

Photo/TV Checklist

STS-125 Flight Supplement

**Mission Operations Directorate
Operations Division**

**Final
March 19, 2008**

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas



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MISSION OPERATIONS DIRECTORATE

**PHOTO/TV CHECKLIST
STS-125 FLIGHT SUPPLEMENT**

FINAL
March 19, 2008

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PHOTO/TV CHECKLIST
STS-125 FLIGHT SUPPLEMENT

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FINAL 03/19/08

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FS 1-3		125/FIN	FS 1-53	⊗ 125/FIN
FS 1-4	⊗	125/FIN	FS 1-54	⊗ 125/FIN
FS 1-5		125/FIN	FS 1-55	⊗ 125/FIN
FS 1-6		125/FIN	FS 1-56	⊗ 125/FIN
FS 1-7		125/FIN	FS 1-57	125/FIN
FS 1-8		125/FIN	FS 1-58	⊗ 125/FIN
FS 1-9		125/FIN	FS 1-59	125/FIN
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FS 1-12		125/FIN	FS 1-62	125/FIN
FS 1-13		125/FIN	FS 1-63	125/FIN
FS 1-14	⊗	125/FIN	FS 1-64	125/FIN
FS 1-15		125/FIN	FS 1-65	125/FIN
FS 1-16		125/FIN	FS 1-66	125/FIN
FS 1-17		125/FIN	FS 1-67	125/FIN
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FS 1-19		125/FIN	FS 1-69	125/FIN
FS 1-20		125/FIN	FS 1-70	125/FIN
FS 1-21		125/FIN	FS 1-71	125/FIN
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FS 1-27		125/FIN	FS 1-77	125/FIN
FS 1-28		125/FIN	FS 1-78	125/FIN
FS 1-29		125/FIN	FS 1-79	125/FIN
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FS 1-32		125/FIN	FS 1-82	125/FIN
FS 1-33		125/FIN	FS 1-83	125/FIN
FS 1-34		125/FIN	FS 1-84	125/FIN
FS 1-35		125/FIN	FS 1-85	125/FIN
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* – Omit from flight book

⊗ – Flight copies of this page contain color

FS 1-89	125/FIN	FS 2-31	125/FIN
FS 1-90	125/FIN	FS 2-32	125/FIN
FS 1-91	125/FIN	FS 2-33	⊗ 125/FIN
FS 1-92	125/FIN	FS 2-34	125/FIN
FS 1-93	125/FIN	FS 2-35	125/FIN
FS 1-94	125/FIN	FS 2-36	125/FIN
FS 1-95	125/FIN	FS 2-37	125/FIN
FS 1-96	125/FIN	FS 2-38	125/FIN
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FS 1-98	125/FIN	FS 2-40	⊗ 125/FIN
FS 1-99	125/FIN	FS 2-41	⊗ 125/FIN
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FS 1-102	125/FIN	FS 2-44	125/FIN
FS 1-103	125/FIN	FS 2-45	125/FIN
FS 1-104	125/FIN	FS 2-46	125/FIN
FS 1-105	125/FIN	FS 2-47	125/FIN
FS 1-106	125/FIN	FS 2-48	⊗ 125/FIN
FS 1-107	125/FIN	FS 2-49	⊗ 125/FIN
FS 1-108	125/FIN	FS 2-50	⊗ 125/FIN
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FS 1-114	125/FIN	FS 2-56	⊗ 125/FIN
FS 2-1	125/FIN	FS 2-57	⊗ 125/FIN
FS 2-2	125/FIN	FS 2-58	125/FIN
FS 2-3	125/FIN	FS 2-59	125/FIN
FS 2-4	⊗ 125/FIN	FS 2-60	125/FIN
FS 2-5	125/FIN	FS 2-61	125/FIN
FS 2-6	125/FIN	FS 2-62	125/FIN
FS 2-7	125/FIN	FS 2-63	125/FIN
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FS 2-12	125/FIN	FS CC 3-4	125/FIN
FS 2-13	125/FIN	FS CC 3-5	125/FIN
FS 2-14	125/FIN	FS CC 3-6	⊗ 125/FIN
FS 2-15	125/FIN	FS CC 3-7	125/FIN
FS 2-16	125/FIN	FS CC 3-8	125/FIN
FS 2-17	125/FIN	FS CC 3-9	125/FIN
FS 2-18	125/FIN	FS CC 3-10	125/FIN
FS 2-19	125/FIN	FS CC 3-11	125/FIN
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FS 2-21	125/FIN	FS CC 3-13	⊗ 125/FIN
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FS 2-25	125/FIN	FS CC 3-17	⊗ 125/FIN
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FS 2-27	125/FIN	FS CC 3-19	⊗ 125/FIN
FS 2-28	125/FIN	FS CC 3-20	⊗ 125/FIN
FS 2-29	125/FIN	FS CC 3-21	125/FIN
FS 2-30	125/FIN	FS CC 3-22	⊗ 125/FIN

FS CC 3-23	⊗	125/FIN	5-17	†⊗	generic
FS CC 3-24		125/FIN	5-18	†⊗	generic
FS CC 3-25		125/FIN	5-19	†⊗	generic
FS CC 3-26	⊗	125/FIN	5-20	†⊗	generic
FS CC 3-27		125/FIN	5-21	†	generic
FS 3-28		125/FIN	5-22	†	generic
FS 3-29 (4 pgs)	Δ	125/FIN	5-23	†⊗	generic
FS 3-30 (4 pgs)	Δ	125/FIN	5-24	†⊗	generic
4-i		generic	5-25	†⊗	generic
4-ii		generic	5-26	†⊗	generic
4-1	†	generic	5-27	†⊗	generic
4-2	†	generic	5-28	†	generic
4-3	†	generic	5-29	†	generic
4-4	†	generic	5-30	†	generic
4-5	†	generic	5-31	†	generic
4-6	†	generic	5-32	†	generic
4-7	†	generic	5-33	†	generic
4-8	†	generic	5-34	†	generic
4-9	†	generic	5-35	†	generic
4-10	†	generic	5-36	†	generic
4-11	†	generic	5-37	†	generic
4-12	†	generic	5-38	†	generic
4-13	†	generic	6-1	†	generic
4-14	†	generic	6-2	†	generic
4-15	†	generic	6-3	†	generic
4-16	†	generic	6-4	†	generic
4-17	†	generic	6-5	†⊗	generic
4-18	†	generic	6-6	†⊗	generic
4-19	†	generic	6-7	†	generic
4-20	†	generic	6-8	†	generic
4-21	†	generic	6-9	†	generic
4-22	†	generic	6-10	†	generic
4-23	†	generic	6-11	†	generic
4-24	†	generic	6-12	†	generic
4-25	†	generic	6-13	†	generic
4-26	†	generic	6-14	†	generic
4-27	†	generic	6-15	†	generic
4-28	†	generic	6-16	†	generic
4-29	†	generic	6-17	†	generic
4-30	†	generic	6-18	†	generic
5-1	†	generic	7-1	†	generic
5-2	†	generic	7-2	†	generic
5-3	†	generic	7-3	†	generic
5-4	†	generic	7-4	†	generic
5-5	†	generic	7-5	†	generic
5-6	†	generic	7-6	†	generic
5-7	†⊗	generic	7-7	†	generic
5-8	†⊗	generic	7-8	†	generic
5-9	†⊗	generic	7-9	†⊗	generic
5-10	†	generic	7-10	†	generic
5-11	†	generic	7-11	†	generic
5-12	†	generic	7-12	†	generic
5-13	†	generic	7-13	†	generic
5-14	†	generic	7-14	†	generic
5-15	†⊗	generic	7-15	†⊗	generic
5-16	†⊗	generic	7-16	†	generic

⊗ – Flight copies of this page contain color

Δ – Replace with blue K-10 card stock in flight book only

† – May be replaced with CD in flight book only

8-1	†	generic	12-5	†	generic
8-2	†	generic	12-6	†	generic
8-3	†	generic	12-7	†	generic
8-4	†	generic	12-8	†	generic
8-5	†	generic	12-9	†	generic
8-6	†	generic	12-10	†	generic
9-1	†	generic	12-11	†	generic
9-2	†	generic	12-12	†	generic
9-3	†	generic	12-13	†	generic
9-4	†⊗	generic	12-14	†⊗	generic
9-5	†	generic	12-15	†	generic
9-6	†	generic	12-16	†	generic
9-7	†⊗	generic	12-17	†	generic
9-8	†	generic	12-18	†	generic
10-1	†	generic	12-19	†	generic
10-2	†	generic	12-20	†	generic
10-3	†	generic	13-1	†	generic
10-4	†	generic	13-2	†	generic
10-5	†	generic	13-3	†	generic
10-6	†⊗	generic	13-4	†⊗	generic
10-7	†	generic	13-5	†⊗	generic
10-8	†	generic	13-6	†⊗	generic
10-9	†	generic	13-7	†⊗	generic
10-10	†	generic	13-8	†⊗	generic
10-11	†	generic	13-9	†	generic
10-12	†	generic	13-10	†	generic
10-13	†	generic	13-11	†	generic
10-14	†	generic	13-12	†	generic
10-15	†	generic	14-1	†	generic
10-16	†	generic	14-2	†	generic
10-17	†	generic	14-3	†	generic
10-18	†	generic	14-4	†	generic
10-19	†	generic	15-1	†	generic
10-20	†	generic	15-2	†	generic
10-21	†	generic	15-3	†	generic
10-22	†	generic	15-4	†	generic
10-23	†	generic	15-5	†	generic
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11-3	†	generic	15-11	†	generic
11-4	†	generic	15-12	†	generic
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11-6	†	generic	15-14	†	generic
11-7	†	generic	15-15	†	generic
11-8	†	generic	15-16	†	generic
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11-10	†	generic	16-2	†	generic
11-11	†⊗	generic	16-3	†	generic
11-12	†	generic	16-4	†	generic
12-1	†	generic	16-5	†	generic
12-2	†	generic	16-6	†	generic
12-3	†	generic	17-1	†	generic
12-4	†	generic	17-2	†	generic

† – May be replaced with CD in flight book only

⊗ – Flight copies of this page contain color

18-1	†	generic
18-2	†	generic
18-3	†	generic
18-4	†	generic
18-5	†	generic
18-6	†	generic
19-1	†	generic
19-2	†	generic
19-3	†	generic
19-4	†	generic
19-5	†	generic
19-6	†	generic
19-7	†	generic
19-8	†	generic
19-9	†	generic
19-10	†	generic
19-11	†	generic
19-12	†	generic
20-1	†	generic
20-2	†	generic
20-3	†	generic
20-4	†	generic
20-5	†	generic
20-6	†	generic
20-7	†	generic
20-8	†	generic
20-9	†	generic
20-10	†	generic
20-11	†	generic
20-12	†	generic
20-13	†	generic
20-14	†	generic
20-15	†⊗	generic
20-16	†	generic
20-17	†	generic
20-18	†⊗	generic
20-19	†	generic
20-20	†	generic
20-21	†	generic
20-22	†	generic
21-1	†	generic
21-2	†	generic

† – May be replaced with CD in flight book only

⊗ – Flight copies of this page contain color

PHOTO/TV CUE CARDS

	<u>Title</u>	<u>Ref. Page</u>	<u>Card No.</u>
TV			
	(Front).....	FS CC 3-3	P/TV-1a/125/O/B
	(Back).....	FS CC 3-4	P/TV-1b/125/O/A
ANALOG PLAYBACK			
	(Front).....	FS CC 3-5	P/TV-2a/125/O/A
	(Back).....	FS CC 3-6	P/TV-2b/125/O/A
ET PHOTO			
	(Front).....	FS CC 3-7	P/TV-3a/125/O/A
	(Back).....	FS CC 3-7	P/TV-3b/125/O/A
VIDEO TAPE ALLOCATIONS			
	(Front).....	FS CC 3-8	P/TV-4a/125/O/A
	(Back).....	FS CC 3-9	P/TV-4b/125/O/A
WVS			
	(Front).....	FS CC 3-10	P/TV-5a/125/O/A
	(Back).....	FS CC 3-11	P/TV-5b/125/O/A
PLBD VTR RECORDING			
	(Front).....	FS CC 3-12	P/TV-6a/125/O/A
	(Back).....	FS CC 3-13	P/TV-6b/125/O/A
LDRI/ITVC			
	(Front).....	FS CC 3-14	P/TV-7a/125/O/A
	(Back).....	FS CC 3-15	P/TV-7b/125/O/B
LCS			
	(Front).....	FS CC 3-16	P/TV-8a/125/O/B
	(Back).....	FS CC 3-17	P/TV-8b/125/O/B
IDC			
	(Front).....	FS CC 3-18	P/TV-9a/125/O/B
	(Back).....	FS CC 3-19	P/TV-9b/125/O/A
VIDEO SETUP			
	(Front).....	FS CC 3-20	P/TV-10a/125/O/B
	(Back).....	FS CC 3-21	P/TV-10b/125/O/A
D2Xs SETUP			
	(Front).....	FS CC 3-22	P/TV-11a/125/O/B
	(Back).....	FS CC 3-23	P/TV-11b/125/O/B
LDRI/ITVC A7 PLACARD			
	(Front).....	FS CC 3-24	P/TV-12a/125/O/B
	(Back).....	FS CC 3-24	P/TV-12b/125/O/B
DIGITAL PLAYBACK			
	(Front).....	FS CC 3-25	P/TV-13a/125/O/A
	(Back).....	FS CC 3-26	P/TV-13b/125/O/A
FSS CAMR PLACARD			
	(Front).....	FS CC 3-27	P/TV-14a/125/O/A
	(Back).....	FS CC 3-27	P/TV-14b/125/O/A

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SCENES

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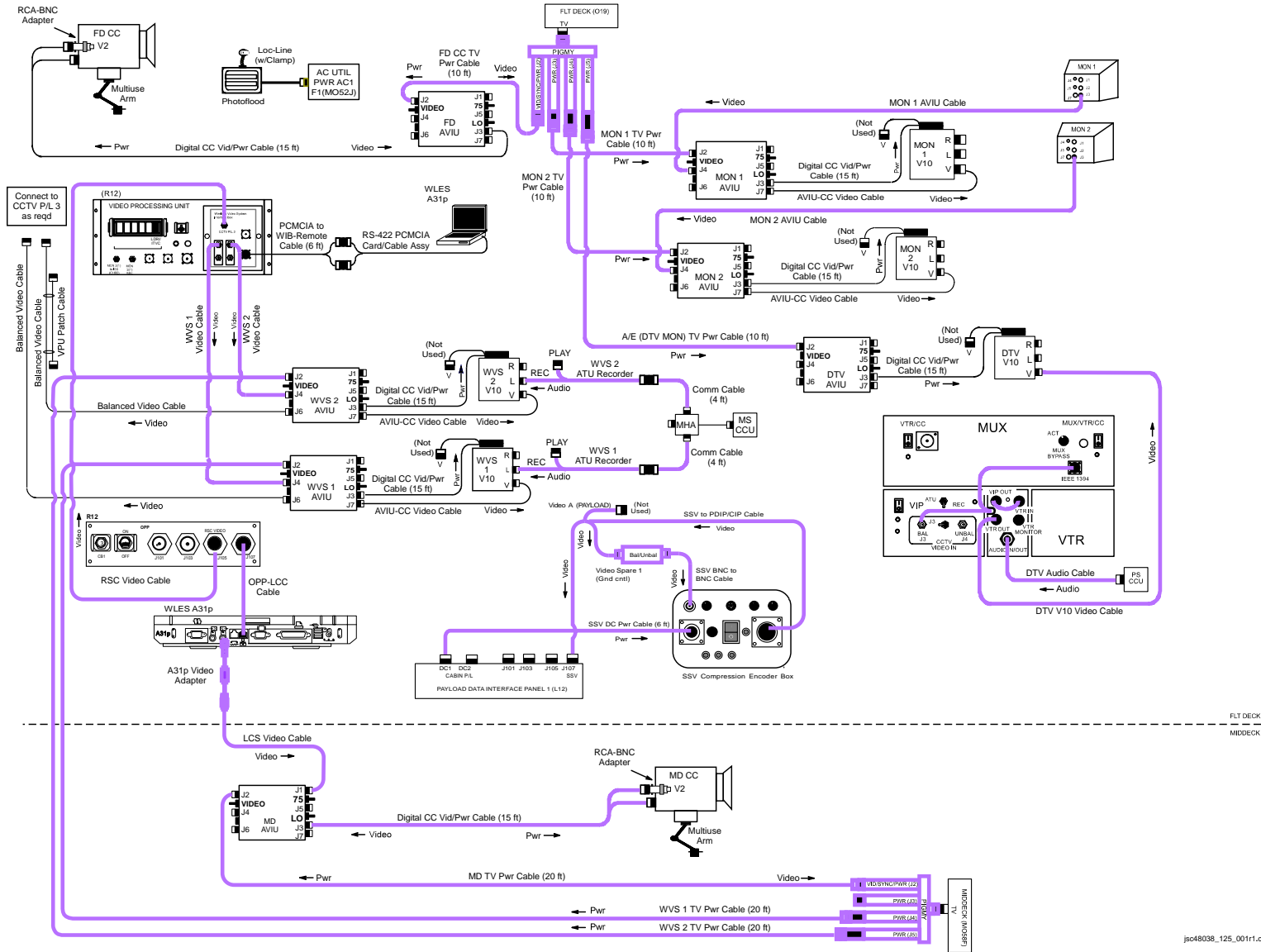
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P/TV01 VIDEO SETUP

P/TV01 VIDEO SETUP

H/W SUMMARY



js048038_125_001r1.cvx

P/TV01 VIDEO SETUP (Continued)

SETUP

NOTE

Steps 1-7 minimum reqmt for FD2 OBSS TPS Inspection

1. Perform ACTIVATION, OPERATION (Cue Card, TV) as reqd
2. Perform DTV Setup

O19 TV PWR – OFF

L10:A1 Unstow AVIU and disconnect following cables:
A/E (DTV/MON) TV Pwr Cable from J2
ASC/HUD Mini-Cam Cable from J5
Mini-Cam BNC Video Cable from J1

A15 Connect DTV Audio Cable to PS CCU
Config DTV H/W per H/W SUMMARY, FS 1-4

Config Panels

L10 (MUX) ✓VTR/CC PWR – on (LED on)
If dnk:
MUX/VTR/CC PWR – on (LED on)
✓MUX BYPASS – ACT

(VIP) ✓ATU – REC
✓CCTV VIDEO IN – J3
✓PWR – on (LED on)

(VTR) ✓ON/STANDBY LED – green
✓Switches set to White Dot (seven)
✓COUNTER SELECT – COUNTER (TC)

Config DTV V10

AVIU (DTV) ✓SYNC/VIDEO – VIDEO
HI-Z/75 – 75
PWR SELECT – LO

O19 TV PWR – ON

V10 PWR – ON
MENU pb – push
SEL COMMANDER
SEL – OFF
MENU pb – push

L9 Config PS ATU per Comm Plan

P/TV01 VIDEO SETUP (Continued)

SETUP (Continued)

3. Perform MON 1,2 V10 Setup

MF43D Remove MON 1,2 Desk Assy Hardware from Stow-n-Go CTB

O19 TV PWR – OFF

Config MON 1,2 V10s and Cables per H/W SUMMARY, FS 1-4

Connect:

MON 1,2 Digital CC Vid/Pwr Cables to MON 1,2 V10s

MON 1,2 AVIU-CC Video Cables to MON 1,2 V10s

Multiuse Brkt to desk

MON 1 AVIU Cable to MON 1 AVIU J5

MON 2 AVIU Cable to MON 2 AVIU J5

MON 1,2 TV PWR Cable to MON 1,2 AVIU J2

Multiuse Brkt to wall

AVIU (MON 1,2) √SYNC/VIDEO – VIDEO
√HI-Z/75 – 75
√PWR SELECT – LO

O19 TV PWR – ON
V10 (MON 1,2) PWR – ON
DISPLAY pb – toggle to display tape counter
√Tape installed

4. √RSC Video Cable connected between R12/OPP-RSC Video (J105) and R12/VPU-CCTV PL3

P/TV01 VIDEO SETUP (Continued)

SETUP (Continued)

5. Perform Analog Camcorder Setup for FD,MD per H/W SUMMARY, FS 1-4, as reqd

O19,MO58F TV PWR – OFF

AVIU (FD,MD) SYNC/VIDEO – VIDEO
HI-Z/75 – 75
PWR SELECT – LO

O19,MO58F TV PWR – ON

CC (FD,MD) Install Wide Conversion Lens
PWR dial – “green”
√ND FILTER – OFF
√OUTPUT – CAM
√..-
√STANDBY/LOCK – STANDBY
√Tape installed
√Viewfinder (LCD) displays “green” •||
Install Audio Muting Plug (optional)
Install Multiuse Brkt
PWR dial – OFF

6. Perform LCS Cable Connections per H/W SUMMARY, FS 1-4, as reqd

A17 If MD Camcorder setup not performed, unstow MD AVIU from Camcorder Bag

Middeck AVIU (MD) FIt Deck Connect end of LCS Video Cable to MD AVIU J1
√HI-Z/75 – 75
Connect other end of LCS Video Cable (A31p Video Adapter) to WLES A31p Video Out port
Connect OPP-LCC Cable to WLES RJ45 Ethernet port

P/TV01 VIDEO SETUP (Continued)

SETUP (Continued)

7. Perform SSV Setup

MF710

Unstow:

- SSV Compression Encoder Box
- SSV BNC-BNC Cable
- SSV To PDIP/CIP Cable
- PGSC Pwr Cable
- Bal/Unbal Xfmr

Config SSV H/W per H/W SUMMARY, FS 1-4

NOTE

Video Spare 1 controlled by MCC instead of pnl A7

L12 (SSP 1)
(PDIP 1)

- √PDIP 1 PWR 1 (CB3) – cl
- DC PWR 1 – ON

SSV

Config SSV settings

IN SEL – NTSC

Mode – 3

OUTRATE – 4

SSV Pwr – on

√Pwr LED illum

√ENC DATA LED flickering

√FRM DATA LED flickering

√FILL FRM pulsing

Inform MCC when SSV SETUP complete

P/TV01 VIDEO SETUP (Continued)

SETUP (Continued)

8. Perform WVS Setup

a. Activate WVS System

A7 WIRELESS VID HTR – ON
PWR – ON

MO58F TV PWR – OFF

b. Remove WVS Hardware from Stow-n-Go CTB

Config WVS 1,2 V10s and Cables per H/W SUMMARY, FS 1-4

Connect:

WVS 1,2 Digital CC Vid/Pwr Cables to WVS 1,2 V10s

WVS 1,2 AVIU-CC Vid Cables to WVS 1,2 V10s

Multiuse Brkt to desk

Pre-routed WVS 1,2 Balanced Video Cables from R12/VPU XCVR 1,2 BAL to WVS 1,2 AVIU J4

Pre-routed WVS TV Pwr Cables to WVS 1,2 AVIU J2

Balanced Video Cables stowed on WVS Stow-n-Go desk to WVS 1,2 AVIU J6

ATU Recorder Cables to left (white) port per H/W SUMMARY, FS 1-4

Multiuse Brkt to wall

PCMCIA-to-WIB Remote Cable to R12/WIB J701

RS-422 PCMCIA Card/Cable Assy and PCMCIA-to-WIB Remote Cable to A31p per PGSC Usage Chart

AVIU (WVS 1,2) ✓SYNC/VIDEO – VIDEO
✓HI-Z/75 – 75
✓PWR SELECT – LO

MO58F V10 (two)
V10 (WVS 1,2) TV PWR – ON
PWR – ON
✓Tape installed
✓WVS Test Pattern displayed (color bars w/“No WVS Video”)
PWR – OFF

A11 Config MS ATU/CCU per Comm Plan

P/TV01 VIDEO SETUP (Continued)

SETUP (Continued)

8. Perform WVS Setup (Continued)

c. WVS PGSC Prep

PGSC

PGSC Pwrup and Application Opening

√Pwr – ON

Sel Shuttle Apps icon

Sel WVS icon

Sel 'No' at 'Restore To Previous Settings:' window

If 'Comm Port Configuration' error displayed:

Remove Quatech RS-422 Card

Sel 'Start' > 'Shut Down' > 'Shut Down' > 'OK'

Reinstall Quatech RS-422 Card

Pwr – ON

Sel Shuttle Apps icon

Sel WVS icon

RF Camera page will appear

Application Setup

If 'Static XCVR' ('Bad Camera ID', 'Temp Alert', 'Temp Caution') alert msg:

| Perform ALERT MSG TROUBLESHOOTING (Cue Card, WVS)

If 'Static RF Camera' alert msg:

Disregard

Sel 'File' → 'Assign Camera ID'

Verify following:

Camr Address	S/N	In Use	Label
TBD	TBD	1	EV1
TBD	TBD	1	EV2

When complete, sel 'OK'

If Camr IDs not correct:

Sel 'Delete Entry' until all deleted

Perform CAMR ID ASSIGNMENT (Cue Card, WVS) as reqd

P/TV01 VIDEO SETUP (Concluded)

SETUP (Concluded)

8. Perform WVS Setup (Concluded)

c. WVS PGSC Prep (Concluded)

Application Setup (Concluded)

Sel 'File' → 'Advanced Controls'

On XVCR tab:

√IF – selected

√Other options not selected

Sel RF Camera tab:

√Power Selections – selected

√Automatic Gain Control – selected

√S-Band Level – selected

√Other options not selected

When complete, sel 'OK'

d. PWRDN

Sel 'File' → 'Exit'

WIRELESS VID PWR – OFF

HTR – OFF

A7

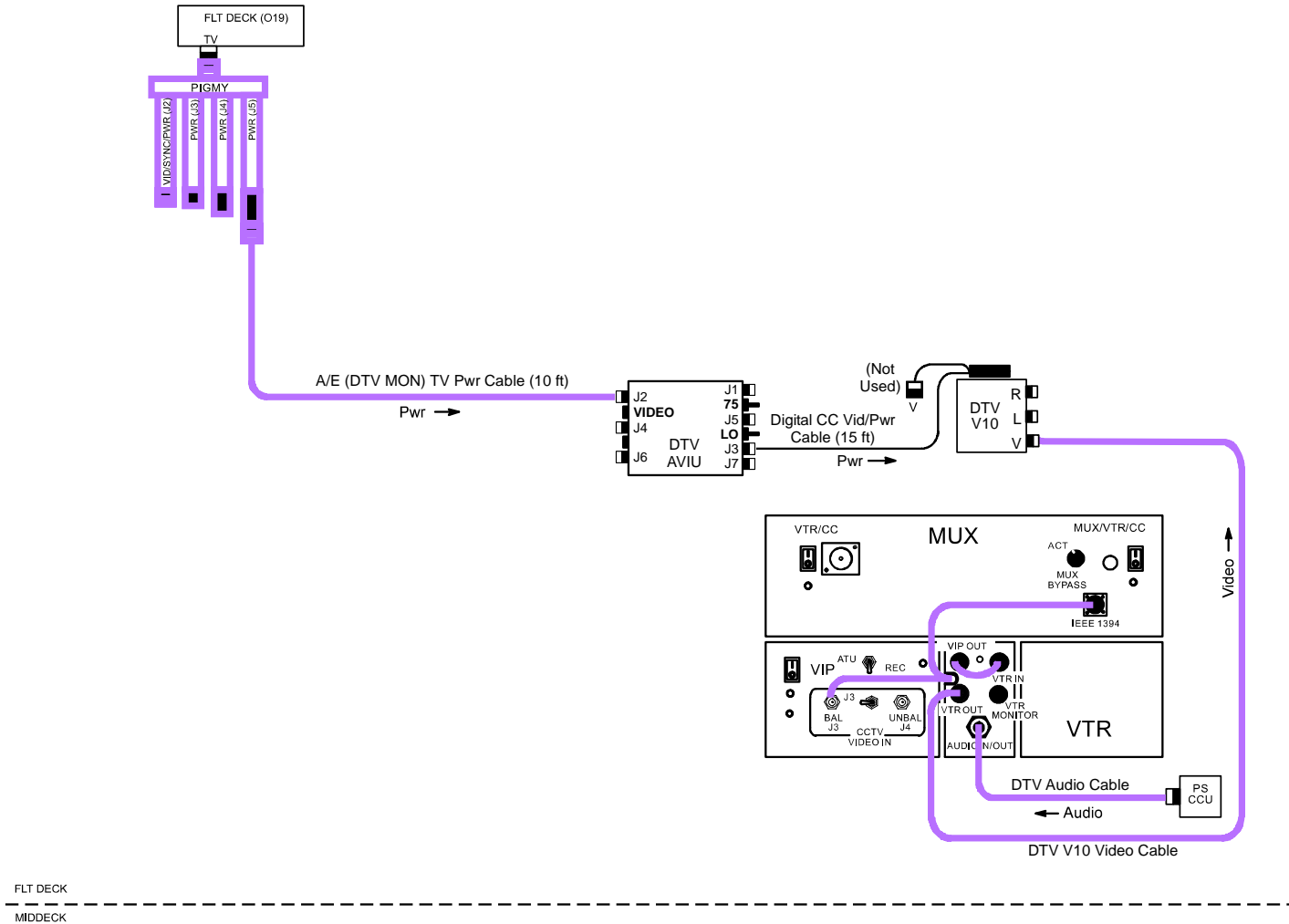
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P/TV02 SSE SURVEY

P/TV02 SSE SURVEY

H/W SUMMARY



jsc48038_125_002.cvx

P/TV02 SSE SURVEY (Continued)

SCENE SYNOPSIS

Scene contains procedures for recording survey of HST SSE components after on-orbit arrival

SETUP

1. Perform ACTIVATION, OPERATION (Cue Card, TV) as reqd
2. Perform D2Xs SHUTTER PRIORITY

Lens – 80-200mm(400mm)

Aperture – Min, locked

Body Focus Mode – S

√Batt installed

√Flash Card installed

Pwr – ON

Top LCD

√Batt

√Frames remaining sufficient

Exp Comp () – 0.0

Exp Mode – S

SS – 250(500)

Meter – Matrix ()

Diopter – Adjust

Frame Rate – S

√BKT disabled

Rear LCD

√ISO – 100

√QUAL – RAW

√WB – 0,A

AF Area Mode – [[]]

√Focus Area – Center

√Focus Selector Lock – L

SB-800 Flash Settings

ON/OFF pb – OFF

P/TV02 SSE SURVEY (Continued)

SETUP (Concluded)

3. Perform H/W Verification for DTV, DTV V10

L10 (MUX) VTR/CC PWR – on (LED on)
 (VIP) PWR – on (LED on)
 (VTR) √ON/STANDBY LED – green
 √Tape installed
 O19 √TV PWR – ON
 V10 (DTV) PWR – ON

OPS

√	Item # Track #	Rqmts	Still Imagery	Video			Notes
				PLB	CC	Dnlk	
	1.	SSE VIDEO SURVEY <ul style="list-style-type: none"> • MULE <ul style="list-style-type: none"> – Overall View – Avionics – LGAPC – RNS – ASLRs – MINC – COPE – SIP Interfaces • FSS <ul style="list-style-type: none"> – Overall View of BAPS, FSS – Avionics – BAPS, Latches – SCM – Main Umbilical – BSP – SIP Interfaces 		B,C		Desired	PLBK requested prior to crew sleep if dnlk not avail
				A,B,C,Wrist, Elbow			

P/TV02 SSE SURVEY (Continued)

OPS (Continued)

√	Item # Track #	Rqmts	Still Imagery	Video			Notes
				PLB	CC	Drnk	
	1.	<p>SSE VIDEO SURVEY (Concluded)</p> <ul style="list-style-type: none"> • SLIC <ul style="list-style-type: none"> – Overall View – Avionics – Batt Extraction Tool – OVP – WSIPE – FGSHH – Fuse Plugs – COSTAR Y Harness – BPAs – SIP Interfaces 				Desired	PLBK requested prior to crew sleep if drnk not avail
	2.	<p>SSE STILL IMAGE SURVEY</p> <ul style="list-style-type: none"> • MULE <ul style="list-style-type: none"> – Avionics • FSS <ul style="list-style-type: none"> – Latches – Umbilical(s) – Rotator – Downlock – Pivoter Targets – Avionics • ORUC <ul style="list-style-type: none"> – Avionics – Purge Interfaces • SLIC <ul style="list-style-type: none"> – Avionics – Purge Interfaces – WFPCHH 	<p><u>D2Xs</u> 80-200mm (400mm)</p>				

P/TV02 SSE SURVEY (Concluded)

OPS (Concluded)

If OPS temporarily suspended, perform DEACTIVATION as reqd
If OPS completed, go to DEACTIVATION

DEACTIVATION

1. D2Xs
Exp Mode – P
Flash ON/OFF – ON
2. TV System
Go to DEACTIVATION (Cue Card, TV) as reqd

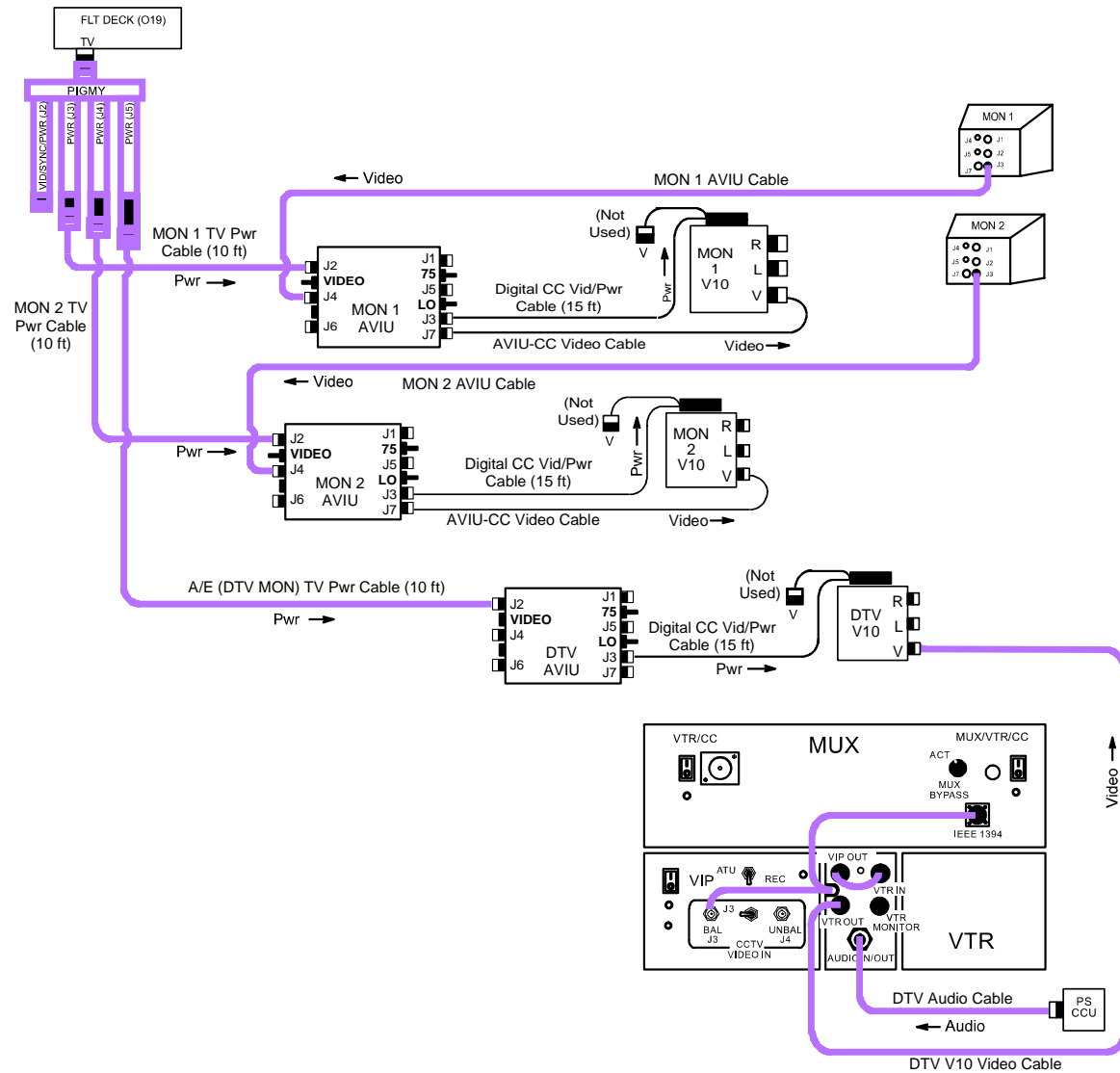
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P/TV03 FSS OPS

P/TV03 FSS OPS

H/W SUMMARY



FLT DECK

MIDDECK

jsc48038_125_003.cvx

P/TV03 FSS OPS (Continued)

SCENE SYNOPSIS

Scene contains procedures for recording FSS movements w/ and w/o HST attached and HST SA Slews

SETUP

1. Perform ACTIVATION, OPERATION (Cue Card, TV) as reqd
2. Perform D2Xs SHUTTER PRIORITY

Lens – 400mm(80-200mm)

√Aperture – Min, locked

Body Focus Mode – S

√Batt installed


√Flash Card installed

Pwr – ON

Top LCD

√Batt

√Frames remaining sufficient

Exp Comp () – 0.0

Exp Mode – S

SS – 500(250)

Meter – Matrix ()

Diopter – Adjust

Frame Rate – S

√BKT disabled

Rear LCD

√ISO – 100

√QUAL – RAW

√WB – 0,A

AF Area Mode – [[]]

√Focus Area – Center

√Focus Selector Lock – L

SB-800 Flash Settings

ON/OFF pb – OFF

P/TV03 FSS OPS (Continued)

SETUP (Concluded)

3. Perform Hardware Verification for V10s, FD CC, DTV

- | | |
|-----------------------------|--|
| O19 | √TV PWR – ON |
| V10
(MON 1,2, DTV) | PWR – ON
For MON 1,2,V10s
√Tape installed
DISPLAY pb – Toggle to display tape counter |
| L10 (MUX)
(VIP)
(VTR) | VTR/CC PWR – on (LED on)
PWR – on (LED on)
√ON/STANDBY LED – green
√Tape installed |

P/TV03 FSS OPS (Continued)

OPS

√	Item # Track #	Rqmts	Still Imagery	Video	CC	Dnlk	Notes
				PLB			
	1.	<u>FSS CONFIG FOR BERTHING</u> <ul style="list-style-type: none"> • Video FSS downlock mechanism retraction/release • Video BAPS w/SCM pivot from 0-90° including pivoter targets w/emphasis on final config • Video BAPS w/SCM rotator target after PIVOT OPS complete • Video of each FFS,SM Berthing Latch (three each) to ensure fully open • Video of main umbilical movement during cycling, watching for obstructions • Video of backup umbilical mechanism showing unobstructed, retracted connector • Still Images in Final Config: <ul style="list-style-type: none"> – Downlock – Pivot target – Rotator target – FSS Latches (three) – SCM Latches (three) – Main umbilical 	<u>D2Xs</u> 400mm(80-200mm)	<u>D</u> <u>A,B</u> <u>C,D</u> <u>A,B,C,D</u> <u>WRIST</u> <u>WRIST</u>			

|

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P/TV03 FSS OPS (Continued)

OPS (Continued)

√	Item # Track #	Rqmts	Still Imagery	Video			Notes
				PLB	CC	Dnlk	
	2.	<u>FSS/HST REPOSITIONING</u> <ul style="list-style-type: none"> Video of FSS/HST pivots, rotations watching pivot, rotation targets and watching for SA clearance of orbiter structure 		<u>B(D),ELBOW</u>			B(D) – FSS targets ELBOW – Wide view
	3.	SA Slews <ul style="list-style-type: none"> Muxed video view of both SAs during Slew Ops 		<u>MUX A,D</u>		PLBK (If no KuBand)	Fill FOV w/whole SA
	4.	<u>Airlock EVA Egress</u> <u>DepressSAMA</u> <ul style="list-style-type: none"> Rcd SA motion due to airlock depress venting. Use overlays to determine deflection magnitude 		A on +V2 Array		Live	FOV per dwg below, overlay HFOV: FULL IN PAN: +10° TILT: +41° 

P/TV03 FSS OPS (Continued)

OPS (Continued)

√	Item # Track #	Rqmts	Still Imagery	Video			Notes
				PLB	CC	Dnlk	
	4.	<u>Airlock EVA Egress</u> <u>DepressSAMA</u> (Concluded)		D on -V2 Array		X	FOV per dwg below, overlay HFOV: FULL IN PAN: -11° TILT: +37° 
				RMS Elbow overview of both arrays		X	FOV per dwg below HFOV: FULL OUT 

P/TV03 FSS OPS (Concluded)

OPS (Concluded)

√	Item # Track #	Rqmts	Still Imagery	Video			Notes
				PLB	CC	Dnlk	
	5.	<u>FSS CONFIG FOR LANDING</u> <ul style="list-style-type: none"> • Video of BAPS pivot from 90° to 43.8° • Closeup video of BSP latching mechanism engagement • Wide view video of BAPS in final config 		A,B			
				B,C			
				A,C			

If OPS temporarily suspended, perform DEACTIVATION as reqd
 If OPS completed, go to DEACTIVATION

DEACTIVATION

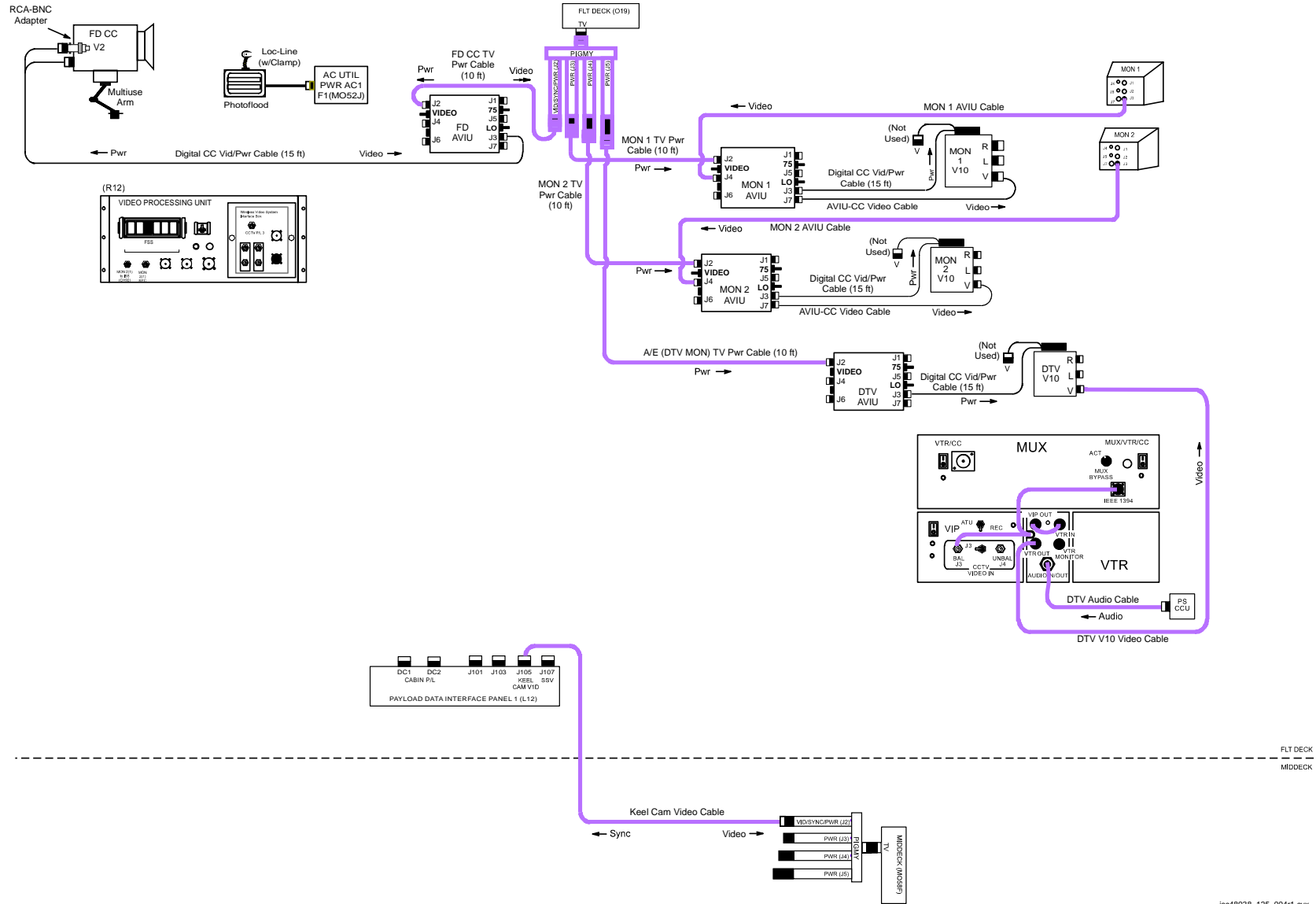
1. D2Xs
 Exp Mode – P
 Flash ON/OFF – ON
2. TV System
 Go to DEACTIVATION (Cue Card, TV) as reqd

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P/TV04 RTRV/BERTH

P/TV04 HST RETRIEVE/BERTH

H/W SUMMARY



jsc48038_125_0041.cvx

P/TV04 HST RETRIEVE/BERTH (Continued)

SCENE SYNOPSIS

Scene contains procedures for obtaining video, still photos of HST retrieve, berth

SETUP

1. Perform ACTIVATION, OPERATION (Cue Card, TV) as reqd
2. Perform D2Xs PROGRAM w/FLASH for in-cabin imagery

Lens – 28-70mm

√Aperture – Min, locked

Body Focus Mode – S

√Batt installed

√Flash Card installed

Pwr – ON

Top LCD

√Batt

√Frames remaining sufficient

Exp Comp (☑) – 0.0

Exp Mode – P

Meter – Matrix (☉)

Diopter – Adjust

Frame Rate – S

√BKT disabled

Rear LCD

√ISO – 100

√QUAL – RAW

√WB – 0,A

√Focus Area – Center

√Focus Selector Lock – L

AF Area Mode – []]

SB-800 Flash Settings

√Diffuser Dome installed

ON/OFF pb – ON

√MODE – [] [TTL] [BL]



√Exp Comp – 0.0

Tilt – 45° (Direct)

P/TV04 HST RETRIEVE/BERTH (Continued)

SETUP (Continued)

3. Perform D2Xs SHUTTER PRIORITY for docking/external imagery

- Lens – 400mm(80-200mm)
- √Aperture – Min, locked
- Body Focus Mode – S
- √Batt installed
- √Flash Card installed
- Pwr – ON
- Top LCD
 - √Batt
 - √Frames remaining sufficient
- Exp Comp () – 0.0
- Exp Mode – S
 - SS – 500(250)
- Meter – Matrix () (Spot when HST <1/2 frame)
- Diopter – Adjust
- Frame Rate – S
- √BKT disabled
- Rear LCD
 - √ISO – 100
 - √QUAL – RAW
 - √WB – 0,A
- AF Area Mode – [[]]
- √Focus Area – Center
- √Focus Selector Lock – L

- SB-800 Flash Settings
 - ON/OFF pb – OFF

P/TV04 HST RETRIEVE/BERTH (Continued)

OPS

√	Item # Track #	Rqmts	Still Imagery	Video			Notes
				PLB	CC	Dnlk	
	1.	<u>HST ORBITER APPROACH,GRAPPLE</u> <ul style="list-style-type: none"> • Video of HST approach, grapple viewing HGAs,AD, SAs to ensure in retrieve config • Still images of HST for overall config, especially aft bulkhead • In-cabin PAO still photos 	<u>D2Xs (Shutter Priority)</u> 400mm(80-200mm) Survey rqmts <u>D2Xs (Program w/Flash)</u> 12-24mm)	<u>A(D),KEEL, WRIST</u>	<u>G1</u> In-Cabin Activities Tape installed	LIVE (PLBK)	Replay video if no comm. Dnlk still images prior to crew sleep
	2.	<u>HST POST-GRAPPLE MNVR</u> <ul style="list-style-type: none"> • Video of RMS mnvr of HST to berth posn w/emphasis on aft bulkhead components • Video of +V2 SA wing tip, FSS,SCM berthing latches envelope simo • Still images of aft bulkhead while overhead 	<u>D2Xs (Shutter Priority)</u> 80-200mm Survey rqmts	<u>D,B,FSS</u>	<u>G1</u> In-Cabin, Ovhd Window View Tape installed	LIVE (PLBK)	Replay video if no comm. Dnlk still images overnight
	3.	<u>HST BERTH,LATCHING</u> <ul style="list-style-type: none"> • Video of each FSS latch operation • Video of – V2 SA wing tip during latching ops • Still images of each FSS latch in final config 	<u>D2Xs (Shutter Priority)</u> 400mm	<u>B(C)</u> <u>D</u>			

P/TV04 HST RETRIEVE/BERTH (Concluded)

OPS

√	Item # Track #	Rqmts	Still Imagery	Video			Notes
				PLB	CC	Dnlk	
	4.	<u>HST/FSS UMBILICAL MATE</u> <ul style="list-style-type: none"> • Video of umbilical travel, mating ops • Still image of final config 	<u>D2Xs (Shutter Priority)</u> 400mm	A,B			
	5.	<u>RMS RELEASE</u> <ul style="list-style-type: none"> • Video of RMS EE release,backaway 		WRIST,D			

If OPS temporarily suspended, perform DEACTIVATION as reqd
 If OPS completed, go to DEACTIVATION

DEACTIVATION

1. D2Xs
 Exp Mode – P
 Pwr – OFF
 Flash ON/OFF – ON

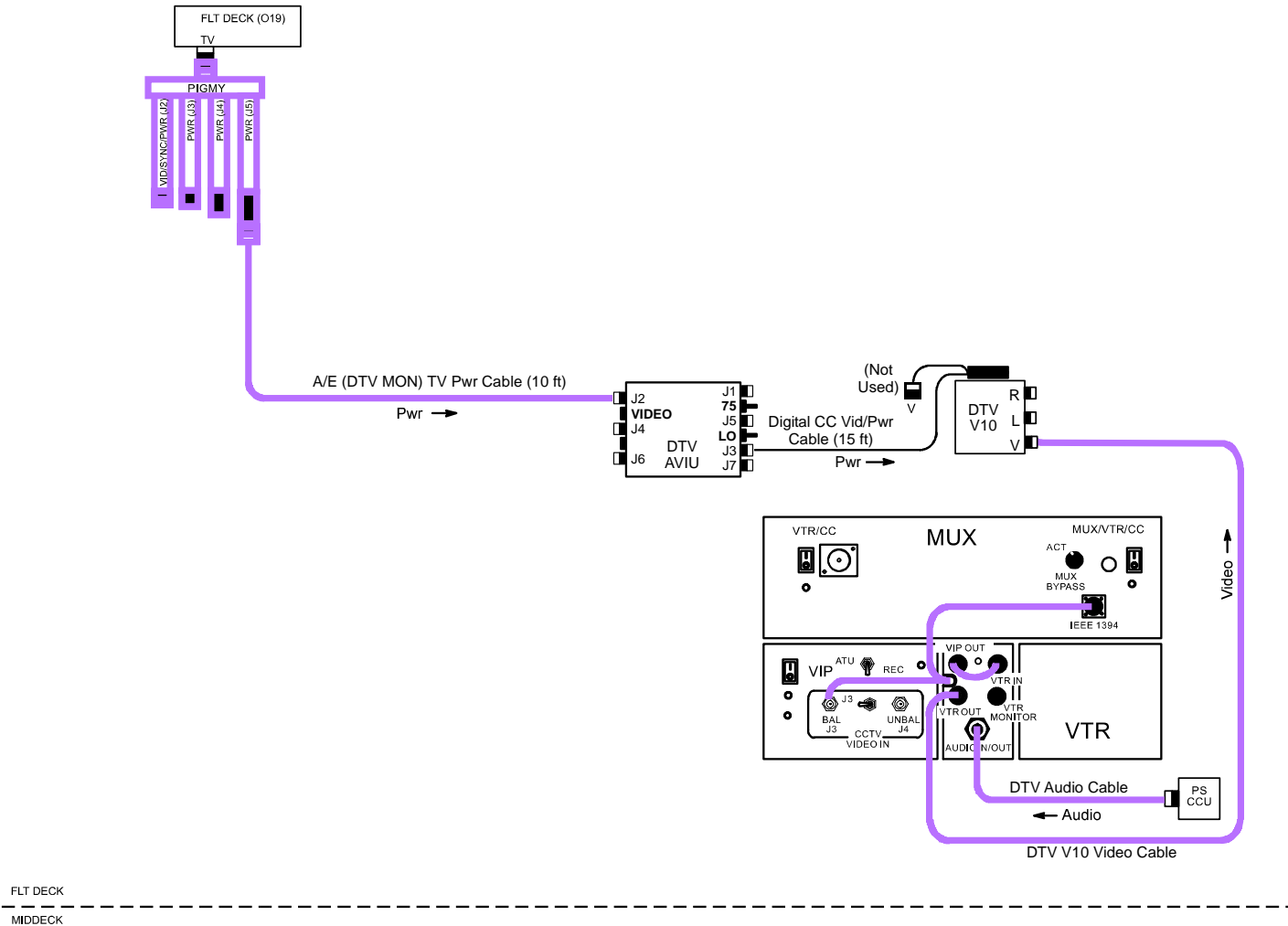
- L11 (SSP3)
2. TV System
 KEEL CAM ENA – OFF
 Go to DEACTIVATION (Cue Card, TV) as reqd

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P/TV05 HST SURVEY

H/W SUMMARY



jsc48038_125_005.cvx

P/TV05 HST SURVEY (Continued)

SCENE SYNOPSIS

Scene contains procedures for recording survey video, still images of HST

SETUP

1. Perform ACTIVATION, OPERATION (Cue Card, TV) as reqd

2. Perform D2Xs SHUTTER PRIORITY for HST Mapping

Lens – 80-200mm

Aperture – Min, locked

Body Focus Mode – S

√Batt installed

√Flash Card installed

Pwr – ON

Top LCD

√Batt

√Frames remaining sufficient

Exp Comp (☑) – 0.0

Exp Mode – S

SS – as reqd

Meter – Matrix (☉)

Diopter – Adjust

Frame Rate – S

√BKT disabled

Rear LCD

√ISO – 100

√QUAL – RAW

√WB – 0,A

AF Area Mode – [[]]

√Focus Area – Center

√Focus Selector Lock – L

SB-800 Flash Settings

ON/OFF pb – OFF

P/TV05 HST SURVEY (Continued)

SETUP (Concluded)

3. Perform H/W Verification for DTV, DTV V10

L10 (MUX) VTR/CC PWR – on (LED on)
 (VIP) PWR – on (LED on)
 (VTR) √ON/STANDBY LED – green
 √Tape installed
 O19 √TV PWR – ON
 V10 (DTV) PWR – ON

OPS

√	Item # Track #	Rqmts	Still Imagery	Video			Notes
				PLB	CC	Dnlk	
	1.	<u>-V3 SURVEY</u> <ul style="list-style-type: none"> • Video survey of HST surfaces post berthing • Mapping of HST surfaces (see diagrams, FS 1-59 thru FS 1-64) w/emphasis on: <ul style="list-style-type: none"> – Bays 1 thru 4 – AS door, latches, seals, edges, handrails, NCS radiator handrail latches (three), skirt – WFC3/WF/PCII EVA (gnd strap, radiators, door seals) – Equip sections C-H – HGA (hole, latch, gimbal cable routing, interference) – Handrails 	D2Xs 80-200mm	<u>WRIST</u>		LIVE Preferred DNLK	Dnlk of items a,b,c (see diagrams, FS 1-59, FS 1-60, FS 1-62, & FS 1-63) prior to SDM retraction Use audio files to identify areas covered

P/TV05 HST SURVEY (Continued)

OPS (Continued)

√	Item # Track #	Rqmts	Still Imagery	Video			Notes
				PLB	CC	Dnlk	
	2.	<u>SA3 HST -V3 Survey SA @ 0</u> <ul style="list-style-type: none"> • Still images of active side of SA3s <ul style="list-style-type: none"> - Entire length of Solar Array Mast (includes SADM and thermal shields) 	<u>D2Xs</u> 80-200mm	<u>A,B,C,D</u>		LIVE (PLBK)	First opportunity in this config: Narrate on Tape during ops via ORB comm Dnlk DCS images prior to crew sleep
	3.	<u>SA3 HST -V3 Survey @ Batt Charge Posn</u> <ul style="list-style-type: none"> • Video of passive, active sides of SA3s • Still images of passive side of SA3s 	<u>D2Xs</u> 80-200mm	<u>A,B,C,D</u>		LIVE (PLBK)	First opportunity in this config: Narrate on Tape during ops via ORB comm Dnlk DCS images prior to crew sleep
	4.	<u>+V3 SURVEY</u> <ul style="list-style-type: none"> • Video survey of HST surfaces • Mapping of HST surfaces (see diagrams, FS 1-65 & FS 1-66) w/emphasis on: <ul style="list-style-type: none"> - FGS #2 pre, post EVA (latches, seals, edges, handrails, covers (five)) - Bays 6-9 (before, after MLI installation) - HGA (latch, gimbal cable routing, interferences) - AD hinges, motor - MSS 1,2 - Handrails 	<u>D2Xs</u> 80-200mm	<u>A,D</u> (B,C while in -V3 fwd posn)		PLBK DNLK	Use audio files to identify areas covered

P/TV05 HST SURVEY (Continued)

OPS (Continued)

√	Item # Track #	Rqmts	Still Imagery	Video			Notes
				PLB	CC	Dnlk	
	5.	<u>SA3 HST +V3 Survey SA @ 0</u> <ul style="list-style-type: none"> • Video of active side of SA3s 		<u>A,B,C,D</u>			First opportunity in this config
	6.	<u>Aperture Door HST +V3 FWD Survey</u> <ul style="list-style-type: none"> • Still images of aperture door motors and hinge,MLI around motors,hinge 	<u>IVA D2Xs</u> 8-200mm			PLBK (prior to sleep)	First opportunity in this config: Download reqd evening acquisition
	7.	<u>-V2 SURVEY</u> <ul style="list-style-type: none"> • Video survey of HST surfaces • Mapping of HST surfaces (see diagrams FS 1-67 & FS 1-68) w/emphasis on: <ul style="list-style-type: none"> – COSTAR/COS doors pre,post EVA (latches, seals, edges, handrails) – ACS doors pre,post EVA (latches, seals, edges, handrails) – FGS #1 (latches, seals, edges, handrails) – Solar array mast (includes SADM,thermal shields) – HGA (dish, latch, gimbal cable routing, interferences) – ES A,B – Handrails 	<u>D2Xs</u> 80-200mm	<u>A,D</u>		PLBK DNLK	Use audio files to identify areas covered

P/TV05 HST SURVEY (Continued)

OPS (Concluded)

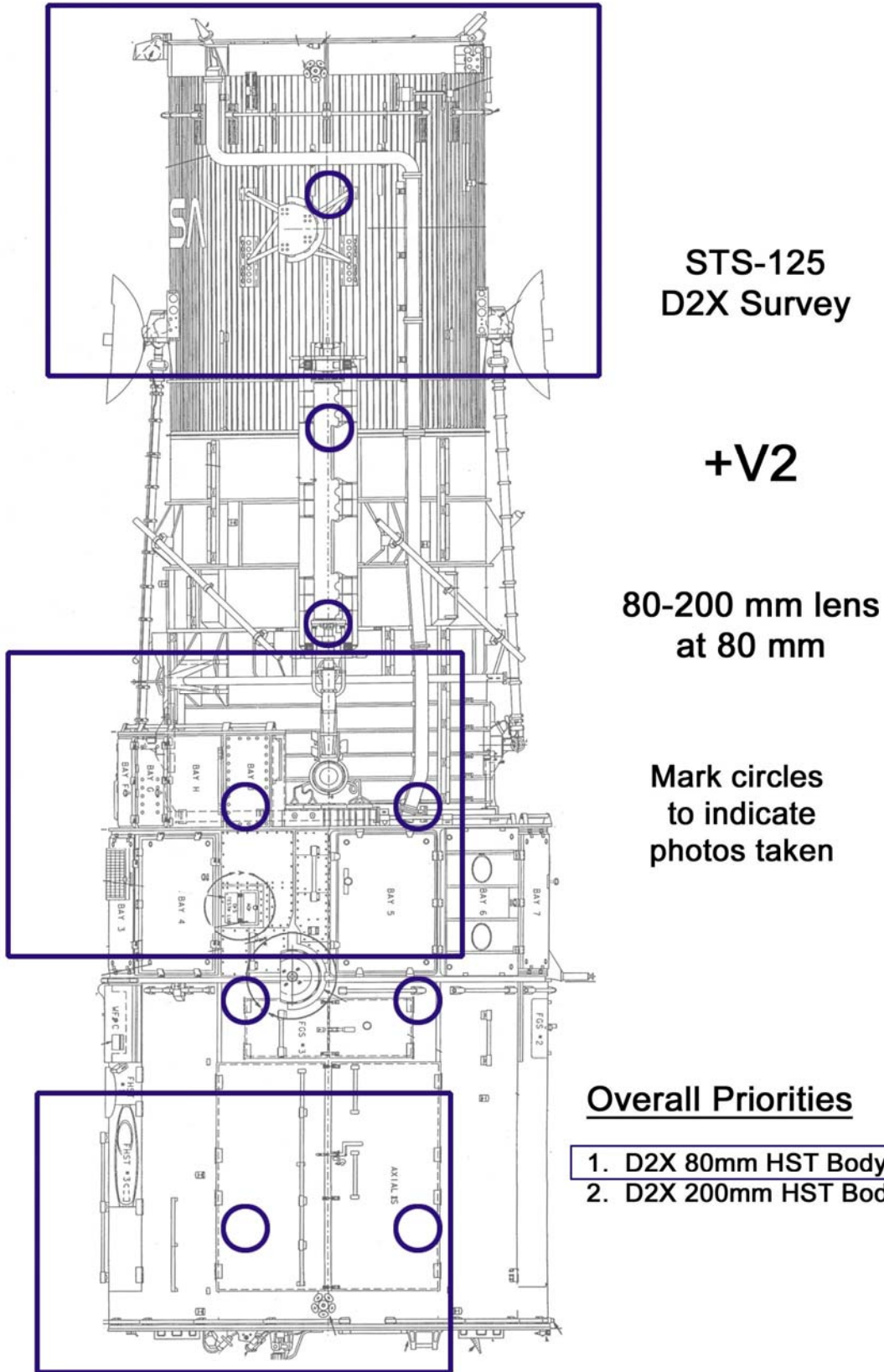
√	Item # Track #	Rqmts	Still Imagery	Video			Notes
	11.	<u>SA3 HST +V2 Survey SA @ 0</u> • Video of active side of SA3s	<u>D2Xs</u> 80-200mm	<u>A,B,C,D</u>			First opportunity in this config
	12.	<u>Aperture Door HST +V2 FWD Survey</u> • Still images of aperture door motors and hinge,MLI around motors,hinge	<u>IVA D2Xs</u> 8-200mm			PLBK prior to sleep	First opportunity in this config: Download reqd evening acquisition

If OPS temporarily suspended, perform DEACTIVATION as reqd
 If OPS completed, go to DEACTIVATION

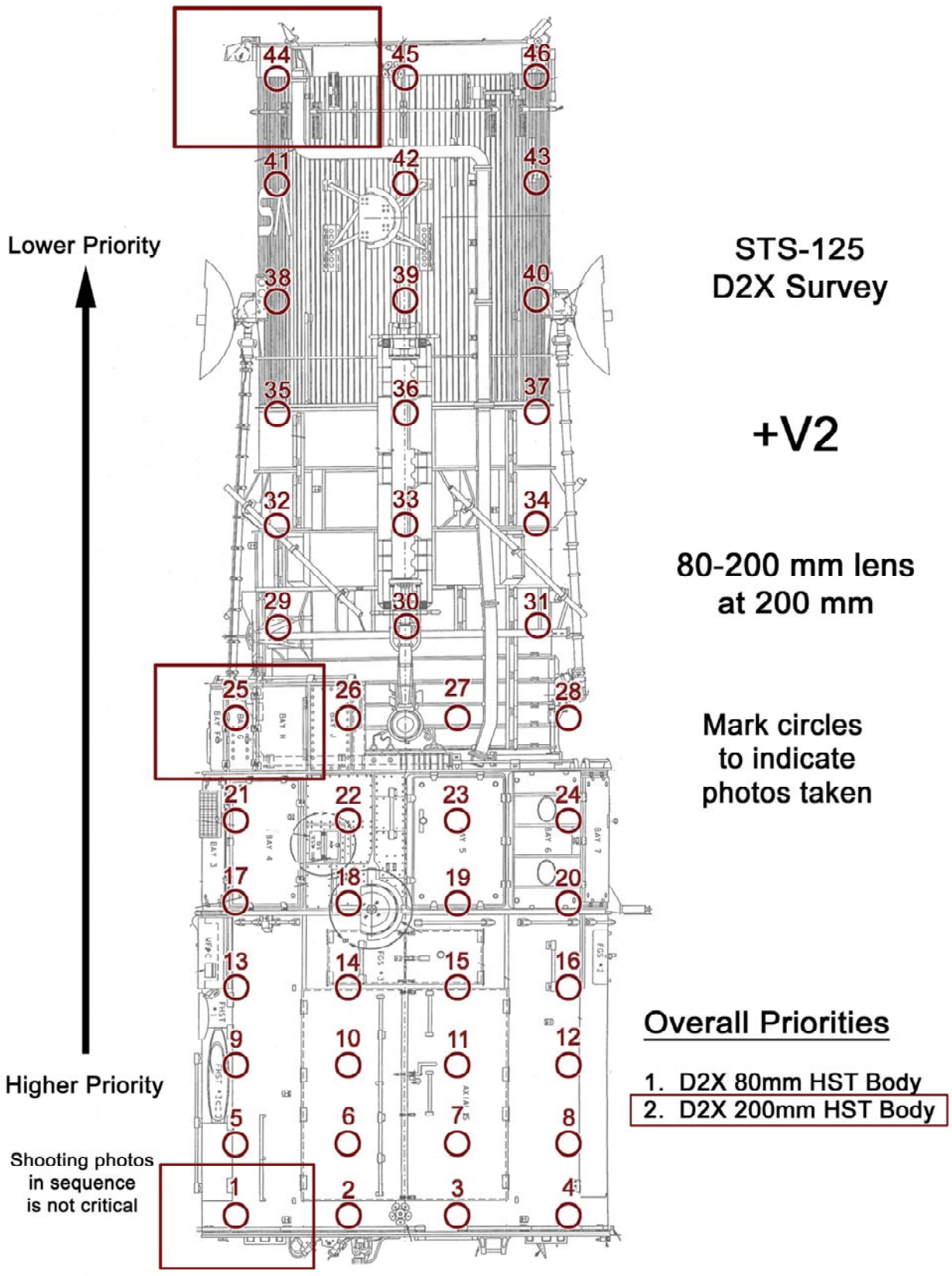
DEACTIVATION

1. D2Xs
 Exp Mode – P
 Pwr – OFF
 Flash ON/OFF – ON
2. TV System
 Go to DEACTIVATION (Cue Card, TV) as reqd

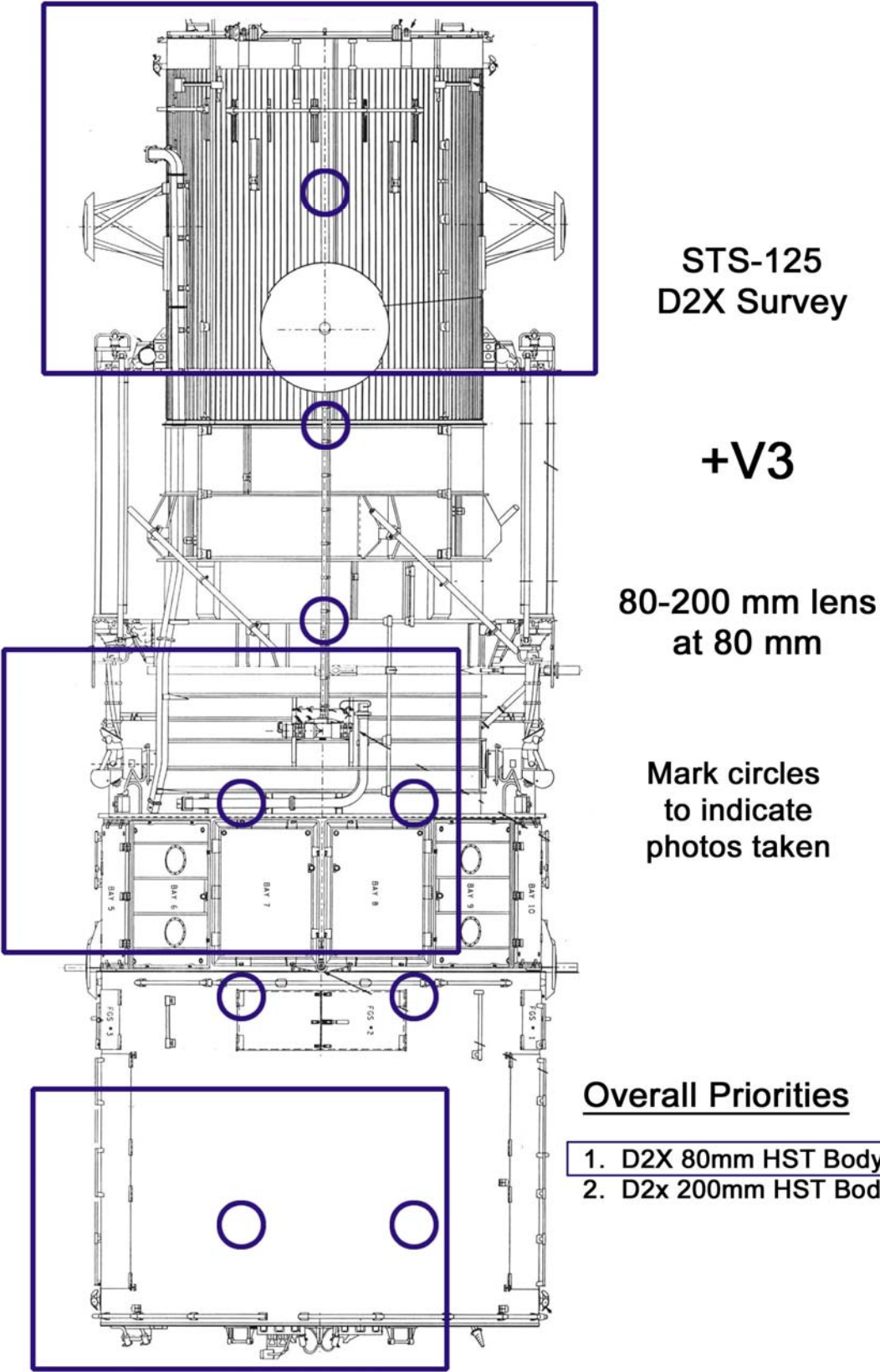
P/TV05 HST SURVEY (Continued)



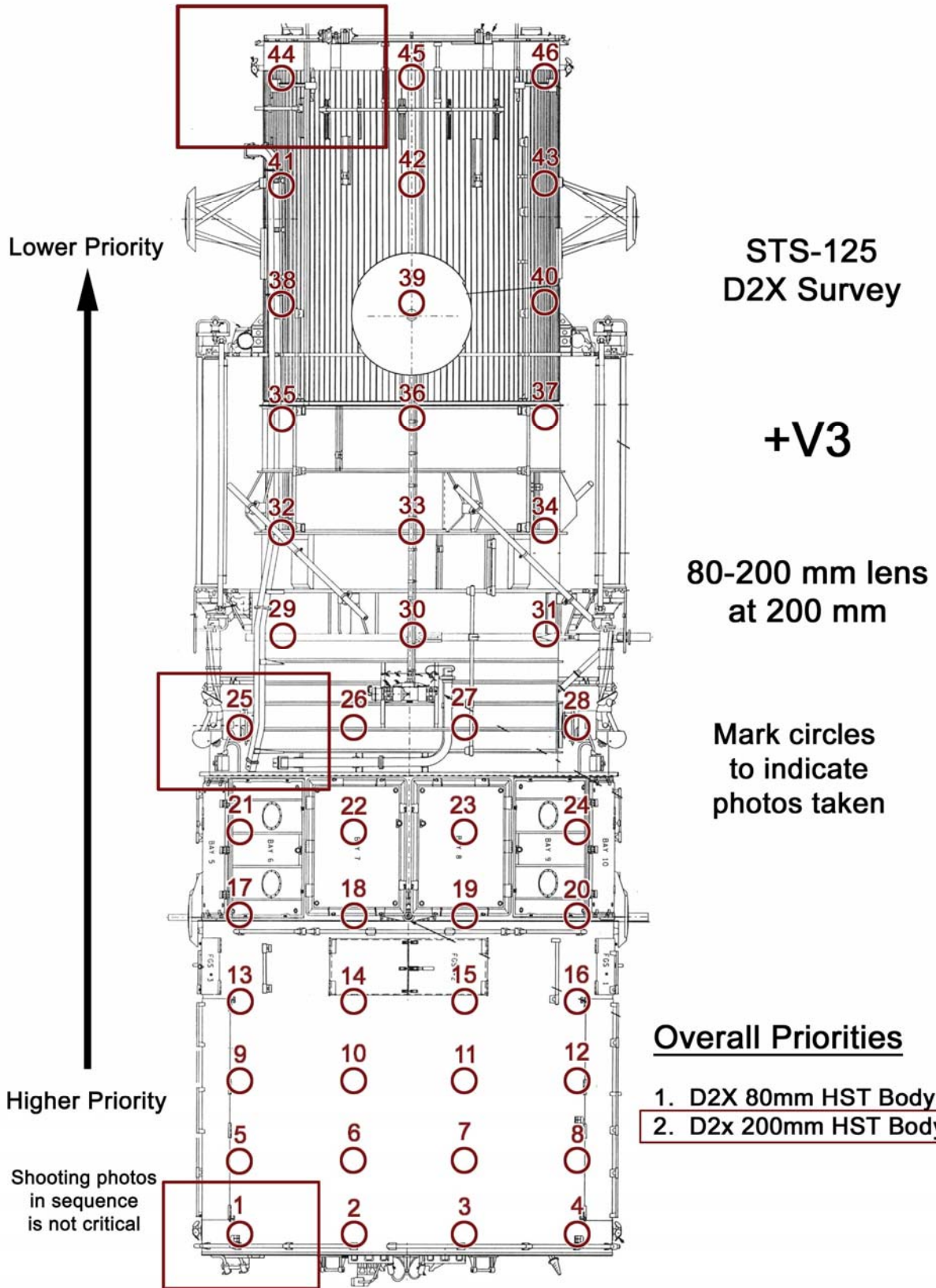
P/TV05 HST SURVEY (Continued)



P/TV05 HST SURVEY (Continued)



P/TV05 HST SURVEY (Continued)



STS-125
D2X Survey

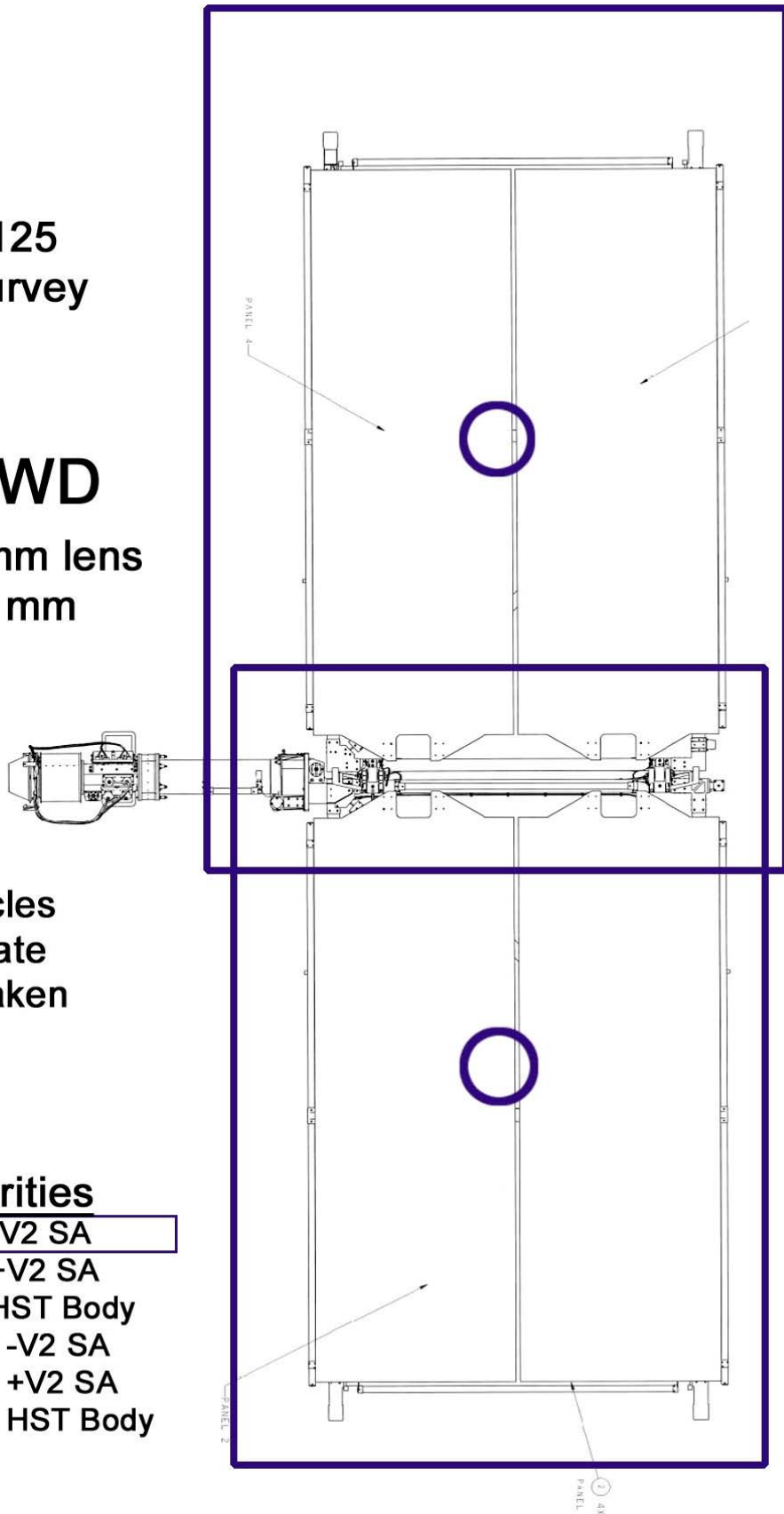
+V3 FWD

80-200 mm lens
at 80 mm

Mark circles
to indicate
photos taken

Overall Priorities

- | |
|-----------------------|
| 1. D2X 80mm -V2 SA |
| 2. D2X 80mm +V2 SA |
| 3. D2X 80mm HST Body |
| 4. D2X 200mm -V2 SA |
| 5. D2X 200mm +V2 SA |
| 6. D2X 200mm HST Body |



**STS-125
D2X Survey**

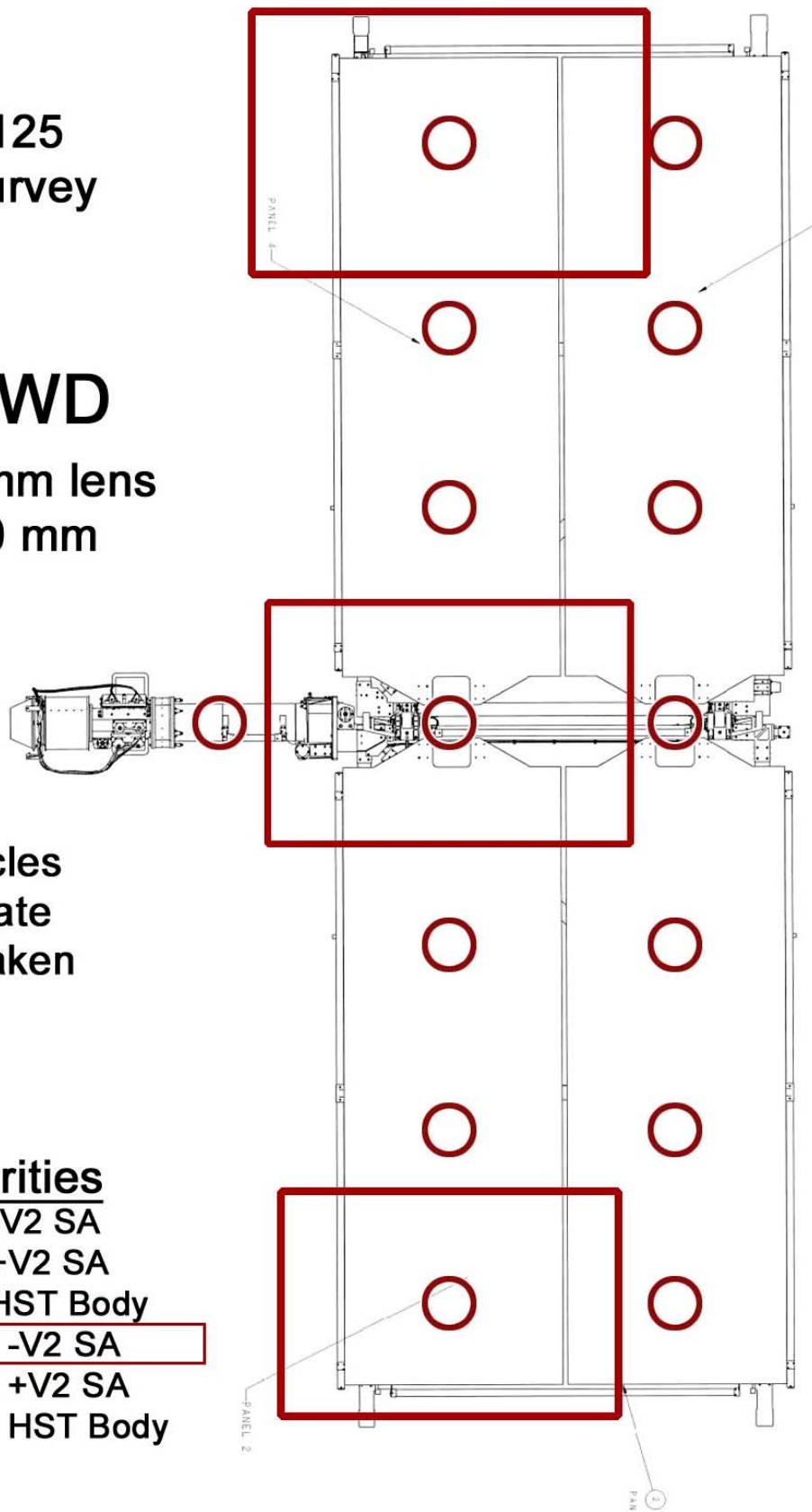
+V3 FWD

**80-200 mm lens
at 200 mm**

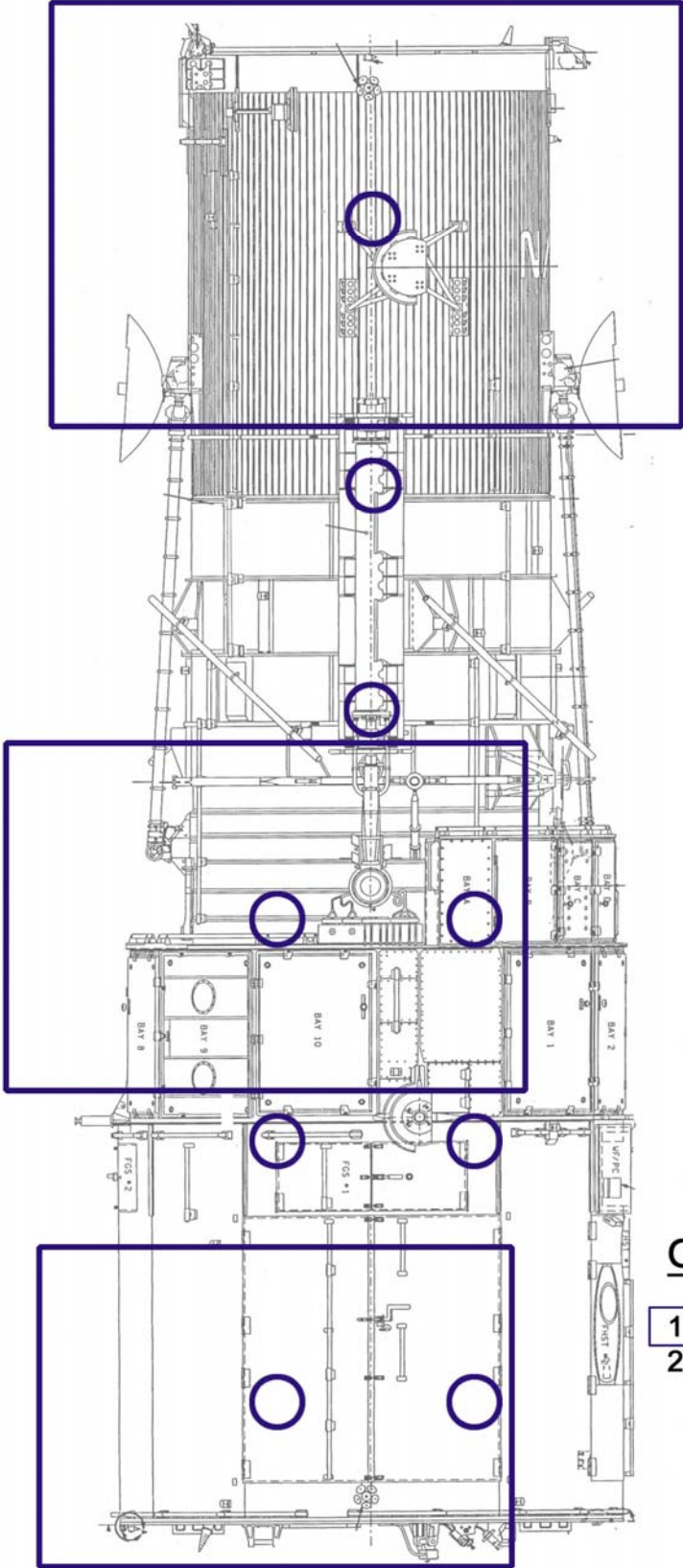
**Mark circles
to indicate
photos taken**

Overall Priorities

1. D2X 80mm -V2 SA
2. D2X 80mm +V2 SA
3. D2X 80mm HST Body
4. D2X 200mm -V2 SA
5. D2X 200mm +V2 SA
6. D2X 200mm HST Body



P/TV05 HST SURVEY (Continued)



STS-125
D2X Survey

-V2

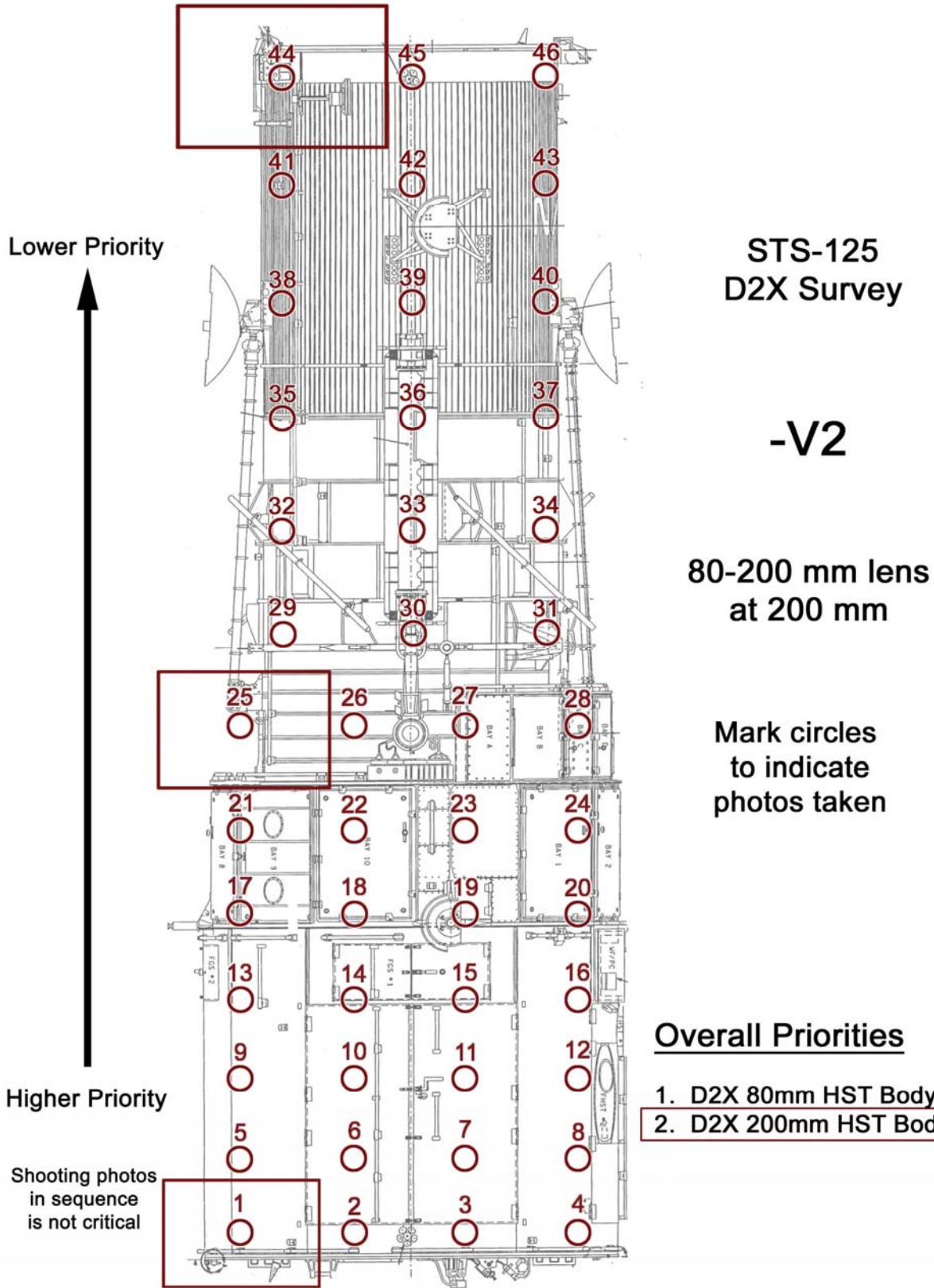
80-200 mm lens
at 80 mm

Mark circles
to indicate
photos taken

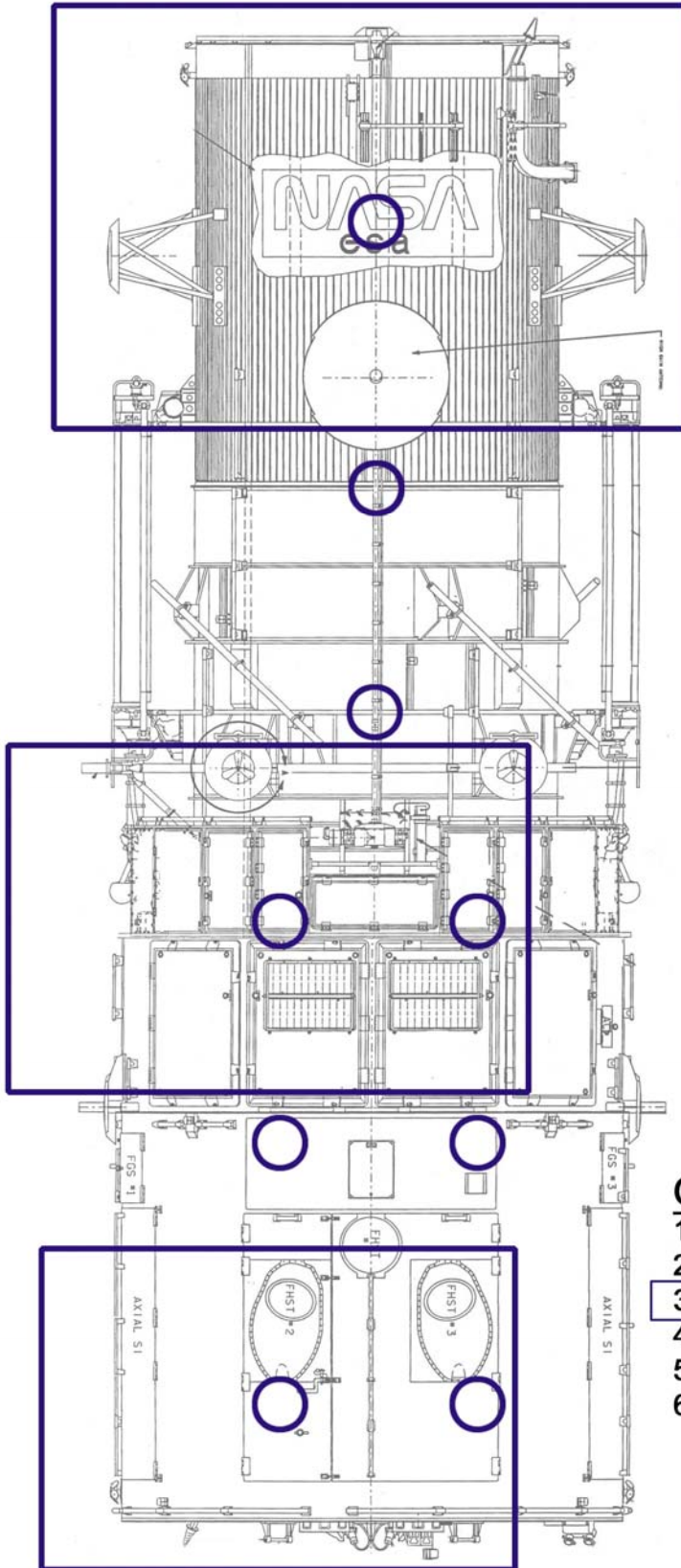
Overall Priorities

- 1. D2X 80mm HST Body
- 2. D2X 200mm HST Body

P/TV05 HST SURVEY (Continued)



P/TV05 HST SURVEY (Continued)



**STS-125
D2X Survey
FD 3**

-V3

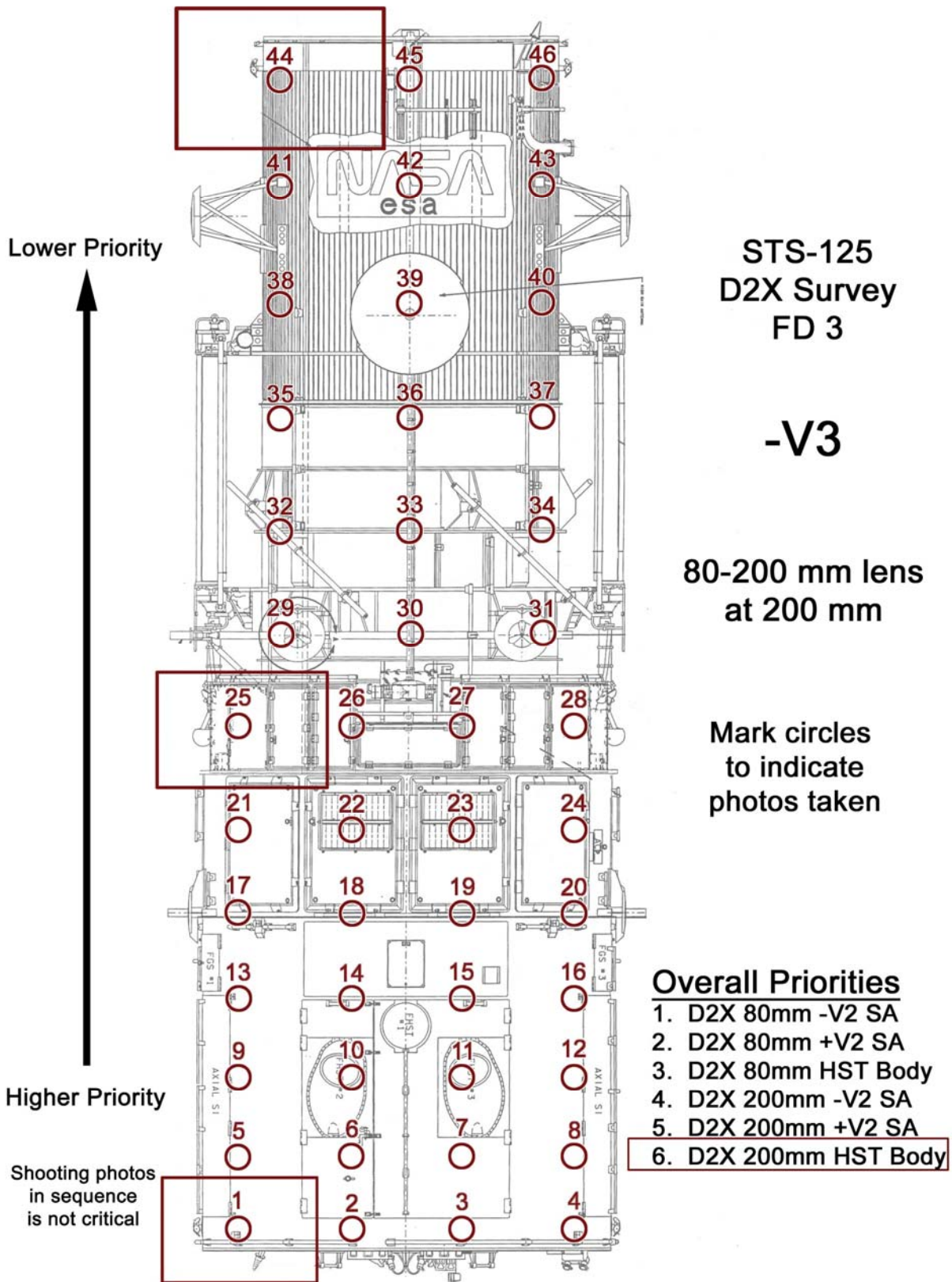
**80-200 mm lens
at 80 mm**

**Mark circles
to indicate
photos taken**

Overall Priorities

1. D2X 80mm -V2 SA
2. D2X 80mm +V2 SA
3. D2X 80mm HST Body
4. D2X 200mm -V2 SA
5. D2X 200mm +V2 SA
6. D2X 200mm HST Body

P/TV05 HST SURVEY (Continued)



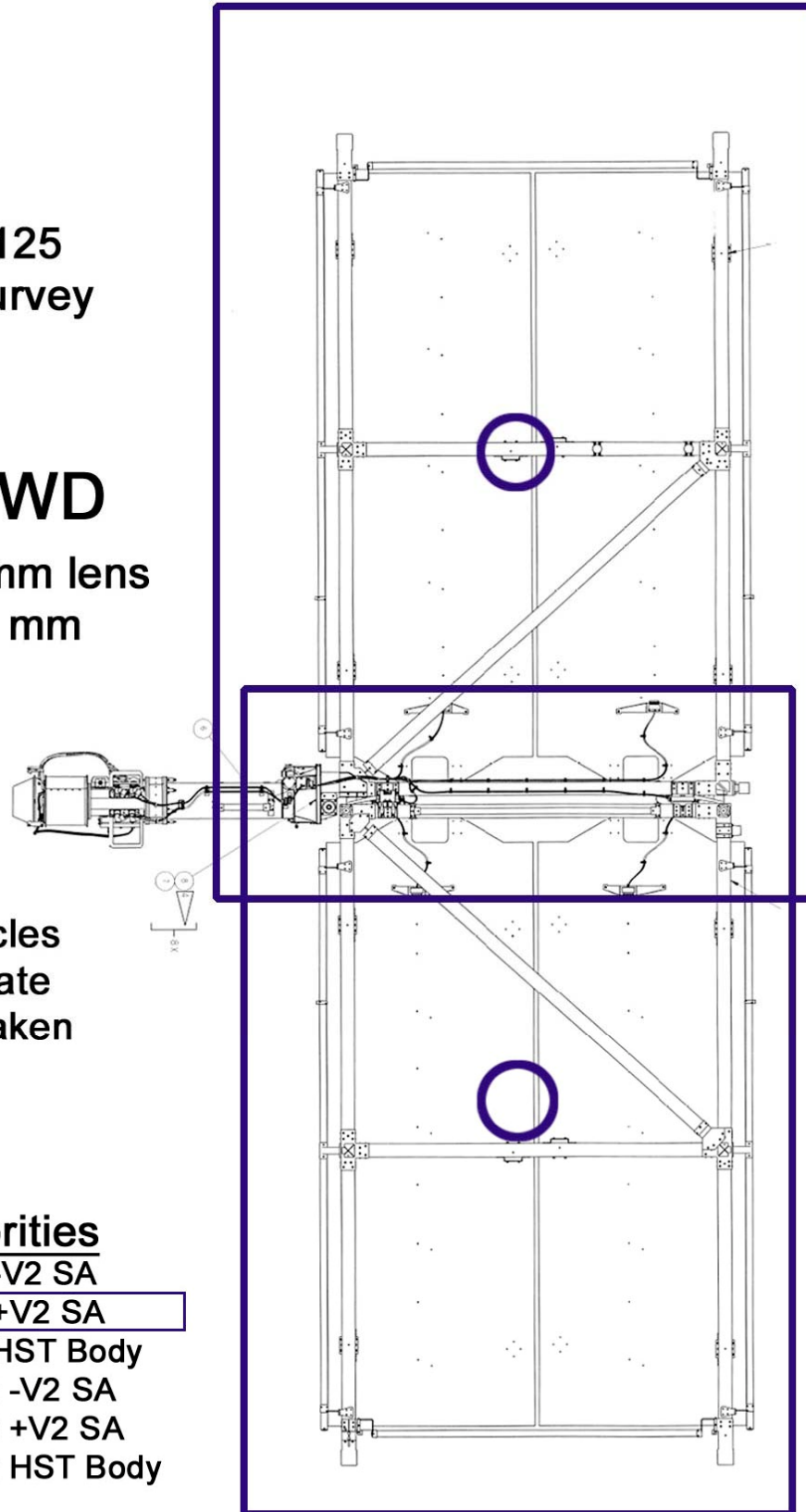
**STS-125
D2X Survey**

-V3 FWD
80-200 mm lens
at 80 mm

**Mark circles
to indicate
photos taken**

Overall Priorities

1. D2X 80mm -V2 SA
2. D2X 80mm +V2 SA
3. D2X 80mm HST Body
4. D2X 200mm -V2 SA
5. D2X 200mm +V2 SA
6. D2X 200mm HST Body



**STS-125
D2X Survey
FD 3**

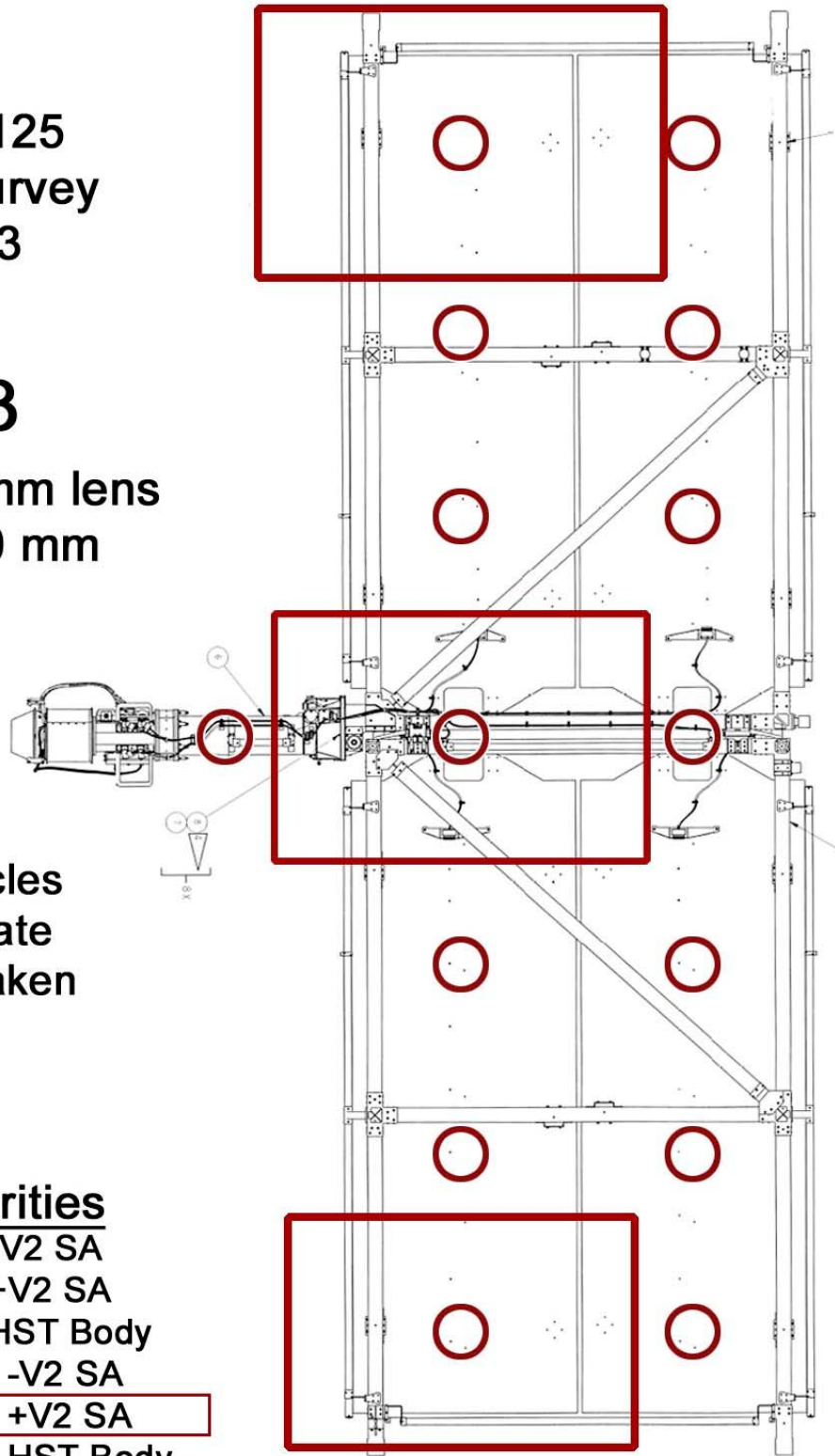
-V3

**80-200 mm lens
at 200 mm**

**Mark circles
to indicate
photos taken**

Overall Priorities

- 1. D2X 80mm -V2 SA
- 2. D2X 80mm +V2 SA
- 3. D2X 80mm HST Body
- 4. D2X 200mm -V2 SA
- 5. D2X 200mm +V2 SA
- 6. D2X 200mm HST Body



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P/TV06 HST EVA (Continued)

SCENE SYNOPSIS

Scene contains procedures for documenting HST EVA and IVA ops w/video, still photos

SETUP

FOR ALL EVAs:

1. Perform ACTIVATION, OPERATION (Cue Card, TV) as reqd
2. Perform D2Xs PROGRAM w/FLASH for IVA prep shots

Lens – 28-70mm

√Aperture – Min, locked

Body Focus Mode – S

√Batt installed


√Flash Card installed

Pwr – ON

Top LCD

√Batt

√Frames remaining sufficient

Exp Comp () – 0.0

Exp Mode – P

Meter – Matrix ()

Diopter – Adjust

Frame Rate – S

√BKT disabled

Rear LCD

√ISO – 100

√QUAL – RAW

√WB – 0,A

√Focus Area – Center

√Focus Selector Lock – L

AF Area Mode – [[]]

SB-800 Flash Settings

ON/OFF pb – ON

√MODE –  TTL BL

√Exp Comp – 0.0

√Zoom – Auto (no M displayed above Zoom)

Tilt – Direct

P/TV06 HST EVA (Continued)

SETUP (Continued)

3. Perform D2Xs EVA

TBD

4. Perform Hardware Verification for V10s, FD CC, DTV

O19,MO58F √TV PWR – ON

V10
(DTV,MON 1,2,
WVS 1,2)

PWR – ON

√Tape installed
DISPLAY pb – toggle to display tape counter

CC (FD,MD)

PWR dial – “green”

√Tape installed
√Viewfinder (LCD) displays “green” •||

L10 (MUX)

VTR/CC PWR – on (LED on)
If dnlk, MUX/VTR/CC PWR – on (LED on)

(VIP)

PWR – on (LED on)

(VTR)

ON/STANDBY LED – green

√Tape installed

P/TV06 HST EVA (Continued)

SETUP (Concluded)

5. Config WVS and PGSC

- A7 a. Activate WVS System
√WIRELESS VID HTR – ON
PWR – ON
- PGSC b. WVS PGSC Prep
PGSC Pwrup and Application Opening
Pwr – ON
Sel Shuttle Apps icon
Sel WVS icon
Sel 'No' at 'Restore To Previous Settings' window
If 'Comm Port Configuration' error displayed:
Remove Quatech RS-422 Card
Sel 'Start'> 'Shut Down'> 'Shut Down'> 'OK'
Reinstall Quatech RS-422 Card
Pwr – ON
Sel Shuttle Apps icon
Sel WVS icon
RF Camera page will appear

NOTE

During EVA prep, EMU TV assy will be pwr'd

Application Setup

- Select Page – XCVR
Transceiver 1(2) CMD Power – ON (green CMD PWR:LVL- "ON:Min")
RF Camera 1 – One EVA crewmember (green "ON")
RF Camera 2 – Other EVA crewmember (green "ON")
If alert msg, perform ALERT MSG TROUBLESHOOTING (Cue Card, WVS)
Select Page – RF CAMERA
Near middle of RF Camera page, sel 'Advanced Controls'
For center lens on each RF Camr Assy:
Lens Iris Cntl – op(cl) until good video on V10(MON)

P/TV06 HST EVA (Continued)

OPS

√	Item # Track #	Rqmts	Still Imagery	Video			Notes
				PLB	CC	Dnlk	
	1.	<u>EVA PREP. ACTIVITIES, CLOSEOUT</u> <ul style="list-style-type: none"> • Video, still imagery of EVA Prep, Tool Ops, General EVA Ops, EVA Daily Closeout Ops 	<u>IVA D2Xs (Flash)</u> 28-70mm <u>EVA D2Xs</u> EVA 28mm(35mm)	<u>WVS,A,B,C,D,</u> <u>ELBOW</u>	<u>G1</u> Tape installed		Reqd for each EVA Closeouts for EVAs 1-4
	2.	<u>LGA COVER INSTALLATION</u> <ul style="list-style-type: none"> • Video of cover removal from MULE, install, final config • Still images of LGA prior to cover install 	<u>IVA D2Xs</u> 80-200mm	<u>WVS,B,C</u>			
	3.	<u>BSP INSTALLATION</u> <ul style="list-style-type: none"> • Video of BSP removal from FSS, install including attach points, pip pins • Still images of final config 	<u>IVA D2Xs</u> 80-200mm	<u>WVS,B,C</u>			
	4.	<u>WFC3 INSTALLATION</u> <ul style="list-style-type: none"> • Video of: <ul style="list-style-type: none"> – WFPC2 Removal – WFC3 Retrieval – WFC3 Install – WFPC2 Stow in WSIPE – WFPC2 Cleanup 	<u>IVA D2Xs</u> 80-200mm <u>EVA D2Xs</u> EVA 28mm(35mm)	<u>WVS,A,D,</u> <u>ELBOW</u>			
	5.	<u>BATT MODULE CHANGEOUT</u> <ul style="list-style-type: none"> • Video of: <ul style="list-style-type: none"> – Bay 3 Batt Retrieval – Bay 3 Batt Swap – Batt-R Install 	<u>IVA D2Xs</u> 80-200mm <u>EVA D2Xs</u> EVA 28mm(35mm)	<u>WVS,A,B,C,D,</u> <u>ELBOW</u>			

P/TV06 HST EVA (Continued)

OPS (Continued)

√	Item # Track #	Rqmts	Still Imagery	Video			Notes
				PLB	CC	DnIk	
	6.	<u>SCM INSTALLATION</u> <ul style="list-style-type: none"> • Video of SCM Mechanism Ops, Focus on Gear Box and LED Lts • Still images of final config. Show HST attach, jaws on berthing latches, FSS jaws in released posn 	<u>IVA D2Xs</u> 80-200mm <u>EVA D2Xs</u> EVA 28mm(35mm)	<u>WVS,A,B,C,D,</u> <u>ELBOW</u>		LIVE	
	7.	<u>RSU CHANGEOUT</u> <ul style="list-style-type: none"> • Video of: <ul style="list-style-type: none"> – RSU-R Retrieval – RSU-2 Changeout – RSU-3 Changeout – RSU-1 Changeout – Close -V3 Doors 	<u>IVA D2Xs</u> 80-200mm <u>EVA D2Xs</u> EVA 28mm(35mm)	<u>WVS,A,D,</u> <u>ELBOW</u>			
	8.	<u>BATT MODULE CHANGEOUT</u> <ul style="list-style-type: none"> • Video of: <ul style="list-style-type: none"> – Bay 3 Batt Retrieval – Bay 3 Batt Swap – Batt-R Install 	<u>IVA D2Xs</u> 80-200mm <u>EVA D2Xs</u> EVA 28mm(35mm)	<u>WVS,A,B,C,D,</u> <u>ELBOW</u>			
	9.	<u>COS INSTALLATION</u> <ul style="list-style-type: none"> • Video of: <ul style="list-style-type: none"> – COSTAR Removal – COS Retrieval – COS Install – COSTAR Install 	<u>IVA D2Xs</u> 80-200mm <u>EVA D2Xs</u> EVA 28mm(35mm)	<u>WVS,A,B,C,D,</u> <u>ELBOW</u>			

P/TV06 HST EVA (Continued)

OPS (Continued)

√	Item # Track #	Rqmts	Still Imagery	Video			Notes
				PLB	CC	Dnlk	
	10.	<u>ACS REPAIR PARTI</u> <ul style="list-style-type: none"> • Video of: <ul style="list-style-type: none"> – ACS Repair Prep – Guide Stud Install – ACS Grid Cover Removal – FCP Install – ACS CEB Cover Removal – Card Removal – Cleanup – Close -V2 door 	<u>IVA D2Xs</u> 80-200mm <u>EVA D2Xs</u> EVA 28mm(35mm)	<u>WVS,A,B,C,D,</u> <u>ELBOW</u>			
	11.	<u>STIS REPAIR</u> <ul style="list-style-type: none"> • Video of: <ul style="list-style-type: none"> – MEB Cover Removal Prep – MEB Cover Removal – Card Replace,Repair – STIS Closeout – Close +V2 doors 	<u>IVA D2Xs</u> 80-200mm <u>EVA D2Xs</u> EVA 28mm(35mm)	<u>WVS,A,B,C,D,</u> <u>ELBOW</u>			
	12.	<u>NOBL8 INSTALLATION</u> <ul style="list-style-type: none"> • Video of: <ul style="list-style-type: none"> – Bay 8 MLI,Patch Removal – Bay 8 NOBL Install 	<u>IVA D2Xs</u> 80-200mm	<u>WVS,A,B,C,D,</u> <u>ELBOW</u>		PLBK desired	

P/TV06 HST EVA (Continued)

OPS (Concluded)

√	Item # Track #	Rqmts	Still Imagery	Video			Notes
				PLB	CC	Dnlk	
	13.	<u>FGS-2 REPLACEMENT</u> <ul style="list-style-type: none"> • Video of: <ul style="list-style-type: none"> – Open FGS-2 Bay Doors – FGS-2 Conn Demate – FGS-2 Handhold Install – FGS-2 Removal – FGS-2R Retrieval – FGS-2R Install – Close FGS-2 Bay Doors – FGS-2 Stow 	<u>IVA D2Xs</u> 80-200mm <u>EVA D2Xs</u> EVA 28mm(35mm)	<u>WVS,A,B,C,D,</u> <u>ELBOW</u>			
	14.	<u>ACS REPAIR PART II</u> <ul style="list-style-type: none"> • Video of: <ul style="list-style-type: none"> – ACS Prep – Open -V2 Doors – ACS Setup – Card Removal – CEB-R Module Install – LVPS-R Install – Cleanup – Close -V2 Doors 	<u>IVA D2Xs</u> 80-200mm <u>EVA D2Xs</u> EVA 28mm(35mm)	<u>WVS,A,B,C,D,</u> <u>ELBOW</u>			
	15.	<u>FINAL WORKSITE CLOSEOUT</u> <ul style="list-style-type: none"> • Video final HST,SSE configs including SLIC, ORUC, FSS, MINC, OPES, latches, all visible HST surfaces 		<u>WRIST,A,B,</u> <u>C,D</u>			Still images on request

If OPS temporarily suspended, perform DEACTIVATION as reqd
 If OPS completed, go to DEACTIVATION

P/TV06 HST EVA (Concluded)

DEACTIVATION

1. EVA D2Xs
Pwr – OFF
Download images

2. IVA D2Xs
√Exp Mode – P
Pwr – OFF
√Flash ON/OFF – ON

3. TV System
Perform PWRDN (Cue Card, WVS)
Go to DEACTIVATION (Cue Card, TV) as reqd

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FS 1-67

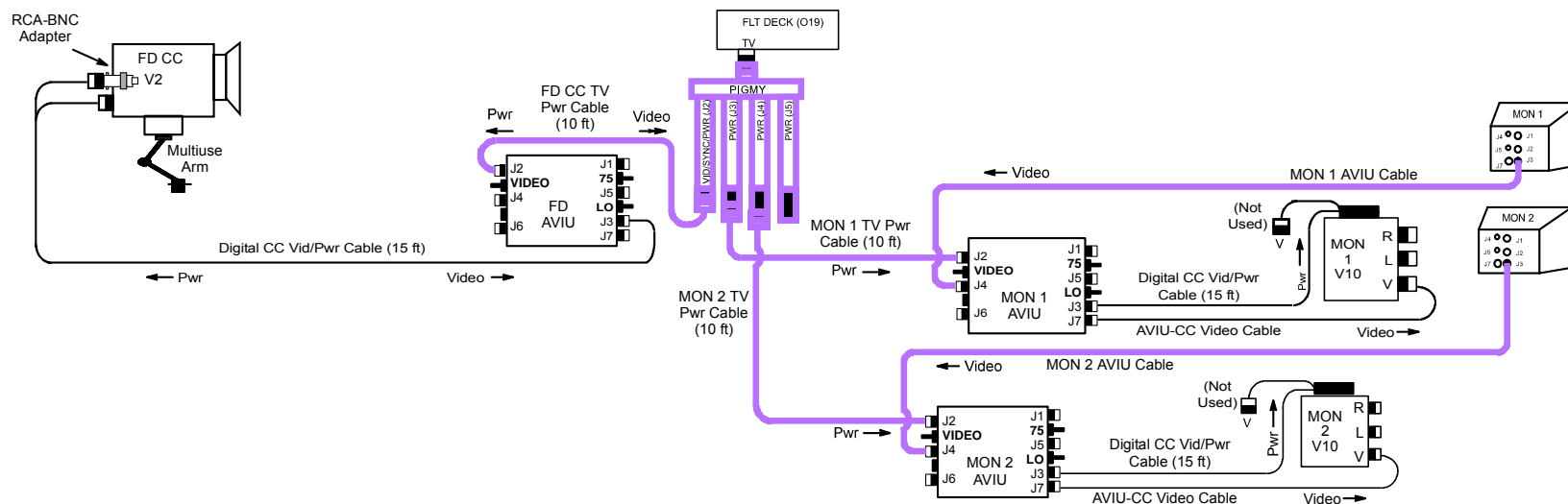
P/TV/125/FIN

**P/TV07
REBOOST**

P/TV07 REBOOST

P/TV07 HST REBOOST

H/W SUMMARY



FLT DECK
MIDDECK

jsc48038_125_007.cvx

P/TV07 HST REBOOST (Continued)

SCENE SYNOPSIS

Scene contains procedures for documenting HST during reboost ops. Views will be used to measure HST motion and monitoring HGA latch mechanisms. Camr selection, views will vary depending upon HST orientation on HST.

SETUP

1. Perform ACTIVATION, OPERATION (Cue Card, TV) as reqd
2. Perform Hardware Verification for V10s, FD CC

O19 √TV PWR – ON

V10
(MON 1,2) PWR – ON

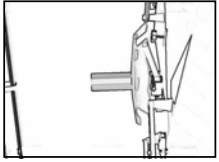
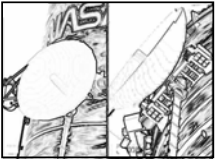
√Tape installed
DISPLAY pb – toggle to display tape counter

FD CC PWR dial – “green”

√Tape installed
√Viewfinder (LCD) displays “green” •||

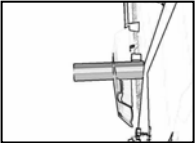
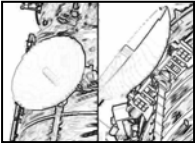

P/TV07 HST REBOOST (Continued)

OPS

√	Item # Track #	Rqmts	Still Imagery	Video			Notes
				PLB	CC	Dnlk	
	1.	HST REBOOST					
		<ul style="list-style-type: none"> • Check illuminators on • Display white CDATE, LDATA on both monitors 					
		<ul style="list-style-type: none"> • Check GMT Date/Time on V10, CC(VTR) 					
		<ul style="list-style-type: none"> • Rcd FD GMT Clock on both recorders at beginning,end of reboost w/o stopping recorders between view of clock, view of PLB targets 			<u>Mini-Cam</u>		
		<ul style="list-style-type: none"> • For -V3 Fwd Posn: <ol style="list-style-type: none"> a. Video of HST port trunnion (Zero Pan/Tilt numbers by pointing Camrs A,B at each other, PAN/TILT RESET) 			<u>B</u>	LIVE (PLBK prior to sleep)	B: Port Trunnion  PAN: -4.2 TILT: 50 HFOV: 10
		<ul style="list-style-type: none"> <ol style="list-style-type: none"> b. Video of both HGA dishes,latches (Zero Pan/Tilt numbers by pointing Camrs C,D at each other, PAN/TILT RESET) 			<u>MUX: ELBOW,C</u>		MUX: ELBOW,C  ELBOW: Fwd HGA HFOV: 15 C: Aft HGA PAN: -50 TILT: 75 HFOV: 10

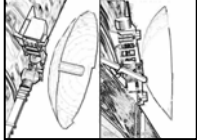

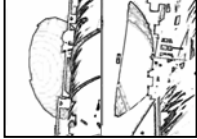
P/TV07 HST REBOOST (Continued)

OPS (Continued)

√	Item # Track #	Rqmts	Still Imagery	Video			Notes
				PLB	CC	Dnlk	
	1.	<p><u>HST REBOOST</u> (Continued)</p> <ul style="list-style-type: none"> • For +V3 Fwd Posn: <ol style="list-style-type: none"> a. Video of HST port trunnion (Zero Pan/Tilt numbers by pointing Camrs A,B at each other, PAN/TILT RESET) b. Video of both HGA dishes, latches (Zero Pan/Tilt numbers by pointing Camrs C,D at each other, PAN/TILT RESET) 					<p>LIVE (PLBK prior to sleep)</p> <p>B: Port Trunnion</p>  <p>PAN: -4 TILT: 56 HFOV: 10</p>
		<ul style="list-style-type: none"> • For +V2 Fwd Posn: <ol style="list-style-type: none"> a. Video of HST +V3 Keel Trunnion (Zero Pan/Tilt numbers by pointing Camrs A,B at each other, PAN/TILT RESET) 					<p>MUX: <u>ELBOW,C</u></p>  <p>ELBOW: C: Aft HGA Fwd HGA PAN: -50 HFOV: 15 TILT: 75 HFOV: 10</p>
		<ul style="list-style-type: none"> • For +V2 Fwd Posn: <ol style="list-style-type: none"> a. Video of HST +V3 Keel Trunnion (Zero Pan/Tilt numbers by pointing Camrs A,B at each other, PAN/TILT RESET) 					<p>LIVE (PLBK prior to sleep)</p> <p>B: Keel Trunnion</p>  <p>PAN: 4.2 TILT: 53 HFOV: 10</p>

P/TV07 HST REBOOST (Continued)

OPS (Continued)

√	Item # Track #	Rqmts	Still Imagery	Video			Notes
				PLB	CC	Drnk	
	1.	<p><u>HST REBOOST</u> (Concluded)</p> <ul style="list-style-type: none"> • For +V2 Fwd Posn: (Concluded) b. Video of both HGA dishes, latches (Zero Pan/Tilt numbers by pointing Camrs C,D at each other, PAN/TILT RESET) 		<u>MUX:</u> <u>ELBOW,C</u>			<p>MUX: ELBOW,C</p>  <p>ELBOW: Port HGA HFOV: 10</p> <p>C: Stbd HGA PAN: -4.2 TILT: 72 HFOV: 10</p>
		<ul style="list-style-type: none"> • For -V2 Fwd Posn: <ul style="list-style-type: none"> – Video of HST+V3 Keel Trunnion (Zero Pan/Tilt numbers by pointing Camrs A,B at each other, PAN/TILT RESET) – Video of both HGA dishes, latches (Zero Pan/Tilt numbers by pointing Camrs C,D at each other, PAN/TILT RESET) 		<u>C</u>		LIVE (PLBK prior to sleep)	<p>C: Keel Trunnion</p>  <p>PAN: -4.2 TILT: 53 HFOV: 10</p>
				<u>MUX:</u> <u>ELBOW,B</u>			<p>MUX: ELBOW,B</p>  <p>ELBOW: Port HGA HFOV: 10</p> <p>B: Port HGA PAN: 7.0 TILT: 72 HFOV: 10</p>

P/TV07 HST REBOOST (Concluded)

OPS (Concluded)

If OPS temporarily suspended, perform DEACTIVATION as reqd
If OPS completed, go to DEACTIVATION

DEACTIVATION

1. TV System
Go to DEACTIVATION (Cue Card, TV) as reqd

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FS 1-75

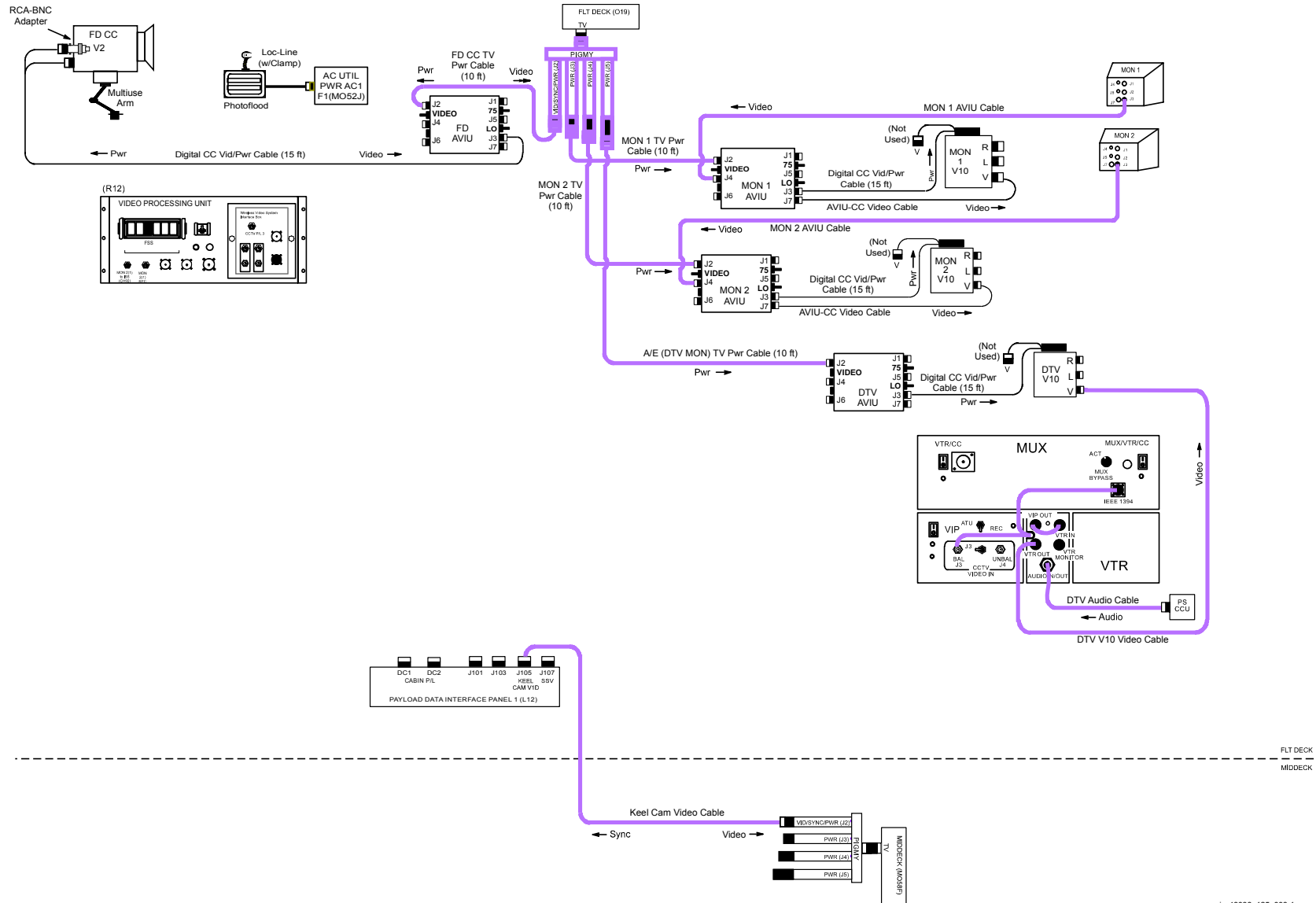
P/TV/125/FIN

**P/TV08
RELEASE**

P/TV08 RELEASE

P/TV08 HST RELEASE

H/W SUMMARY



jsc48038_125_008r1.cvx

P/TV08 HST RELEASE (Continued)

SCENE SYNOPSIS

Scene contains procedures for obtaining video, still photos of HGA deployment, HST unberth, deployment

SETUP

1. Perform ACTIVATION, OPERATION (Cue Card, TV) as reqd
2. Perform D2Xs PROGRAM w/FLASH for In-Cabin Imagery

Lens – 12-24mm

√Aperture – Min, locked

Body Focus Mode – S

√Batt installed

√Flash Card installed

Pwr – ON

Top LCD

√Batt

√Frames remaining sufficient

Exp Comp (☑) – 0.0

Exp Mode – P

Meter – Matrix (☉)

Diopter – Adjust

Frame Rate – S

√BKT disabled

Rear LCD

√ISO – 100

√QUAL – RAW

√WB – 0,A

AF Area Mode – []

√Focus Area – Center

√Focus Selector Lock – L

SB-800 Flash Settings

√Diffuser Dome installed

ON/OFF pb – ON

√MODE – [] [TTL] [BL]

√Exp Comp – 0.0

Tilt – 45° (Direct)

P/TV08 HST RELEASE (Continued)

SETUP (Continued)

3. Perform D2Xs SHUTTER PRIORITY for undocking/external imagery

Lens – 400mm(80-200mm)

√Aperture – Min, locked

Body Focus Mode – S

√Batt installed


√Flash Card installed

Pwr – ON

Top LCD

√Batt

√Frames remaining sufficient

Exp Comp () – 0.0

Exp Mode – S

SS – 500

Meter – Matrix ()

Diopter – Adjust

Frame Rate – S

√BKT disabled

Rear LCD

√ISO – 100

√QUAL – RAW

√WB – 0,A

√Focus Area – Center

√Focus Selector Lock – L

AF Area Mode – [[]]

SB-800 Flash Settings

ON/OFF pb – OFF

P/TV08 HST RELEASE (Continued)

SETUP (Concluded)

4. Config Keel Camr

MO58F Connect Keel Cam Video Cable to PIGMY J2 per H/W SUMMARY, FS 1-76

√TV PWR – ON

L11 (SSP 3) √cb KEEL CAM PWR (CB3) – cl
√SW (CB1) – cl

√HTR/ILLUM PWR – ON
KEEL CAM ENA – ON

A7 VID OUT MON 1(2) pb – push
IN MIDDECK pb – push
If MAN GAIN pb not illuminated:
KEEL CAM ENA – OFF, wait 10 sec, ON
Repeat until MAN GAIN pb illuminated
LT LEVEL pb – push
DAY(NIGHT) pb – push
ALC pb – push
AVG pb – push

5. Perform Hardware Verification for V10s, FD CC, DTV

O19 √TV PWR – ON

V10 PWR – ON

(MON 1,2, DTV)

For MON 1,2,V10s

√Tape installed

DISPLAY pb – Toggle to display tape counter

FD CC PWR dial – “green”

√Tape installed

√Viewfinder (LCD) displays “green” •||

L10 (MUX) VTR/CC PWR – on (LED on)
If dnk, MUX/VTR/CC PWR – on (LED on)

(VIP) PWR – on (LED on)

(VTR) ON/STANDBY LED – green

√Tape installed

P/TV08 HST RELEASE (Continued)

OPS

√	Item # Track #	Rqmts	Still Imagery	Video	CC	Dnlk	Notes
				PLB			
	1.	<u>HGA DEPLOY</u> <ul style="list-style-type: none"> •Video of Mast deploy, Dish Slews •Still images of fwd latches, gimbal hinge post deployment 	<u>D2Xs</u> 80-200mm(400mm)	<u>MUX:</u> <u>D(A),B(C)</u>		PLBK desired	Full length views of each HGA from start of deployment thru Dish Slew completion Frame shots to capture HGA in deployed posn
	2.	<u>HST GRAPPLE, UNBERTH</u> <ul style="list-style-type: none"> •Video of HST grapple ops including: <ul style="list-style-type: none"> – RMS grapple – Umbilical demate (entire travel) – Each berthing latch opening – HST unberth •Still images of each visible berthing latch in open posn 	<u>D2Xs</u> 80-200mm(400mm)	<u>A(D),B,C,</u> <u>WRIST,FSS</u>			
	3.	<u>HST RELEASE</u> <ul style="list-style-type: none"> •Video HST release, sep from mnvr to release posn thru 15 min post release including AD opening ops •Still images of HST release ops including DCS survey of aft bulkhead concentrating on Soft Capture Mechanism 	<u>D2Xs</u> 80-200mm(400mm)	<u>A,B,C,D,</u> <u>WRIST,</u> <u>ELBOW,</u> <u>KEEL</u>			

If OPS temporarily suspended, perform DEACTIVATION as reqd
 If OPS completed, go to DEACTIVATION

P/TV08 HST RELEASE (Concluded)

DEACTIVATION

1. D2Xs
Exp Mode – P
Pwr – OFF
Flash ON/OFF – ON
- L11 (SSP3) 2. TV System
KEEL CAM ENA – OFF
Go to DEACTIVATION (Cue Card, TV) as reqd

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P/TV09 ICBC3D

SCENE RQMTS

Scene contains ICBC3D scene rqmts, ops procedures
ICBC3D malfunction procedures located in section 2 (REF PROC)

NOTES FOR EXPOSURE

HST in Earthshine: f/5.6 @ 24 fps. Use Spotmeter in other cases. Readings should be close to following guidelines:

Stack in sunlight = f/11
Low side sun(backlight) = f/8
Earthshine only = f/5.6
Ground scenes = f/11.

Spotmeter Ops PWR – ON M-CLR – press AMBI/FLASH – AMBI F No/EV – Fno (no “EV”) ISO/TIME – ISO (set to 40 w/up,dn arrows ISO/TIME – TIME (set to 50 w/up,dn arrows Read setting off of side LCD

For scenes filmed at 12 fps, close down one full stop from nominal.
For scenes at 18 fps, close down 1/2 stop (i.e., if scene at 24 fps, nominal f/stop = f11; same scene at 12 fps = f16; same scene at 6 fps = f22)

NOTES FOR LENSES

If Sun is directly in lens FOV, use 30mm lens only or wait for blockages.
If Sun not directly in FOV, but possibly grazing lens surface from side, scene may be attempted w/40mm(60mm).
√MCC first

P/TV09 ICBC3D (Continued)

SCENE RQMTS (Continued)

SC #	FD	Scene Description (Track # – 7A-29)	Lens	Film Speed	Dist From Lens	Length Sec	Total Sec Exp	Total Sec Remain	Notes
								480	
1.		Berth HST	30mm	6 fps	TBD-VR	160	:40	440	At 6 fps, Camr run is 160 sec NOTE: Reduced fram rate only if Earth not in FOV
EVA 1									
2.		MFR/Tools Set Up	40mm	24 fps	TBD-VRLAB	:25	:25	415	
3.		WFC2 Temp Stow	40mm	24 fps	TBD-VRLAB	:30	:30	385	
4.		WFC3 Translation	30mm	24 fps	TBD-VRLAB	:30	:30	355	
5.		WFC3 Install	60mm	24 fps	TBD-VRLAB	:30	:30	325	
6.		Bay 3 Batt, Retrieve/Install	40mm	24 fps	TBD-VRLAB	:30	:30	295	
EVA 2									
7.		Open HST Door	30mm	24 fps	TBD-VRLAB	:25	:25	270	
8.		Pickstick remove old RSU/or hand-off	40mm	24 fps	TBD-VRLAB	:30	:30	240	
9.		Translation to Install New RSU3 (left)	30/40mm	24 fps	TBD-VRLAB	:30	:30	210	
EVA 3									
10.		COS Removal: RMS-EV Posns Free Floater	40mm	24 fps	TBD-VRLAB	:30	:30	180	
11.		COS Temp Stow	40mm	24 fps	TBD-VRLAB	:30	:30	150	
12.		COS Translation	30mm	24 fps	TBD-VRLAB	:30	:30	120	
13.		COS Install	60mm	24 fps	TBD-VRLAB	:30	:30	90	
EVA 4									
14.		STIS Ops/Tools	60mm	24 fps	TBD-VRLAB	:30	:30	60	√Visibility in VRLAB

P/TV09 ICBC3D (Continued)

SCENE RQMTS (Concluded)

SC #	FD	Scene Description (Track # – 7A-29)	Lens	Film Speed	Dist From Lens	Length Sec	Total Sec Exp	Total Sec Remain	Notes
		EVA 5							
15.		FGS Ops	30mm	24 fps	TBD-VRLAB	:30	:30	30	
16.		HST Undock	30mm	24 fps	TBD-VRLAB	:60	:60	-30	
		Contingency EVA							
17.		Contingency EVA	Crew Choice	24 fps		:30	:30	-60	
18.		Contingency EVA	Crew Choice	24 fps		:30	:30	*-90	

*Film intentionally oversubscribed. During mission, scenes may be deleted from list depending upon lighting conditions and EVA crew activities

NOMINAL PROCEDURES

ICBC3D ACTIVATION

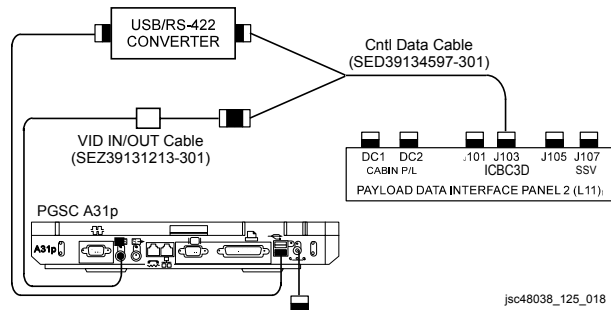
- L12L
1. √cb SW PWR (CB2) – cl
ICBC3D PWR – ON (tb-gray)
 2. Notify MCC activation complete

P/TV09 ICBC3D (Continued)

NOMINAL PROCEDURES (Continued)

ICBC3D SETUP

- TBD 1. Unstow:
PGSC Laptop
DC W Pwr Cable
DC W Pwr Cable Extension
Cntl/Data Cable
VID IN/OUT Cable
USB/RS422 Converter
USB Cable
- L11U 2. √DC PWR 1 – OFF
3. Connect DC W Pwr Cable, DC VID IN/OUT Cable, Cntl/Data Cable, USB Cable, and USB/RS422 Converter



- PGSC 4. DC PWR 1 – ON
Pwr pb – push (on)
5. Start ICBC3D software:
Double-click on 'SHUTTLE APS' folder icon
Double-click on 'IMAX-ICBC3D' folder icon
Double-click on 'ICBC3D' icon to start software
6. √MET displayed (edit MET if necessary):
Click on 'Edit' button
Edit MET
Click on 'Okay' button

P/TV09 ICBC3D (Continued)

NOMINAL PROCEDURES (Continued)

ICBC3D SETUP (Concluded)

7. After ~15 sec, verify 'ICBC3D – Control Interface' screen displayed
8. √Mode – Standby
9. If video window not desired size:
Select 'Size Video' from menu bar, 'Full', 'OK'
If 'Full' grayed out:
Select 'Image Format', 'Overlay YUV 420', 'Full', 'OK'

NOTE

Camr must be jogged and ICBC3D software restarted prior to first shot of flight to ensure ICBC3D operating properly.

Video will be blank after window opened first time software initiated.

Video will be displayed while Camr jogging

10. If first shot of flight:
Select 'Open Window'
√No video displayed. If video displayed, √MCC-H
Select 'Arm Camera'
√Mode – Ready
Click on 'Jog' button (Camr will run at 1 fps)
√Mode – Jogging
After ~20 sec, click on 'Stop' button
Under 'Current Camera Status':
√All boxes green(yellow); if not, √MCC-H

NOTE

Video will be displayed after Camr armed

11. Under 'Systems Control':
Select 'Close Window' button
√No video displayed
'Disarm Camera' button
√Mode – STBY
12. Exit 'ICBC3D Control Interface' screen

P/TV09 ICBC3D (Continued)

NOMINAL PROCEDURES(Continued)

FILMING OPS

NOTE

Software restart should be performed ≤ 10 min prior to filming scene to minimize risk of software upset in PGSC and Camr

1. \surd Control/Data Cable reconnected
2. Repeat ICBC3D SETUP, steps 5-10, as reqd
3. Under 'Lens Setup', select per scene list:
 - Lens
 - f/stop (see note above)
 - Focus

NOTE

Range table indicates lens depth-of-field

4. Under 'Frame Rate Setup', select frame rate per scene list
5. Under 'Systems Control':
 - Select 'Open Window'
 - \surd View displayed in video window
 - 'Arm Camera'
 - \surd Mode – Ready (after ~10 sec)

P/TV09 ICBC3D (Continued)

NOMINAL PROCEDURES(Continued)

FILMING OPS (Continued)

NOTE

If temp outside 40-90 degF range, close window, √MCC-H

6. To shoot reqd scene:
 - √Audio Recorder recording
 - Under 'Current Camera Status':
 - √All boxes green(yellow). If not, √MCC-H
 - Select 'Reset' to set 'Seconds Shot' to 0
 - Under 'Camera Command', click on 'Run' button
 - Under 'Run Confirmation', click on 'Run'
 - √'Seconds Shot' incrementing

7. To Set Timer (Capture,Rndz only):
 - Under Camera Command, click on 'Run' button
 - Select 'Set Timer'
 - Input min,sec on Timer display (if no input, timer will set to 5 min)
 - Select 'Start Timer'
 - To override set timer and start Camera run:
 - Select 'Stop Timer'
 - Select 'Run'

If scene not acceptable, select 'Cancel' at any time

√'Seconds Shot' incrementing

8. If reqd to change Frame Rate, f/stop while shot in progress:
 - Under 'Frame Rate Setup', select desired frame rate, f/stop
 - Under 'Camera Command', click on 'Run' button
 - Under 'Run Confirmation', click on 'Run'
 - √Frame Rate, f/stop – desired setting

9. When 'Seconds Shot' reads desired time, click on 'Stop' button

P/TV09 ICBC3D (Continued)

NOMINAL PROCEDURES (Continued)

FILMING OPS (Concluded)

NOTE

An automatic shot log is maintained by ICBC3D software, but can be edited to include notes after each shot

10. To edit Shot Log (filename Shot.log):
 - Select 'Log' from menu bar
 - Edit log
 - Close 'Log' window

11. Under 'Systems Control':
 - Select 'Close Window' button
 - √No video displayed
 - 'Disarm Camera' button
 - √Mode – STBY

12. If series of shots complete:
 - Exit 'ICBC3D – Control Interface' screen
 - If PGSC not used for other applications, and if OCA dnk of Shot.log,Event.log complete:
 - Shut down PGSC

ICBC3D DEACTIVATION

- SSP2 1. ICBC3D PWR – OFF (tb-bp)

P/TV09 ICBC3D (Continued)

NOMINAL PROCEDURES (Concluded)

PGSC STOW

- | | | |
|--------------|--|---|
| L11U
PGSC | <ol style="list-style-type: none">1. If no other users of pwr source:
 DC PWR 1 – OFF
 √Pwr pb – off | I |
| | <ol style="list-style-type: none">2. Disconnect DC W Pwr Cable, TBD pwr source3. Disconnect Control/Data Cable (data connector) from USB/RS-422 Converter (COM), PDIP J1034. Disconnect USB Cable from PGSC and USB/RS-422 Converter5. Disconnect Video In/Out Cable from Control/Data Cable (video connector), PGSC (Video IN/OUT (rear) slot) | |
| TBD | <ol style="list-style-type: none">6. Stow:
 USB/RS-422 Converter
 USB Cable
 PGSC Laptop
 DC W Pwr Cable
 DC W Pwr Cable Extension
 Control/Data Cable
 Video IN/OUT Cable | |

USING ICBC3D AS VIDEO MONITOR

1. Perform ICBC3D SETUP, steps 1-10, FS 1-87 as reqd

CAUTION

Closely monitor Camr temp to ensure it does not exceed tolerable limits (40-90 degF, box will turn red) when window open

- | | |
|------|--|
| PGSC | <ol style="list-style-type: none">2. Click on 'Open Window' button
 Monitor Camr temp3. Select appropriate lens, f/stop, focus |
|------|--|

P/TV09 ICBC3D (Continued)

CONTINGENCY PROCEDURES

EMERGENCY RUN

NOTE

PGSC must be pwr'd off or Control/Data Cable disconnected for EMERGENCY RUN to operate

L12L

1. √cb SW PWR (CB2) – cl
√ICBC3D PWR – ON (tb-gray)

|

NOTES

When using EMERGENCY RUN, ICBC3D will assume following config:

Lens = 30mm

f/stop = 8.5

Focus = 25 ft

Depth-of-Field = 8 ft 5 in to ∞.

Start timing shot when tb goes to gray. May take up to 60 sec for tb to turn gray after sw thrown

2. ICBC3D EMER RUN – ON (tb-gray, wait 60 sec max)
Start shot clock when tb – gray

|

- * If tb – bp after 60 sec: *
- * ICBC3D EMER RUN – OFF *
- * √MCC-H *

|

3. After desired shot duration:
ICBC3D EMERGENCY RUN – OFF (tb-bp)

CANON G1 CAMCORDER PROCEDURES

TBD

P/TV09 ICBC3D (Continued)

AUDIO RECORDER PROCEDURES

SETUP

- TBD
1. Unstow:
Audio Recorder
15 ft Microphone Cable (two)
Unused CF Card Box
New AA Batt Box

NOTE

Additional 15 ft and 30 ft Microphone Cables (one each) available, if desired

2. ✓ Recorder Settings

NOTE

Mic levels can be adjusted to match specific recording situations

- Rcdr
(Front Pnl)
- MIC TRIM L,R (both) – 2 O'clock posn
 - MONITOR – 3 O'clock posn
 - Mic Level "Wheel" Inside, Outside kbs (both) – 12 O'clock posn

3. Remove one (1) CF Card from unused CF Card Box
4. Label underside of CF Card w/current date
5. Open CF Card door

NOTE

When inserting CF card, hold so brand name readable on top side

- Rcdr
(Bottom Pnl)
6. Insert CF Card into slot until firmly seated (do not force)
 7. Close CF Card door
 8. Remove four (4) AA Batts from new Batt Box
 9. Squeeze, lift two (2) levers to remove tethered Batt Compartment Door
 10. Remove Batt Holder (cable stays attached)
 11. Unfasten Velcro strap; remove and discard used Batts
 12. Install four (4) new AA Batts into holder. Align "+" and "-"
 13. Re-fasten Velcro strap on Batt Holder
 14. Re-insert Batt Holder into Recorder
 15. Replace Batt Compartment Door

P/TV09 ICBC3D (Continued)

AUDIO RECORDER PROCEDURES (Continued)

PWRUP

- RCDR
(Right Pnl) 1. Toggle Pwr – up, hold 2 sec, release (top pnl display lt-on)
- RCDR
(Top Pnl) 2. √MENU SETTINGS:
MENU/ENTER – push
Using “-“ (MARK) pb, toggle down to “Setup”
MENU/ENTER – push

NOTE

Use “-“ to toggle down, and STOP/CANCEL to exit menu and return to Main Display

3. √NOMINAL SETTINGS:
- | | |
|----------------------|------------|
| ALC | – ON |
| HPF | – ON |
| Def. FS/BIT | – BWF44/16 |
| Source Select | – INPUT |
| Phantom | – ON |
| Monitor Mode | – L/R |
| Speaker Out | – OFF |
| FileNameMode | – Date |
| Default File Name | – > |
| Pre Rec | – OFF |
| Time Display | – ABS |
| Remain Display | – Time |
| Max File Size | – 4GB |
| Battery Type | – Alkali |
| Error Tone | – OFF |
| Level LED Mode | – LED |
| Adjust RealTimeClock | – > |
| Version | – > |
| Initial Setup | – > |
| Version Up | – > |

P/TV09 ICBC3D (Continued)

AUDIO RECORDER PROCEDURES (Continued)

PLACEMENT

- Rcdr (Left Pnl) 1. Insert 15 ft Microphone Cable Connectors (two) into ANALOG IN L,R inputs

NOTE
Make sure Microphone Cables click into place

2. Deploy Microphones around scene area as needed

RECORDING

START RECORDING

- Rcdr (Front Pnl) 1. Slide red REC sw to right (it springs back). Red light comes on
Rcdr (Top Pnl) 2. Adjust rec level (on 'wheel') so that peak level averages six (6)
3. √Counter – counting up

STOP RECORDING

- Rcdr (Top Pnl) 4. STOP/CANCEL pb – push
5. To resume recording, repeat steps 1-3

P/TV09 ICBC3D (Continued)

AUDIO RECORDER PROCEDURES (Continued)

NOTE

Changeout requires changing CF Card and four AA Batts at same time

CF CARD CHANGEOUT

- Rcdr
(Right Pnl)
1. Pwr down Recorder:
Toggle Pwr – up, hold 2 sec, release (top display-off)
- Rcdr
(Front Pnl)
2. OPEN CF card door
 3. Push spring pb to left of card. Card will pop out
 4. Remove CF Card from slot; verify Card labeled w/date,time. Stow in used card box
 5. Retrieve new CF Card from unused Card Box; label Card w/current date on underside of Card

NOTE

When inserting CF Card, hold so brand name readable on top side

- Rcdr
(Front Pnl)
6. Insert new CF Card into the slot until firmly seated (do not force)
 7. Close CF Card door.

P/TV09 ICBC3D (Continued)

AUDIO RECORDER PROCEDURES (Continued)

BATT CHANGEOUT

- Rcdr
(Top Pnl) 1. √Rcdr Pwr – off (top display-off)
- Rcdr
(Bottom Pnl) 2. Remove four (4) AA Batts from New Batt Box
3. Squeeze, lift two (2) levers to remove tethered Batt Compartment Door
4. Remove Batt Holder (cable stays attached)
5. Unfasten Velcro strap; remove and discard used Batts
6. Install four (4) new AA Batts into holder. Align “+” and “-“
7. Re-fasten Velcro strap on Batt Holder.
8. Re-insert Batt Holder into Recorder
9. Replace Batt Compartment Door

TBD

P/TV09 ICBC3D (Continued)

AUDIO RECORDER PROCEDURES (Concluded)

PWRDN/REPWRUP

PWRDN

NOTE

If Recorder not being used for period >10 min, pwr down

- Rcdr
(Right Pnl) 1. Pwr down Recorder:
Toggle Pwr sw – up, hold 2 sec,release (top display-off)

REPWRUP

NOTE

Prior to resuming recording, verify Batt pwr and CF Card space adequate

- Rcdr
(Right Pnl) 1. Toggle Pwr – up, hold 2 sec,release top display-on)
- Rcdr
(Top Pnl) 2. √Time remaining on CF Card:
If <03h00m00, change CF Card and Batts
3. √Batt icon:
If <50% full, change Batts and CF Card.
4. If time remaining >03h00m00 and Batt pwr >50%, resume recording

PWRDN/STOW

- Rcdr
(Right Pnl) 1. Pwr down Recorder:
Toggle Pwr sw – up, hold 2 sec,release (top display-off)
2. Open CF Card door
3. Push spring pb to left of card. Card will pop out
4. Remove used CF Card; verify labeled w/date,time, Stow in used card box
5. Close CF Card door
- Rcdr
(Bottom Pnl) 6. Squeeze,lift two (2) levers to remove tethered Batt Compartment Door
7. Remove Batt Holder (cable stays attached)
8. Unfasten Velcro strap; remove and discard used Batts
9. Re-fasten Velcro strap on Batt Holder
10. Re-insert empty Batt Holder into Recorder
11. Replace Batt Compartment Door
- Rcdr (Pnl) 12. Unplug microphones from recorder. Coil cable and stow.
13. Stow Recorder

**P/TV09
ICBC3D
(Continued)**

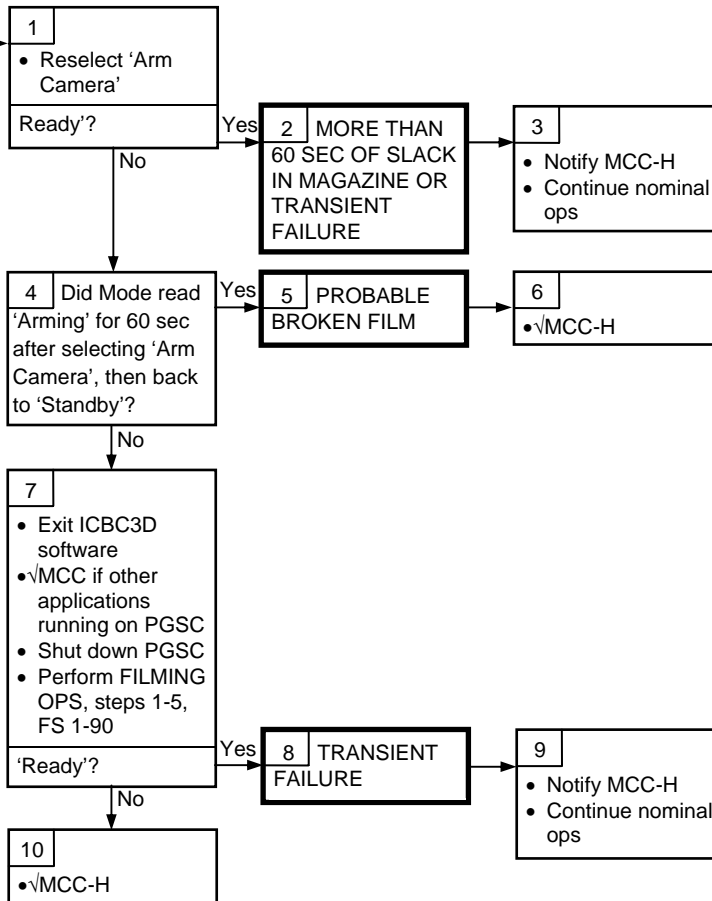
No 'Ready' Indication

Nominal Config:
(R1)
PL AFT MNB – ON

(L12)
ICBC3D PWR – ON

DC W Pwr cable connected to orbiter pwr (L11U) and PGSC USB/RS-422 Converter
DC PWR 1 – ON
Control/Data cable: Data plugs into USB/RS-422 Converter
USB Cable connects to PGSC USB port and USB/RS-422 Converter USB port
Video plugs into rear most connector on PGSC
PGSC pwr on and running ICBC3D software

**CAMR MALS
1.1a NO 'READY' INDICATION AFTER
SELECTING ARM CAMERA'**



**P/TV09
ICBC3D
(Continued)**

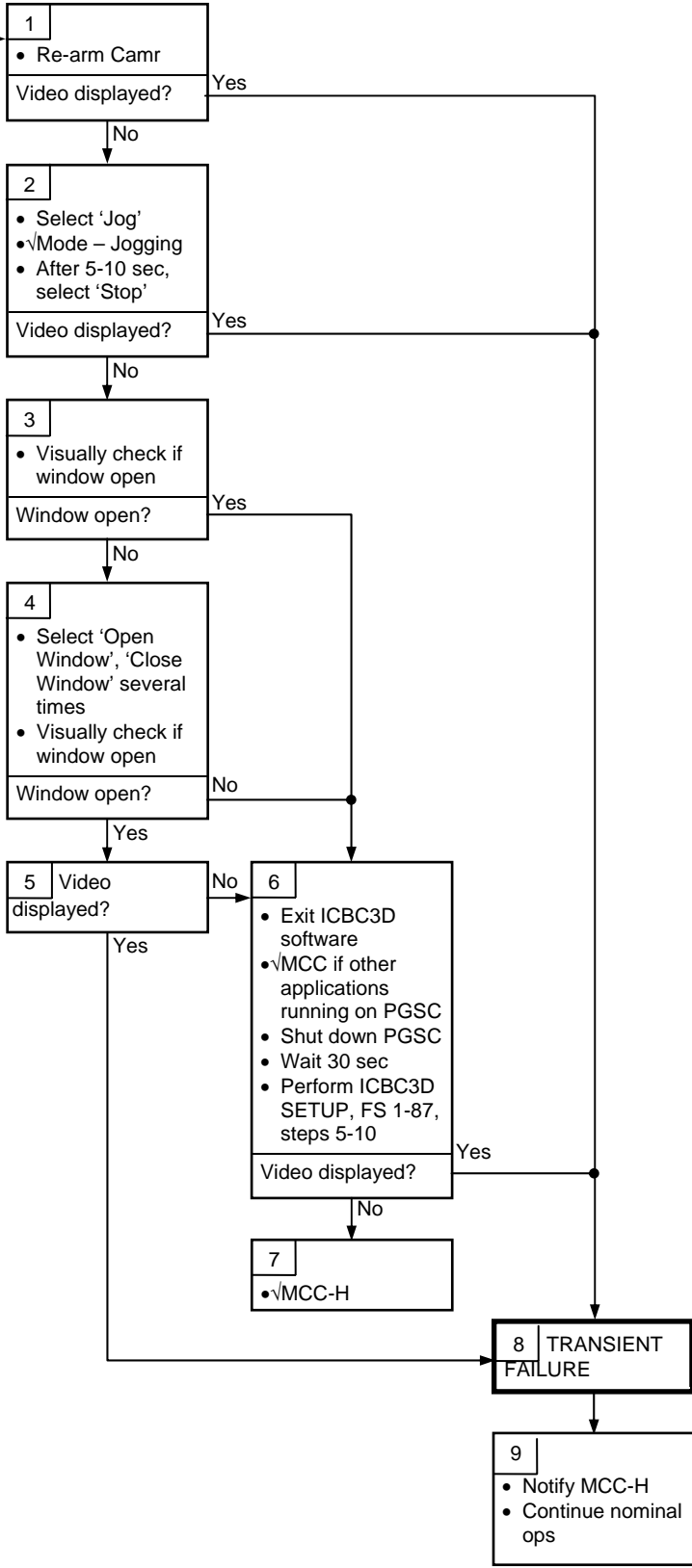
**CAMR MALS (Continued)
1.1b NO VIDEO DISPLAYED AFTER 'Open
Window' SELECTED**

No Video Displayed

Nominal Config:
(R1)
PL AFT MNB – ON

(L12)
ICBC3D PWR – ON

DC W Pwr cable connected to orbiter pwr (L11U) and PGSC USB/RS-422 Converter
DC PWR 1 – ON
Control/Data cable: Data plugs into USB/RS-422 Converter
USB Cable connects to PGSC USB port and USB/RS-422 Converter USB port
Video plugs into rear most connector on PGSC
PGSC pwr on and running ICBC3D software



**P/TV09
ICBC3D
(Continued)**

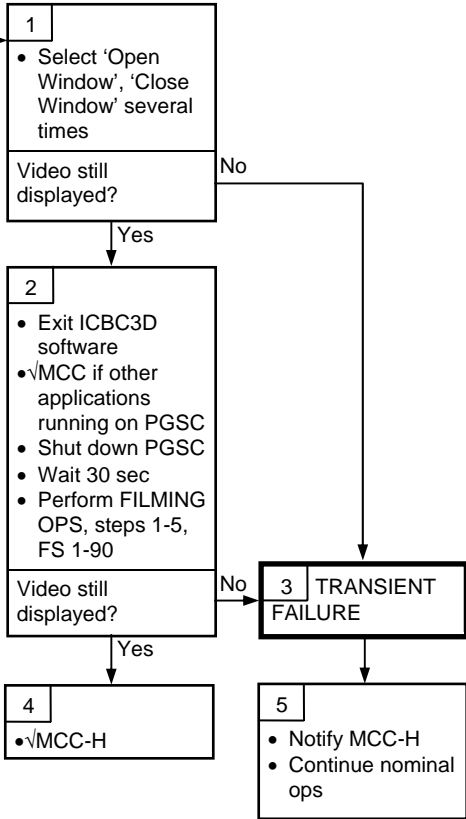
**CAMR MALS (Concluded)
1.1c VIDEO REMAINS VISIBLE AFTER
'Close Window' SELECTED**

Video Still Displayed

Nominal Config:
(R1)
PL AFT MNB – ON

(L12)
ICBC3D PWR – ON

DC W Pwr cable connected to orbiter pwr (L11U) and PGSC USB/RS-422 Converter
DC PWR 1 – ON
Control/Data cable: Data plugs into USB/RS-422 Converter
USB Cable connects to PGSC USB port and USB/RS-422 Converter
USB port
Video plugs into rear most connector on PGSC
PGSC pwr on and running ICBC3D software



P/TV09 ICBC3D (Continued)

TROUBLESHOOTING TABLE

Mode	Reason	Action
No Connect	PGSC cannot communicate w/Camr. Camr not pwr'd up or Data Cable not connected	<ul style="list-style-type: none"> • Check Data Cable connections Same error? NO: Transient error, continue nominal ops >> • Exit and restart ICBC3D Control I/F program Same error? NO: Transient error, continue nominal ops >> • √MCC if other applications running on PGSC • Shut down and restart PGSC, wait 30 sec, restart ICBC3D Control I/F program Same error? NO: Transient error, continue nominal ops >> YES: √MCC-H
Out of Film	<2 sec of film remaining in magazine	None
Error/00	Data error has occurred. Sometimes occurs as transient. Comm usually automatically re-established	<ul style="list-style-type: none"> • Check Data Cable connections Same error? NO: Transient error, continue nominal ops >> • Exit and restart ICBC3D Control I/F program Same error? NO: Transient error, continue nominal ops >> YES: √MCC-H
Turret Error	Turret mechanism jammed and cannot reach its commanded position. Might occur in extreme cold temp. Solution is to try to move turret back and forth to help free it	<ul style="list-style-type: none"> • Select different lenses from ICBC3D Control I/F program Same error? NO: Transient error, continue nominal ops >> • Exit and restart ICBC3D Control I/F program Same error? NO: Transient error, continue nominal ops >> YES: √MCC-H

P/TV09 ICBC3D (Continued)

TROUBLESHOOTING TABLE (Concluded)

Mode	Reason	Action
Lens Error	Lens mechanism jammed and cannot reach its commanded position. Might occur in extreme cold temp. Solution is to try to move the lens mechanism back and forth to help free it	<ul style="list-style-type: none"> • Select different focus points Same error? NO: Transient error, continue nominal ops >> • Select different lenses Same error? NO: Transient error, continue nominal ops >> • Exit and restart ICBC3D Control I/F program Same error? NO: Transient error, continue nominal ops >> YES: √MCC-H
Iris Error	Iris mechanism jammed and cannot reach its commanded position. Will occur if Camr extremely cold(hot) or if iris commanded to close in increments >1 f/stop Solution: Move iris back to full open posn (f/2.8 for 30mm,60mm; f/4 for 40mm) and close to desired f/stop in increments 1 f/stop	<ul style="list-style-type: none"> • Select full open f/stop (f/2.8 for 30mm,60mm; f/4 for 40mm) Same error? NO: Step iris closed 1 f/stop at a time to desired f/stop setting, continue nominal ops >> • Select different lenses Same error? NO: Step iris closed 1 f/stop at a time to desired f/stop setting, continue nominal ops >> • Exit and restart ICBC3D Control I/F program Same error? NO: Step iris closed 1 f/stop at a time to desired f/stop setting, continue nominal ops >> YES: Step iris closed 1 f/stop at a time to desired f/stop setting, continue nominal ops >> If no joy, √MCC-H
Program Shutdown	PGSC is shutting down Camr H/W	None This mode can last several seconds as turret and lenses return to their default positions

**P/TV09
ICBC3D
(Concluded)**

Nominal Config:

ALC – ON
HPF – ON
DEF. FS/BIT –
BWF44/16
Source Select –
INPUT
Phantom – ON
Monitor Mode – L/R
Speaker Out – OFF
FileNameMode –
Date
Default File Name –
>
Pre Rec – OFF
Time Display – ABS
Remain Display –
Time
Max File Size – 4 GB
Batt Type – Alkali
Error Tone – OFF
Level LED Mode –
LED
AdjustRealTime
Clock – >
Version – >
Initial Setup – >
Version Up – >

AUDIO RECORDER MALS

1.2a

CF CARD DOES NOT FIT IN SLOT

1. Card upside down or wrong end inserted
√Manufacturer's logo on top
√Female end of card inserted into slot

NOTE

Never force card into slot

Slide card in gently but firmly. Wiggle if stubborn

2. Card defective and/or female holes blocked
Clear blocked holes
If no blocked holes and card still doesn't seat, mark card as defective and stow
Retrieve new card
3. Male pins in Recorder bent
Use flashlight to inspect slot. Repair, if possible, by gently aligning pins

1.2b

RECORDER PWRS UP MOMENTARILY, THEN PWRS OFF

1. Batts low(dead)
2. Replace AA Batts,CF Card

1.2c

RECORDER WILL NOT GO INTO RECORD MODE (NO RED LT)

1. CF Card full
2. Replace CF Card and AA Batts

1.2d

LED METER ON FRONT PNL SHOWS GREEN LTS (AUDIO INPUT), BUT RED LT NOT ON AND COUNTER NOT COUNTING UP

1. Recorder in Standby Mode (green lt above grey pb)
2. Push STOP/CANCEL pb on Top Pnl
3. Slide red RCD sw on Front Pnl to right
√Red lt on and Recorder counting up

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P/TV10 EXTERNAL SURVEY



SCENE SYNOPSIS

Scene contains procedures for documenting STS,ISS external structures w/still photos during general survey activities

SETUP

1. D2Xs Camr Configuration for OMS Pod Survey

If Sunlit OMS Pod, config D2Xs Manual Mode

Lens – 80-200mm at 200mm
Aperture – Min,locked
Body Focus Mode – S
√Batt installed
√Flash Card installed
Pwr – ON
Top LCD
√Batt
√Frames remaining sufficient
Exp Comp () – 0.0
Exp Mode– M
SS – 1000
f/stop – F8
Meter – Matrix ()
Diopter – Adjust
Frame Rate – S
√BKT disabled
Rear LCD
√ISO – 100
√QUAL – RAW
√WB – 0,A
√Focus Area – Center
√Focus Selector Lock – L
AF Area Mode – [[]]

SB-800 Flash Settings
ON/OFF pb – OFF

~

SETUP (Continued)

1. D2Xs Camr Configuration for OMS Pod Survey (Concluded)

┌

If Earthshine OMS Pod, config D2Xs Program Mode

Lens – 80-200mm @ 200mm

√Aperture – Min, locked

Body Focus Mode – S

√Batt installed

√Flash Card installed

Pwr – ON

Top LCD

√Batt

√Frames remaining sufficient

Exp Comp () – 0.0

Exp Mode – P

Meter – Spot

Diopter – Adjust

Frame Rate – S

√BKT disabled

Rear LCD

√ISO – 100

√QUAL – RAW

√WB – 0,A

√Focus Area – Center

√Focus Selector Lock – L

AF Area Mode – [[]]

SB-800 Flash Settings


ON/OFF pb – OFF

P/TV10 EXTERNAL SURVEY(Continued)

I

SETUP (Concluded)

2. D2Xs Camr Config for SEITE (D2Xs Shutter Priority Mode)

- Lens – 28mm
- √Aperture – Min, locked
- Body Focus Mode – S
- √Batt installed
- √Flash Card installed
- Pwr – ON
- Top LCD
 - √Batt
 - √Frames remaining sufficient
- Exp Comp () – 0.0
- Exp Mode – S
 - SS – 500
- Meter – Center weighted
- Diopter – Adjust
- Frame Rate – S
- √BKT disabled
- Rear LCD
 - √ISO – 100
 - √QUAL – RAW
 - √WB – 0,A
- √Focus Area – Center
- √Focus Selector Lock – L
- AF Area Mode – [[]]


- Accessory Equipment
 - Shutter Release Cable – Install
 - Multiuse Base – install in W9/10
 - Multiuse Brkt – install on Base

- SB-800 Flash Settings
 - ON/OFF pb – OFF

P/TV10 EXTERNAL SURVEY(Continued)

I

OPS

√	Item # Track #	Rqmts	Still Imagery	Video			Notes
				PLB	CC	Dnlk	
	1.	<u>OMS Pod Survey</u> <ul style="list-style-type: none"> 50 percent mapping of both OMS pods and vertical stabilizer w/emphasis on Black Tile areas 	<u>D2Xs</u> 80-200mm @ 200mm (400mm)				Download images to MCC once complete
	2.	<u>SEITE</u> <ul style="list-style-type: none"> Obtain minimum of one photo at the beginning, middle, end of OMS Burn 	<u>D2Xs</u> 28mm				Initial photo within 5 sec of burn

OPS (Continued)

TBD

Priority of ISS Photographic Targets During Docked Phase:

TBD

P/TV10 EXTERNAL SURVEY Concluded)

I

OPS (Concluded)

If OPS temporarily suspended, perform DEACTIVATION as reqd
If OPS completed, go to DEACTIVATION

DEACTIVATION

1. D2Xs
√Exp Mode – P
PWR – OFF
Flash ON/OFF – ON

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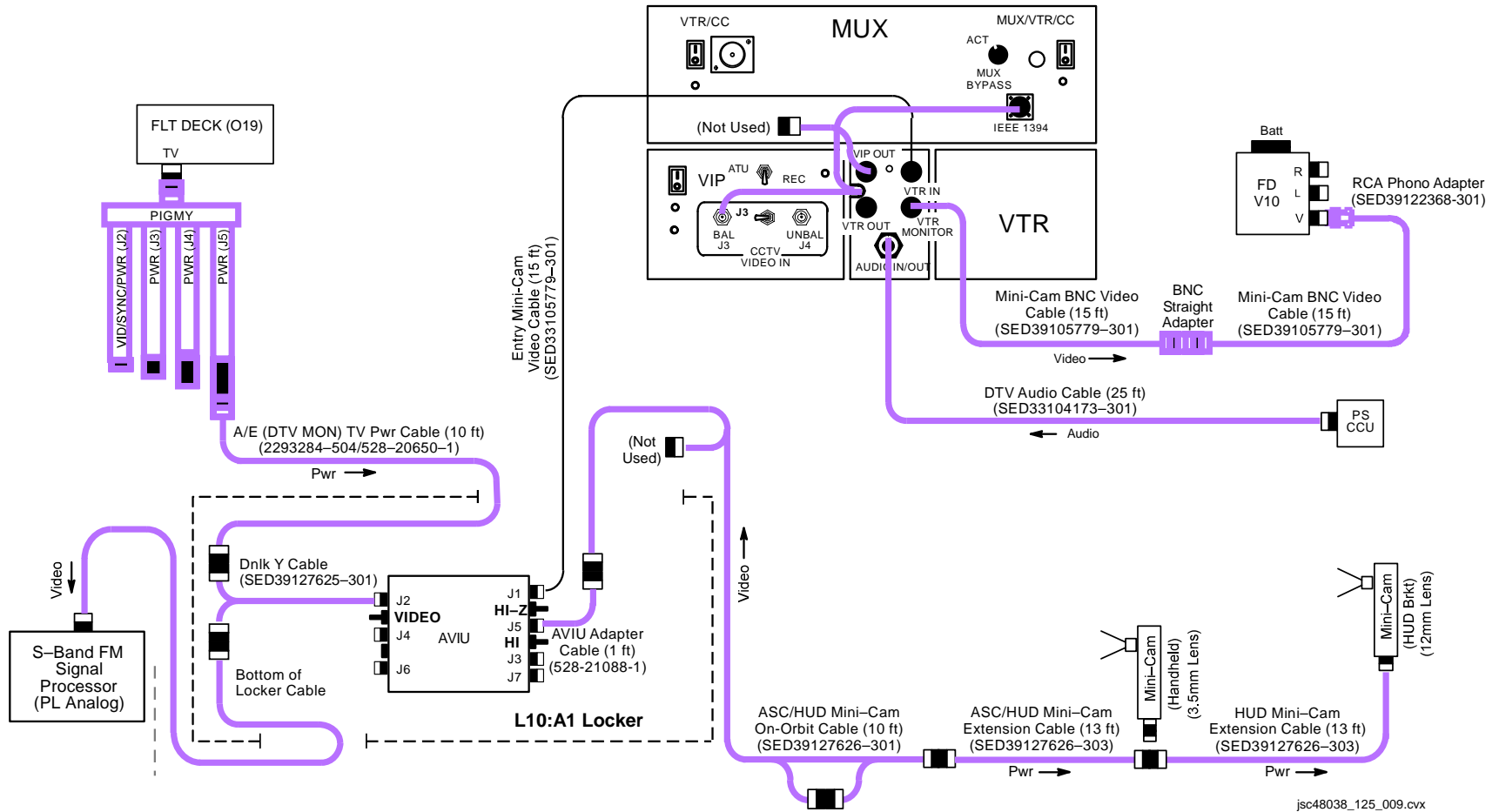
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MINI-CAM

MINI-CAM

ENTRY VIDEO SETUP



MINI-CAM (Continued)

ENTRY VIDEO SETUP (Continued)

1. Remove "Entry" Ziploc bag from DTV Bag
2. Config Mini-Cam, VTR for Audio, Video Recording
Config H/W per dwg, FS 2-4
 - a. Config HUD Mini-Cam w/12mm Lens
Using two (2) captive screws, attach HUD Brkt to installation holes for protective cover w/ HUD Brkt tab pointing up

Attach Tie Wrap thru holes on captive screws to prevent screw from coming loose; cut off extra length on Tie Wrap

Attach Mini-Cam Extension Cable to Mini-Cam

12mm Lens Focus – ∞
 Aperture – f/5.6

Velcro Mini-Cam w/12mm Lens to HUD Brkt. (Top of black Velcro on front of Camr should be at top edge of HUD Brkt.
 Only yellow Velcro should be visible above HUD Brkt)
 - b. Config in-cabin Mini-Cam w/3.5mm Lens

3.5mm Lens Aperture – f/1.8
 - c. Config additional Mini-Cam H/W

L10:A1 AVIU
 SYNC/VIDEO – VIDEO
 HI-Z/75 – HI-Z
 PWR SELECT – HI
 - O19 \sqrt TV PWR – ON
 - PS ATU Config audio as reqd for entry audio
 - L10 (MUX)
 (VTR) VTR/CC PWR – on (LED on)
 \sqrt ON/STANDBY LED – green

MINI-CAM (Concluded)

ENTRY VIDEO SETUP (Concluded)

- c. Config additional Mini-Cam H/W (Concluded)

Acquire two (2) V10 Li-ION batts

NOTE

One Batt will be used on V10 for system c/o. Second Batt is spare. Batts will be removed after c/o and used for Entry

- V10 Install fresh Batt
 PWR – ON
√HUD 12mm Lens/Mini-Cam producing good video
- Change config to in-cabin 3.5mm Lens/Mini-Cam
√In-cabin 3.5mm Lens/Mini-Cam producing good video
- V10 PWR – OFF
- L10 (VTR) ON/STANDBY pb – push (red LED off)
 (MUX) VTR/CC PWR – off (LED off)
- O19 TV PWR – OFF

NOTE

TV, VTR pwr will be re-enabled per ENT AFT FLT DECK
CONFIG 15 (DEORB, NOMINAL DEORBIT PREP); recording
will be initiated via ENTRY C/L

Start w/3.5mm Lens/Mini-Cam video in-cabin and reconfig for 12mm Lens/Mini-Cam when exterior scene available

When exterior avail:

Focus – Adjust per V10

Aperture – Adjust per V10

If needed, turn down brightness on HUD display

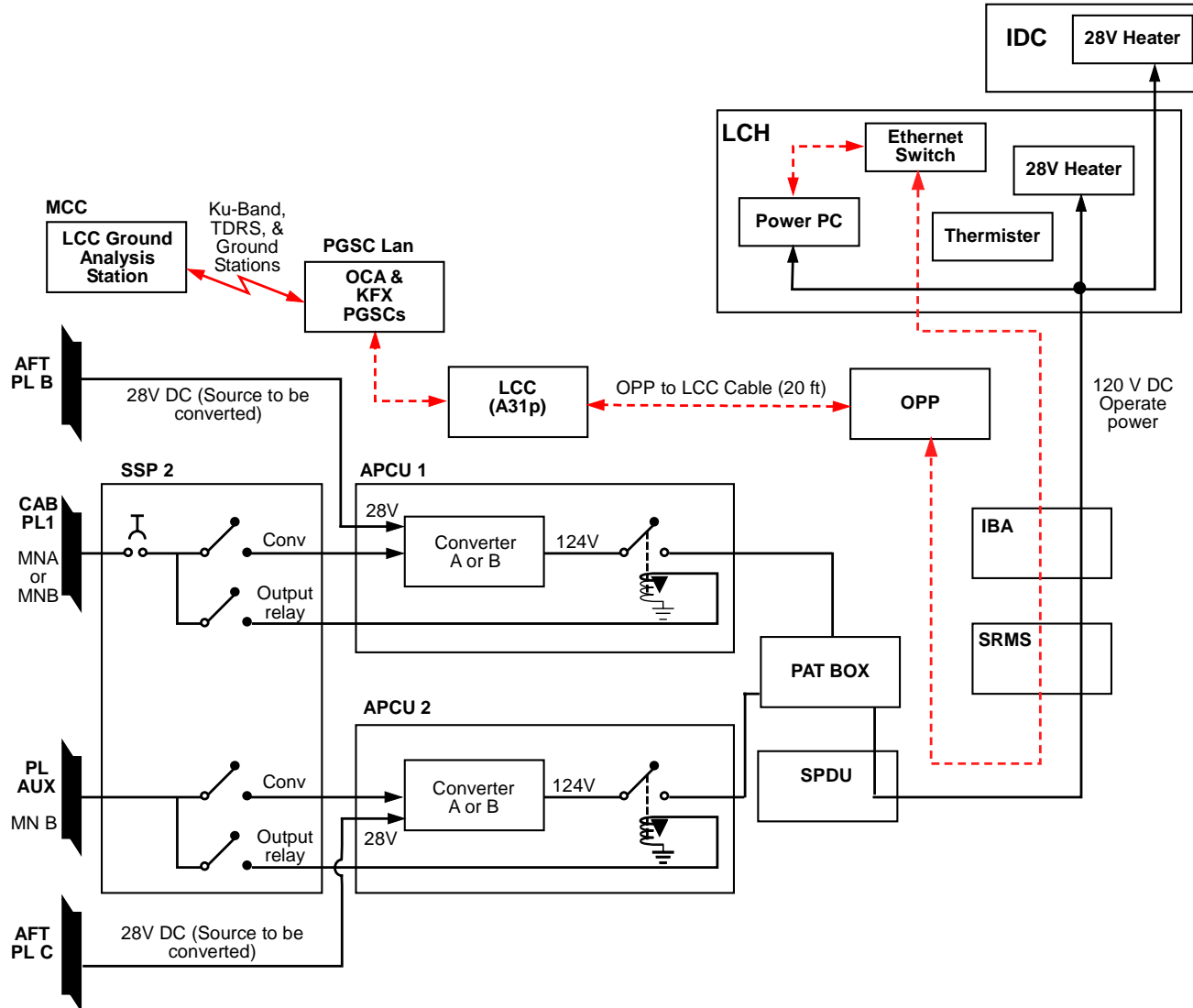
Turn off V10 when not needed

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LCS/IDC

LASER CAMR SYSTEM (LCS)/INTEGRATED SENSOR INSPECTION SYSTEM DIGITAL CAMR (IDC)

LCS/IDC (HEATER ONLY MODE)/(OPERATIONAL PWR MODE) DATA AND PWR INTERFACES

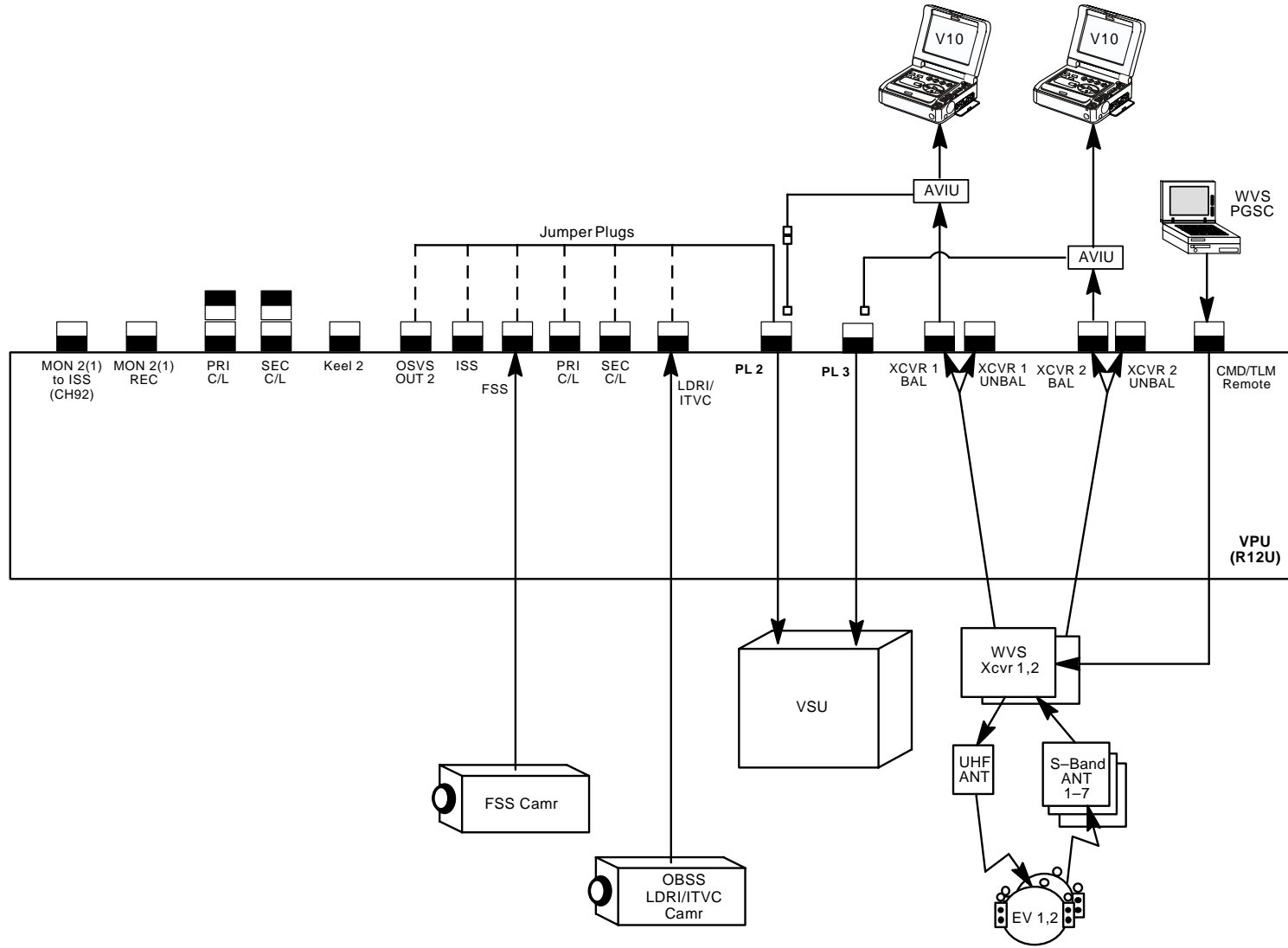


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CCTV

VPU/WVS VIDEO ROUTING OVERVIEW



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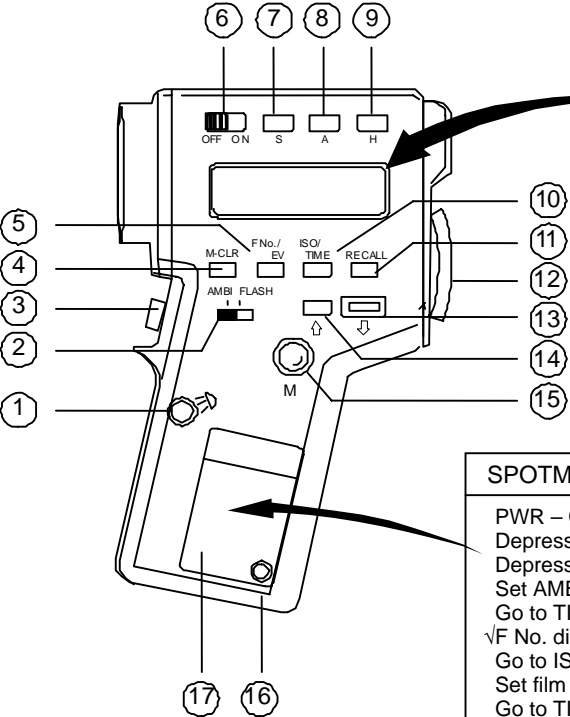
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SPOTMETER 303

SPECIFICATIONS

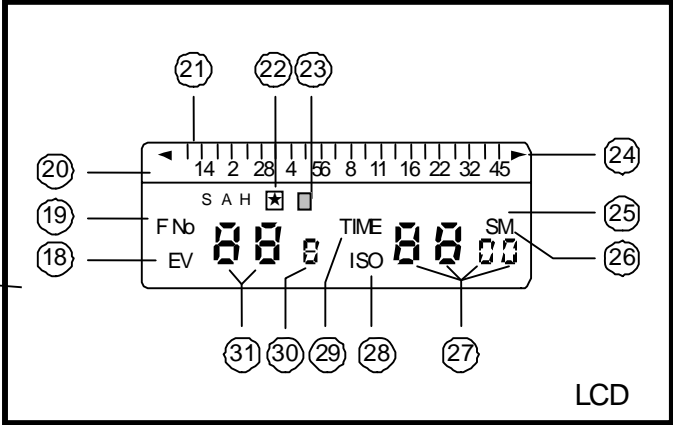
METERING AREA: 1° spot
 ISO RANGE: 12-6400 in 1/3 stops
 F/STOP RANGE: f/7 - f/90 in half stop increments
 SHUTTER SPEED RANGE: 1/8000 sec - 30 min
 BATT VOLTAGE: 1.5V (1AA)
 BATT LIFE: Entire mission
 BODY WEIGHT: 0.6 lb

NOMENCLATURE



SPOTMETER OPS

- PWR – ON
- Depress trigger
- Depress M-CLR
- Set AMBI mode
- Go to TIME mode
- √F No. displayed
- Go to ISO mode
- Set film ISO
- Go to TIME mode
- Set Shutter Speed
- Take reading
- Set F No. on Camr



- ① Viewfinder Illumination pb
- ② Ambient/Flash
- ③ Trigger
- ④ Memory Clear pb
- ⑤ F No./EV Select pb
- ⑥ On/Off
- ⑦ Shadow pb
- ⑧ Average pb
- ⑨ Highlight pb
- ⑩ ISO/Time Select pb
- ⑪ Memory Recall pb
- ⑫ Eyepiece/Diopter
- ⑬ ISO/Timer Decrease pb
- ⑭ ISO/Timer Increase pb
- ⑮ Memory Entry pb
- ⑯ PC Connector
- ⑰ Decal
- ⑱ EV Mode
- ⑲ F No. Mode
- ⑳ Low Light (off scale)
- ㉑ Analog Aperture Scale
- ㉒ Differential Star
- ㉓ Flash Indicator
- ㉔ High Light (off scale)
- ㉕ Seconds (Shutter Speed)
- ㉖ Minutes (Shutter Speed)
- ㉗ ISO/Shutter Speed
- ㉘ ISO Mode
- ㉙ Time Mode
- ㉚ Tenths of an F No.
- ㉛ F No. Display

SPOTMETER 303 (Continued)

OPERATIONS

METERING WHITE FOR AVERAGE SCENE

Take normal reading per decal
Open 1 stop (smaller f-number) from what meter says;
i.e., if meter reads f/8, set f/stop to f/5.6

METERING BLACK FOR AVERAGE SCENE

Take normal reading per decal
Close 1 stop (larger f-number) from what meter says;
i.e., if meter reads f/4, set f/stop to f/5.6

AVERAGING MODE

Take reading on light area per decal
Depress M pb
Take 2nd reading on dark area
Depress M pb
Depress A
Read f/stop under middle tick mark on analog scale (above digital readout)

NOTES

1. f/stop can be read in three places:
 - Digital display on side LCD
 - Analog scale above side digital display
 - Digital display in viewfinder
2. To change from EV to F No., meter must be ON and in TIME mode
3. Power interruption (batt removal) will cause meter to default to ISO 100, 1/60 sec, & F No.
4. Meter will store up to two readings. Both must be put into memory by using 'M' pb
5. After taking meter reading, different shutter speeds (TIME) can be selected (using increase (↑) decrease (↓) pbs) and meter will automatically display corrected f/stop (equivalent exposures) w/o having to take another reading
6. After a meter reading is obtained, if S(A,H) pb depressed, a 'H' appears. Next reading will display difference between first and second readings for as long as trigger depressed. To clear 'H' and return to normal ops, depress M-CLR pb

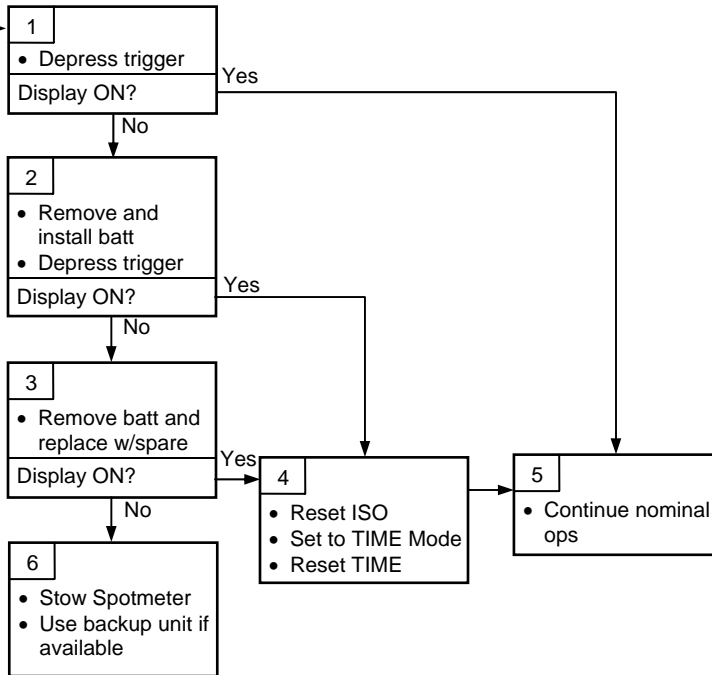
**SPOTMETER
303
(Continued)**

2.1a DISPLAY OFF - NO READING

No Display

Nominal Config:

ON/OFF sw – ON
 AMBI/FLASH – AMBI
 ISO – As reqd
 TIME – As reqd
 F No./EV – F No.
 M-CLR – Depress



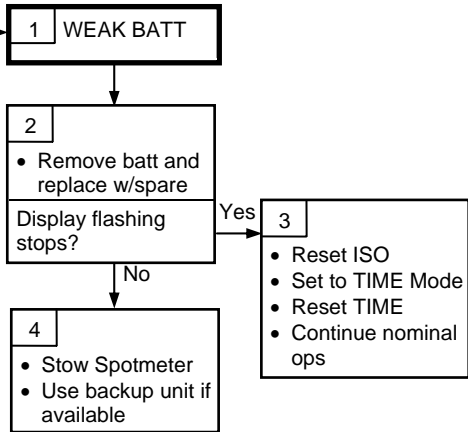
**SPOTMETER
303
(Continued)**

2.1b DISPLAY FLASHING

Display Flashing

Nominal Config:

ON/OFF sw – ON
AMBI/FLASH –
AMBI
ISO – As reqd
TIME – As reqd
F No./EV – F No.
M-CLR – Depress



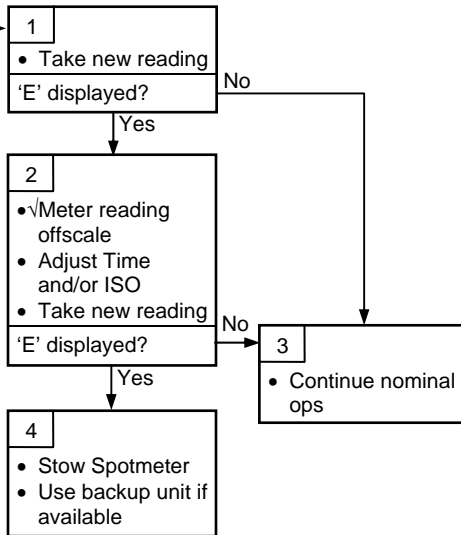
**SPOTMETER
303
(Concluded)**

2.1c 'E' IN DISPLAY

①
'E' Displayed

Nominal Config:

ON/OFF sw – ON
 AMBI/FLASH –
 AMBI
 ISO – As reqd
 TIME – As reqd
 F No./EV – F No.
 M-CLR – Depress



①
'E' appears when reading is outside metering range

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SEQUENTIAL STILL VIDEO (SSV)SSV DEACTIVATION

- L12
(PDIP 1)
1. SSV
SSV Pwr – off
√Pwr LED not illuminated
√ENC DATA LED not illuminated
√FRM DATA LED not illuminated
√FILL FRM LED not illuminated
DC PWR 1 CAB PL – OFF
 2. TV System
Go to DEACTIVATION (Cue Card, TV) as reqd

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CANON G1

CANON G1

SPECIFICATIONS

IMAGE SENSOR: 1/3-in CCD x 3 (1,670,000 pixels)
ZOOM: 20X Optical Zoom, 4.5-90mm (32.5-650mm, 35mm in Photo Equivalent)
VIDEO RECORDING SYSTEM:
 HDV – High Definition Video 1080i
 DV – Standard Definition Video 1080i
AUDIO RECORDING SYSTEM:
 HDV – MPEG-1, 16 bit (48kHz)
 DV – PCM Digital Sound, 16 bit (48kHz) or 12 bit (32kHz)
TAPE FORMAT: Mini DV Cassette (Mini DVCAM acceptable)
MAXIMUM RECORDING TIME:
 HDV – 60 min
 DV: SP – 60 min; LP – 90 min
VIEWFINDER: 0.57-in wide, 16:9 aspect ratio TFT Color; ~269,000 pixels
LCD SCREEN: 2.8-in wide, 16:9 aspect ratio TFT Color; ~207,000 pixels
MICROPHONE: Stereo Electret, Cross-layout
AF SYSTEM: Autofocus, Manual Focusing w/Focus Ring
WHITE BALANCE: Auto White Balance, Preset, Custom, Manual
MINIMUM ILLUMINATION: 0.4 lx (1/3 Shutter, F1.6, Gain 18 dB)
IMAGE STABILIZATION: Optical Shift Image Stabilizer
POWER: 7.2V Batt Pack, 8.4V DC In
BODY WEIGHT: TBD
BATT LIFETIME: ~90 min
BATT WEIGHT: 0.41 lb
WIDE ANGLE CONVERTER:
 CONVERSION – 0.8X
 CONVERTED FOCAL LENGTH – 3.6-72mm
 WEIGHT – 1.59 lb

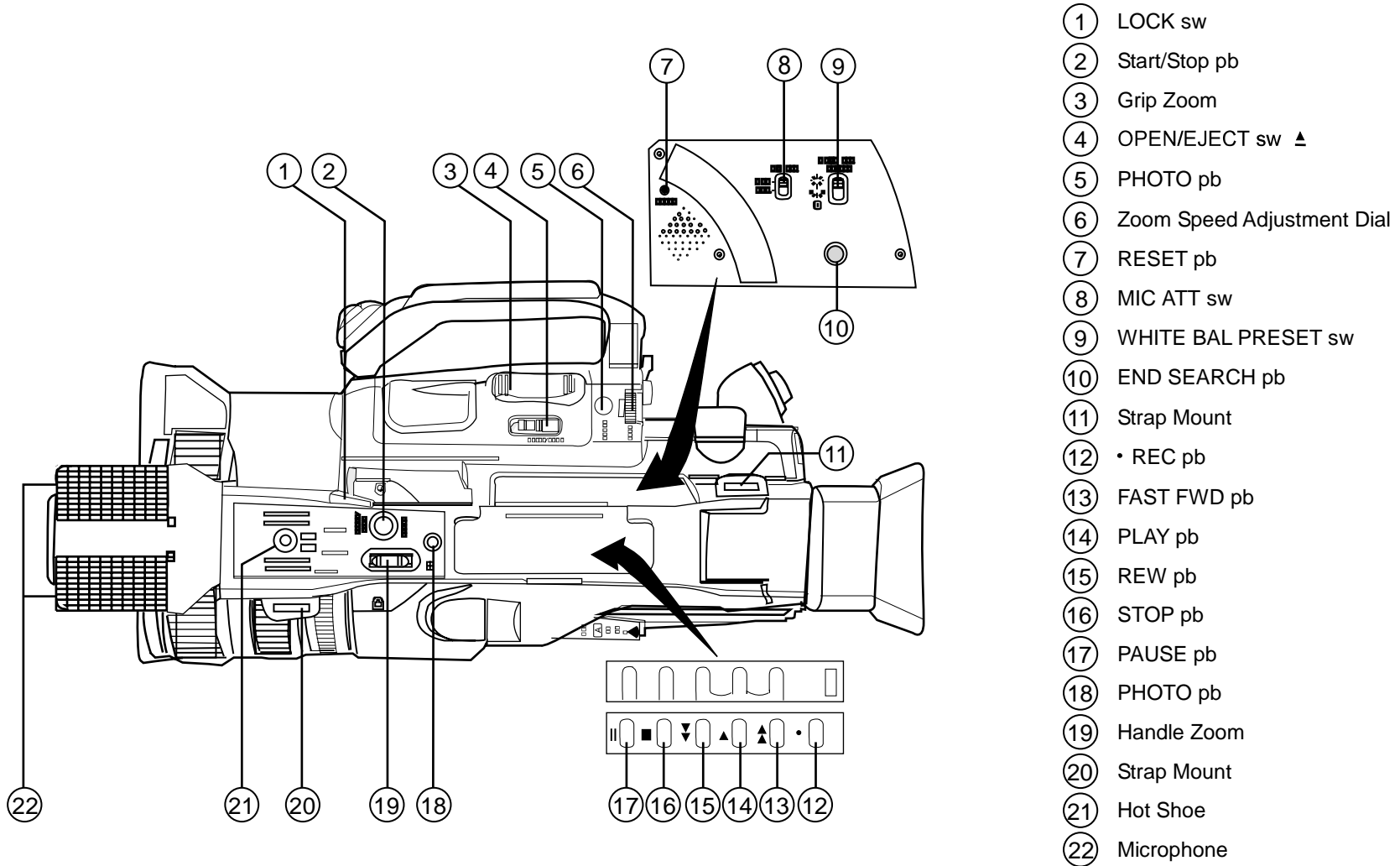
LENS DATA

Lens	Zoom Ratio	Approximate Field of View			Filter Size
		Horizontal	Vertical	Diagonal	
4.5-90mm	20:1	58°-3.2°	40.5°-2.1°	67.3°-3.8°	72mm
w/Wide Conversion Lens 3.6-72mm	20:1	69.4°-4.0°	49.5°-2.6°	79.6°-4.8°	N/A

CANON G1 (Continued)

NOMENCLATURE

CAMCORDER – TOP VIEW



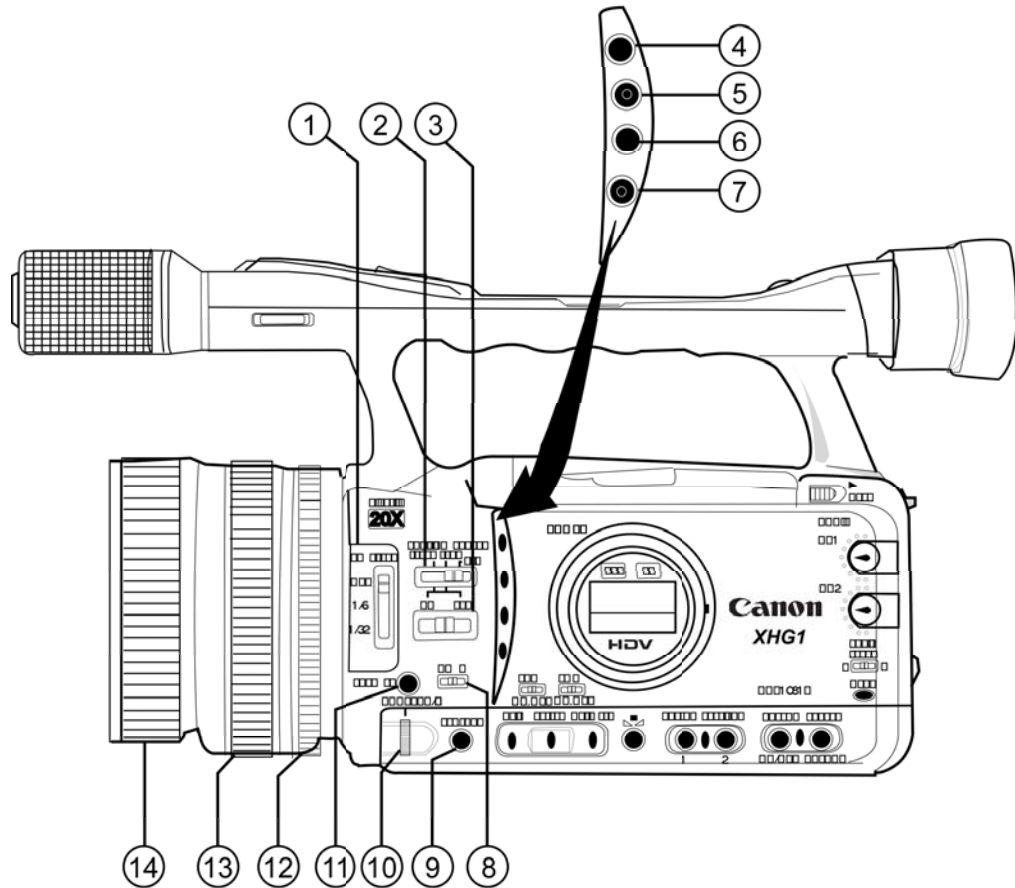
- ① LOCK sw
- ② Start/Stop pb
- ③ Grip Zoom
- ④ OPEN/EJECT sw ▲
- ⑤ PHOTO pb
- ⑥ Zoom Speed Adjustment Dial
- ⑦ RESET pb
- ⑧ MIC ATT sw
- ⑨ WHITE BAL PRESET sw
- ⑩ END SEARCH pb
- ⑪ Strap Mount
- ⑫ • REC pb
- ⑬ FAST FWD pb
- ⑭ PLAY pb
- ⑮ REW pb
- ⑯ STOP pb
- ⑰ PAUSE pb
- ⑱ PHOTO pb
- ⑲ Handle Zoom
- ⑳ Strap Mount
- ㉑ Hot Shoe
- ㉒ Microphone


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CANON G1 (Continued)

NOMENCLATURE (Continued)

CAMCORDER – LEFT SIDE FRONT SECTION



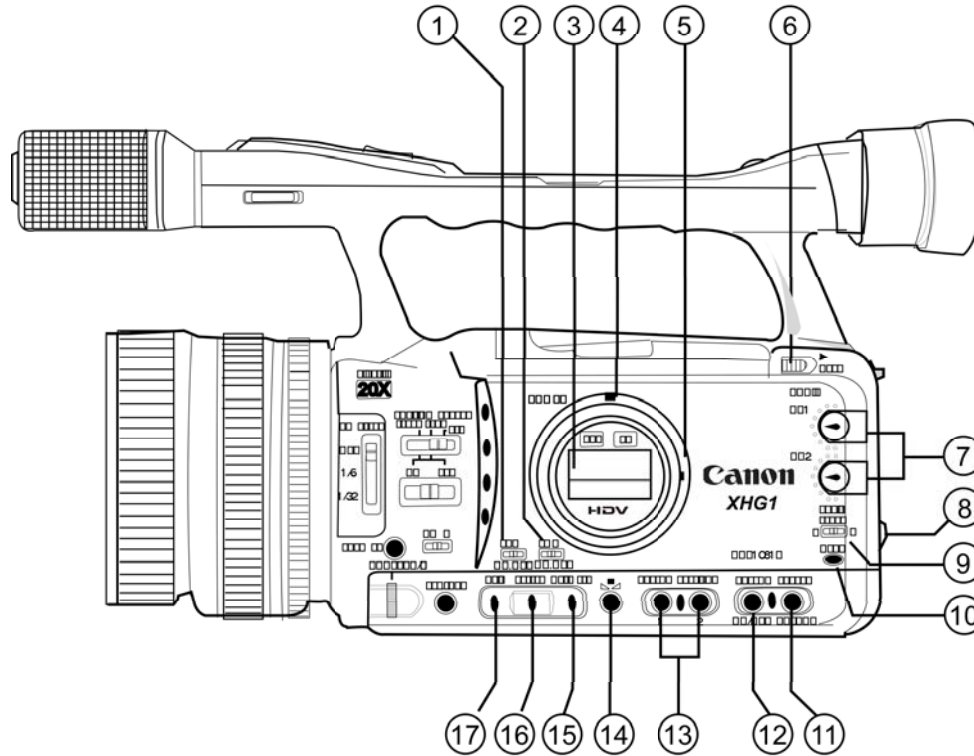
- ① ND FILTER sw
- ② POSITION PRESET sw
- ③ POSITION PRESET ON/SET sw
- ④ DISP. (Display) pb
- ⑤ PEAKING pb
- ⑥ MAGN. (Magnification) pb
- ⑦  (Record Review) pb
- ⑧ Focus Mode sw
- ⑨ EXP. LOCK pb
- ⑩ SHUTTER/K tw
- ⑪ PUSH AF pb
- ⑫ Aperture Ring
- ⑬ Zoom Ring
- ⑭ Focus Ring


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CANON G1 (Continued)

NOMENCLATURE (Continued)

CAMCORDER – LEFT SIDE REAR SECTION



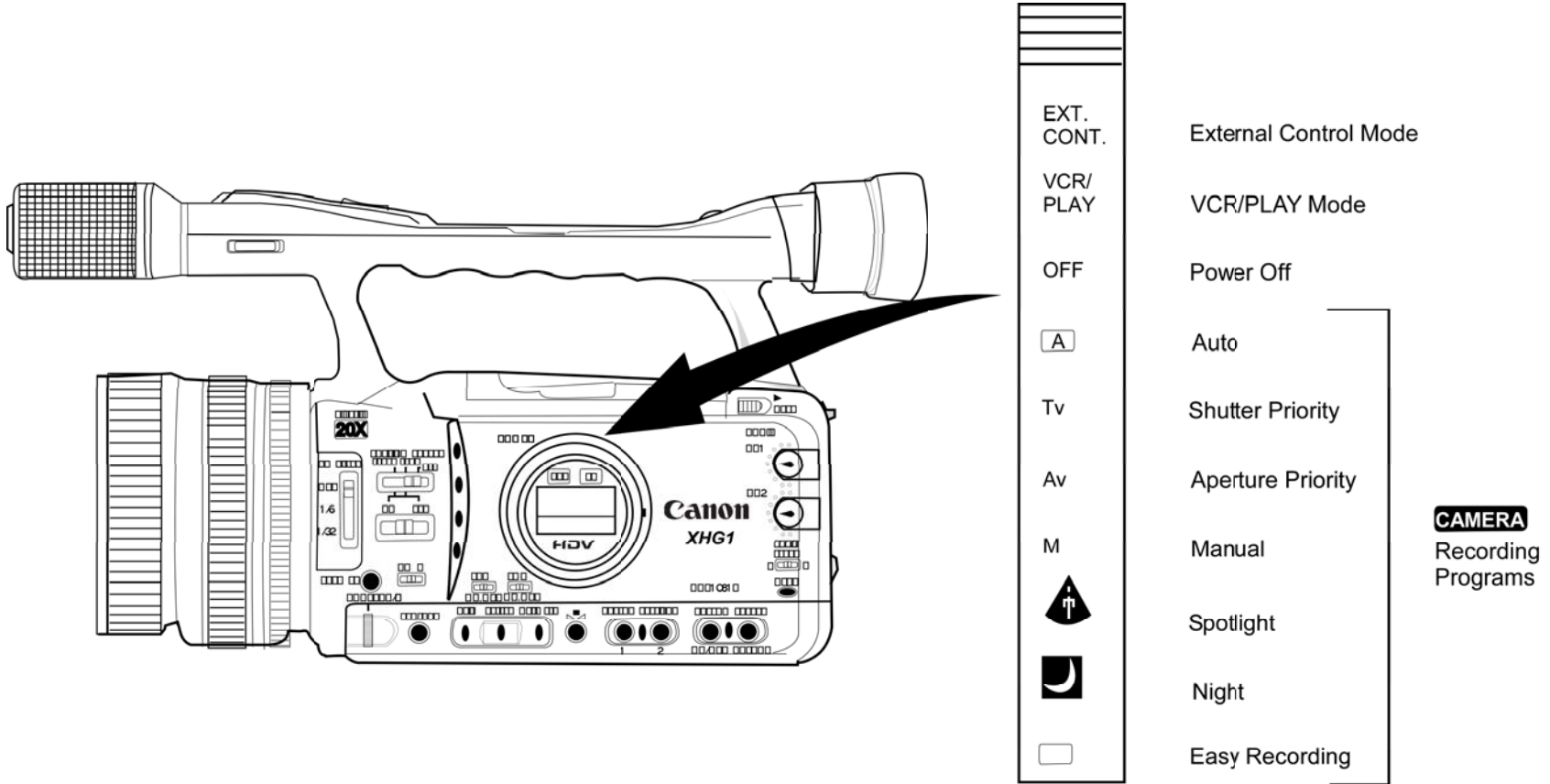
- ① AGC sw (Automatic Gain Control)
- ② AWB sw (Automatic White Balance)
- ③ Side Panel Display
- ④ POWER Indicator
- ⑤ POWER Dial
- ⑥ OPEN sw (open the LCD display)
- ⑦ **AUDIO** CH1/CH2 Dials
- ⑧ SELECT/SET Dial
- ⑨ AUDIO LEVEL sw
- ⑩ MENU pb
- ⑪ CUSTOM PRESET SELECT pb
- ⑫ CUSTOM PRESENT ON/OFF pb
- ⑬ CUSTOM KEY pb
- ⑭ WHITE BAL  pb (White Balance)
- ⑮ WHITE BAL sw
- ⑯ OUTPUT sw
- ⑰ GAIN sw

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CANON G1 (Continued)

NOMENCLATURE (Continued)

CAMCORDER – PWR DIAL

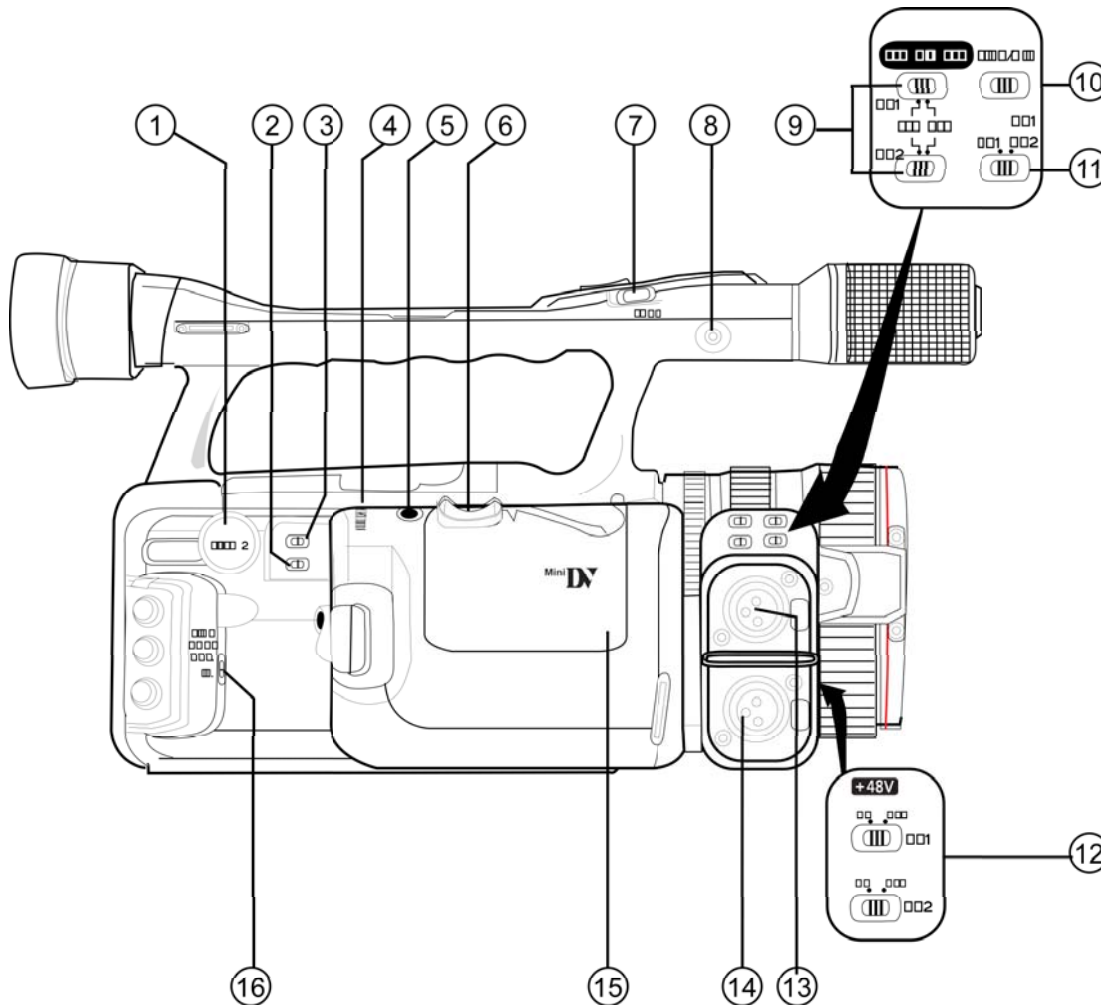




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CANON G1 (Continued)

NOMENCLATURE (Continued)

CAMCORDER – RIGHT SIDE

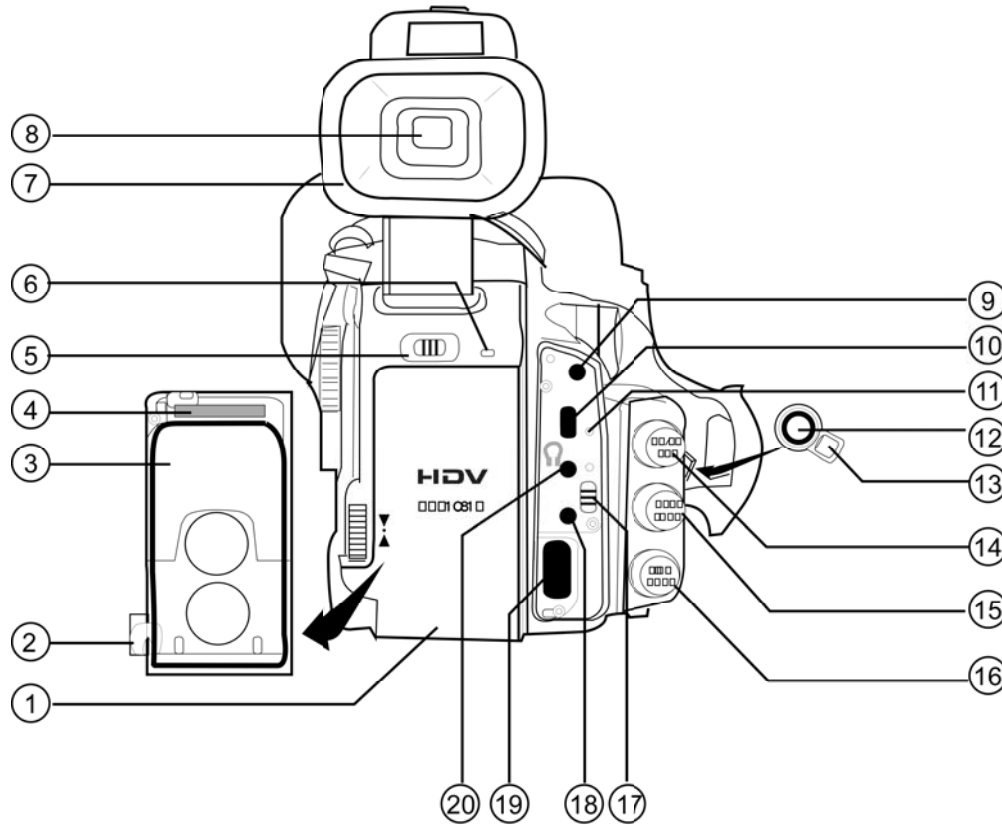




- ① V2 Terminal
- ② ZOOM SPEED sw
- ③ Card/Tape sw 
- ④ Zoom Speed Adjustment Dial
- ⑤ PHOTO pb
- ⑥ Grip Zoom
- ⑦ LOCK sw
- ⑧ MIC (External Microphone) Terminal
- ⑨ XLR MIC ATT. sw
- ⑩ LINE/MIC sw
- ⑪ Input Channel Selection sw
- ⑫  +48V sw
- ⑬ CH1 Input Terminal
- ⑭ CH2 Input Terminal
- ⑮ Cassette Compartment
- ⑯ TIME CODE sw

CANON G1 (Continued)

NOMENCLATURE (Continued)

CAMCORDER – BACK VIEW



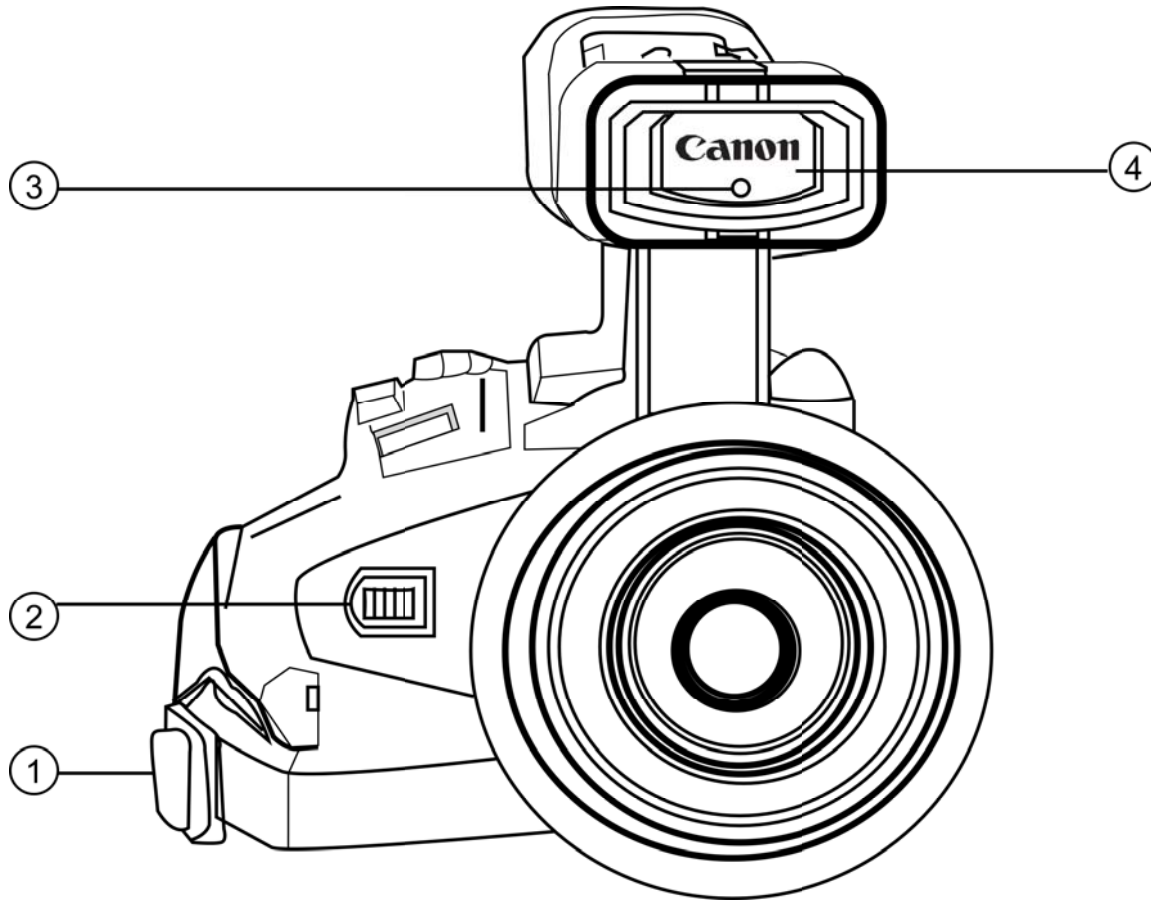
- ① Battery/Memory Card Compartment
- ② BATT. RELEASE Latch
- ③ Battery Attachment Unit
- ④ Memory Card Slot
- ⑤ OPEN sw (Battery Compartment)
- ⑥ CARD Access Indicator
- ⑦ Diopic Adjustment Lever
- ⑧ Viewfinder
- ⑨  Terminal
- ⑩ HDV/DV Terminal
- ⑪ HDV Indicator
- ⑫ Start/Stop pb
- ⑬ Standby/Lock Lever
- ⑭ HD/SD SDI Terminal
- ⑮ GENLOCK Terminal
- ⑯ TIME CODE Terminal
- ⑰ A/V1/V2 sw
- ⑱ A/V1 Terminal
- ⑲ COMPONENT OUT Terminal
- ⑳  Headphones Terminal

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CANON G1 (Continued)

NOMENCLATURE (Concluded)

CAMCORDER – FRONT VIEW



- ① Grip Belt
- ② Instant AF External Sensor
- ③ Tally Lamp
- ④ Remote Sensor

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CANON G1 (Continued)

NOMINAL MENU SETTINGS

CAMR MENU

SIGNAL SETUP

TIME CODE

FRAME SETTING – DROP
COUNT-UP – REC-RUN
GENLOCK ADJUST – 0000

SIGNAL STD – HD
FRAME RATE – 60i
COMP. OUT – 1080i/480i
SDI OUTPUT – OFF
SPEC. – AUTO


CAMERA SETUP

AE SHIFT – ±0

GAIN SETTING

GAIN L – ±0dB
M – 6dB
H – 12dB

AF MODE – NORMAL AF

IMG STAB – ON ()

SKIN DETAIL

EFFECT LEVEL – OFF
SKY DETAIL – OFF
COLOR CORR.
CORRECT – OFF
F SPEED PSET – HIGH

RECORDING SETUP

DV REC MODE – SP (Standard Definition Mode Only)

UB REC – INT. USB-BIT
SELEC – 00 00 00 00

IMG QUALITY – FINE
IMAGE SIZE – LW1920x1080
FILE NOS. – CONTINUOUS

AUDIO SETUP

DV AUDIO – 16 bit (Standard Definition Mode Only) |

AUD. M. SET – NORMAL

MIC MODE – NORMAL |
SENS. – NORMAL

XLR INPUT – OFF
GAIN UP – OFF

DISPLAY SETUP

CVF SETUP

BRIGHTNESS – mid
CONTRAST – mid
SHARPNESS – mid
BACKLIGHT – NORMAL

LCD SETUP

BRIGHTNESS – mid
CONTRAST – mid
SHARPNESS – mid
BACKLIGHT – NORMAL

CVF+LCD BW – OFF
ON – OFF

LANGUAGE – ENGLISH

MARKERS – OFF
ASPECT GUIDE – OFF
SAFETY ZONE – OFF
ZEBRA – OFF

LEVEL – 85

TV SCREEN – OFF |
AUDIO LEVEL – ON
GUIDE INFO – OFF
UB DISPLAY – OFF

CANON G1 (Continued)

NOMINAL MENU SETTINGS (Continued)

CAMR MENU (Continued)

SYSTEM SETUP

CUSTOM KEY 1 – NONE
2 – NONE

D/TIME SET

T.ZONE/DST – LONDON
DATE/TIME – ‘GMT’
DATE FORMAT – ‘M.D.Y.TIME’
DV CONTROL – OFF
MAGN. B. LOCK – ACTIVE
SHTR D. LOCK – DISABLED
RESET ALL – NO

CUSTOMIZE

CUSTOM PRESET – 1 PRESET_A

SETTING ITEMS

GAMMA – NORMAL
KNEE – AUTO
BLACK – MIDDLE
MASTER PED. – 0
SETUP LEVEL – 0
SHARPNESS – 0
H DTL FREQ – MIDDLE
DTL HV BAL – 0
CORING – 0
NR1 – OFF
NR2 – OFF
COLOR MAT. – NORMAL
GAIN – 0
PHASE – 0
R GAIN – 0
G GAIN – 0
B GAIN – 0

CUSTOMIZE (CONTINUED)

CUSTOM PRESET – 1 PRESET_A (Concluded)

SETTING ITEMS (Concluded)

RG MATRIX – 0
RB MATRIX – 0
GR MATRIX – 0
GB MATRIX – 0
BR MATRIX – 0
BG MATRIX – 0

CUSTOM FUNCTION – C.Fn1

SETTING ITEMS (*non-default)

00 SHCKLSS WB/GN – 00
01 AE RESPONSE – 00
02 HIGH-SPEED ZOOM – 00
03 FOCUS RING CTRL – 00
04 BUTTONS OPER. – 00
05 RINGS DIRECTION – 00
06 DIALS DIRECTION -- 00
07 FOCUS PRIORITY – 00
08 SIMULT.IMG.REC – 00
09 MARKER LEVEL – 00
10 F. AST BW-MOD – 00
11 OBJ DST UNIT – 00
12 ZOOM INDICATOR – 00
13 COLOR BARS – 00
14 1kHz TONE – 00
15 WIRELESS REMOTE – 00
16 POWER SAVE – 01*
17 TALLY LAMP – 02*
18 LED – 00
19 BEEP – 00
20 CHARACTER REC – 00

CANON G1 (Continued)

NOMINAL MENU SETTINGS (Continued)

CAMR MENU (Concluded)

CUSTOMIZE (Concluded)

CUSTOM DISPLAY

SETTING ITEMS (*non-default)

- 00 REC PROGRAMS – 01
- 01 CAMERA DATA1 – 03
- 02 CAMERA DATA2 – 07
- 03 ZOOM – 01
- 04 FOCUS – 02*
- 05 ND – 01
- 06 IMAGE EFFECTS – 07
- 07 F. ASSIST FUNC. – 03
- 08 CUSTOMIZE – 03
- 09 RECORDING STD – 01
- 10 DV REC MODE – 00
- 11 FRAME RATE – 01
- 12 TAPE – 03
- 13 TAPE REMAINDER – 01*
- 14 TAPE/CARD – 02*
- 15 LIGHT METERING – 03
- 16 CARD – 03
- 17 CARD REMAINDER – 02
- 18 AUDIO – 00
- 19 CONDENSATION – 01
- 20 BATTERY – 01*
- 21 WIRELESS REMOTE – 02

VCR MENU

SIGNAL SETUP

TIME CODE

- FRAME SETTING – DROP
- COUNT-UP – REC RUN
- HDV/DV IN – REGEN.
- PLAYBACK STD – AUTO
- COMP. OUT – 1080i/480i
- SDI OUTPUT – OFF
- SPEC. – AUTO
- AV->DV – OFF
- HD DOWN-CONV – ON
- LETTERBOX – OFF

RECORDING SETUP

- DV REC MODE – SP
- UB SELECT -- 00 00 00 00
- IMG QUALITY – FINE
- HD IMG SIZE -- LW1920x1080
- FILE NOS. – CONTINUOUS

AUDIO SETUP

- SEL AUDIO CH – CH1/3 / CH2/4
- AUD. M. SET – CH1/2
- DV AUDIO – 16 bit

CANON G1 (Continued)

NOMINAL MENU SETTINGS (Concluded)

VCR MENU (Concluded)

DISPLAY SETUP

CVF SETUP

BRIGHTNESS – mid
CONTRAST – mid
SHARPNESS – mid
BACKLIGHT – NORMAL

LCD SETUP

BRIGHTNESS – mid
CONTRAST – mid
SHARPNESS – mid
BACKLIGHT – NORMAL

CVF+LCD BW – OFF

ON- OFF

TV SCREEN – OFF

AUDIO LEVEL – ON

LANGUAGE – ENGLISH

CUSTOM KEY – OFF

DATA CODE – DATE & TIME

6SEC. DATE – OFF

UB DISPLAY – OFF

SYSTEM SETUP

CUSTOM KEY 1 – TV SCREEN

2 – DATA CODE

D/TIME SET

T.ZONE/DST – LONDON

DATE/TIME – 'GMT'

DATE FORMAT – 'M.D.Y.TIME'

RESET ALL – NO

CUSTOM FUNCTION – C.FN1

SETTING ITEMS (*NON-DEFAULT)

00 SHCKLSS WB/GN – 00

01 AE RESPONSE – 00

02 HIGH-SPEED ZOOM – 00

03 FOCUS RING CTRL – 00

04 BUTTONS OPER. – 00

05 RINGS DIRECTION – 00

06 DIALS DIRECTION – 00

07 FOCUS PRIORITY – 00

08 SIMULT.IMG.REC – 00

09 MARKER LEVEL – 00

10 F. AST BW-MOD – 00

11 OBJ DST UNIT – 00

12 ZOOM INDICATOR – 00

13 COLOR BARS – 00

14 1kHz TONE – 00

15 WIRELESS REMOTE – 00

16 POWER SAVE – 01*

17 TALLY LAMP – 02*

18 LED – 00

19 BEEP – 00



20 CHARACTER REC – 00

CANON G1 (Continued)

MANUAL SETTINGS

FOCUS

MANUAL FOCUS

PWR dial – **A** (Tv,Av,M, , )
AF/M sw – MANUAL (MF display in viewfinder (LCD))
Zoom – IN to subject
Focus manually
Zoom to desired setting
Begin recording as reqd





TEMP AUTO FOCUS

PUSH AF pb – press,hold for temp Auto Focus





SHUTTER SPEED

PWR dial – **A** (Tv,M)
If **A**, EXP.LOCK pb – push
SHUTTER/K tw – rotate to select SS from 1/4 to 1/15,000 sec, CS
If **A**, to exit Shutter Speed:
EXP.LOCK pb – push
√No SS displayed

WHITE BALANCE

PWR dial – **A** (Tv,Av,M, , )
AWB – OFF
WHITE BAL – A(B,PRE)
For A(B):
To set WHT BAL, place white sheet of paper in CC FOV (under same lighting conditions)
 tw – push
White Balance icon  A(B) will blink for 2 sec and become steady

WHITE BALANCE (Concluded)

For PRE:
WHITE BAL PRESET –  (, **K**)
For **K**:
 pb – push (flashing #K)
SHUTTER/K tw – rotate to desired color temperature
 pb – push (solid #K)

APERTURE

PWR dial – **A** (Av,M)
If **A**, EXP.LOCK pb – push
Aperture Ring – rotate to select AP from F1.6 to F9.5
PROGRAM AE pb – press
If **A**, to exit Aperture:
EXP.LOCK pb – push
√No F# displayed

GAIN

PWR dial – **A** (Tv,Av,M)
AGC – OFF
GAIN – L(M,H) as reqd
√+/- #dB displayed on LCD(Viewfinder)

CANON G1 (Continued)

DIGITAL CC DNLK

Config H/W per dwg at right

Velcro IEEE Cable to aft part of handle

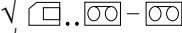



AVIU

SYNC/VIDEO – VIDEO
HI-Z/75 – 75
PWR SELECT – LO

O19

√TV PWR – ON

CC

√Wide Conversion lens installed
√ND FILTER – OFF
√OUTPUT – CAM
√ – 
√STANDBY/LOCK – STANDBY
Install Audio Muting Plug (optional)
PWR dial – “green” 
MENU pb – push
SELECT/SET – sel ‘SIGNAL SETUP’
 – sel ‘SIGNAL STD’
 – sel ‘SD 4:3’
 – sel ‘YES’
√LCD(Viewfinder) displays 
Multiuse Brkt, Clamp

F1(MO52J)

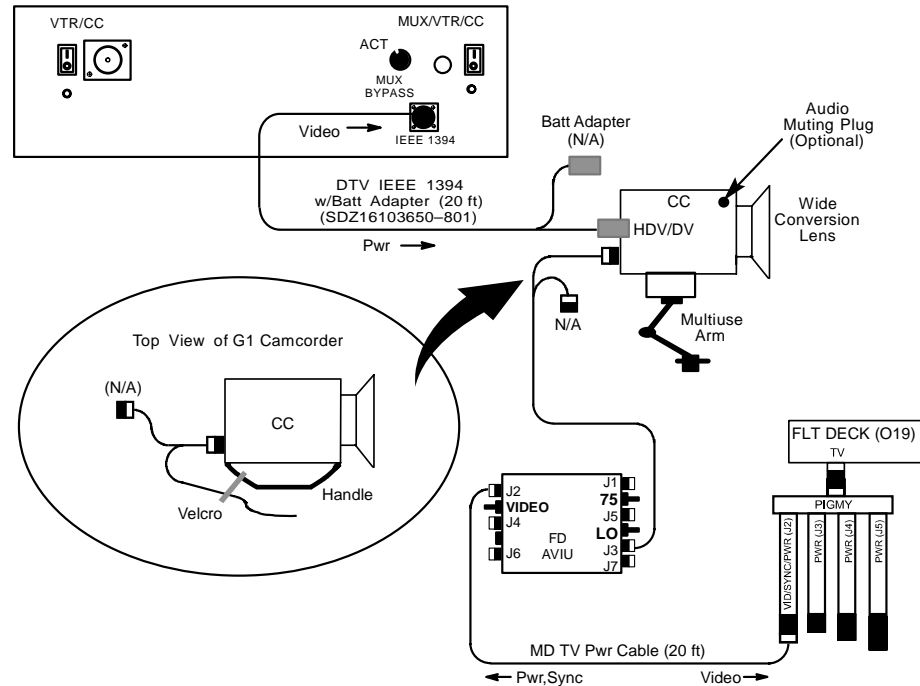
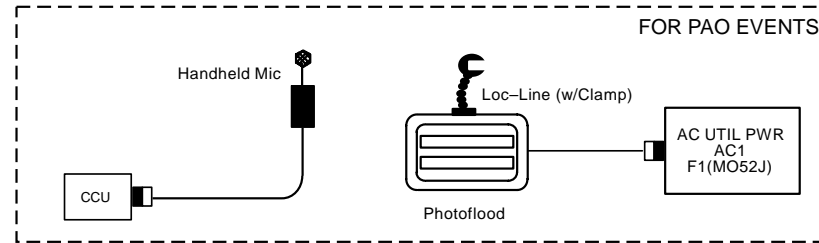
AC UTIL PWR AC1 – ON

Photoflood

ON/OFF – ON
HI/LO – HI

Cabin Lts

Flt Deck – ON
Lts in FOV – OFF as reqd
Lt Shades – install as reqd
Window Shades – install as reqd



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CANON G1 (Continued)

DIGITAL CC DNLK (Concluded)

- CC √Scene composition
- Adjust Camr angle for best framing
- CCU CCU PWR – ON
- ATU PWR – AUD
 A/G 1(2) – T/R
 All Other Loops – OFF
 XMIT/ICOM MODE SEL – PTT/PTT
 MSTR SPKR VOL SEL – As reqd
- L10 (MUX) When ready to dnlk signal:
 MUX/VTR/CC PWR – on (LED on)
 √MUX BYPASS – ACT
 √CHANNEL 3 DATA LED – on
- CC When dnlk complete:
 MENU pb – push
 SELECT/SET – sel 'SIGNAL SETUP'
 – sel 'SIGNAL STD'
 – sel 'HD'
 – sel 'YES'
 √LCD(Viewfinder) displays HDV

CANON G1 (Continued)

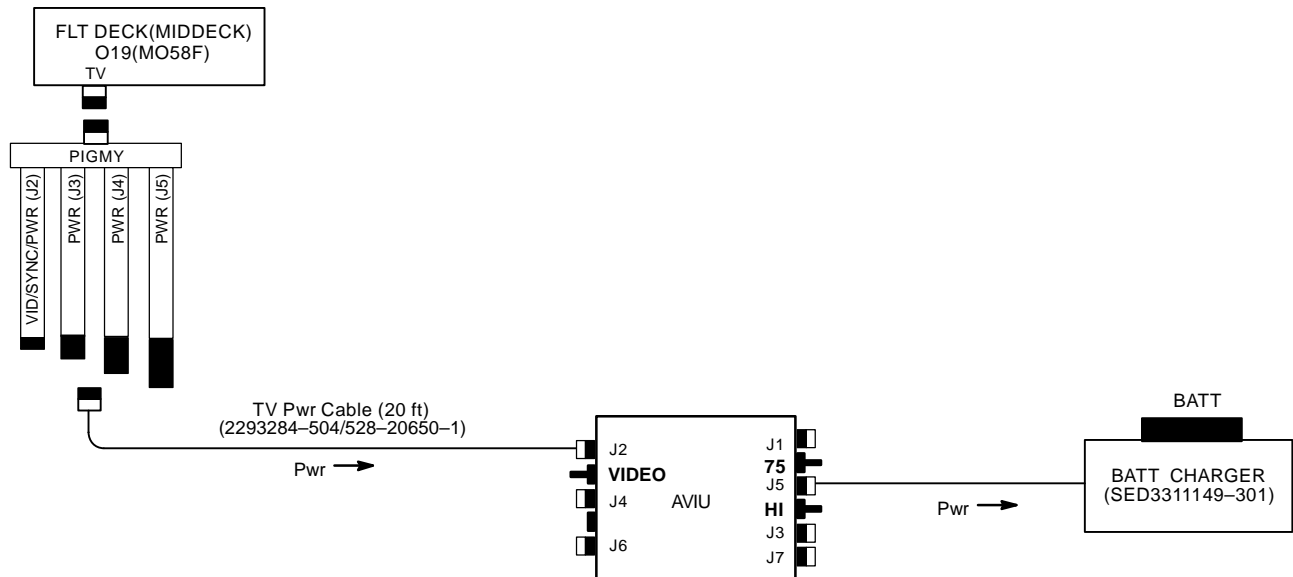
CC BATT CHARGING

1. Config H/W per dwg below
- AVIU
2. SYNC/VIDEO – VIDEO
HI-Z/75 – 75
PWR SELECT – HI

NOTE

When batt charger not in use, remove pwr

- O19
(MO58F)
3. √TV PWR – ON
 4. Insert Batt in charger. Check charger LED for charge status (~2 hr)



jsc48037_093.cnv

CANON G1 (Continued)

G1 TO G1 VIA FIREWIRE

Config H/W per dwg at right

AVIU (two) SYNC/VIDEO – VIDEO
 HI-Z/75 – 75
 PWR SELECT – LO

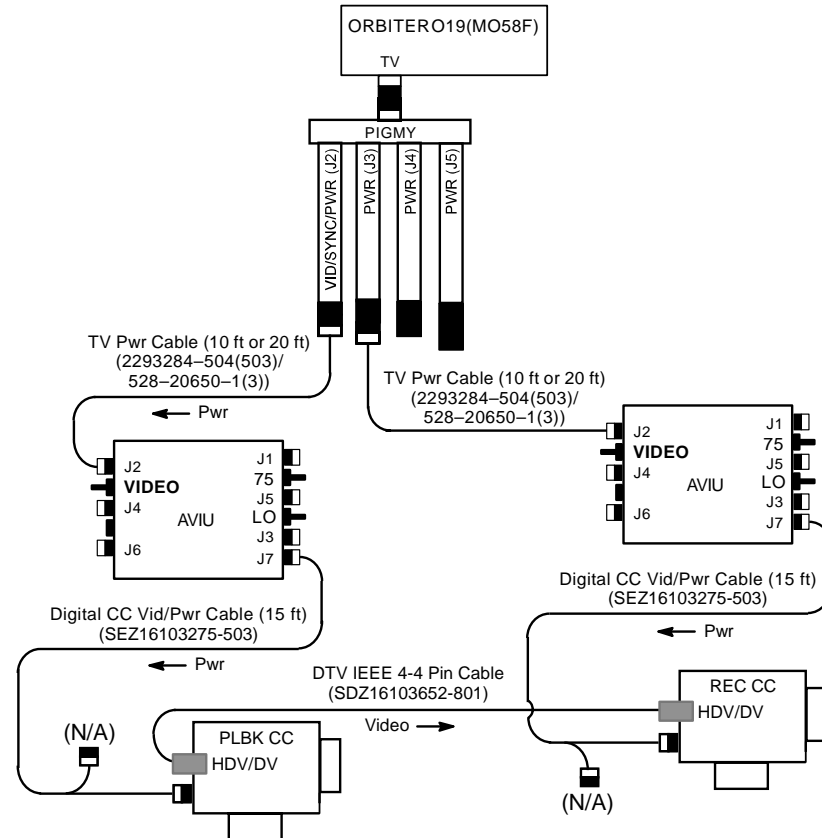
PLBK CC PWR dial – VTR/PLAY
 Install source tape. Protect Tab – slide (red visible)
 Cue tape to desired take via FF(REW) pb
 PLAY pb – push
 || pb – push

RCD CC PWR dial – VTR/PLAY
 Install new tape
 REC pb – push
 || pb – push

PLBK CC Perform following for each video segment:
 || pb – push (To PLAY)
 RCD CC || pb – push (To REC)

PLBK CC When EDIT segment complete:
 || pb – push (PAUSE)
 RCD CC || pb – push (PAUSE)

When complete:
 STOP pb – push simo
 Cue to next starting point and repeat as reqd

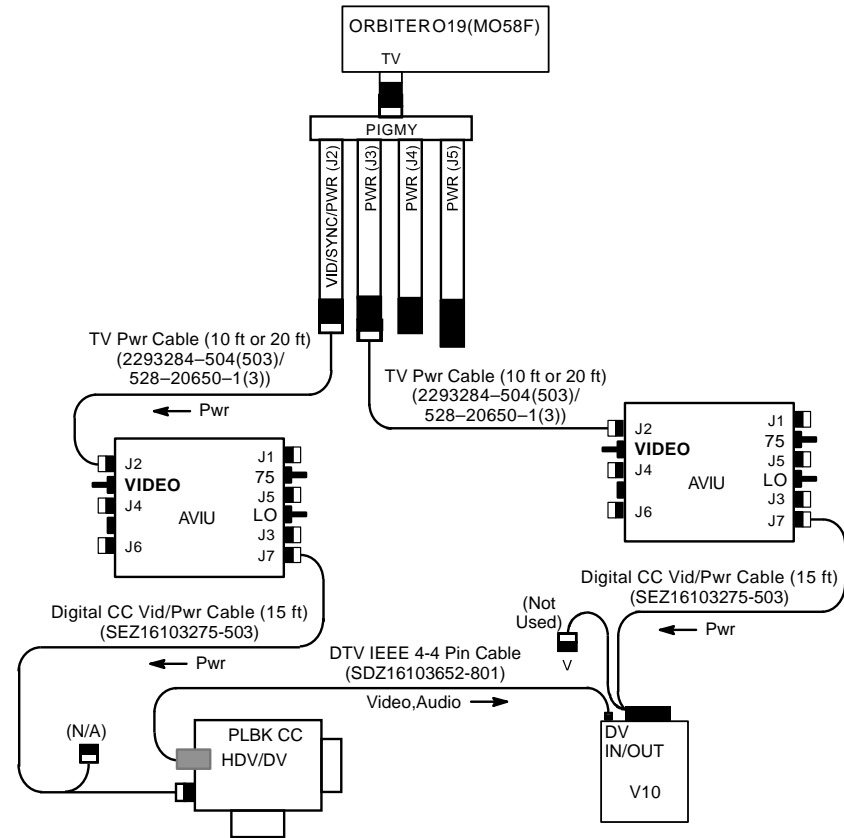


jsc48037_170r1.cvx

CANON G1 (Continued)

G1 TO V10 VIA FIREWIRE

- Config H/W per dwg at right
- AVIU (two) SYNC/VIDEO – VIDEO
HI-Z/75 – 75
PWR SELECT – LO
- CC PWR dial – VTR/PLAY
Disconnect DTV IEEE 4-4 Pin Cable
MENU pb – push
SELECT/SET:
 Sel 'SIGNAL SETUP'
 √HD DOWN-CONV – ON
MENU pb – push
Reconnect DTV IEEE 4-4 Pin Cable
Install source tape. Protect Tab – slide (red visible)
Cue tape to desired take via FF(REW) pb
PLAY pb – push
|| pb – push
- V10 PWR – ON
DISPLAY pb – push
Install new tape
REC (two) pb – push simo
PAUSE pb – push
- CC Perform following for each video segment:
|| pb – push (To PLAY)
- V10 PAUSE pb – push (To REC)
- CC When EDIT segment complete:
|| pb – push (PAUSE)
- V10 PAUSE pb – push (PAUSE)
- When complete:
STOP pb – push simo
Cue to next starting point and repeat as reqd



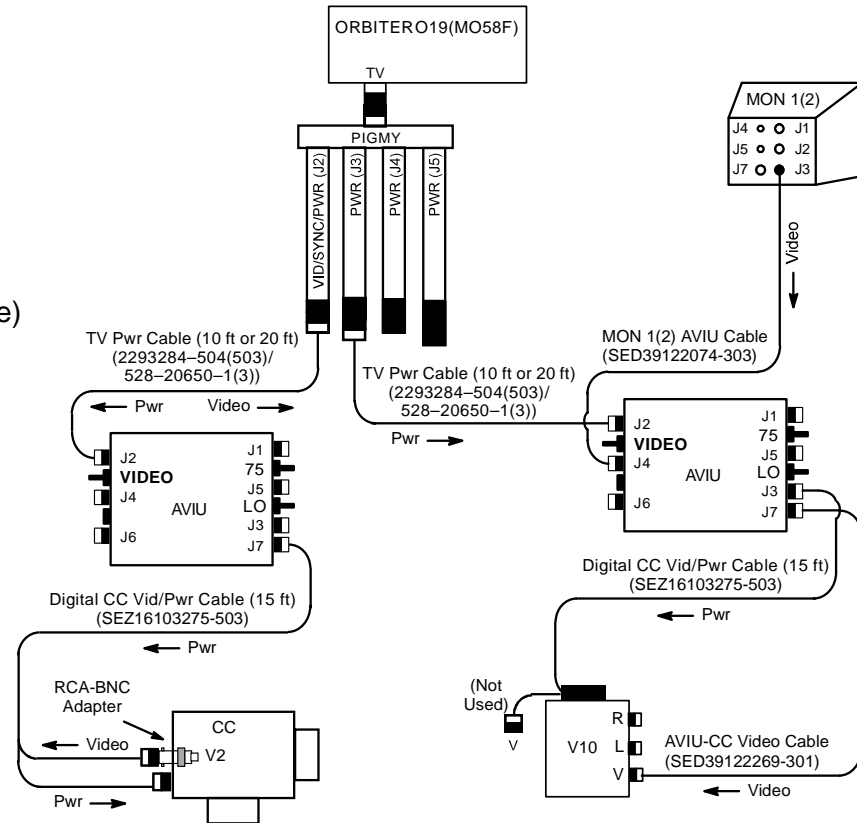
jsc48037_171r1.cvx

CANON G1 (Continued)

G1 TO V10 VIA ORBITER TV SYSTEM

Config H/W per dwg at right
 ✓Orbiter in async mode
 Perform ACTIVATION (Cue Card, TV)

- | | |
|------------|--|
| AVIU | SYNC/VIDEO – VIDEO
HI-Z/75 – 75
PWR SELECT – LO |
| O19(MO58F) | ✓TV PWR – ON |
| CC | PWR dial – VTR/PLAY
✓AV1/V2 – V2
Install source tape, Protect Tab – slide (red visible)
Cue tape to desired take via FF(REW) pb
PLAY pb – push
 pb – push |
| V10 | PWR – ON
DISPLAY pb – push
Install new tape
REC pb – push
PAUSE pb – push |
| A7 | VID OUT MON 1(2) pb – push
IN FLT DECK(MIDDECK) pb – push |
| CC | Perform following for each video segment:
 pb – push (To PLAY)
PAUSE pb – push (To REC) |
| V10 | When EDIT segment complete:
 pb – push (PAUSE) |
| CC | pb – push (PAUSE) |
| V10 | PAUSE pb – push (PAUSE) |

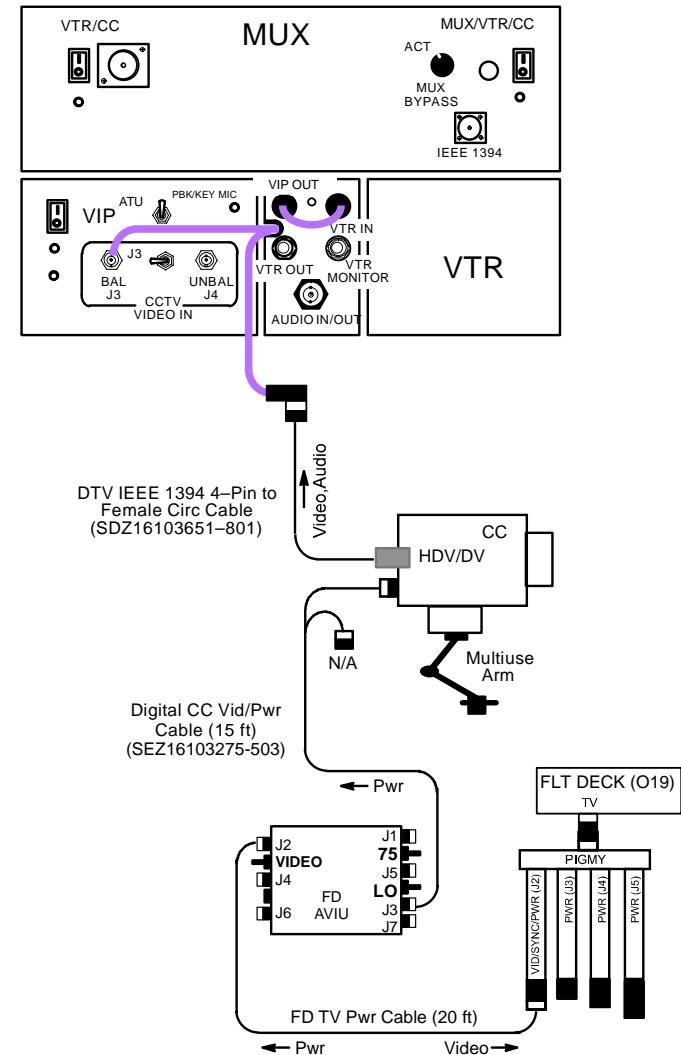


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CANON G1 (Continued)

G1 TO DSR-25 VTR

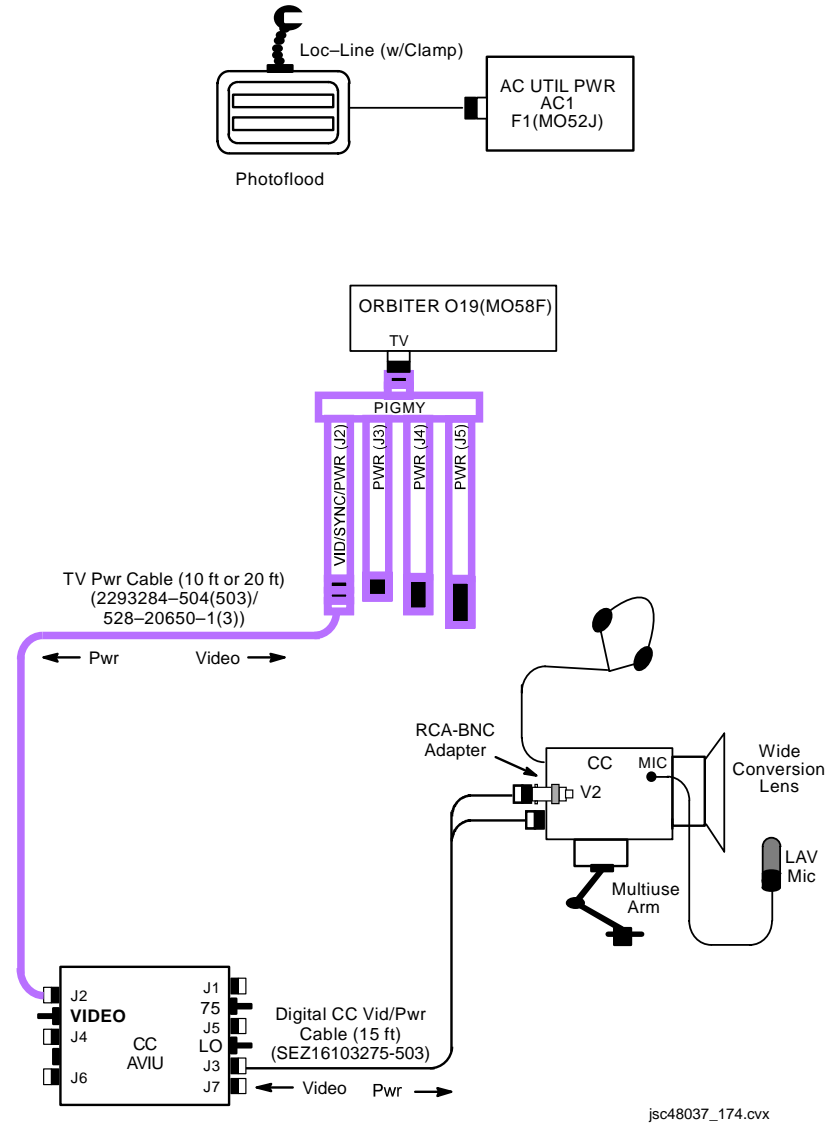
- Config H/W per dwg at right
- L10 (MUX) (VTR) √VTR/CC PWR – on (LED on)
 √ON/STANDBY LED – green
 INPUT SELECT – DV
 Install new tape
 REC pb – push,hold
 PLAY pb – push, simo (red dot displayed on LCD)
 PAUSE pb – push
- CC PWR dial – VTR/PLAY
 Disconnect DTV IEEE 1394 Cable
 MENU pb – push
 SELECT/SET:
 Sel 'SIGNAL SETUP'
 √HD DOWN-CONV – ON
 MENU pb – push
 Reconnect DTV IEEE 1394 Cable
 Install source tap, Protect Tab – slide (red visible)
 Cue tape to desired take via FF(REW) pb
 PLAY pb – push
 || pb – push
- CC Perform following for each video segment:
 || pb – push (To PLAY)
 L10 (VTR) PAUSE pb – push (To REC)
- CC When EDIT segment complete:
 || pb – push (PAUSE)
 L10 (VTR) PAUSE pb – push (PAUSE)
- When complete:
 INPUT SELECT – VIDEO
 Remove,mark tape
 ON/STANDBY pb – push (red LED on)
 Remove,stow IEEE 1394 female cable
 VTR/CC PWR – off (LED off) as reqd
 Reconnect IEEE 1394 male cable to IEEE 1394 connector
- (MUX)



CANON G1 (Concluded)

SINGLE CAMCORDER w/CAMCORDER MICROPHONE

- Config H/W per dwg at right
- AVIU SYNC/VIDEO – VIDEO
HI-Z/75 – 75
PWR SELECT – LO
- O19(MO58F) ✓TV PWR – ON
- CC ✓Wide Conversion Lens installed
✓ND FILTER – OFF
✓OUTPUT – CAM
✓A/V1/V2 – V2
✓ .. -
✓STANDBY/LOCK – STANDBY
PWR dial – “green”
Tape – Install
✓Viewfinder (LCD) displays “green” •||
Multiuse Brkt, Clamp
- Lav Mic ON/OFF – ON
- F1(MO52J) AC UTIL PWR AC1 – ON
- Photoflood ON/OFF – ON
HI/LO – HI
- Cabin Lts Flt Deck(Middeck) – ON
Lts in FOV – Off as reqd
Lt Shades – install as reqd
- CC ✓Scene Composition
Adjust Camr for best framing
✓Audio Quality



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D2Xs EVA

D2Xs EVA CAMR

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SPECIFICATIONS

CAMR BODY

CMOS SENSOR SIZE: 15.7mm x 23.7mm

PIXEL COUNT: 4288 x 2848

DISK/FRAME: 1 GB, ~90 frames

RAW FILE SIZE: ~10 MB

EXPOSURE CONTROL: Auto (program, shutter priority, aperture priority), Manual

METER PATTERN: 3D Color Matrix, Center Weighted, Spot

EXPOSURE COMP: ± 5 in 1, 1/3, 1/2 EV steps

SHUTTER:

Program & Aperture Priority – 1/8000 thru 30 sec (virtually stepless)

Manual & Shutter Priority – 1/8000 thru 30 sec (1, 1/3, 1/2) stop increments), 250x, and Bulb (manual only)

ISO Setting: 100-3200; >800 controlled by menu

FRAME RATE: Single, C_L – 3 fps, C_H – 5 fps

Burst Rate: Mode dependent

CAMR BATT: Rechargeable Li-ION

CAMR BATT VOLTAGE: 11.1VDC

CAMR BATT LIFETIME: ~1000 frames

CAMR WEIGHT: 2.4 lb (w/Batt & Memory Card)

D2Xs EVA CAMR (Continued)

LENS DATA

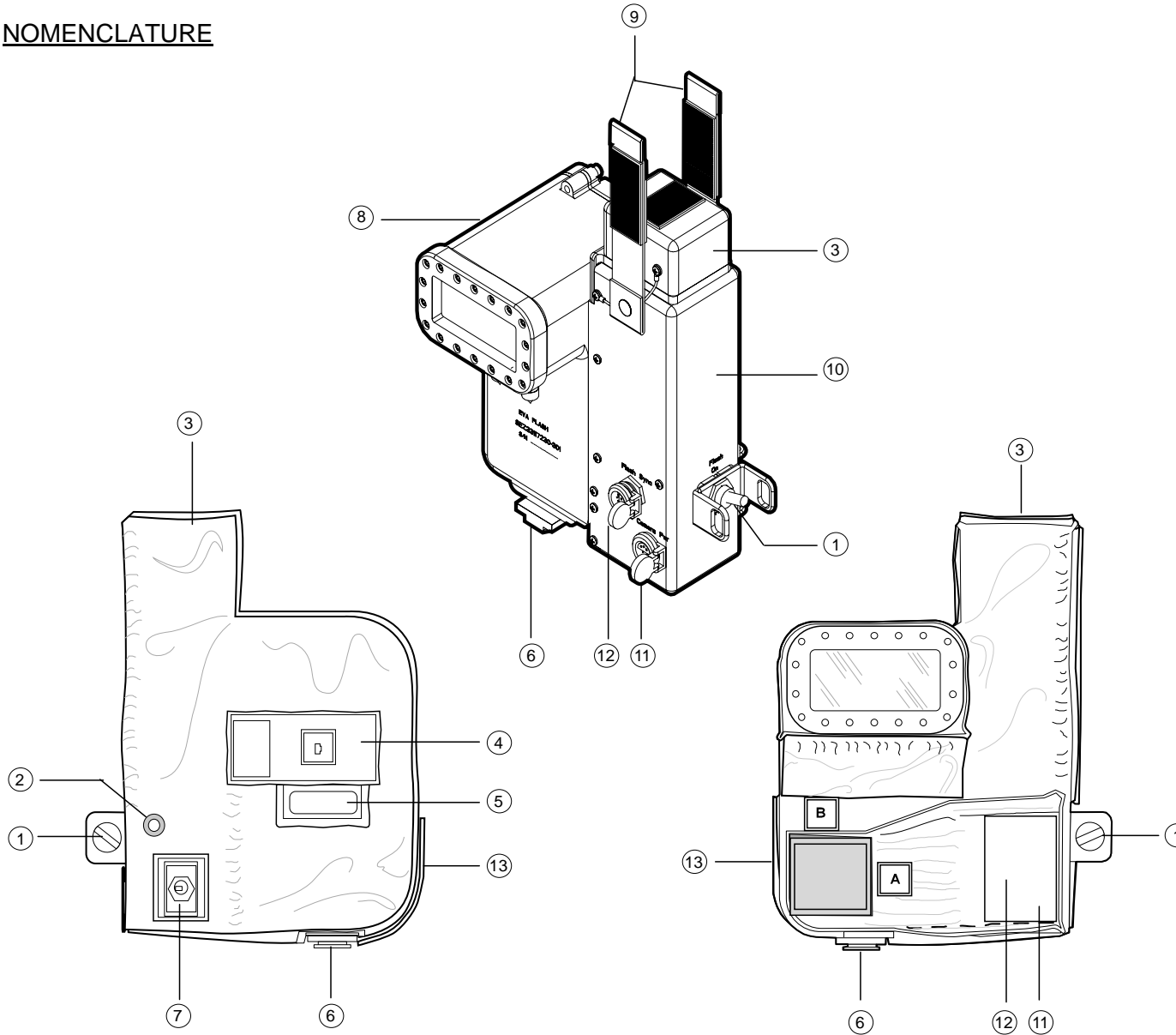
NOTE

Do not use non-EVA lens w/D2Xs EVA

Lens	Aperture Range (f/stop)	Approximate Field of View (FOV)			Approx Minimum Focus Distance (ft)	Weight (lb)	Filter Size	M-A Switch
		Horizontal	Vertical	Diagonal				
28mm AF	f/2.8-f/22	46°	31°	54°	1.25	0.46	52mm	
35mm AF	f/2.0-f/22	37°	25°	44°	0.9	0.51	52mm	
50mm AFD	f/1.4-f/16	27°	18°	32°	1.5	0.59	52mm	
70-200mm AF	f/2.8-f/22	19°	13°	23°	6.0	2.98	77mm	Yes
85mm AF	f/1.8-f/16	16°	11°	19°	3.0	0.93	62mm	
105mm AF	f/2.8-f/32	13°	9°	15°	1.0	1.22	52mm	Yes
180mm AFD	f/2.8-f/22	7°	5°	9°	5.0	1.72	72mm	Yes

D2Xs EVA CAMR (Continued)

NOMENCLATURE



- ① Flash Pwr sw
- ② External Camr Batt Low Light/LED
- ③ Batt Cap
- ④ Rear Flash Display Window
- ⑤ Flash Ready Lt Window
- ⑥ Flash Mount Rail
- ⑦ Camr Batt Pwr sw
- ⑧ Flash Housing
- ⑨ Batt Cap Straps
- ⑩ Batt Housing
- ⑪ External Camr Pwr Port
- ⑫ Flash Sync Port
- ⑬ Flap E

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D2Xs EVA CAMR (Continued)

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D2Xs EVA – CAMR ONLY

NOTE

When Camr not in use during EVA, Thermal Lens Cap must be installed

1. Unstow, assemble from EVA Camr Accessories Bag
D2Xs Camr
Lens – as reqd
If 28(35,50,105)mm EVA Lens:
√Circular Polar 52mm Filter w/o glass fully installed on lens



NOTE

Eyepiece shutter must be closed in order to remove(install) eyepiece

EVA Viewfinder attachment
D2Xs Batt – fully charged
4 GB EVA Flash Card

2. Unstow but do not install
EVA Camr Blanket
Camr Mounting Assy w/Thermal Blanket
Tether

D2Xs

3. Camr Settings
Lens – as reqd
Aperture – Min, locked
Body Focus Mode – S
√Batt installed
√Flash Card installed
Pwr – ON
Top LCD
√Batt
√Frame count = 1
If >1, perform D2Xs FORMAT, 5A-62
Exp Comp () – 0.0
Exp Mode – P
Meter – Matrix ()
Diopter – Adjust
Frame Rate – S
√BKT disabled

D2Xs EVA CAMR (Continued)

D2XS EVA – CAMR ONLY (Continued)

- D2Xs
3. Camr Settings (Concluded)
 - Rear LCD
 - √ISO – 100
 - √QUAL – RAW
 - √WB – 0,A
 - AF Area Mode – [[]]
 - √Focus Area – Center
 - √Focus Selector Lock – L
 - 4. √Eyepiece shutter open
 - 5. Install EVA Camr Blanket starting at top of Camr
 - 6. √Lens Cap removed from Lens
 - 7. Secure EVA Camr Blanket around lens
 - 8. Activate Shutter Release:
 - √No “FEE” in Viewfinder
 - If “FEE” displayed:
 - Remove Lens
 - Aperture – Min, locked
 - Replace Lens
 - √Lens moves freely under EVA Camr Blanket
 - 9. Install 28mm, 35mm, 50mm Lens Cap (Thermal Cap)
 - 10. Thread Tether thru pull tab on Camr Mounting Assy Thermal Blanket



D2Xs EVA CAMR (Continued)

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D2XS EVA – CAMR ONLY (Continued)

11. Loop French Hook thru loop on Tether



12. Install Camr Mounting Assy w/Thermal Blanket from rear
13. ✓Camr Mounting Assy seated, will not slip off Camr. Release pb – out
14. Connect French Hook to D-Ring on right side of Camr



FINAL CONFIGURATION

15. Stow Camr until day of EVA

D2Xs EVA CAMR (Continued)

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D2XS EVA – CAMR ONLY (Concluded)

If Remote Cord Assy used:

16. Connect Remote Cord Assy to Remote Release Port on D2Xs Camr (Connector will thread into place)



17. ✓ Remote Cord Assy not locked
18. Remove 28mm, 35mm, 50mm Lens Cap (Thermal Cap)
19. Test fire D2Xs w/Remote Release
20. Install 28mm, 35mm, 50mm Lens Cap (Thermal Cap)
21. Stow until day of EVA

D2Xs EVA CAMR (Continued)

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D2Xs EVA – CAMR ONLY DISASSEMBLY

BETWEEN EVAs

NOTE

Removal of Batt, Card main objective

- D2Xs
1. Disconnect Tether from D-Ring
 2. Detach Camr Mounting Assy from D2Xs
 3. Remove:
 - EVA Camr Blanket
 - D2Xs Batt
 - 4 GB EVA Flash Card

POST-EVA

NOTE

Stowing of EVA H/W and IVA use of D2Xs main objective

1. Remove EVA Camr Blanket:
 2. Temp stow EVA Camr Blanket
 3. Camr Pwr – OFF
 4. Remove:
 - D2Xs Batt
 - 4 GB EVA Flash Card
- If reqd:
5. Return Camr to Nominal Ops
 - Replace D2Xs Batt and 4 GB EVA Flash Card
 - Camr Pwr – OFF

NOTE

Eyepiece shutter must be closed in order to remove(install) eyepiece

Remove, stow EVA Viewfinder
Repace IVA Eyepiece

D2Xs EVA CAMR (Continued)

I

D2Xs EVA – CAMR w/FLASH

NOTE

When Camr not in use during EVA, Thermal Lens Cap must be installed

1. Unstow, Install

D2Xs Camr

Lens – As Req'd

If 28(35,50,105)mm EVA Lens:

√Circular Polar 52mm Filter w/o glass fully installed on lens

NOTE

Eyepiece shutter must be closed in order to remove(install) eyepiece

EVA Viewfinder attachment

D2Xs Batt – fully charged

4 GB EVA Flash Card

2. Unstow but do not install

EVA Camr Blanket

Camr Mounting Assy w/Thermal Blanket

Tether

Bracket Assy w/Thermal Blanket

EVA Flash w/Thermal Blanket

Flash Sync Cable Assy w/Thermal Blanket

Remote Cord Assy (SED33112525-302)

D2Xs

3. Camr Settings

Lens – as req'd

Aperture – Min, locked

Body Focus Mode – S

√Batt installed



√Flash Card installed

Pwr – ON

D2Xs EVA CAMR (Continued)

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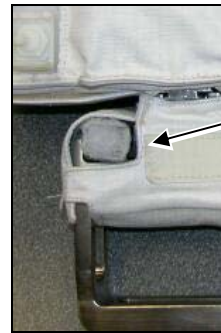
D2XS EVA – CAMR w/Flash (Continued)

- D2Xs
3. Camr Settings (Concluded)
 - Top LCD
 - √Batt
 - √Frame count = 1
 - If >1, perform D2Xs FORMAT, 5A-62
 - Exp Comp () – 0.0
 - Exp Mode – P
 - Meter – Matrix ()
 - Diopter – Adjust
 - Frame Rate – S
 - √BKT disabled
 - Rear LCD
 - √ISO – 100
 - √QUAL – RAW
 - √WB – 0,A
 - AF Area Mode – [[]]
 - √Focus Area – Center
 - √Focus Selector Lock – L
 4. √Eyepiece shutter open
 5. Install EVA Camr Blanket starting at top of Camr
 6. √Lens Cap removed from Lens
 7. Secure EVA Camr Blanket around lens
 8. Activate Shutter Release:
 - √No “_FEE” in Viewfinder
 - If “_FEE” displayed:
 - Remove Lens
 - Aperture – Min, locked
 - Replace Lens
 - √Lens moves freely under EVA Camr Blanket
 9. Install 28mm, 35mm, 50mm Lens Cap (Thermal Cap)
 10. Obtain Bracket Assy w/Thermal Blanket
 - If Thermal Blanket not installed, install on Bracket Assy
- Brkt Assy

D2Xs EVA CAMR (Continued)

D2Xs EVA – CAMR w/FLASH (Continued)

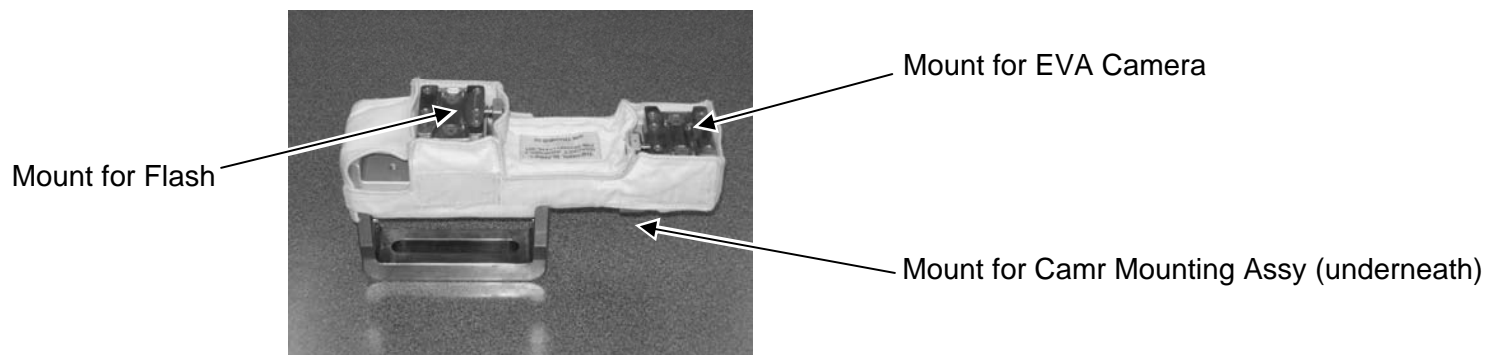
11. Insert Remote Cord Assy thru hole in Thermal Blanket (verify Remote Cord Assy not locked) and place lip of remote under Thermal Blanket



Remote Cord Lip

D2Xs

12. Remove Flash Sync Cover from Flash Sync Cable
13. Install Flash Sync Cable to Camr Hot Shoe:
Lock Flash Sync Cable – turn lever cw
Secure Camr Hot Shoe Flap to EVA Camr Blanket
14. Reinstall Flash Sync Cover onto Flash Sync Cable Assy
15. Install D2Xs Camr onto Bracket Assy (from front)
16. Install EVA Flash onto Bracket Assy (from rear)



D2Xs EVA CAMR (Continued)

I

D2XS EVA – CAMR w/Flash (Continued)

17. Thread Tether thru pull tab on Camr Mounting Assy Thermal Blanket
18. Loop French Hook thru loop on Tether



19. Install Camr Mounting Assy w/Thermal Blanket to Bracket Assy (from rear)
20. ✓D2Xs Camr, EVA Flash, and Camr Mounting Assy seated, will not slip off Bracket Assy. Release pb – out
21. Connect French Hook to D-Ring on left side of Camr

EVA Flash

22. Open Flaps A,B,F
23. Under Flap B, tuck excess Remote Cord Assy (three coils) into pocket on EVA Flash unit
24. Close Flap B using two snaps



(Remote Cord Coil)

25. Connect Remote Cord Assy to Remote Release Port on D2Xs Camr (Connector will thread into place)

D2Xs EVA CAMR (Continued)

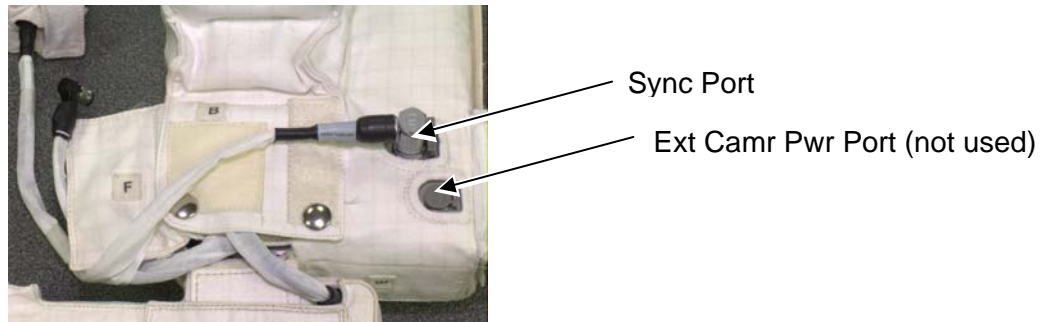
I

D2XS EVA – CAMR w/Flash (Continued)

NOTE

Adjustments to cables may be reqd during installation

- D2Xs 26. Connect Flash Sync Cable Assy to Flash Sync Port on EVA Flash



27. Close Flap A over Flash Sync Cable Assy, secure w/Velcro



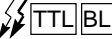

D2Xs EVA CAMR (Continued)

I

D2XS EVA – CAMR w/Flash (Continued)

28. Secure Flash Sync Cable and Remote Cord Assy under Flap F on right side of Flash



- EVA Flash
29. Access Flash Batt Compartment (remove Flap(s) C as reqd)
 30. Remove Batt Cap
 31. Install one DCS 760 Batt into FLASH slot (align arrows)
 32. Reinstall Batt Cap
 33. Flash – ON
 34. Activate Camr
 35. Open Flap D; verify following:
 - √Mode – 
 - If  not displayed, press viewfinder Forward
 - √Zoom – “M” not displayed
 - If “M” displayed, contact MCC
- D2Xs
36. Remove 28mm, 35mm, 50mm Lens Cap (Thermal Cap)
 37. Test fire Camr w/Flash using Remote Release (two shots)
 38. √Flash fired
- EVA Flash
39. Flash – OFF
 40. Close Flap D
- D2Xs
41. Remove DCS 760 Batt from FLASH slot
 42. Install 28mm, 35mm, 50mm Lens Cap (Thermal Cap)
 43. Stow until day of EVA



D2Xs EVA CAMR (Continued)

I

D2XS EVA – CAMR w/Flash (Concluded)

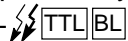

PRIOR TO ENTERING AIRLOCK:

If Camr only:

1. Remove 28mm Lens Cap
2. Activate Shutter Release:
 - √No “FEE” in Viewfinder
 - If “FEE” displayed:
 - Remove Lens
 - Aperture – Min, locked
 - Replace Lens
3. Test fire Camr
4. Install 28mm, 35mm, 50mm Lens Cap

If Camr w/Flash:

EVA Flash

5. Remove Batt Cap
6. Install DCS 760 Batt into Flash slot (align arrows)
7. Reinstall Batt Cap
8. Flash – ON
9. Activate Camr
10. Open Flap D; verify following:
 - √Mode – 
 - If  not displayed, press viewfinder Forward
 - √Zoom – “M” not displayed
 - If “M” displayed, contact MCC
11. Remove 28mm, 35mm, 50mm Lens Cap (Thermal Cap)
12. Test fire Camr w/Flash
13. Install 28mm, 35mm, 50mm Lens Cap (Thermal Cap)
14. Flash – OFF
15. Close Flap D
16. Close Flap C



D2Xs EVA CAMR (Continued)

I

D2Xs EVA – CAMR w/FLASH DISASSEMBLY

BETWEEN EVAS

NOTE

Removal of Batts,Cards main objective

FLASH

1. Flash – OFF
2. Open Flap C to access Flash Batt compartment
3. Remove Batt Cap
4. Remove DCS 760 Batt
5. Install Batt Cap
6. Close Flap C

CAMR

1. Disconnect Remote Cord Assy from D2Xs Camr
2. Disconnect Flash Sync Cable Assy from Camr Hot Shoe:
Unlock Flash Sync Cable Assy – turn ccw
3. Disconnect French Hook from D-Ring
4. Detach Camr Mounting Assy from Bracket Assy
5. Detach D2Xs Camr from Bracket Assy
6. Remove:
D2Xs Batt
4GB EVA Flash Card

D2Xs EVA CAMR (Continued)

I

D2XS EVA – CAMR w/Flash DISASSEMBLY (Continued)

POST-EVA

NOTE

Stowing of EVA H/W and IVA use of D2Xs main objective

CAMR w/FLASH

1. Disconnect Remote Cord Assy from D2Xs Camr
2. Disconnect Flash Sync Cable Assy from Camr Hot Shoe:
Unlock Flash Sync Cable Assy – turn ccw
3. Disconnect French Hook from D-Ring
4. Detach Camr Mount,D2Xs Camr from Bracket Assy

CAMR

1. Remove,temp stow EVA Camr Blanket:
2. Camr Pwr – OFF
3. Remove:
D2Xs Batt
4 GB EVA Flash Card

D2Xs EVA CAMR (Continued)

I

D2XS EVA – CAMR w/Flash DISASSEMBLY (Concluded)

POST-EVA (Concluded)

EVA FLASH AND FLASH BRACKET

1. Flash – OFF
2. Open Flap C to access Flash Batt compartment
3. Open Batt Cap and remove DCS 760 Batt
4. Secure Batt Cap
5. Close Flap C
6. Open Flaps A,B,F
7. Disconnect Flash Sync Cable Assy from Flash
8. Remove Remote Cord Assy, Flash Sync Cable from Flap B
9. Close Flaps A,B,F
10. Remove EVA Flash from Bracket Assy
11. Remove Remote Cord Assy from Thermal Blanket
12. Temp Stow EVA Flash and Bracket Assy w/Thermal Blanket

RETURN CAMR TO NOM OPS (as reqd)

1. Replace D2Xs Batt and 4 GB EVA Flash Card
2. Camr Settings:
 - Camr Pwr sw – ON
 - Nom Ops settings
3. Camr Pwr – OFF

NOTE

Eyepiece shutter must be closed in order to remove(install) eyepiece

4. Remove, stow EVA Viewfinder
Repace IVA Eyepiece

D2Xs EVA CAMR (Continued)

I

DATE/TIME SET

1. MENU pb – press
2. Navigate pad – sel Menu icon **Y**
 - press (right)
 - sel WORLD TIME (up,down)
 - press (right)
 - sel DATE (up,down)
 - press (right)
3. Set TIME/DATE to GMT
 - Navigate pad – sel desired field (left,right)
 - sel desired setting (up,down)
4. ENTER pb – press
5. MENU pb – press twice

D2Xs FORMAT

1. Pwr – ON
2. MENU pb – press
3. Navigate pad –set up MENU **Y**
 - sel 'Format'
 - sel 'Yes'
4. ENTER pb – press
5. 'Formatting'
6. 'Done'
7. MENU pb – press twice

D2Xs EVA CAMR (Concluded)

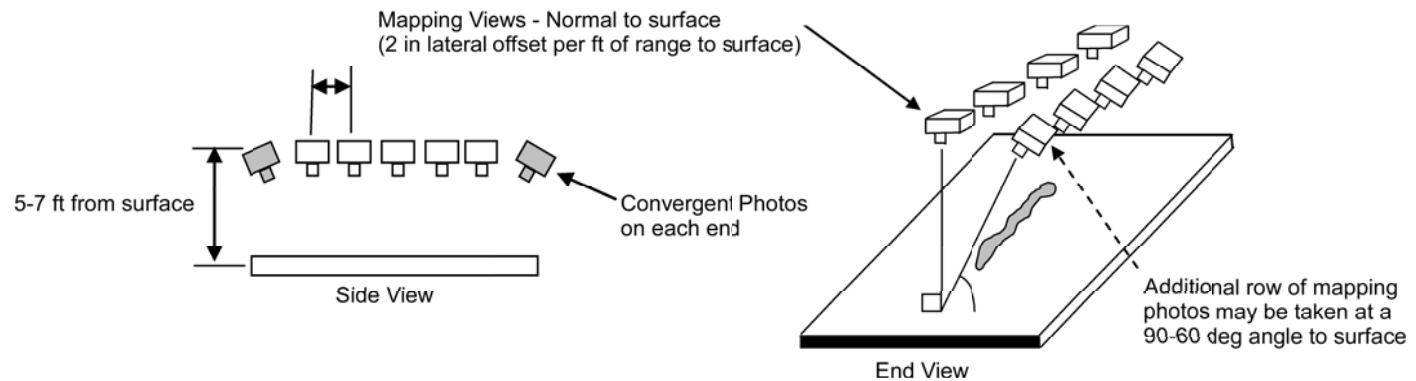
STEREO PHOTOGRAMMETRY PROCEDURE

CAMR SETTINGS – ACTIVATION

1. Rcd CAMR and LENS S/Ns
2. Perform EVA – CAMR ONLY (CAMR w/BRACKET ONLY, CAMR w/FLASH)
3. Install Lens – 35mm(50mm) EVA (preferred)
Exp Mode – P
Flash Settings:
ON/OFF – OFF

TECHNIQUE

1. Distance to subject: 5-7 ft
2. Take mapping images normal to surface, followed by one additional convergent view on each side
3. Shoot photos in pairs. Offset each image laterally 2 in/ft of subject distance, ~10-14 in
4. An additional row of photos may be taken at a 90-60 deg angle to surface to capture critical details not covered in previous images
5. Repeat as time permits



CAMR SETTINGS – DEACTIVATION

1. Exp Mode – P
Body Focus Mode – S
Flash Settings:
ON/OFF – ON

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CUE CARD CONFIGURATION

	<u>PAGE</u>
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ET PHOTO	FS CC 3-7
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PLBD VTR RECORDING	FS CC 3-12
LDRI/ITVC	FS CC 3-14
LCS.....	FS CC 3-16
IDC.....	FS CC 3-18
VIDEO SETUP.....	FS CC 3-20
D2Xs SETUP	FS CC 3-22
LDRI/ITVC A7 PLACARD	FS CC 3-24
DIGITAL PLAYBACK.....	FS CC 3-25
FSS CAMR PLACARD	FS CC 3-27

CUE CARDS

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HOOK
VELCRO

TV

ACTIVATION

A3 MON 1(2) PWR – ON (LED ON)
 A7 √TV DNK – ENA
 PWR CNTL – PNL
 CONTR UNIT – MNA(B)
 CNTL – CMD (wait 10 sec for system initialization)

OPERATION**Auto Ops (Auto Exposure)**

A7 √MCC has commanded sync config
 TV CAMR PWR A(B,C,D,RMS) – ON (tb-ON)
 VID OUT MON 1(2) pb – push
 IN pb – as reqd
 If CTVC:
 | ALC pb – push
 | AVG pb – push
 If ITVC:
 | If MAN GAIN pb not illuminated:
 | TV CAMR PWR A(B,C,D,RMS) – OFF, wait 10 sec, ON
 | Repeat until MAN GAIN pb illuminated
 | LT LEVEL pb – push
 | DAY(NIGHT) pb – push
 | ALC pb – push
 | AVG pb – push
 If FSS Camr:
 √FSS Camr Placard installed
 ALC.AVG pb – push
 GAMMA NORM pb – push
 Repeat for other Camrs as reqd

Dnk Ops

Coordinate dnk and sync config w/MCC
 Config audio as reqd
 If analog, on MCC GO:
 VID OUT DNK pb – push
 IN pb – as reqd
 If DTV, on MCC GO:
 L10 √Cables connected
 (MUX) MUX/VTR/CC PWR – on (LED on)
 √MUX BYPASS – ACT
 (VIP) PWR – on (LED on, DATA FLOW LED flashes twice)
 (VTR) √ON/STANDBY LED – green
 √INPUT SELECT – VIDEO
 A7 VID OUT DTV pb – push
 IN pb – as reqd
 L10 √DATA FLOW LED – on
 (VIP) √CHANNEL 3 DATA LED – on
 (MUX)

DEACTIVATION

If Illuminator ON:
 Refer to Illuminator Ops and perform Illuminator OFF
 A7 PORT RMS CAMR – WRIST
 TV CAMR PWR A(B,C,D,RMS) – OFF (tb-OFF), wait 10 sec
 PORT RMS CAMR – ELBOW
 TV CAMR PWR RMS – ON (tb-on), wait 10 sec, OFF (tb-OFF)
 If Keel:
 L11 KEEL CAM ENA – OFF, wait 10 sec
 (SSP 3)
 TV PWR CNTL – PNL
 CONTR UNIT – OFF
 CNTL – CMD
 A3 MON 1,2 PWR – OFF
 If DTV:
 L10 ON/STANDBY pb – push (red LED on)
 (VTR) PWR – off (LED off)
 (VIP) MUX/VTR/CC PWR – off (LED off)
 (MUX) VTR/CC PWR – off (LED off)

Manual Ops – CTVC/ITVC (Manual Exposure)

CAUTION
 DO NOT LEAVE CAMRS UNATTENDED IN MANUAL
 MODE. DIRECT SUNLIGHT WILL DAMAGE CAMRS

Manual Exposure ON

A7 MAN GAIN pb – push
 0(+12,+24) dB pb – push
 CAMR CMD IRIS – OP,CL

Return to Auto Exposure

ALC pb – push
 AVG pb – push

Manual Ops – FSS Camr (Manual Exposure)**Semi-Manual Exposure ON**

A7 CAMR CMD IRIS – OP,CL

Full Manual Exposure ON

A7 CAMR CMD IRIS – OP,CL
 GAMMA WHT STRCH(BLK STRCH) pb – push

Return to Auto Exposure

ALC AVG(PEAK,NORM) pb – push

MUX Ops

NOTE
 Although dnk/red is in color, MON
 will display MUX in B&W

A7 VID OUT MON pb – as reqd
 IN MUX 1(2) pb – push
 OUT MUX 1(2) L pb – push
 IN pb – As reqd
 OUT MUX 1(2) R pb – push
 IN pb – as reqd

For RSC ops:
 Go to LDR/ITVC Cue Card

Keel Camr

√Keel Vid Cable connected to PDIP 1 (J105) and MO58F PIGMY (J2)
 MO58F √TV PWR – ON
 L11 √cb KEEL CAM PWR (CB3) – cl
 (SSP 3) √SW (CB1) – cl
 √HTR/ILLUM PWR – ON
 KEEL CAM ENA – ON
 A7 VID OUT MON 1(2) pb – push
 IN pb – MIDDECK
 If MAN GAIN pb not illuminated:
 L11 KEEL CAM ENA – OFF, wait 10 sec, ON
 (SSP 3) Repeat until MAN GAIN pb illuminated
 A7 LT LEVEL pb – push
 DAY(NIGHT) pb – push
 ALC pb – push
 AVG pb – push

P/TV-1a/125/O/B

(reduced copy)

FS CC 3-3

P/TV/125/FIN

TOP
BACK OF 'TV'

HOOK
VELCRO

Illuminator Ops

Illuminator ON

L11 (SSP 3) If Keel Illuminator:
 \cb KEEL CAM PWR (CB3) - cl
 \SW (CB1) - cl
 HTR/ILLUM PWR - OFF,ON

R14:D(E) If Wrist Illuminator:
 \cb TV RMS CAMR/PTU - cl
 \WRIST ILLUM/CAMR HTR - cl
 - op,cl

If Elbow Illuminator:
 \cb TV RMS CAMR/PTU - cl
 \ELB ILLUM/PTU HTR - cl
 - op,cl

If A(B,C,D,ELB) Illuminator:
 \cb TV A(B,C,D,RMS,ELB) CAMR/PTU - cl
 \ILLUM/PTU HTR - cl
 - op,cl

Illuminator OFF

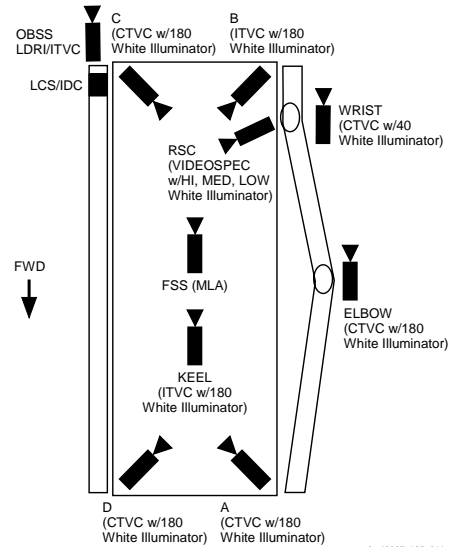
L11 (SSP 3) If Keel Illuminator:
 HTR/ILLUM PWR - OFF,ON

R14:D(E) If Wrist Illuminator:
 cb TV RMS WRIST ILLUM/CAMR HTR - op,cl

If Elbow Illuminator:
 cb TV RMS ELB ILLUM/PTU HTR - op,cl

If A(B,C,D,ELB) Illuminator:
 cb TV A(B,C,D,RMS,ELB) ILLUM/PTU HTR - op,cl

If RSC Illuminator:
 Go to LDR/ITVC (Cue Card)



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P/TV-1b/125/O/A

(reduced copy)

FS CC 3-4

P/TV/125/FIN

HOOK
VELCRO

ANALOG PLAYBACK

ANALOG VIA CC

NOTE

Analog Playback from CC only possible for CC Video recordings

ACTIVATION

CC Setup per diagram (back of cue card)
 A7 Perform ACTIVATION (Cue Card, TV), as reqd
 O19 √TV PWR – ON

AVIU SYNC/VIDEO – VIDEO
 HI-Z/75 – 75
 PWR SELECT – LO

CC PWR – VTR/PLAY
 √AV1/V2 – V2

OPERATIONS

PLBK or DNLK VIDEO

CC Install tape, if reqd

If audio reqd:
 CCU If MHA, COMM PWR – ON
 ATU PWR – AUD
 Desired Loops – T/R
 Other Loops – RCV(OFF)
 XMIT/COM Mode – VOX/VOX
 VOX SENS – MAX

CC Speaker Vol Max

A7 VID OUT MON pb – as reqd
 IN FLT DECK(MIDDECK) pb – push
 CC VTR pb – REW(FF) to cue tape

If Dnlk

A7 √MCC has commanded async config
 √TV DNLK – ENA
 VID OUT DNLK pb – push
 IN FLT DECK(MIDDECK) pb – push

CC PLAY pb – push (green ► displayed)

If PLBK(DNLK) complete:
 | STOP pb – push
 If CC ops complete, go to DEACTIVATION

DEACTIVATION

CC Remove, mark, stow tape as reqd
 PWR – OFF
 ATU Reconfig as desired
 O19 TV PWR – OFF, as reqd
 Go to DEACTIVATION (Cue Card, TV), as reqd

ANALOG VIA VTR

ACTIVATION

Setup per diagram (back of cue card)
 Disconnect CC Video input from AVIU J3
 Perform ACTIVATION (Cue Card, TV) as reqd
 O19 √TV PWR – ON

AVIU SYNC/VIDEO – VIDEO
 HI-Z/75 – 75
 PWR SELECT – LO

L10 (MUX) √VTR/CC PWR – on (LED on)
 (VTR) √ON/STANDBY LED – green

OPERATIONS

PLBK or DNLK VIDEO

L10 (VTR) Install tape if reqd
 √DISPLAY SELECT – DATA

(VIP) If audio reqd:
 PWR – on (LED on, DATA FLOW LED
 flashes twice)
 ATU – PBK/KEY MIC (Amber LED on)

CCU If MHA, COMM PWR – ON
 ATU PWR – AUD
 Desired Loops – T/R
 Other Loops – OFF
 XMIT/COM Mode – VOX/VOX
 VOX SENS – MAX

A7 VID OUT Desired MON pb – push
 IN FLT DECK pb – push
 L10 (VTR) REW(FF),PLAY,PAUSE pb – push as reqd to
 cue tape

If Dnlk

A7 √MCC has commanded async config
 √TV DNLK – ENA
 VID OUT DNLK pb – push
 IN FLT DECK pb – push

L10 (VTR) PLAY pb – push (green • displayed)

If PLBK(DNLK) complete:
 | STOP pb – push
 If VTR ops complete, go to DEACTIVATION

DEACTIVATION

L10 (VTR) Remove, mark, stow tape as reqd
 ATU Reconfig as desired
 O19 TV PWR – OFF
 Go to DEACTIVATION (Cue Card, TV) as reqd

P/TV-2a/125/O/A

(reduced copy)

FS CC 3-5

P/TV/125/FIN

TOP

VIDEO TAPE ALLOCATIONS										
DVCAM						3 hr/tape				
						15	14	13	12	11
10	9	8	7	6	5	4	3	2	1	
MINI DVCAM						40 min/tape				
210	209	208	207	206	205	204	203	202	201	
200	199	198	197	196	195	194	193	192	191	
190	189	188	187	186	185	184	183	182	181	
180	179	178	177	176	175	174	173	172	171	
170	169	168	167	166	165	164	163	162	161	
160	159	158	157	156	155	154	153	152	151	
150	149	148	147	146	145	144	143	142	141	
140	139	138	137	136	135	134	133	132	131	
130	129	128	127	126	125	124	123	122	121	
120	119	118	117	116	115	114	113	112	111	
110	109	108	107	106	105	104	103	102	101	
100	99	98	97	96	95	94	93	92	91	
90	89	88	87	86	85	84	83	82	81	
80	79	78	77	76	75	74	73	72	71	
70	69	68	67	66	65	64	63	62	61	
60	59	58	57	56	55	54	53	52	51	
50	49	48	47	46	45	44	43	42	41	
40	39	38	37	36	35	34	33	32	31	
30	29	28	27	26	25	24	23	22	21	
20	19	18	17	16	15	14	13	12	11	
10	9	8	7	6	5	4	3	2	1	

P/TV-4a/125/O/A

(reduced copy)

FS CC 3-8

P/TV/125/FIN

TOP
BACK OF 'MEDIA ALLOCATIONS'



HOOK
VELCRO

P/TV-4b/125/O/A



(reduced copy)
FS CC 3-9

P/TV/125/FIN

TOP

HOOK
VELCRO

WVS

HOOK
VELCRO

CAMR ADJUSTMENTS

ADJUST BRIGHTNESS

Course Adjustment

PGSC Select Page – RF Camera
Lens Iris Control – cl(op)

Fine Adjustment

PGSC Select Page – RF Camera
Electronic Shutter – Manual
Brightness – Dec(Inc)
(# to right: 100 = brightest; 0 = darkest)

DARK SUBJECT

PGSC Select Page – RF Camera
√Advanced Controls displayed
Automatic Gain Control – Enabled
(Disabled preferred)

PWRDN

PGSC For all lens (three) on each RF Camera Assy:
Lens Iris Control – Close until view black

V10 Sel RF Camr 1,2 – None (black "OFF")
√Test Pattern displayed (color bars w/"No WVS
Video")

PGSC Select Page – XCVR
Transceiver 1(2) CMD Pwr – Off
(black CMD PWR:LVL-"OFF:Min")
Sel File → Exit

V10 STOP pb – push
Mark, stow tapes
PWR – OFF

A7 WIRELESS VID PWR – OFF
HTR – OFF

VIDEO SIGNAL PROBLEMS

For problem EMU TV:
EMU EMU TV Pwr pb – push (no LED), wait 10 sec, push
(green LED)

If no joy:
PGSC √Select Page – XCVR
√Advanced Controls displayed
For XCVR w/Video problem: IF – Narrow

If still no joy:
A7 WIRELESS VID PWR – OFF, wait 10 sec, ON

If still no joy:
PGSC For XCVR w/video problem: IF – Wide
For XCVR w/good video: Sel RF Camr – None (black 'OFF')
If video acceptable, other EMU TV interfering w/signal
Alternately sel EMU TVs to acquire video

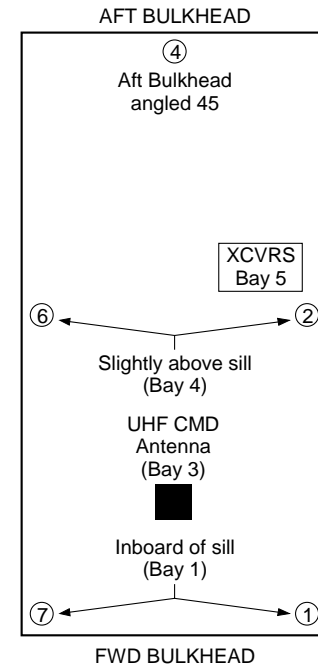
If still no joy:
For XCVR with good video:
Sel RF Camr – reselect original EVA crewmember
For XCVR w/video problem: Antenna – Manual
Sel desired antenna

If still no joy:
For XCVR w/video problem: Antenna – Auto
√MCC

COMMANDING PROBLEM (UHF)

If commanding of WVS not visually seen:
PGSC Select Page – XCVR
Sel Transceiver 2(1) CMD Pwr – On
(green CMD PWR:LVL-"ON:Min")

ANTENNA LOCATIONS



jsc4808_125_107.cvx

P/TV-5a/125/O/A

(reduced copy)

FS CC 3-10

P/TV/125/FIN

HOOK
VELCRO

ALERT MSG TROUBLESHOOTING

HOOK
VELCRO

STATIC XCVR

Condition: No comm between PGSC & PLB XCVR

- PGSC 1. √Cable connections between WIB and PGSC
A7 2. WIRELESS VID PWR – OFF, wait 10 sec, ON

If no joy:

- PGSC 3. Sel 'Start' > 'Shut Down' > 'Restart' > 'OK'
When reboot complete:
Sel Shuttle Apps icon > WVS icon
Sel 'Yes' at 'Restore To Previous Settings' window
RF Camera page will appear

If still no joy:

4. √MCC

STATIC RF CAMERA

Condition: No telemetry and video received by PLB XCVR from EMU TV

- EMU 1. √EMU TV Pwr pb pushed (green LED)

If no joy:

- PGSC 2. √Correct RF Camera selected via pull-down menu
√RF Camera (two) – ON (green "ON")
If not ON:
RF Camera (of static EMU TV) – sel "None" via
pull-down menu, then sel original EMU TV

If still no joy:

3. RF Camera 1(2) – sel 'None'
Perform CAMR ID ASSIGNMENT
Reattempt RF Camr selections

If still no joy:

4. √CMD PWR:LVL - green "ON:Min" for XCVR 1(2)
If not ON,
Select Page – XCVR
Transceiver 1(2) CMD Power – on
(green CMD PWR:LVL - "ON:Min")

If still no joy:

- EMU 5. EMU TV Pwr pb (of static EMU TV) – push (no LED),
wait 10 sec, push (green LED)

If still no joy:

6. √MCC

BAD CAMERA ID

Condition: Mismatch between EMU TV Camera ID and software camera ID

- PGSC 1. Select Page – XCVR
Transceiver 1(2) CMD Power – on (green CMD PWR:LVL - "ON:Min")
Sel RF Camera 1,2 – None
Sel File > Assign Camera ID
√Camera IDs match data under CAMR ID ASSIGNMENT
If not a match,
Highlight entry, then sel 'Delete Entry' option
Perform CAMR ID ASSIGNMENT
Sel RF Camera 1,2 – EVA crewmembers

If still no joy:

2. √MCC

TEMP ALERT (blue text)

Condition: EMU TV -35 °C to -30 °C OR 80 °C to 85 °C range
PLB XCVR -40 °C to -35 °C OR 80 °C to 85 °C range

- Select Page – Telemetry
Identify component w/temperature alert (blue text)
√MCC

TEMP CAUTION (yellow text)

Condition: EMU TV < -35 °C OR > 85 °C
PLB XCVR < -40 °C OR > 85 °C

- Select Page – Telemetry
Identify component w/temperature alert (yellow text)
√MCC

CAMR ID ASSIGNMENT

- Sel File → Assign Camr ID
√All EV crewmembers listed as options on pull-down 'Label' menu under CAMERA ID SETUP

If label entry reqd:

- Type label into space next to "Add Label" icon
Sel "Add Label" icon to add to listing

Camr ID Data		
Camr Address	TBD	TBD
Serial Number	TBD	TBD
Label	EV1	EV2

Under CAMERA ID SETUP:

- Camera Address – As reqd via left/right arrows
Serial Number – As reqd via left/right arrows
Label – As reqd via pull-down menu
"In Use" Box – Check via single click
Sel "Save Entry" icon to right of Camr ID table (top)
√Data entry visible in Camr ID table

Sel OK

P/TV-5b/125/O/A

(reduced copy)

TOP

HOOK
VELCRO

PLBD VTR RECORDING

- L10 √VIP, VTR covers removed
- R1 √PL AUX – ON
- MA73C:E cb AC2 PL3Φ – cl
 √Cables config'd per dwg (back of cue card)

- L10
(MUX) VTR/CC PWR – on (LED on)
- (VIP) √ATU – REC
 √CCTV VIDEO IN – J3
 PWR – on (LED on, DATA FLOW flashes twice)
- (VTR) √ON/STANDBY LED – green
 √Switches set to white dot (seven)
 √COUNTER SELECT – COUNTER (TC)
 √Tape installed (tape icon LED on)
 Set GMT:
 DISPLAY SELECT – MENU
 ↓ pb – ETC, EXEC pb – push
 ↓ pb – CLOCK SET, EXEC pb - push
 Use ↓, ↑, EXEC to set Y, M, D, hr, min to GMT
 DISPLAY SELECT – DATA
- A15 If Audio desired:
 Connect DTV Audio Cable
- L9 PS AUD PWR – AUD
 Desired Loops – RCV, Vol tw 5
 Other Loops – OFF
- A7 VID OUT DTV pb – push
 IN pb – as reqd

- L10
(VTR) REC pb – push, hold
 PLAY pb – push, simo (red dot displayed)

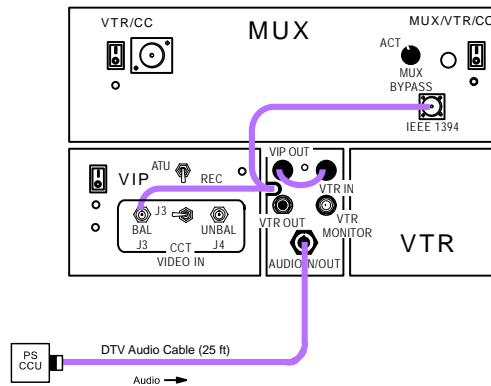
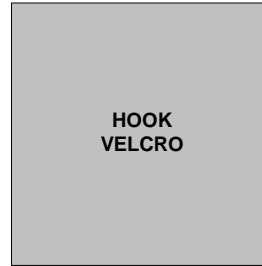
P/TV-6a/125/O/A

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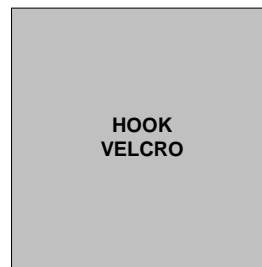
FS CC 3-12

P/TV/125/FIN

TOP
BACK OF 'PLBD VTR RECORDING'



jsc48038_125_015.cvx



P/TV-6b/125/O/A

(reduced copy)
FS CC 3-13

P/TV/125/FIN

HOOK
VELCRO

HOOK
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LDR/ITVC

ACTIVATION

1. Config CCTV Sys
 A7 √ACTIVATION (Cue Card, TV) performed
 L10 (MUX) √MUX/VTR/CC PWR – on (LED on)
 √Cabling from VTR OUT port to DTV V10
 R12 (VPU) √VPU PWR – ON (LED on)
 √Green Jumper – LDRI/ITVC
 MON 1,2 L-DATA – ON
 C-DATA – GRN
 X-HAIR – GRN
2. Apply SPEE Pwr
 A8L √STBD RMS HTR (two) – OFF
 R12 (OPP) √cb OBSS SW PWR – cl
 √OBSS SW PWR – ON
 (OBSS) SPEE PWR – ON
 A6U EVENT TIMER CNTL – STOP
 – RESET
 CNTL – START
 (15 min LDRI calibration warmup)
3. Config RSC Illum to HI
 A7 VID OUT MON 1 pb – push
 IN C pb – push
 PAN/TILT – Adjust to see RSC Camr
 R12 (OBSS) SPEE PWR – OFF, wait 10 sec, ON
 MON 1 √RSC illum on HI (three rings)
4. Enable ITVC
 R12 (OBSS) √MCC has commanded sync config
 ITVC ENA – ON
 A7 VID OUT DTV pb – push
 IN PL 2(VPU) pb – push
 If MAN GAIN pb not illuminated:
 R12 (OBSS) ITVC ENA – OFF, wait 10 sec, ON
 Repeat until MAN GAIN pb
 illuminated
 A7 LT LEVEL pb – push
 DAY (NIGHT) pb – push
 ALC pb – push
 AVG pb – push
 V10 √ITVC video displayed
5. Verify LDRI Powered
 A7 VID OUT MUX 1 L pb – push
 IN MIDDECK pb – push
 LDRI MODE 2 pb – push
 VID OUT DTV pb – push, to return to
 ITVC control

GENERAL LDRI CONTROL

- A7 VID OUT MUX 1 L pb – push
 IN MIDDECK pb – push
- Mode 1 (default at pwrup)**
 A7 LDRI MODE 1 pb – push
 MON 2 √ITVC video displayed
- Mode 2**
 A7 LDRI MODE 2 pb – push
 MON 2 √ITVC video w/illum displayed
- Modes 3 (4,5,6)**
 A7 LDRI MODE 3(4,5,6) pb – push
 MON 2 √LDRI w/rounded corners displayed
 To adjust brightness:
 A7 CAMR CMD IRIS – OP,CL, as reqd
- PAN/TILT OPS WITH LDRI ACTIVE**
- NOTE
 When adjusting pan/tilt in Modes
 3(4,5,6), ITVC FOCUS (ZOOM,
 IRIS) cntls functional
- A7 VID OUT MON 1 pb – push
 IN PL2(VPU) pb – push
 CAMR CMD PAN,TILT – as reqd
 VID OUT MUX 1 L pb – push, to return to LDRI cntl

DEACTIVATION

- A7 VID OUT MUX 1 L pb – push
 √IN MIDDECK pb – lt on
 LDRI MODE 1 pb – push
- R12 (OBSS) ITVC ENA – OFF, wait 10 sec
 SPEE PWR – OFF
- A6U EVENT TIMER MODE – UP
 CNTL – START

LDRI MODE SUMMARY

Mode 1 – Standby

- ITVC video
- LDRI in standby

Mode 2 – Illuminator

- ITVC video w/illum
- LDRI laser active, LDRI camera inactive

Mode 3 – 2D

- LDRI 2D video
- Similar to ITVC video

Mode 4 – 2D Gamma

- LDRI 2D video w/Gamma Black Stretch
- Similar to ITVC video

Mode 5 – 3D

- LDRI 3D video
- Flicker on MON

Mode 6 – 3D Gamma

- LDRI 3D video w/Gamma Black Stretch
- Flicker on MON

TOP
BACK OF 'LDRI/ITVC'

HOOK
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RSC CAMR OPS

NOTE

Camr nominally pwr'd in Block 4 of PI C/L

R12 (OPP) cb OBSS SW PWR CB1 – cl
OBSS SW PWR – ON
(OBSS) RSC PWR – ON

RSC ILLUMINATOR OPS

NOTE

RSC illuminator OFF when SPEE PWR sw initially taken to ON. A cycle of the SPEE PWR sw takes RSC illuminator to HIGH. Subsequent pwr cycles take illuminator to MED, LOW, OFF and then back to HIGH. Config may req alt Camr view of RSC

R12 (OBSS) ✓SPEE PWR – ON
✓RSC PWR – ON
ITVC ENA – OFF
A7 VID OUT MON 1 pb – push
IN A(B,C,D) pb – push
PAN,TILT – Adjust to see RSC Camr

NOTE

SPEE pwr cycle will reset LDRI/ITVC to Mode 1 and reset the PTU angles

R12 (OBSS) SPEE PWR – OFF, wait 10 sec, ON
MON 1 ✓RSC illum on

To cycle thru illuminator modes:
R12 (OBSS) SPEE PWR – OFF, wait 10 sec, ON

Perform LDRI/ITVC ACTIVATION, step 4

Return to original LDRI/ITVC Mode, continue OPS

CONTINGENCY LDRI CLEARANCE VIEW

NOTE

Do not apply RMS brakes

A8U AUTO SEQ – STOP (READY lt on)

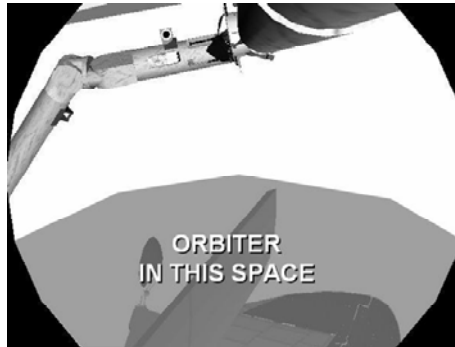
L10(VTR) STOP pb – push (no red ●)

A7 VID OUT MUX 1 L pb – push (MIDDECK lt on)
LDRI MODE 3(4) pb – push (steady LDRI video)

VID OUT MON 1 pb – push
IN PL2(VPU) pb – push

Record PTU Pan _____ and Tilt _____

CAMR CMD PAN/TILT – HI RATE
PAN: 0 (left, to hard stop)
TILT: 0 (up, to hard stop)



Note clearance thru LDRI FOV

Return PTU to Pan and Tilt values recorded above

VID OUT MUX 1 L pb – push (MIDDECK lt on)
LDRI MODE 6 pb – push (flickering LDRI video)

VID OUT MON 1 pb – push
IN pb – as desired (not PL2)

L10(VTR) REC pb – push, hold
PLAY pb – push, simo (red on LCD)

A8U AUTO SEQ – PROCEED (IN PROG lt on)

LDRI PAN/TILT RESET

Reset PTU

A7 VID OUT MON 1 pb – push
IN PL2(VPU) pb – push

CAMR CMD PAN/TILT – HI RATE
PAN – L (to hard stop)
TILT – UP (to hard stop)
PAN/TILT – RESET

P/TV-7b/125/O/B

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FS CC 3-15

P/TV/125/FIN

HOOK
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LCH ACTIVATION

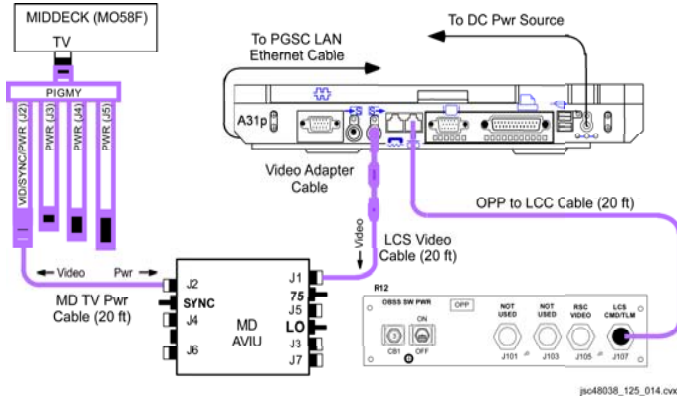
APCU/ LCH Pwrup

- R1 1. \PL AFT MNB – ON
 \CABIN MNA – ON
 SSP 2. \cb SW PWR – cl
 APCU1 OUTPUT RLY – CL
 CONV – ON (tb-gray)
 \CLOSE tb – gray
SM 200 APCU STATUS
 \APCU1 OUT VOLT RES HIGH: 122V to 126.5V

LCC ACTIVATION

1. LCC Setup

A31p \Hardware and cables configured per diagram below:



2. LCC Startup

- A31p PGSC Pwr – ON
 Sel 'Shuttle Apps' > 'LCC' from APCU 1 CONV – ON for GUI Status)
 \Laser off – blue
 \Comm – green
 If Laser off and Comm status not correct: \MCC

3. Verify LCC Desktop Video

- MO58F \TV PWR – ON
 AVIU \HI-Z/75 – 75
 CC PWR SELECT – LO
 PWR – OFF

(For APCU2 flights only w/no interconnect bus)

TOP

LCS

HOOK
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3. Verify LCC Desktop Video (Concluded)

- A31P Minimize all programs
 Right click on ATI icon on system tray
 Sel 'Schemes'
 Sel 'ENABLE DESKTOP DOWNLINK'
 Maximize program windows as desired

- A7 VID OUT MON1(2) pb - push
 IN MIDDECK pb – push

- A3 \LCC desktop displayed on MON1(2)
 * If LCC Desktop not displayed, \MCC *

4. Verify GMT

- A31p \GMT on GUI lower right-hand side within 3 sec of SM-GPC GMT
 * If GMT not within 3 sec of SM GPC: *
 * Sel 'Tools' > 'Set GMT' *
 * Adjust GMT as reqd *
 * Sel 'Apply' > 'OK' *

OPERATION

NOTE

PDRS OPS will call for appropriate scan steps on LCC.
 MCC may have limited insight if desktop drnk avail

1. Load Database (if reqd)

- \MCC for desired LCS database
 \DB Name': Field on upper left-hand side of LCS GUI
 * If 'DB Name' incorrect: *
 * Sel 'Load Database...' from File menu *
 * Sel MCC desired database file *
 * Sel 'OK' *

2. LCS System Status

LCS SYSTEM STATUS

Laser On/Off	Comm	LCS State
Laser ? (gray)	No Comm (yellow)	Unknown or Keep Alive Heater Only Mode (No LCC to LCH Network Connection)
Laser Off (blue)	Comm (green)	Configuration (Waiting for user command)
Laser On (green)	Comm (green)	Operational (Scan in progress)

While Scan in progress ('Scan Status' counter incrementing):

- \Laser On – green
 \Comm – green
 \Scan Display – updating
 \Temp – green
 \Elec – green

Scan complete when 'Scan Status: Complete' displayed

If LCS system status out of config, perform appropriate TROUBLESHOOTING section of this cue card

P/TV-8a/125/O/B

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LCC DEACTIVATION

NOTE

Shutting down LCC software also puts LCH in keep-alive heater mode. No LCH scans/insight or IDC ops available. APCU Converter pwr cycle reqd to reinitialize LCH for scanning and IDC ops

1. LCC Software Shutdown

- A31p Sel 'File' > 'Exit'
- When 'Shutdown' dialog box opens:
 - √'Shutdown LCH and Exit LCC Software' selected
 - Sel 'OK'
- When 'Shutdown?' dialog box opens:
 - Sel 'OK'

2. A31p Screen Resolution Reset

- A31p Right click on ATI icon on system tray
- Sel 'Schemes'
- Sel 'DISABLE DESKTOP DOWNLINK', 'ATI Property Settings'
- Sel 'Yes'
- Arrange program windows as desired

LCH DEACTIVATION

CAUTION

Removing APCU Converter Pwr or opening output relay will remove critical keep-alive pwr to LCH and IDC

1. APCU Converters Off/LCH Pwrdn

NOTE

Expect 'S200 APCU2 VOLT LMT' msg

- SSP 2 APCU1 CONV – OFF (tb-bp)

2. Open APCU Output Relay

- SSP 2 APCU1 OUTPUT RLY – OP (tb-bp)

TROUBLESHOOTING

Temp or Elec Status Yellow and Message

- A31p Sel 'System' page
- Report 'Elec' or 'Temp' values backlit in yellow to MCC

Comm Status Yellow and LAN2 Network cable unplugged (red X on A31p system tray)

NOTE

LCC GUI Comm status will be yellow and A31p Local Area Network status (w/red X on A31p system tray) cable unplugged tool tip will appear if LCH is in keep-alive heater mode

- A31p If unexpected red X w/Local Area Network Connection tool tip shown on A31p system tray:



- R12 √OPP to LCC Cable connected to LCS CMD/TLM(J107) port
- A31p √OPP to LCC Cable connected to LCC RJ45 port
- Exit LCC software and shut down Windows

NOTE

Expect 'S200 APCU2 VOLT LMT' msg

- SSP 2 APCU1 CONV – OFF, ON
- √CONV tb – gray
- √CLOSE tb – gray

SM 200 APCU STATUS

√APCU1 OUT VOLT RES HIGH: 122V to 126.5V

- A31p LCC PGSC Pwr – ON
- √A31p internal RJ45 Network Interface Card LED green
- Perform LCC ACTIVATION, step 2

- √Local Area Network Connection 2 status icon (with red X) in Windows system tray not displayed
- √MCC if LCC GUI Comm status still yellow

Message Area Entry

Report LCC GUI message area log entry(ies) to MCC

(For APCU2 flights only w/no interconnect bus)

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FS CC 3-17

P/TV-8b/125/O/B

P/TV/125/FIN

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IDC

IDC ACTIVATION

- LCC Setup
 A31p PGSC Pwr – ON
 √Hardware configured per LCC ACTIVATION steps 1,2 (Cue Card, LCS)
- IDC connectivity Check
 LCC √A31p internal RJ45 Network Interface Card LED green
 If RJ45 Network Interface Card LED not green:
 SSP 2 APCU1 CONV – OFF, then ON
 √CONV tb – gray
 √CLOSE tb – gray

SM 200 APCU STATUS
 √APCU1 OUT VOLT RES HIGH: 122V to 126.5V

IDC SOFTWARE ACTIVATION

- IDC Software Startup
 A31p Sel 'Shuttle Apps' > 'IDC'
- Verify GMT
 A31p √GMT within 3 sec of SM-GPC GMT

 * If GMT not within 3 sec: *
 * Double click on GMT box on GUI *
 * Adjust GMT as reqd *
 * Sel 'OK' on MTU Time dialogue box *

3. IDC Pwr on and self test

CAUTION
 Pwr off IDC when not imaging. Pointing IDC at Sun when pwr on will damage Camr

- A31p Sel 'Power On'
- √Black and White self-test image displayed
 - √'Waiting for User Command' displayed
 - * If red backlit error msg displayed: *
 - * Perform appropriate TROUBLESHOOTING *
 - * steps on this cue card *

(For APCU2 flights only w/no interconnect bus)

OPERATION

NOTE

PDRS OPS will call for IDC image steps on LCC A31p. Limited MCC real-time insight avail if configured for desktop dnk

- Configure LDRI Illumination
 R12 (VPU) √Green Jumper – LDRI/ITVC
 A7 VID OUT MUX 1L pb – push
 IN MIDDECK pb – push
 LDRI MODE 2 pb – push
 VID OUT MON 1(2) pb – push
 IN PL2 (VPU) pb – push
 CAMR CMD PAN/TILT – HI RATE
 PAN – L (to hard stop)
 TILT – UP (to hard stop)
 PAN/TILT – RESET
 – LO RATE within 10°
 PAN – +85 (right)
 TILT – -57 (down)

NOTE

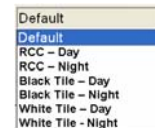
If GMT does not update during Ops, an attempt to shut down/restart A31p should be made

2. Auto Exposure (AE) Ops

- A31p √'Use AE' checked
 Sel 'Scan Lo-Res'
 Resize and posn AE box as reqd (pause 2 sec)
 √MCC for AOI FOV
 Sel 'Scan Hi-Res'
 If Scanning with no RMS Motion:
 Sel 'Stop Scan' after 30 sec
 If scanning with RMS motion:
 Move box to maintain RCC in AE box (using keyboard arrows)
 Sel 'Stop Scan' at pause point
 √'Waiting for User Command' displayed

3. Scenario File Ops

A31p From Scenario File drop-list, sel appropriate lighting condition



- Sel 'Acquire Set'
- √'Acquiring Set' displayed
- √'Waiting for User Command' displayed after set
- √MCC content w/data take

P/TV-9a/125/O/B

(reduced copy)

HOOK
VELCRO

HOOK
VELCRO

IDC DEACTIVATION

- IDC and Software Shutdown
A31p Sel 'Power off' on IDC GUI
Close (X) IDC software > 'YES'
- A31p Screen Resolution Reset
A31P Right click on ATI icon on system tray
Sel 'Schemes'
Sel 'DISABLE DESKTOP DOWNLINK', 'ATI Property Settings'
Sel 'Yes'
Arrange program windows as desired

APPENDING COMMENT TEXT TO TIFF

- If Comment Added Before Scan
A31p Enter text in comment area

NOTE
All scans will contain this comment. Text can be cleared with [F2] hot key. Comments cannot be edited post scan
- If Comment Added After Scan
A31p Sel 'View File' on IDC GUI
Double click on desired TIFF file
Enter text in comment area
Hit [F4] to append comment

IDC HOT KEY COMMANDS

- | | |
|------------------------------------|-------------------------------|
| F5 – Toggle Summary View | F6 – Toggle Image Mode |
| F7 – Zoom In | F8 – Zoom Out |
| F9 – Reset Brightness and Contrast | F10 – Reset AE Box to Default |
| F11 – Toggle AE Box Visibility | F12 – Find AE Box |

IDC SOFTWARE ERROR MESSAGES

- Can't connect to LCH:** Perform TROUBLESHOOTING, steps 1,2
Condition: Possible heater only mode or Network failure
- Iport probe failed:** Perform TROUBLESHOOTING, step 2
Condition: Iport startup check failed. Expected during first pwr on attempt-resend pwr on
- Iport not responding:** Perform TROUBLESHOOTING, step 2
Condition: Iport connection lost
- Camera not responding:** Perform TROUBLESHOOTING, step 2
Condition: Camera connectivity lost
- Image acquisition failed:** Perform TROUBLESHOOTING, steps 1,2
Condition: Camera connectivity lost during imaging
- Network recovery failed:** Perform TROUBLESHOOTING, steps 1,2
Condition: LCH network switch connection lost
- Bad initialization file:** Perform TROUBLESHOOTING, step 3
Condition: Software will not launch due to severe ini file corruption

TROUBLESHOOTING

- LCC to LCH Connectivity Check
A31p If Local Area Network Connection 2 (with red X) tool tip on system tray:



Reseat OPP to LCC Cable (20 ft) to LCC RJ45 port
√Local Area Network Connection 2 Speed 10 mps
If no connection:
Perform LCH, LCC, and IDC Reset, step 2
Continue nominal ops

- LCH, LCC, and IDC Reset
A31p Exit IDC software and shut down Windows
√OPP to LCC Cable (20 ft) connected to LCC RJ45 port

NOTE
Expect 'S200 APCU1 VOLT LMT' msg

- SSP 2 APCU1 CONV – OFF, ON
√CONV tb – gray
√CLOSE tb – gray

SM 200 APCU STATUS
√APCU1 OUT VOLT RES HIGH: 122V to 126.5V

- A31p LCC PGSC Pwr – ON
√A31p internal RJ45 Network Interface Card LED green

Perform IDC SOFTWARE ACTIVATION
Continue nominal ops

- LCC Swap
A31p Exit IDC software and shut down Windows
Swap LCC with other A31p
Perform IDC Activation
Perform IDC Software Activation
Continue nominal ops

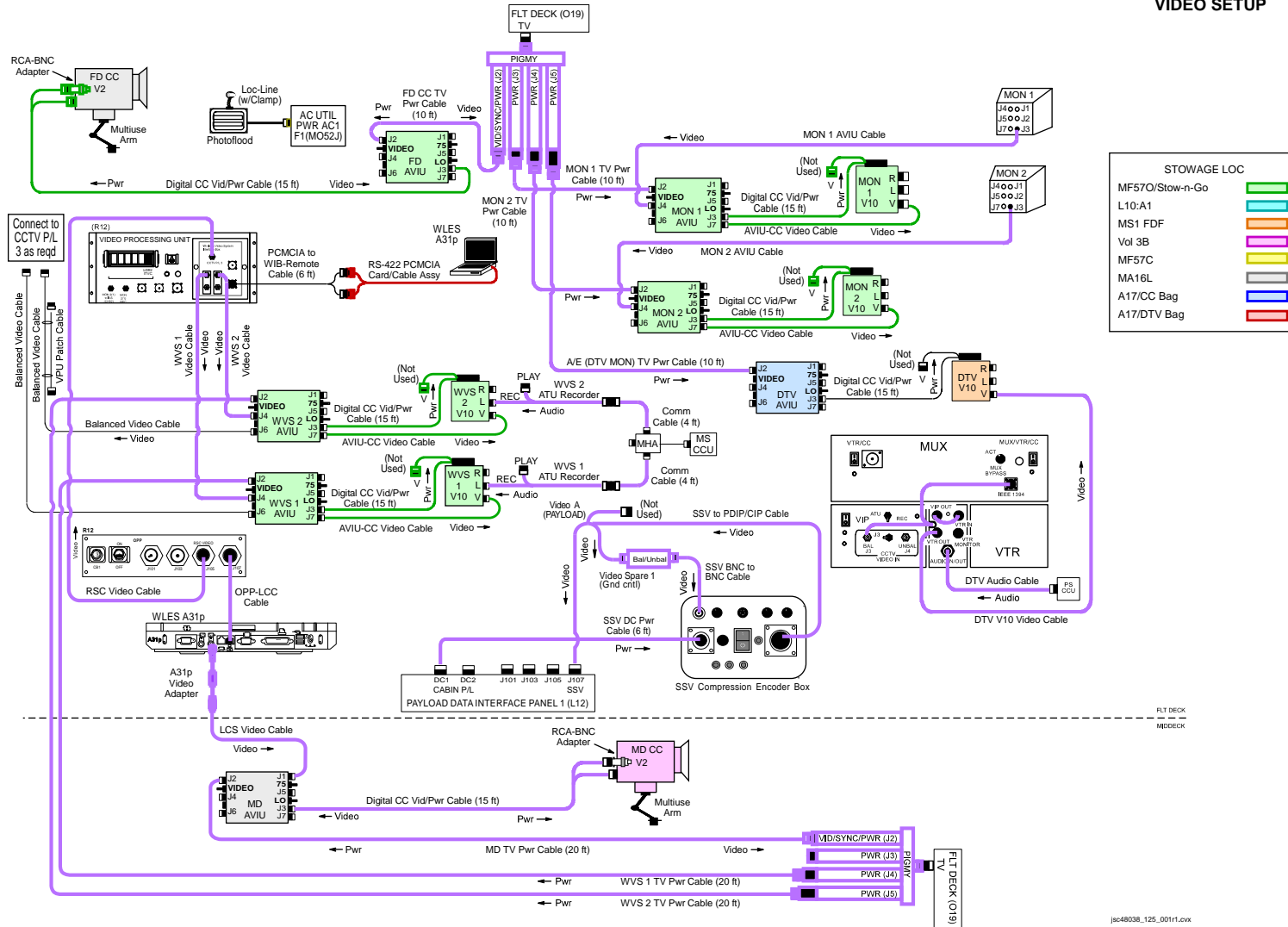
P/TV-9b/125/O/A

(For APCU2 flights only w/no interconnect bus)

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TOP

VIDEO SETUP



jac48038_125_001r.cvx

P/TV-10a/125/O/B

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FS CC 3-20

P/TV/125/FIN

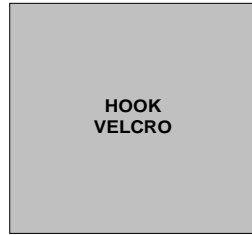


HOOK
VELCRO

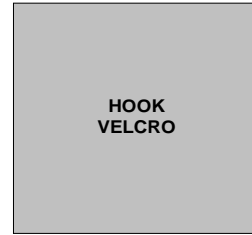
TOP
BACK OF 'VIDEO SETUP'



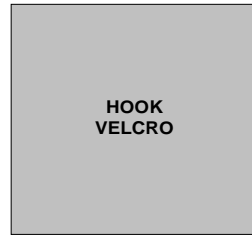
HOOK
VELCRO



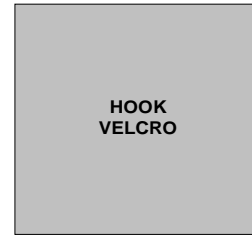
HOOK
VELCRO



HOOK
VELCRO



HOOK
VELCRO



HOOK
VELCRO



P/TV-10b/125/O/A















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FS CC 3-21

P/TV/125/FIN

TOP

D2Xs SETUP

HOOK
VELCRO

D2Xs PROGRAM In Cabin	D2Xs Aperture Priority	D2Xs Shutter Priority "Earth Obs, RNDZ and flyaround"
<p>Lens – as reqd Aperture – Min, locked Body Focus Mode – S √Batt installed √Flash Card installed Pwr – ON Top LCD √Batt √Frames remaining sufficient Exp Comp () – 0.0 Exp Mode – P Meter – Matrix () Diopter – Adjust Frame Rate – S √BKT disabled Rear LCD √ISO – 100 √QUAL – RAW √WB – 0,A AF Area Mode – [[]] √Focus Area – Center √Focus Selector Lock – L</p> <p>SB-800 Flash Settings √Diffuser Dome installed ON/OFF pb – ON √MODE –    √Exp Comp – 0.0 Tilt – 45° (Direct)</p>	<p>Lens – as reqd Aperture – Min, locked Body Focus Mode – S √Batt installed √Flash Card installed Pwr – ON Top LCD √Batt √Frames remaining sufficient Exp Comp () – 0.0 Exp Mode – A f/stop – as reqd Meter – Matrix () Diopter – Adjust Frame Rate – S √BKT disabled Rear LCD √ISO – 100 √QUAL – RAW √WB – 0,A AF Area Mode – [[]] √Focus Area – Center √Focus Selector Lock – L</p> <p>SB-800 Flash Settings √Diffuser Dome installed ON/OFF pb – ON √MODE –    √Exp Comp – 0.0 Tilt – 45° (Direct)</p>	<p>Lens – as reqd Aperture – Min, locked Body Focus Mode – S √Batt installed √Flash Card installed Pwr – ON Top LCD √Batt √Frames remaining sufficient Exp Comp () – 0.0 Exp Mode – S SS – 500 Meter – Matrix () Diopter – Adjust Frame Rate – S √BKT disabled Rear LCD √ISO – 100 √QUAL – RAW √WB – 0,A AF Area Mode – [[]] √Focus Area – Center √Focus Selector Lock – L</p> <p>SB-800 Flash Settings ON/OFF pb – OFF</p>

P/TV-11a/125/O/B
















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FS CC 3-22

P/TV/125/FIN

TOP
BACK OF 'D2Xs'

HOOK
VELCRO

D2Xs Manual	D2Xs EXPOSURE MATCH "HERO SHOT"	D2Xs CREW PHOTO
<p>Lens – as reqd Aperture – Min, locked Body Focus Mode – S √Batt installed √Flash Card installed Pwr – ON Top LCD √Batt √Frames remaining sufficient Exp Comp () – 0.0 Exp Mode – M SS – as reqd f/stop – as reqd Meter – Matrix () Diopter – Adjust Frame Rate – S √BKT disabled Rear LCD √ISO – 100 √QUAL – RAW √WB – 0,A AF Area Mode – [[]] √Focus Area – Center √Focus Selector Lock – L</p> <p>SB-800 Flash Settings √Diffuser Dome installed ON/OFF pb – ON</p> <p>√MODE –    √Exp Comp – 0.0 Tilt – 45° (Direct)</p>	<p>Lens – as reqd Aperture – Min, locked Body Focus Mode – S √Batt installed √Flash Card installed Pwr – ON Top LCD √Batt √Frames remaining sufficient Exp Comp () – 0.0 Exp Mode – P Meter – Matrix () Diopter – Adjust Frame Rate – S √BKT disabled Rear LCD √ISO – 100 √QUAL – RAW √WB – 0,A √Focus Area – Center √Focus Selector Lock – L AF Area Mode – [[]] √CSM – C2 to AEL only</p> <p>SB-800 Flash Settings √Diffuser Dome installed ON/OFF pb – ON</p> <p>√MODE –    √Exp Comp – 0.0 Tilt – 45° (Direct)</p> <p>Technique 1. Fill FOV w/sunlit subject 2. Activate D2Xs Camr 3. Auto Exp Lock – Depress,hold Expect values such as 250,f/11 4. Focus, Frame, Fire</p>	<p>Lens – as reqd Aperture – Min, locked Body Focus Mode – S √Batt installed √Flash Card installed Pwr – ON Top LCD √Batt √Frames remaining sufficient Exp Comp () – 0.0 Exp Mode – A f/stop – f/8 Meter – Matrix () Diopter – Adjust Frame Rate – Selftimer √BKT disabled Rear LCD √ISO – 100 √QUAL – RAW √WB – 0,A √Focus Area – Center √Focus Selector Lock – L AF Area Mode – [[]]</p> <p>SB-800 Flash Settings √Diffuser Dome installed ON/OFF pb – ON</p> <p>√MODE –    √Exp Comp – 0.0 Tilt – 45° (Direct)</p> <p>Accessory Equipment Shutter Release Cable – Install Multiuse Brkt – Install Multiuse Brkt Clamp – Install as reqd</p> <p>Technique 1. Focus on crewmember 2. Body Focus Mode – M 3. Frame, Fire</p>

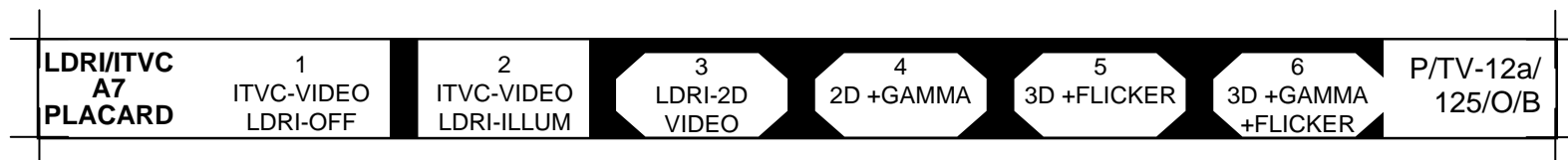
P/TV-11b/125/O/B

(reduced copy)

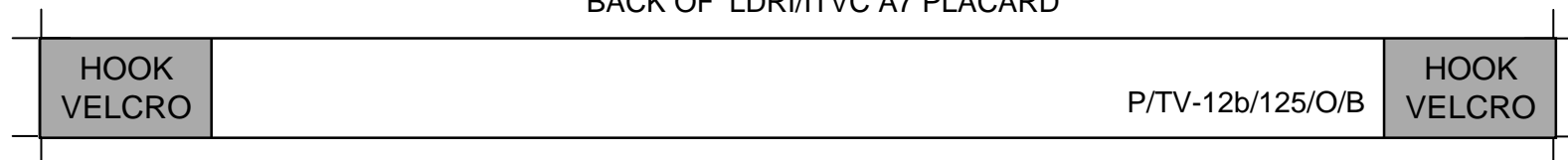
FS CC 3-23

P/TV/125/FIN

TOP



TOP
BACK OF 'LDRI/ITVC A7 PLACARD'



TOP

HOOK
VELCRO

DIGITAL PLAYBACK

DIGITAL VIA CC

NOTE

Digital Playback from CC only possible for CC Video recordings

ACTIVATION

- CC Setup per diagram (back of cue card)
Velcro IEEE 1394 Cable to CC Strap
- O19 √TV PWR – ON
- AVIU SYNC/VIDEO – VIDEO
HI-Z/75 – 75
PWR SELECT – LO
- CC PWR – VTR/PLAY

OPERATIONS

PLBK or DNK VIDEO

- CC Install tape, if reqd
VTR pb – REW(FF) to cue tape

If Dnk
L10 (MUX) MUX/VTR/CC PWR – on (LED on)
√MUX BYPASS – ACT
√CHANNEL 3 DATA LED – on

- CC PLAY pb – push (green ► displayed)
If PLBK(DNK) complete:
| STOP pb – push
If CC ops complete, go to DEACTIVATION

DEACTIVATION

- CC Remove, mark, stow tape as reqd
PWR – OFF
- O19 TV PWR – OFF, as reqd
Go to DEACTIVATION (Cue Card, TV), as reqd

DIGITAL VIA VTR

ACTIVATION

- L10 (MUX) Setup per diagram (back of cue card)
√VTR/CC PWR – on (LED on)
(VTR) √ON/STANDBY LED – green

OPERATIONS

PLBK or DNK VIDEO

- L10 (VTR) Install tape if reqd
√DISPLAY SELECT – DATA

- Remote If Index Search reqd:
√ID – VTR4
SEARCH MODE pb – push (INDEX
SEARCH mode displayed)
| ◀▶ (▶▶) |) pb – push to move highlight
bar to desired GMT start
When VTR auto-cue complete, green •
displayed:
PAUSE pb – push
If playback time not displayed on DSR-25 LCD
cycle "DATA CODE" repeatedly until time
displayed

- L10 (VTR) REW(FF),PLAY,PAUSE pb – push as reqd to
cue tape

If Dnk
L10 (MUX) MUX/VTR/CC PWR – on (LED on)
√MUX BYPASS – ACT
√CHANNEL 3 DATA LED – on

- L10 (VTR) PLAY pb – push (green • displayed)
If PLBK(DNK) complete:
| STOP pb – push
If VTR ops complete, go to DEACTIVATION

DEACTIVATION

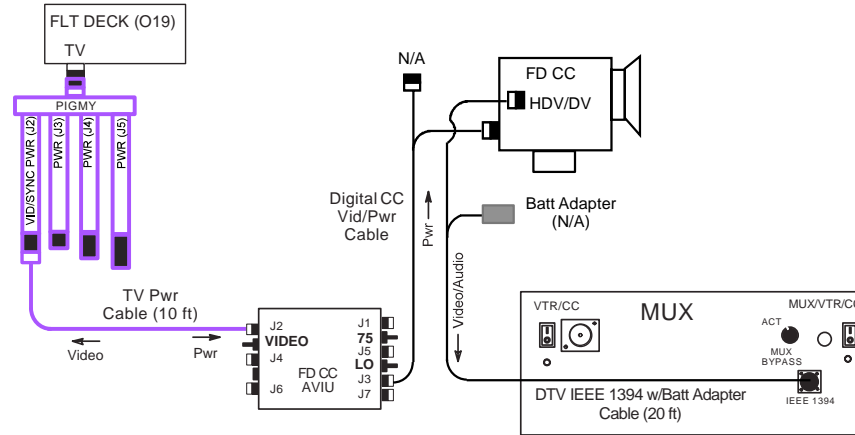
- L10 (VTR) Remove, mark, stow tape as reqd
Go to DEACTIVATION (Cue Card, TV) as reqd

P/TV-13a/125/O/A

TOP
BACK OF 'DIGITAL PLAYBACK'

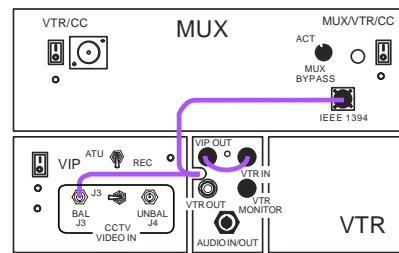
HOOK
VELCRO

DIGITAL VIA CC PLAYBACK



jsc48038_125_012c.cvx

DIGITAL VIA VTR PLAYBACK



jsc48038_125_012d.cvx

P/TV-13b/125/O/A

TOP

FSS CAMR PLACARD	PEAK	ALC NORM	AVG	BLK STR	GAMMA NORM	WHITE STR	P/TV-14a/ 125/O/A
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TOP
BACK OF 'FSS CAMR PLACARD'

HOOK VELCRO	P/TV-14b/125/O/A					HOOK VELCRO
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NOTE

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PHOTO/TV CHECKLIST

STS
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