XVIII.1b	11.1.3 ATV Non-linear Distortion THD+N	Obj Meas	--	--	--	--	--	--	20 - 20,000 Hz audio sweep	--	THD+N vs freq. 32	--	--	All audio channels (Assume 4)
XVIII.1b	11.1.5 ATV Non-linear Distortion THD	Obj Meas	--	--	--	--	--	--	8 frequencies or 20 - 20,000 Hz audio sweep	Harmonic amplitudes 64/64	--	--	--	All audio channels (Assume 4)
XVIII.1b	11.2.4 ATV Non-linear Distortion IMD	Obj Meas	--	--	--	--	--	--	60 Hz audio tone 7 kHz audio tone	--	IMD vs input level 20	--	--	All audio channels. (Assume 4)
XVIII.1b	11.2.5 ATV Non-linear Distortion DIM	Obj Meas	--	--	--	--	--	--	400 Hz audio tone 750 Hz audio tone 2.4 Khz audio tone	--	DIM vs input level 20	--	--	All audio channels. (Assume 4)
XVIII.1g	12. Audio/Video Delay ATV	Obj Meas		--	--	--	--	--	T2G (ATV flat field, gated) 1 kHz audio tone, gated	Delay: video vs audio, off-on and on-off. 8/8	--	--	--	All audio channels. (Assume 4)
XVIII.1g	12. Audio/Video Delay E-NTSC (E)	Obj Meas		--	--	--	--	--	T1G (NTSC flat field, gated) 1 kHz audio tone, gated	Delay: video vs audio, off-on and on-off. 4/4	--	--	--	2 BTSC channels

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Display: 24=24 NTSC Rcvrs; LS=Large Scrn NTSC; ATV=Hitachi

(E) = applies to Enhanced NTSC systems, only.
"x2(E)" = double number for Enhanced NTSC system

ATTC Test & Data Matrix

Objective Test Procedures, Sect. 13-18

Time Line Cross Ref.	TEST ID	TYPE	Resource Utilization: PDXAR	RFTB	HDD VTR	D2VTR	Experts	Display	Test Signals: S=still, M=motion seq T=test pattern	Results: Numerical Taken/Reported	Graph	Photo	Tape	Notes
XVIII.1c	13. Audio Frequency Response	Obj Meas	--	--	--	--	--	--	20 - 20,000 audio sweep @ 3 levels	--	Audio out level vs freq. 12	--	--	All audio channels. (Assume 4)
XVIII.1d	14. Sine Wave Overload vs Frequency	Obj Meas	--	--	--	--	--	--	"series of frequencies"	--	Plot overload level vs freq 1	--	--	Overload point: output drops .2 dB rel. input. All chs. (Assume 4)
XVIII.1h	15. RF Bandwidth & RF Spectrum.	Obj Meas	--	--	--	--	--	--	Audio program material AF pink noise	3 & 30 dB bandwidths, (from photos) 6/6	--	Spectrum 3		Spectrum photos with all audio chs quiet & loaded with noise & music.
XVIII.1e	16. Stereo Interchannel Amplitude & Phasing	Obj Meas	--	--	--	--	--	--	10+ frequencies across band	Ampl. shift, phase shift between channels of stereo pairs. 40/40	Plot ampl & phase shifts vs freq. 2	--	--	Assume 2 stereo pairs.
XVIII.1	17. Noise Degradation of Compatible NTSC Audio (E)	EO&C	--	✓	--	--	5	24	T7 (color bars) Audio program material	(Written commentary, only)	--	--	--	Experts compare audio from NTSC mod. and E-NTSC system.
XVIII.1i	18. Confirmation of Provisions for Ancillary Data Signals.	Obj Meas	--	✓	--	--	--	--	Pseudorandom data T87 (matrix) ? 1Hz audio tone	BER @ 6+ levels of C/N. 18+/6+				
Audio Subjective Test Procedures, Sect. 1 Document SSWP2-0533														
Day 36 Day 41 (E)	1.2.1 Audio Quality Rating Test	Rating	--	--	1	1 (E)	--	--	A1..A10	--	--	--	HD/DAT Rating	Rating tests done off site.
Day 35 Day 40 (E)	1.2.2 Transmission Impairment Test	EO&C	--	✓	1	1 (E)	--	--	A2, A3, A8	(Comment only)	--	--	HD/DAT Archive	Experts listen on headphones, write comments.
--	--													
--	--													
--	--													
--	--													

RF Test Bed is used in all tests but is checked only where it is used to introduce impairment or interference. Display: 24=24 NTSC Rcvrs; 1 S=Large Scrn NTSC; ATV=Hitachi (E): applies to Enhanced NTSC systems, only

Objective Test Procedures, Sect. 19, Susceptibility to Interference, Other Impairments.

Time Line Cross Ref.	TEST ID	TYPE	Resource Utilization						Test Signals	Results				Notes
			PIXAR	RFTB	HDD VTR	D2VTR	Experts	Display	S=still, M=motion seq T=test pattern	Numerical Taboo/Reported	Graph	Photo	Tape	
XIV.1	19.3.1 Random Noise ->NTSC	ToV	✓	✓	--	--	3	24	D: T1(flat field, stat)	ToV 72/1	--	--	--	
XIV.1b	19.3.1 Random Noise ->ATV	ToV	✓	✓	--	--	5	ATV	D: T3 (flat field, dyn)	ToV 25/1	--	--	--	
XIV.1c	19.3.1 Random Noise ->ATV	PoU	✓	✓	--	--	5	ATV	D: T9 (text)	PoU 15/1	--	--	--	
XIV.1d	19.3.1 Random Noise ->ATV	Range	✓	✓	--	--	5	ATV	D: S5 (tulips) or S11 (woman w. roses)	Range levels 6+/6	--	--	--	"+" indicates experts may look at additional levels.
XIV.1e	19.3.1 Random Noise ->ATV	Rating	✓	✓	2	--	--	--	D: S5 (tulips), S11 (woman w roses), M11 desk lamp	--	--	--	2 D2 Rating	Subj. rating to be done at CRC.
XIV.4	19.3.2. Impulse Noise ->ATV	ToV △	✓	✓	--	--	5	ATV 24	D: T3 (flat field, dyn)/ T1 (flat field, stat)	ToV 50/1	--	--	--	"Threshold" is difference between ATV and NTSC
XIV.2b	19.4.3.2.1. Static Multipath ->ATV	ToV	✓	✓	--	--	5	ATV	D: T9? (text)	ToV 300/12	ToV *vs* +/-delay (See Fig. 19-5.)	--	--	12 delays
XIV.2c	19.4.3.2.1. Static Multipath ->ATV	PoU	✓	✓	--	--	5	ATV	D: T9? (text)	PoU 180/12	PoU *vs* +/-delay (See Fig. 19-5.)	--	--	Experts describe failure.
XIV.3b	19.4.3.2.2. Flutter ->ATV	ToV	✓	✓	--	--	5	ATV	D: T9? (text) (Same as multipath)	1/1	--	--	--	
XIV.3c	19.4.3.2.2. Flutter ->ATV	PoU	✓	✓	2	1	5	ATV	D: T9? (text) (Same as multipath)	1/1	--	--		Experts describe failure including rate and level.
Sections 19.5.3.2.1 (Cochannel), 19.5.3.2.2 (Upper & Lower Adjacent), and 19.5.3.2.3. (Taboos) are listed on separate sheets.														
XIII.13	19.5.3.2.4. Discrete Frequency Interf. ->ATV	ToV	✓	✓	--	--	5	ATV	D: T3 (flat field, dyn)	ToV 1250/graph	Carrier:beat vs interf freq: (See Fig. 19-5)	--	--	
--	--													

RF Test Bed is used in all tests but is checked only where it is used to introduce impairment or interference.

Display: 24=24 NTSC Rcvrs; LS=Large Scrn NTSC; ATV=Hitachi

ATTC Test & Data Matrix

Objective Test Procedures, Sect. 19, Susceptibility to Interference, Other Impairments, Quality

Time Line Cross Ref.	TEST ID	TYPE	Resource Utilization: PIXAR	RFTB	HDD VTR	D2VTR	Experts	Display	Test Signals: S=still, M=motion seq, T=test pattern	Results: Numerical Taken/Reported	Graph	Photo	Tape	Notes
XIV(E).1	19.3.1 Random Noise ->NTSC	ToV	✓	✓	--	--	3	24	D: T1 (flat field, static)	ToV 72/1	--	--	--	
XIV(E).1b	19.3.1 Random Noise ->ATV	ToV	✓	✓	--	--	3	24	D: T3 (flat field, dyn)	ToV 72/1	--	--	--	
XIV(E).1c	19.3.1 Random Noise ->ATV	PoU	✓	✓		--	3	24	D: T9 (text)	PoU 1/1	--	--	--	
XIV(E).4b	19.3.2. Impulse Noise ->ATV	ToV △	✓	✓	--	--	3	24	D: T3 (flat field, dyn)/ T1 (flat field, static)	ToV 2/1	--	--	--	"Threshold" is difference between ATV and NTSC
XIV(E).2b	19.4.3.2.1. Static Multipath ->ATV	ToV	✓	✓	--	--	3	24	D: T9? (text)	ToV 12/12	ToV vs +/-delay (See Fig. 19-5.)	--	--	12 delays
XIV(E).2c	19.4.3.2.1. Static Multipath ->ATV	PoU	✓	✓	--	--	3	24	D: T9? (text)	PoU 12/12	PoU vs +/-delay (See Fig. 19-5.)	--	--	Experts describe failure.
XIV(E).3b	19.4.3.2.2. Flutter ->ATV	ToV	✓	✓	--	--	3	24	D: T9? (text) (Same as multipath)	1/1	--	--	--	
XIV(E).3c	19.4.3.2.2. Flutter ->ATV	PoU	✓	✓	2	1	3	24	D: T9? (text) (Same as multipath)	1/1	--	--		Experts describe failure including rate and level.

Video Subjective Test Procedures, Sect. 1

Document SSWP2-0390

Day ? Day ? (E)	Basic Received Quality (Video Subj. Tests, Sect 1.9	Rating	--	--	1	1	--	--	S14, M1...M10, M16...M20	--	--	--	4D2	Subj. rating to be done at CRC.
	--													
	--													
	--													

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Display: 24=24 NTSC Rcvrs; LS=Large Scrn NTSC; ATV=Hitachi

Objective Test Procedures, Sect. 19, Susceptibility to Interference, Cochannel Interference

Time Line Cross Ref.	TEST ID	TYPE	Resource Utilization: PDIAR	RFTB	HDD VTR	D2VTR	Experts	Display	Test Signals: Sweep, Motion seq Test pattern	Results: Numerical Tabs/Reserved	Graph	Photo	Tape	Notes
I.A.1	19.5.3.2.1. Cochannel Interference NTSC->NTSC	ToV	✓	✓	--	--	3	24	D: T1 (flat field, stat) U: T8 (matrix)	ToV 144/2	--	--	--	
I.A.2.b	19.5.3.2.1. Cochannel Interference ATV->NTSC	ToV	✓	✓	--	--	3	24	D: T1 (flat field, stat) U: T8G (matrix, gated)	ToV 288/4	--	--	--	Test at 2 freq. offsets.
I.A.2.c	19.5.3.2.1. Cochannel Interference ATV->NTSC	PoU	✓	✓	--	--	3	24	D: T (text) U: T8G (matrix, gated)	PoU 2/2	--	--	--	
I.A.2.d	19.5.3.2.1. Cochannel Interference ATV->NTSC	Range	✓	✓	--	--	3	LS	D: S9 (girl w toys) or S11 (woman w roses) U: T8G (matrix, gated)	Range levels 12+/12	--	--	--	"+" indicates experts may look at additional levels.
I.A.2.e	19.5.3.2.1. Cochannel Interference ATV->NTSC	Rating	✓	✓	1	2	--	--	D: S9 (girl w toys), S11 (woman w roses), M14 (cochnl) U: M15 (primary)	--	--	--	4 D2 Rating	Subj. rating to be done at CRC.
I.B.1.b	19.5.3.2.1. Cochannel Interference NTSC->ATV	ToV	✓	✓	--	--	5	ATV	D: T3 U: T8	ToV 100/4	--	--	--	Test at 2 freq. offsets.
I.B.1.c	19.5.3.2.1. Cochannel Interference NTSC->ATV	PoU	✓	✓	--	--	5	ATV	D: T9 U: T8	PoU 30/2	--	--	--	
I.B.1.d	19.5.3.2.1. Cochannel Interference NTSC->ATV	Range	✓	✓	--	--	5	ATV	D: S9 (girl w toys) or S11 (woman w roses) U: T8 (matrix)	Range levels 12+/12	--	--	--	"+" indicates experts may look at additional levels.
I.B.1.e	19.5.3.2.1. Cochannel Interference NTSC->ATV	Rating	✓	✓	2	1	--	--	D: S9, S11, M14 U: M15	--	--	--	4 HD Rating	Subj. rating to be done at CRC.
I.B.2.b	19.5.3.2.1. Cochannel Interference ATV->ATV	ToV	✓	✓	--	--	5	ATV	D&U: T8GS	ToV 50/2	--	--	--	
I.B.2.c	19.5.3.2.1. Cochannel Interference ATV->ATV	PoU	✓	✓	--	--	5	ATV	D&U: T9	PoU 30/2	--	--	--	
I.B.2.d	19.5.3.2.1. Cochannel Interference ATV->ATV	Range	✓	✓	--	--	5	ATV	D&U: S9 or S11	Range levels 12+/12	--	--	--	"+" indicates experts may look at additional levels.
I.B.2.e	19.5.3.2.1. Cochannel Interference ATV->ATV	Rating	✓	✓	2	--	--	--	D&U: S9, S11, M14	--	--	--	4 HD Rating	Subj. rating to be done at CRC.

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Display: 24=24 NTSC Rcvrs; LS=Large Scrn NTSC; ATV=Hitachi

Objective Test Procedures, Sect. 19, Susceptibility to Interference, Upper & Lower Adjacent Channel Interference

Notes: Procedures and test signals are same for Upper and Lower adjacent channel tests.

Time Line Cross Ref	TEST ID	TYPE	Resource Utilization						Test Signals	Results				Notes
			PIXAR	RFTB	HDD VTR	D2VTR	Experts	Display*	S=still, M=motion seq Test pattern	Numerical Tolm/Sporadic	Graph	Photo	Tape	
II.A.1. III.A.1.	19.5.3.2.2. Adjacent Channel Interference NTSC->NTSC	ToV	✓	✓	--	--	3	24	D: T1 (flat field, stat) U: T8 (matrix)	ToV 432/6	--	--	--	
II.A.2.b. III.A.2.b.	19.5.3.2.2. Adjacent Channel Interference ATV->NTSC	ToV	✓	✓	--	--	3	24	D: T1 (flat field, stat) U: T8G (matrix, gated)	ToV 432/6	--	--	--	
II.A.2.c. III.A.2.c.	19.5.3.2.2. Adjacent Channel Interference ATV->NTSC	PoU	✓	✓	--	--	3	24	D: T (text) U: T8G (matrix, gated)	PoU 6/6	--	--	--	
II.A.2.d. III.A.2.d	19.5.3.2.2. Adjacent Channel Interference ATV->NTSC	Range	✓	✓	--	--	3	LS	D: S9 or S11 U: T8G	Range levels 36+/36	--	--	--	"+" indicates experts may look at additional levels.
II.A.2.e. III.A.2.e.	19.5.3.2.2. Adjacent Channel Interference ATV->NTSC	Rating	✓	✓	1	2	--	--	D: S9, S11, M14 U: M15	--	--	--	12 D2 Rating	Subj. rating to be done at CRC.
II.B.1.b. III.B.1.b.	19.5.3.2.2. Adjacent Channel Interference NTSC->ATV	ToV	✓	✓	--	--	5	ATV	D: T3 U: T8	ToV 150/6	--	--	--	
II.B.1.c. III.B.1.c.	19.5.3.2.2. Adjacent Channel Interference NTSC->ATV	PoU	✓	✓	--	--	5	ATV	D: T9 U: T8	PoU 90/6	--	--	--	
II.B.1.d. III.B.1.d.	19.5.3.2.2. Adjacent Channel Interference NTSC->ATV	Range	✓	✓	--	--	5	ATV	D: S9 or S11 U: T8	Range levels 36+/36	--	--	--	"+" indicates experts may look at additional levels.
II.B.1.e. III.B.1.e.	19.5.3.2.2. Adjacent Channel Interference NTSC->ATV	Rating	✓	✓	2	1	--	--	D: S9, S11, M14 U: M15	--	--	--	12 HD Rating	Subj. rating to be done at CRC.
II.B.2.b. III.B.2.b.	19.5.3.2.2. Adjacent Channel Interference ATV->ATV	ToV	✓	✓	--	--	5	ATV	D&U: T8GS	ToV 150/6	--	--	--	
II.B.2.c. III.B.2.c.	19.5.3.2.2. Adjacent Channel Interference ATV->ATV	PoU	✓	✓	--	--	5	ATV	D&U: T9	PoU 90/6	--	--	--	
II.B.2.d. III.B.2.d.	19.5.3.2.2. Adjacent Channel Interference ATV->ATV	Range	✓	✓	--	--	5	ATV	D&U: S9 or S11	Range levels 36+/36	--	--	--	"+" indicates experts may look at additional levels.
II.B.2.e. III.B.2.e	19.5.3.2.2. Adjacent Channel Interference ATV->ATV	Rating	✓	✓	2	--	--	--	D&U: S9, S11, M14	--	--	--	12 HD Rating	Subj. rating to be done at CRC.

RF Test Bed is used in all tests but is checked only where it is used to introduce impairment or interference.

Display: 24=24 NTSC Rcvrs; LS=Large Scrn NTSC; ATV=Hitachi

ATTC Test & Data Matrix

Objective Test Procedures, Sect. 19, Susceptibility to Interference, Taboo Channels (9) Interference, Quality

Time Line Cross Ref.	TEST ID	TYPE	Resource Utilization: PIXAR	RFTB	HDD VTR	D2VTR	Experts	Display*	Test Signals: S=still, M=motion seq T=test pattern	Results: Numerical Tabs/Batteries	Graph	Photo	Tape	Notes
n.A.1.	19.5.3.2.3. Taboo Channel Interference NTSC->NTSC	ToV	✓	✓	--	--	3	24	D: T1 (flat field, stat) U: T8 (matrix)	ToV 1944/27 1800/25 (E)	--	--	--	
n.A.2.b	19.5.3.2.3. Taboo Channel Interference ATV->NTSC	ToV	✓	✓	--	--	3	24	D: T1 (flat field, stat) U: T8G (matrix, gated)	ToV 1944/27 1800/25 (E)	--	--	--	
n.A.2.c	19.5.3.2.3. Taboo Channel Interference ATV->NTSC	PoU	✓	✓	--	--	3	24	D: T (text) U: T8G (matrix, gated)	PoU 27/27 25/25	--	--	--	
n.A.2.d	19.5.3.2.3. Taboo Channel Interference ATV->NTSC	Range	✓	✓	--	--	3	LS	D: S9 or S11 U: T8G	Range levels 162+/162 150/150	--	--	--	Numbers may be less if no interference is observed on some taboo channels.
n.A.2.e	19.5.3.2.3. Taboo Channel Interference ATV->NTSC	Rating	✓	✓	1	2	--	--	D: S9, S11, M14 U: M15	--	--	--	12 D2 Rating	Subj. rating to be done at CRC. Rating tapes made for 1 linear, 1 non-linear taboo.
n.B.2.b	19.5.3.2.3. Taboo Channel Interference NTSC->ATV	ToV	✓	✓	--	--	5	ATV	D: T3 U: T8	ToV 675/27 625/25 (E)	--	--	--	
n.B.2.c	19.5.3.2.3. Taboo Channel Interference NTSC->ATV	PoU	✓	✓	--	--	5	ATV	D: T9 U: T8	PoU 405/27 375/25 (E)	--	--	--	
n.B.2.d	19.5.3.2.3. Taboo Channel Interference ATV->ATV	ToV	✓	✓	--	--	5	ATV	D&U: T8GS	ToV 675/27 625/25 (E)	--	--	--	
n.B.2.e	19.5.3.2.3. Taboo Channel Interference ATV->ATV	PoU	✓	✓	--	--	5	ATV	D&U: T9	PoU 405/27 375/25 (E)	--	--	--	

Note: In first column,
"n" = IV, V, VI, VII, VIII, IX, X XI, XII
(Same tests repeated for 9 taboo channels)

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Day 21 Day 20 (E)	Basic Received Quality (Video Subj Tests, Sect. 1.9)	Rating	--	--	2	1 (E)	--	--	S14, M1...M10, M16...M20	--	--	--	4HD	Subj. rating to be done at CRC.

RF Test Bed is used in all tests but is checked only where it is used to introduce impairment or interference.

* Display: 24=24 NTSC Rcvrs; LS=Large Scrn NTSC; ATV=Hitachi