

Photo/TV Checklist

STS-126 Flight Supplement

**Mission Operations Directorate
Operations Division**

**Final, Rev A
October 20, 2008**

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas



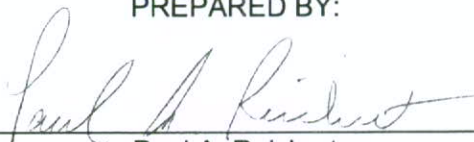
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MISSION OPERATIONS DIRECTORATE

**PHOTO/TV CHECKLIST
STS-126 FLIGHT SUPPLEMENT**

FINAL, REVISION A
October 20, 2008

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PHOTO/TV CHECKLIST
STS-126 FLIGHT SUPPLEMENT

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REV A 10/20/08

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10-3	† generic	13-1	† generic
10-4	† generic	13-2	† generic
10-5	† generic	13-3	† generic
10-6	†⊗ generic	13-4	†⊗ generic
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PHOTO/TV CUE CARDS

	<u>Title</u>	<u>Ref. Page</u>	<u>Card No.</u>
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ANALOG PLAYBACK			
	(Front).....	FS CC 3-5	P/TV-2a/126/O/B
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ET PHOTO			
	(Front).....	FS CC 3-7	P/TV-3a/126/O/B
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	(Front).....	FS CC 3-10	P/TV-5a/126/O/A
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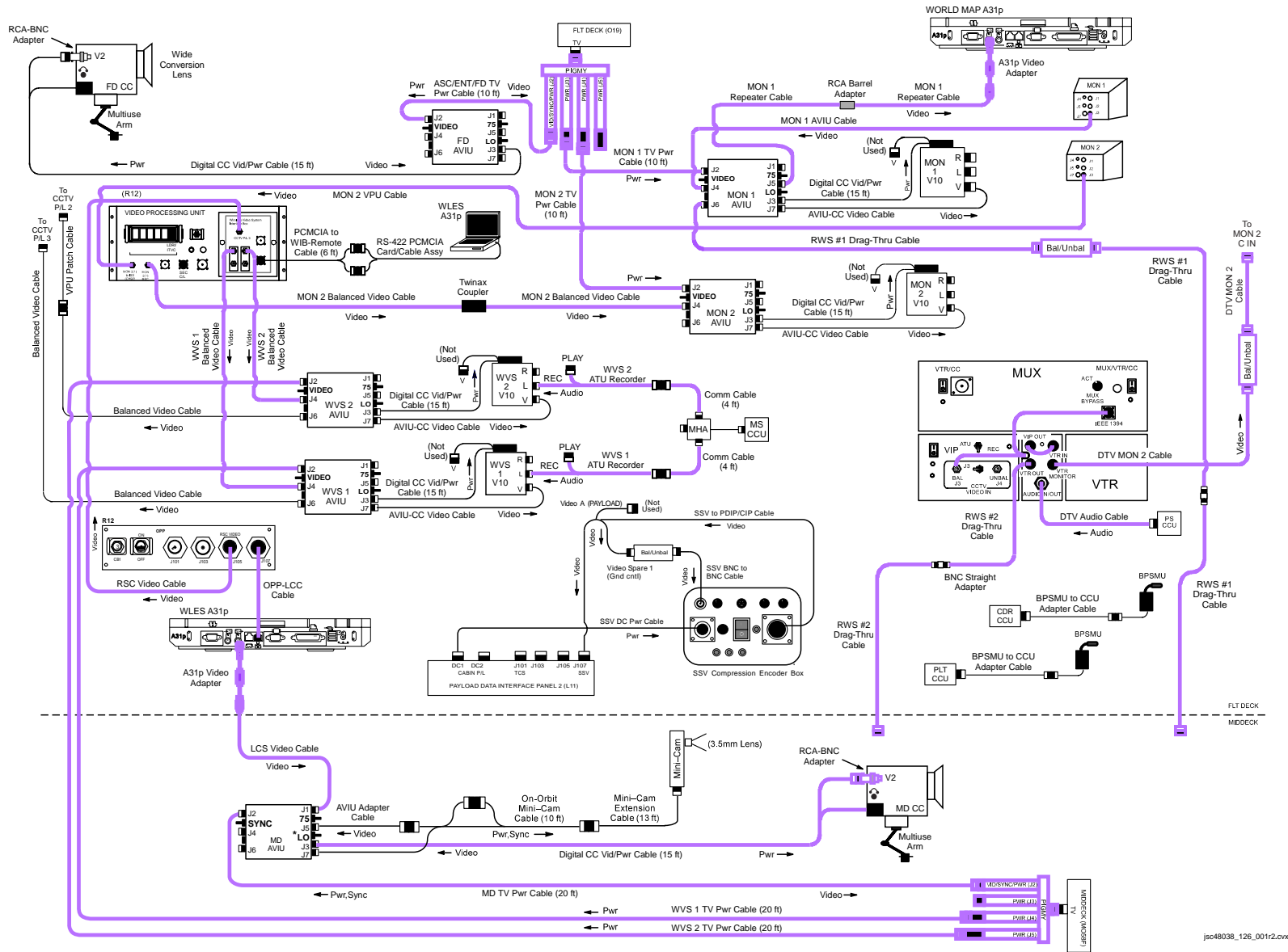
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P/TV01 VIDEO SETUP

P/TV01 VIDEO SETUP

H/W SUMMARY



jsc48038_126_001r2.cov

P/TV01 VIDEO SETUP (Continued)

SETUP

NOTE

Steps 1-7 minimum reqmt for OBSS RCC Inspection (focused and post undocked)

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:
ASC/ENT/FD TV Pwr Cable from J2
AVIU Adapter Cable from J5
ASC/ENT FD V10 Cable from J1

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

L10 (MUX) Config Panels
√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)

MON 2 Config Video
L9 SOURCE – C
Config PS ATU per Comm Plan

P/TV01 VIDEO SETUP (Continued)

SETUP (Continued)

3. Perform MON 1,2 V10 Setup

MA9F 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

RWS #1 Drag-Thru Cable to MON 1 AVIU J6

MON 1 AVIU Cable to MON 1 AVIU J4

MON 2 Balanced Video Cable to MON 2 AVIU J4

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

MON 1 Repeater Cable string to MON 1 AVIU J5 and A31p Vid In port

Multiuse Brkt to wall

AVIU (MON 1,2) √SYNC/VIDEO – VIDEO

√HI-Z/75 – 75

√PWR SELECT – LO

R12 (VPU) VPU PWR – ON (LED on) |

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

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

If MD Camcorder setup not performed, unstow MD AVIU from Stow-n-Go Bag

Middeck AVIU (MD) Flt 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 A31p Video Out port via PGSC Usage Chart
Connect OPP-LCC Cable to A31p RJ45 Ethernet port via PGSC Usage Chart

P/TV01 VIDEO SETUP (Continued)

SETUP (Continued)

7. Perform SSV Setup

MA16N

Unstow:

SSV Compression Encoder Box
SSV BNC-BNC Cable
SSV to PDIP/CIP Cable
SSV DC 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 2)
L11 (PDIP 2)

√PDIP 2 PWR 1 (CB3) – cl
DC PWR 1 – ON

SSV

Config SSV settings

IN SEL – NTSC

Mode – 3

OUTRATE – 3

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
 - MA9F
 - 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 bottom PCMCIA slot on 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
- R10 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 in bottom PCMCIA slot

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
16	1010	1	EV1
18	1007	1	EV2

If Camr IDs not correct:

Sel 'Delete Entry' until all deleted

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

When complete, sel 'OK'

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'

A7

WIRELESS VID PWR – OFF

HTR – OFF

MA16N

9. Unstow, set up BPSMU w/BPSMU to CCU Adapter Cables at CDR, PLT CCUs Connect BPSMU Batt

I

10. Perform Mini-Cam Setup H/W SUMMARY, FS 1-4

AVIU (MD)

√LCS Video Cable not in use for inspection activities

Remove LCS Video Cable from J1

SYNC/VIDEO – SYNC

√HI-Z/75 – 75

PWR SELECT – HI

Mini-Cam

Lens – 3.5mm

Aperture – Adjust per MON view

Stow Glareshield Bracket in DTV Bag

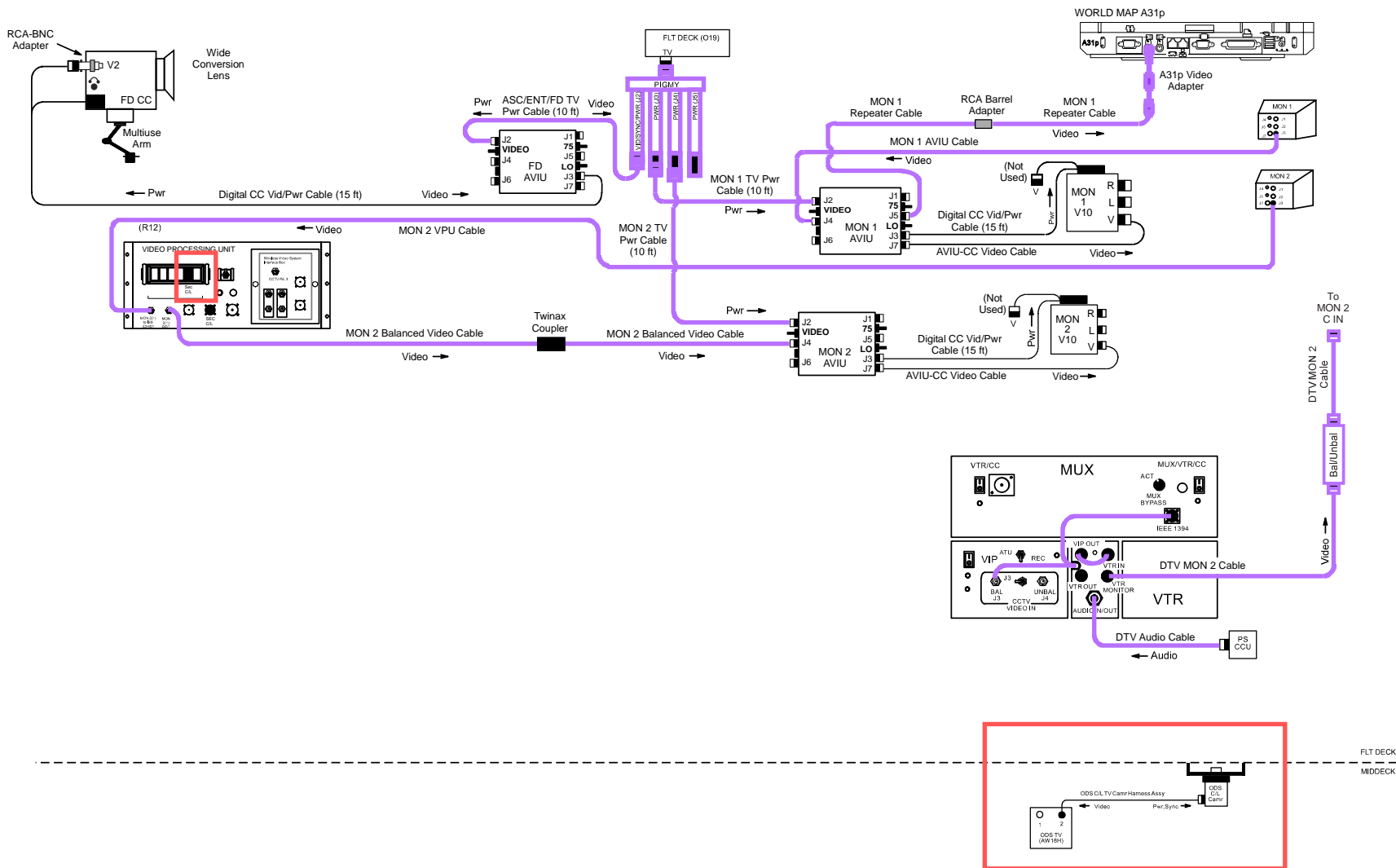
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P/TV02 DOCK

P/TV02 DOCK

H/W SUMMARY



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P/TV02 DOCK (Continued)

SCENE SYNOPSIS

Scene contains procedures for obtaining video, still photos of ISS rndz, docking

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 – 0 F

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 – ON

√Diffuser Dome installed

√MODE –  TTL  BL



√Exp Comp – 0 EV

Tilt – 45° (Direct)

P/TV02 DOCK (Continued)

SETUP (Continued)

3. Perform D2Xs MANUAL 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 – M
 - SS – 500
 - f/stop – 8
- Meter – Matrix ()
- Diopter – Adjust
- Frame Rate – S
- √BKT disabled – 0 F
- 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 DOCK (Continued)

SETUP (Concluded)

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

O19,MO58F	√TV PWR – ON
R12 (VPU)	√VPU PWR – ON (LED on) √Green Jumper – SEC C/L √SEC C/L Cap installed
V10 (MON 1,2)	PWR – ON √Tape installed DISPLAY pb – Toggle to display tape counter
CC	√Wide Conversion lens installed √ND FILTER – OFF √OUTPUT – CAM √ <input type="checkbox"/> .. <input type="checkbox"/> - <input type="checkbox"/> √STANDBY/LOCK – STANDBY PWR dial – “green” <input type="checkbox"/> √Tape installed √Viewfinder (LCD) displays “green” • Install Audio Muting Plug (optional) Install Multiuse Brkt
MON 2 L10 (MUX)	SOURCE – C 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
A31p	Double click ‘Shuttle Apps’ > ‘Video Converter’ √‘NASA Video Overlay’ window displayed Sel ‘Full Screen’ Press ‘ESC’ or ‘W’ key to minimize display as reqd

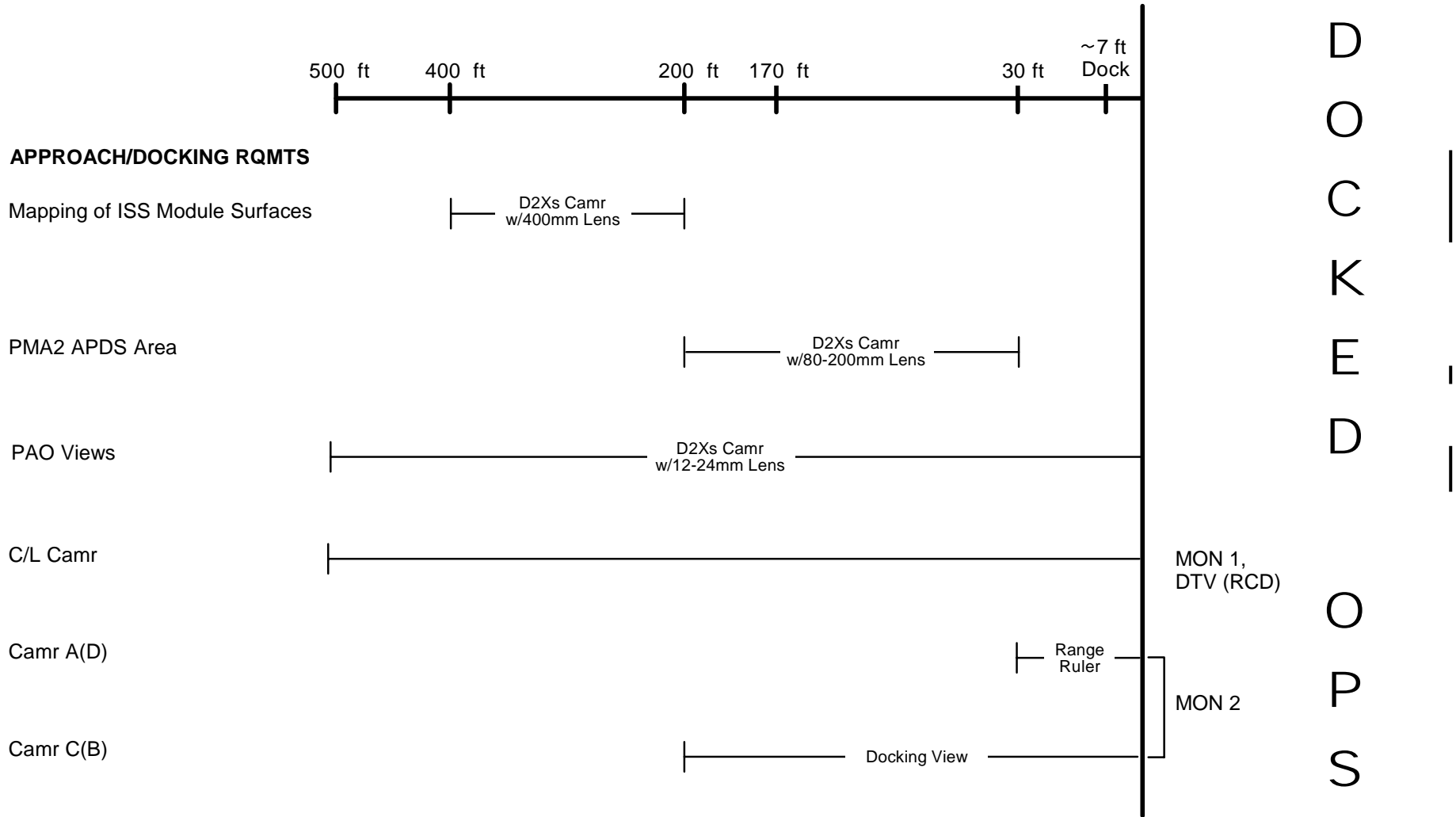
P/TV02 DOCK (Continued)

OPS

√	Item # Track #	Rqmts	Still Imagery	Video			Notes
				PLB	CC	Drnk	
	1. ULF2-4	PAO Coverage	<u>D2Xs</u> 12-24mm If exterior: Flash ON/OFF – OFF	As desired	<u>G1</u> Tape installed	LIVE (If avail)	Plan for end of day crew choice video,DCS
	2. ULF2-1	Rendezvous <ul style="list-style-type: none"> • Overall • Closeup • Damage • Deterioration 	<u>D2Xs</u> 400mm(80-200mm) Flash ON/OFF – OFF	<u>A(B,C,D), ELB</u>	<u>G1</u> As desired		Map ISS surfaces w/30% overlap
	3. ULF2-1	Approach,Dock <ul style="list-style-type: none"> • PMA2 Docking Target • PMA2 Mating Surfaces • PMA2 TCS Planar and Hemispherical Retro Reflectors 	<u>D2Xs (Shutter)</u> 400mm(80-200mm) Flash ON/OFF – OFF	<u>C/L</u> Per RNDZ <u>A(D)</u> Per RNDZ <u>C(B)</u> Docking view	<u>G1</u> As desired		Rcd C/L Camr video thru hard dock on DTV Continually √focus sharpness

P/TV02 DOCK (Continued)

OPS (Continued)



jsc48037_126_003r1.cvx

P/TV02 DOCK (Concluded)

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

2. TV System
 - R12 (VPU) √Green Jumper – SEC C/L
 - √SEC C/L Cap installed
 - √VPU PWR – ON (LED on)
 - A7 VID OUT MON 1 pb – push
 - IN PL2(VPU) pb – push
 - CAMR CMD IRIS – CL
 - L12 (SSP 2) C/L CAM PWR – OFF

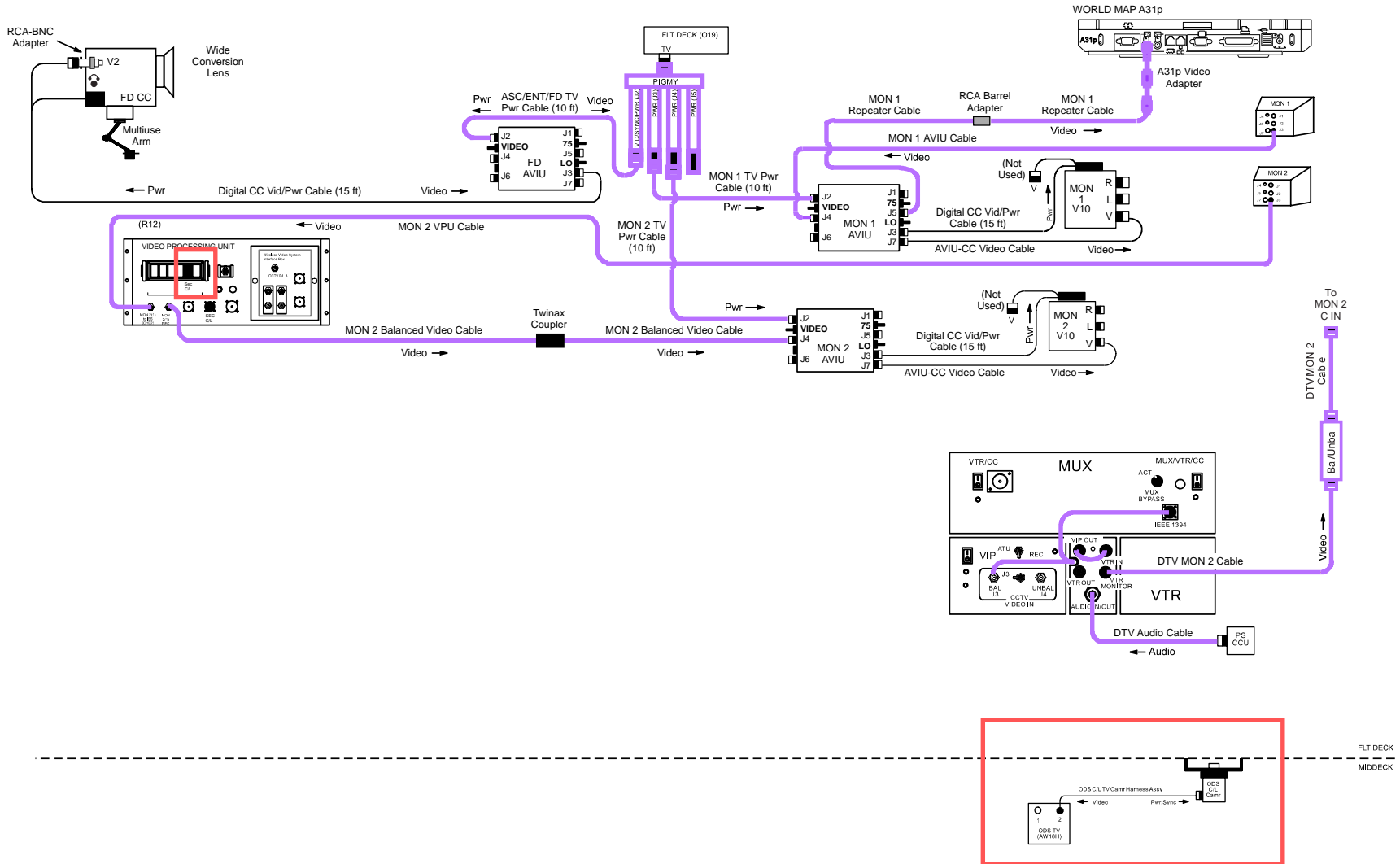
 - ODS Remove, stow C/L camr, Harness Assy, Bridge
 - Go to DEACTIVATION (Cue Card, TV) as reqd

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P/TV03 UNDOCK

P/TV03 UNDOCK

H/W SUMMARY



jsc48038_126_002r2.cvx

P/TV03 UNDOCK (Continued)

SCENE SYNOPSIS

Scene contains procedures for obtaining video, still photos of ISS undocking, flyaround

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 – 0 F

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 – ON

√Diffuser Dome installed

√MODE –  TTL BL



√Exp Comp – 0 EV

Tilt – 45° (Direct)

P/TV03 UNDOCK (Continued)

SETUP (Continued)

3. Perform D2Xs MANUAL 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 – M
 - SS – 500
 - f/stop – 8
- Meter – Matrix ()
- Diopter – Adjust
- Frame Rate – S
- √BKT disabled – 0 F
- 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 UNDOCK (Continued)

SETUP (Concluded)

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

O19	√TV PWR – ON
R12 (VPU)	√VPU PWR – ON (LED on) √Green Jumper – SEC C/L √SEC C/L Cap installed
V10 (MON 1,2)	PWR – ON √Tape installed DISPLAY pb – Toggle to display tape counter
CC	√Wide Conversion lens installed √ND FILTER – OFF √OUTPUT – CAM √ <input type="checkbox"/> .. <input type="checkbox"/> - <input type="checkbox"/> √STANDBY/LOCK – STANDBY PWR dial – “green” <input type="checkbox"/> √Tape installed √Viewfinder (LCD) displays “green” • Install Audio Muting Plug (optional) Install Multiuse Brkt
MON 2 L10 (MUX) (VIP) (VTR)	SOURCE – C VTR/CC PWR – on (LED on) If dnk, MUX/VTR/CC PWR – on (LED on) PWR – on (LED on) ON/STANDBY LED – green √Tape installed
A31p	Double click ‘Shuttle Apps’ > ‘Video Converter’ √‘NASA Video Overlay’ window displayed Sel ‘Full Screen’ Press ‘ESC’ or ‘W’ key to minimize display as reqd

P/TV03 UNDOCK (Continued)

OPS

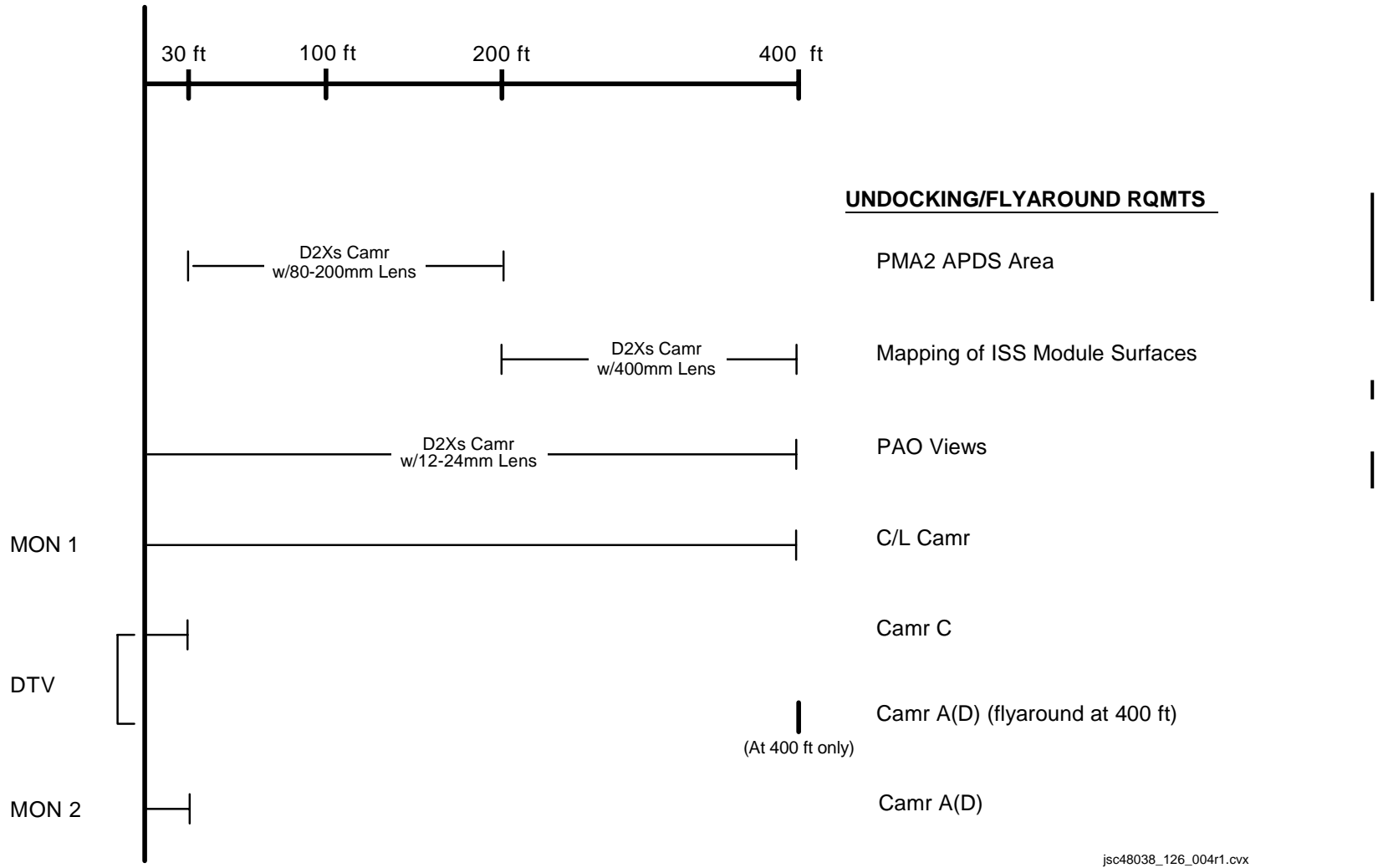
√	Item # Track #	Rqmts	Still Imagery	Video			Notes
				PLB	CC	Dnlk	
	1. ULF2-4	PAO Coverage	<u>D2Xs</u> 12-24mm If exterior: Flash ON/OFF – OFF	As desired	<u>G1</u> Tape installed	LIVE (If avail)	Plan for end of day crew choice video,DCS
	2. ULF2-3 ULF2-17	Undock and Flyaround <ul style="list-style-type: none"> • Docking Tgt/Mating Surfaces • TCS Planar, Hemispherical Retro Reflectors • Surfaces • Solar Panels • Handrails • SM Thrusters on Zenith, near aft end • Trusses including rads/baseplates and SAWs (in/outboard SABB insulation degradation) 	<u>D2Xs</u> 80-200mm(400mm) Flash ON/OFF – OFF	<u>A(D)</u> Per RNDZ <u>C/L</u> Docking tgt and PAO view		LIVE (If avail)	Map ISS surfaces w/30% overlap

P/TV03 UNDOCK (Continued)

OPS (Continued)

D
O
C
K
E
D

O
P
S



jsc48038_126_004r1.cvx

P/TV03 UNDOCK (Concluded)

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

2. TV System
 - R12 (VPU) √Green Jumper – SEC C/L
 - √SEC C/L Cap installed
 - √VPU PWR – ON (LED ON)
 - A7U VID OUT MON 1 pb – push
 - IN PL2(VPU) pb – push
 - CAMR CMD IRIS – CL
 - L12 (SSP 2) C/L CAM PWR – OFF

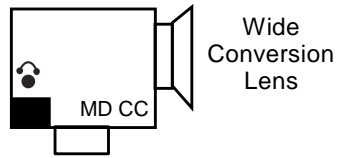
 - ODS Remove, stow C/L Camr, Harness Assy
 - Go to DEACTIVATION (Cue Card, TV) as reqd

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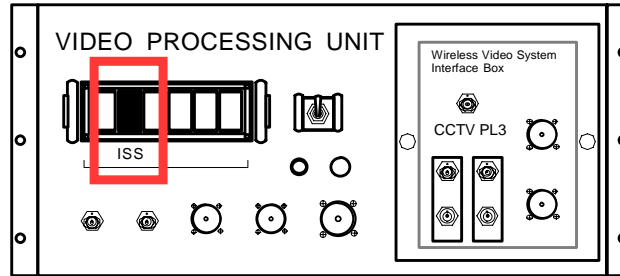
P/TV04 INGRESS/EGRESS

H/W SUMMARY

INGRESS TV CONFIG



(R12)



jsc48038_126_005r1.cvx

P/TV04 INGRESS/EGRESS (Continued)

SCENE SYNOPSIS

Scene contains procedures for documenting ISS ingress/egress w/video and still photos



SETUP


1. Config ISS Video
 - R12 (VPU) Perform ACTIVATION (Cue Card, TV) for DNLK OPS of ISS signal as reqd
 - Green Jumper – ISS
 - √VPU PWR – ON
 - A7 VID OUT DNLK pb – push
 - IN PL2(VPU) pb – push
2. Perform Ingress Camcorder Setup
 - CC Install Wide Conversion lens
 - √ND FILTER – OFF
 - √OUTPUT – CAM
 - √ -
 - √STANDBY/LOCK – STANDBY
 - PWR dial – “green”
 - √Tape installed
 - √Viewfinder (LCD) displays “green” •||
 - Install Audio Muting Plug (optional)
 - Install Multiuse Brkt
3. Perform D2Xs PROGRAM w/FLASH
 - Lens – 12-24mm
 - √Aperture – Min, locked
 - Body Focus Mode – S
 - √Batt installed
 - √Flash Card installed
 - Pwr – ON
 - Top LCD
 - √Batt
 - √Frames remaining sufficient

P/TV04 INGRESS/EGRESS (Continued)

SETUP (Concluded)

3. Perform D2Xs PROGRAM w/FLASH (Concluded)

- Exp Comp () – 0.0
- Exp Mode – P
- Meter – Matrix ()
- Diopter – Adjust
- Frame Rate – S
- √BKT disabled – 0 F
- 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 – ON
- √Diffuser Dome installed
- √MODE –  TTL BL
- √Exp Comp – 0 EV
- Tilt – 45° (Direct)

OPS

√	Item # Track #	Rqmts	Still Imagery	Video			Notes
				PLB	CC	Dnlk	
	1. ULF2-4	Hatch Opening, Ingress Hatch Close, Egress	D2Xs 12-24mm		G1	LIVE (if avail)	

I

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

P/TV04 INGRESS/EGRESS (Concluded)

DEACTIVATION

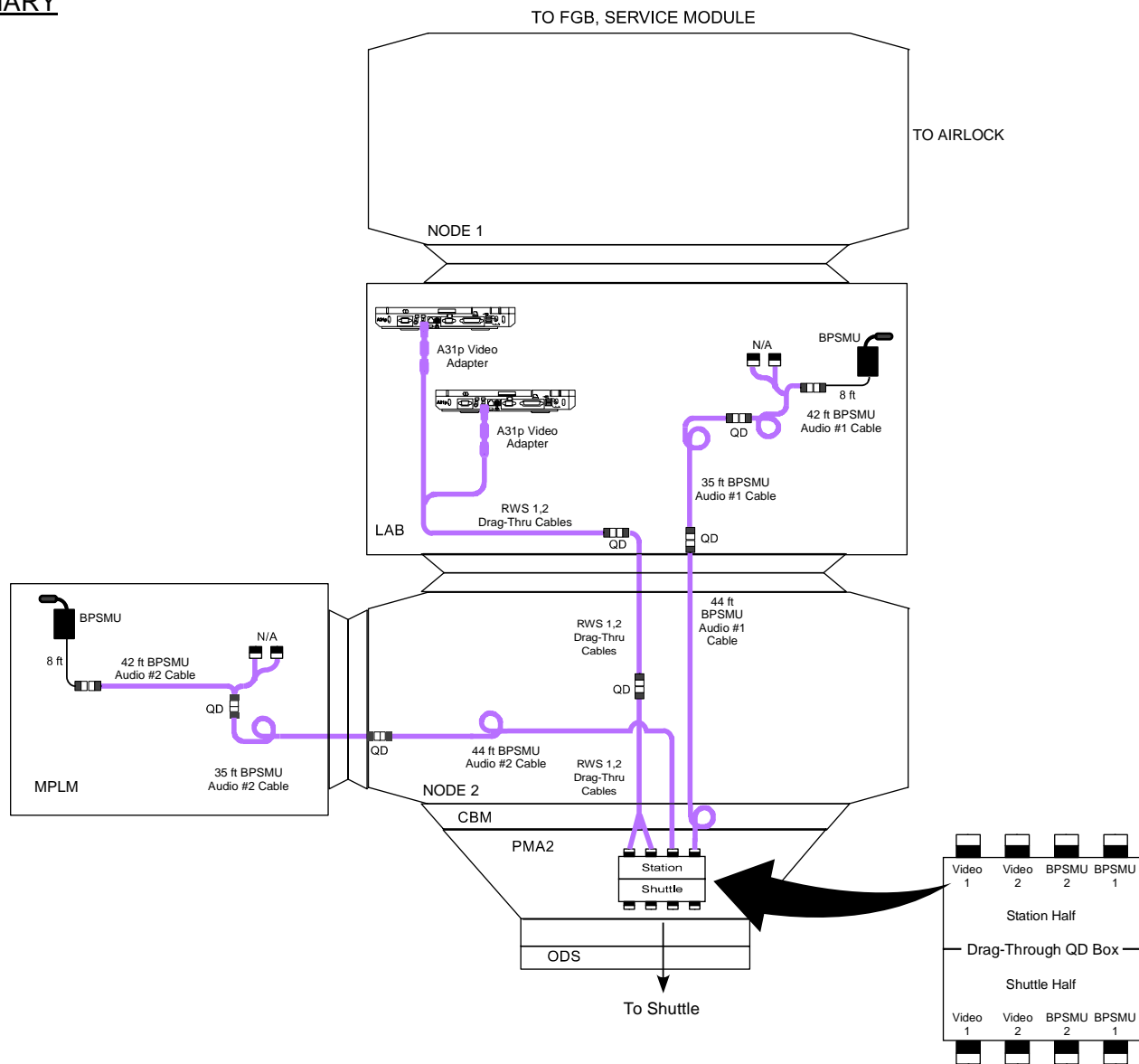
1. D2Xs
Pwr – OFF
2. TV System
Go to DEACTIVATION (Cue Card, TV) as reqd

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P/TV05 ISS INTERNAL OPS

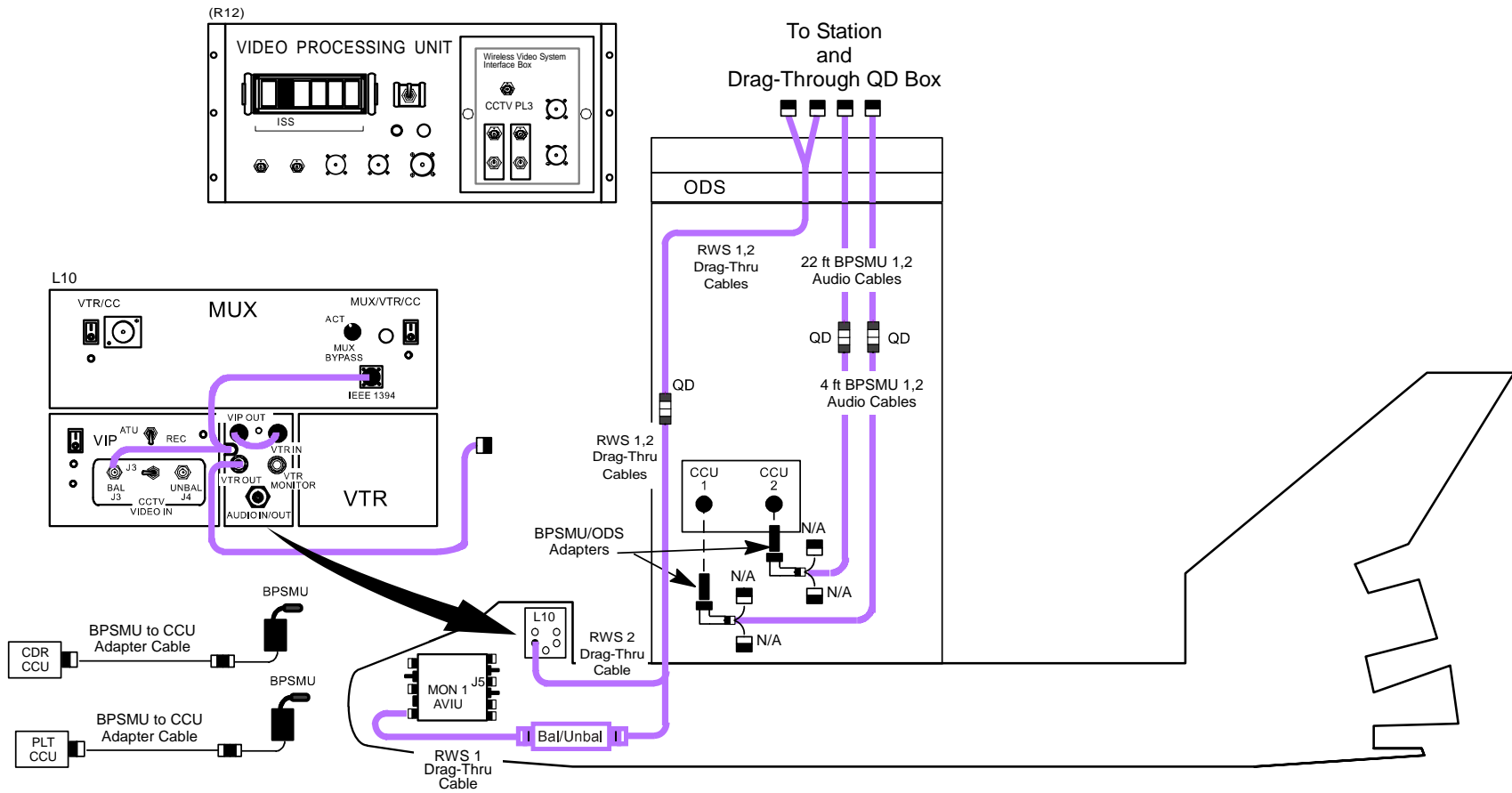
H/W SUMMARY



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P/TV05 ISS INTERNAL OPS (Continued)

H/W SUMMARY (Concluded)



jsc48038_126_006br1.cvx

P/TV05 ISS INTERNAL OPS (Continued)

SCENE SYNOPSIS

Scene contains procedures for setup, documenting ISS internal ops (surveys, PAO events, logistics, transfers, closeouts) w/video,still photos

SETUP

WARNING

Locate QDs at hatches for ease in locating,disconnecting during hatch closure.
Route,restrain cables to prevent loose cable lengths which could entrap crew

BPSMU AND RWS CABLES

1. Config H/W per H/W SUMMARY, FS 1-36 and FS 1-37

Config RWS Vid Cables:

MON 1,2
(Stow-n-Go)
L10:A1

√RWS 1 Drag-Thru Cable connected to MON 1 AVIU J6

√RWS 2 Drag-Thru Cable connected to DTV VTR OUT connector

Config BPSMU and RWS Cables:

ODS/PMA2

Connect orbiter RWS 1,2 Cables to Drag-Through QD Box

Connect BPSMU Cables to orbiter A/L CCU 1,2 and Drag-Through QD Box

Config A/L ATU per Comm Plan

If V10:

ISS
V10 (RWS 1,2)

√Pwr configured per P/TV121 DOCKED OPERATIONS, dwg USOS 120VDC –V10 VTRs (SODF: ISS PTV: SCENES)
PWR– ON

~

P/TV05 ISS INTERNAL OPS (Continued)

SETUP (Continued)

BPSMU AND RWS CABLES (Concluded)

- ~
|
If A31p:
- A31p If A31p w/'NASA Video Monitor' under Station Apps:
 √Drag-Thru Cable connected to A31p Video Adapter
 √PWR – ON
 Sel 'Station Apps : NASA Video Monitor'
 √'NASA Video Monitor 1.0.0.0' window displayed
 Sel 'Settings'
 √'Configuration' window displayed
 Video Input Standard: – NTSC
 √Video Input – 'Composite (RCA)'
 Video Control – press 'Set to defaults' pb
 Commit Changes – 'OK'
 Sel 'Full Screen'
 Press 'ESC' to minimize display as reqd
- A31p If A31p w/'COSS Apps: Video Converter' under Station Apps:
 √Drag-Thru Cable connected to A31p Video Adapter
 √PWR – ON
 Sel 'Station Apps: COSS Apps: Video Converter'
 √'Video Converter' window displayed
 Sel 'Set Properties'
 √'Video Settings' window displayed
 Format: – NTSC
 Close 'Video Settings' window
 Sel 'Full Screen'
 Press 'ESC' or 'W' to minimize display as reqd

PAO EVENT




1. Config VPU
R12 (VPU) √Green Jumper – ISS
 √VPU PWR – ON (LED on)
2. Config Shuttle Video
A7 VID OUT DNLK pb – push
 IN PL2(VPU) pb – push

P/TV05 ISS INTERNAL OPS (Continued)

SETUP (Concluded)

STILL CAMR

1. Perform D2Xs PROGRAM w/FLASH

- 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 – 0 F
- 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 EV
 - Tilt – 45° (Direct)

P/TV05 ISS INTERNAL OPS (Concluded)

OPS

√	Item # Track #	Rqmts	Still Imagery	Video			Notes
				PLB	CC	Dnlk	
	1.	General ISS IVA Activity <ul style="list-style-type: none"> • PAO Scenes of Interest • Crew Photo 	<u>D2Xs</u> 12-24mm For Crew Photo: Perform D2Xs CREW PHOTO (Cue Card, <u>D2Xs</u> <u>SETUP</u>)		<u>ISS G1</u>	LIVE (if avail)	Plan for end of day crew choice video

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

DEACTIVATION

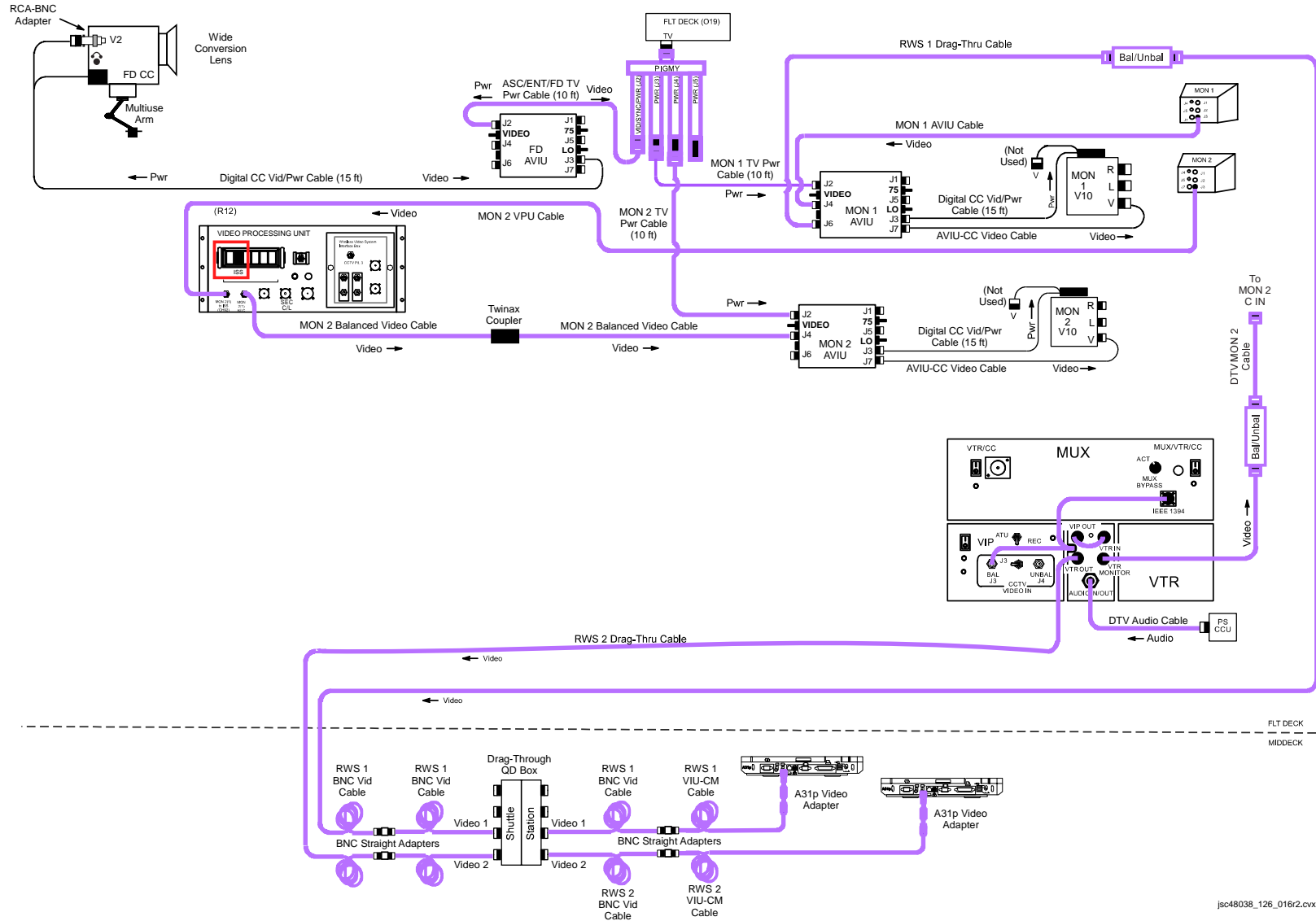
1. D2Xs
Pwr – OFF
2. Drag-Through QD Box
Disconnect:
RWS Cables (two) from orbiter side Video 1,2 ports. Stow cables on orbiter
BPSMU Cables from orbiter side BPSMU 1,2 ports and ODS CCU,TV ports; stow cables on orbiter
Transfer Drag-Through QD Box and remaining attached cables to ISS
3. TV System
Go to DEACTIVATION (Cue Card, TV) as reqd

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P/TV06 ROBOTICS OPERATIONS

H/W SUMMARY



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P/TV06 ROBOTICS OPERATIONS (Continued)

SCENE SYNOPSIS

Scene contains procedures for obtaining video of SSRMS activities

SETUP

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

O19	√TV PWR – ON
R12 (VPU)	√VPU PWR – ON (LED on) Green Jumper – ISS √Drag-Thru Cables configured as reqd
V10 (MON 1,2)	PWR – ON √Tape installed DISPLAY pb – Toggle to display tape counter
CC	√Wide Conversion lens installed √ND FILTER – OFF √OUTPUT – CAM √ <input type="checkbox"/> .. <input type="checkbox"/> - <input type="checkbox"/> √STANDBY/LOCK – STANDBY PWR dial – “green” <input type="checkbox"/> √Tape installed √Viewfinder (LCD) displays “green” • Install Audio Muting Plug (optional) Install Multiuse Brkt
MON 2 L10 (MUX)	SOURCE – C 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/TV06 ROBOTICS OPERATIONS (Continued)

SETUP (Concluded)

- R12 (VPU) 3. If MPLM Reberth:
 √VPU PWR – ON
 Green Jumper – KEEL 1
 (SSP 2) √cb CB2 – cl
 √MPLM KEEL CAM HTR/ILLUM PWR – ON
 PWR – ON

OPS

√	Item # Track #	Rqmts	Still Imagery	Video			Notes
			DCS	PLB	CC	Dnlk	
	1. ULF2-4	PAO Coverage	D2Xs 12-24mm If exterior: Flash ON/OFF – OFF	As desired	G1 Tape installed	LIVE (If avail)	Plan for end of day crew choice video,DCS
	2. ULF2- 12	MPLM XFER TO ISS <ul style="list-style-type: none"> • SSRMS Grapple,Release • ROEU Disconnect • PRLA,Keel Latch Release • Unberth,Hover • Positioning Mnvr for CBM Seal Inspection • Premate Mnvr • Matings • Capture • Securing MPLM to NODE 2 • SSRMS Release • Still Photo of RWS Monitor w/CBCS Overlay and CBCS Camr View of MPLM Target 	D2Xs 28-70mm EXP Mode – S SS: 1/30 sec Flash ON/OFF – ON	Per SODF: ROBO FS			Rcd video

P/TV06 ROBOTICS OPERATIONS (Concluded)

OPS (Concluded)

√	Item # Track #	Rqmts	Still Imagery	Video			Notes
			DCS	PLB	CC	Drnk	
	3. ULF2- 13	MPLM XFER to PLB <ul style="list-style-type: none"> • Removal • Berthing • PRLA Latching • ROEU Connect 		Per SODF: ROBO FS			Rcd video

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

DEACTIVATION

- L12 (SSP2) 1. TV System
 MPLM KEEL CAM PWR – OFF
 √HTR/ILLUM PWR – ON

Go to DEACTIVATION (Cue Card, TV) as reqd

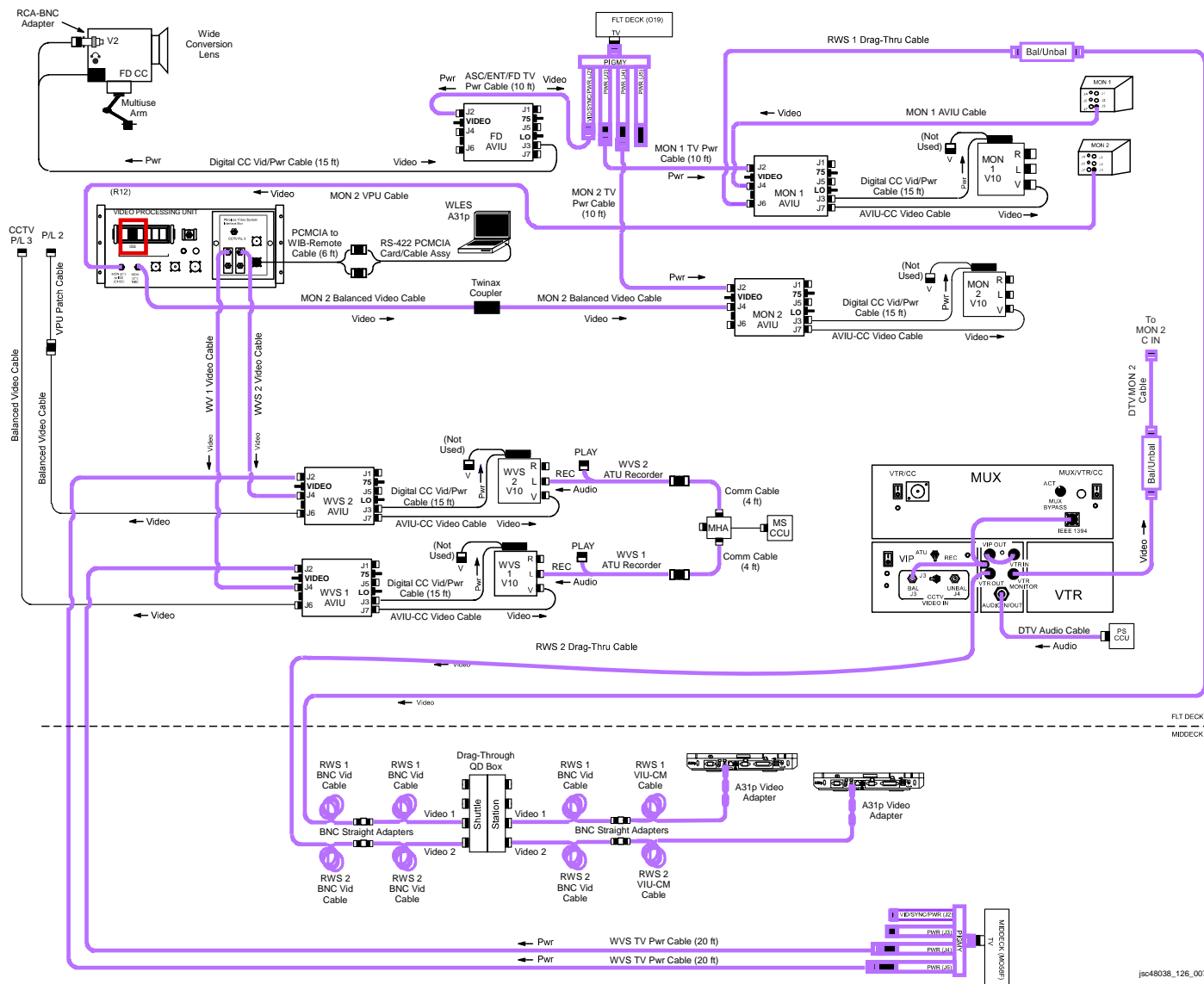
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P/TV07 EVA

P/TV07 EVA

H/W SUMMARY



P/TV07 EVA (Continued)

SCENE SYNOPSIS

Scene contains procedures for documenting ISS 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

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 – 0 F

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 EV

Tilt – 45° (Direct)

P/TV07 EVA (Continued)

SETUP (Continued)

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

O19	√TV PWR – ON
R12 (VPU)	√VPU PWR – ON (LED on) √Green Jumper – ISS
V10 (MON 1,2, WVS 1,2)	PWR – ON √Tape installed DISPLAY pb – Toggle to display tape counter
CC	Install Wide Conversion lens √ND FILTER – OFF √OUTPUT – CAM √ <input type="checkbox"/> .. <input type="checkbox"/> - <input type="checkbox"/> √STANDBY/LOCK – STANDBY PWR dial – “green” <input type="checkbox"/> √Tape installed √Viewfinder (LCD) displays “green” • Install Audio Muting Plug (optional) Install Multiuse Brkt
MON 2 L10 (MUX) (VIP) (VTR)	SOURCE – C VTR/CC PWR – on (LED on) If dnlk, MUX/VTR/CC PWR – on (LED on) PWR – on (LED on) ON/STANDBY LED – green √Tape installed

P/TV07 EVA (Continued)

SETUP (Concluded)

4. Config WVS and PGSC

a. Activate WVS System

A7 √WIRELESS VID HTR – ON
 PWR – ON

b. 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

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/TV07 EVA (Concluded)

OPS

√	Item # Track #	Rqmts	Still Imagery	Video			Notes
				PLB	CC	Dnlk	
	1. ULF2-4	PAO Coverage	IVA D2Xs 12-24mm If exterior: Flash ON/OFF – OFF	As desired <u>WVS</u>	G1 As desired	LIVE (if avail)	Plan for end of day crew choice video, DCS stills

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

DEACTIVATION

1. IVA D2Xs
 Pwr – OFF
 √Flash ON/OFF – ON
 Download images

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

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**P/TV08
EXT SURVEY**



P/TV08 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

Remove aft window shields
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 – 0 F
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/TV08 EXTERNAL SURVEY (Continued)



SETUP (Continued)

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

┌

If Earthshine OMS Pod, config D2Xs Program 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 – P
- Meter – Matrix ()
- Diopter – Adjust
- Frame Rate – S
- √BKT disabled – 0 F
- 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/TV08 EXTERNAL SURVEY (Continued)

SETUP (Continued)

2. D2Xs Camr Config for ISS Still Survey (D2Xs Shutter Priority Mode)

Lens – 50mm(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 – S

SS – 500

Meter – Matrix ()

Diopter – Adjust

Frame Rate – S

√BKT disabled – 0 F

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/TV08 EXTERNAL SURVEY (Continued)

SETUP (Concluded)

3. 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 – Matrix ()
- Diopter – Adjust
- Frame Rate – S
- √BKT disabled – 0 F
- Rear LCD
 - √ISO – 100
 - √QUAL – RAW
 - √WB – 0,A
- AF Area Mode – [[]]
- √Focus Area – Center
- √Focus Selector Lock – L

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

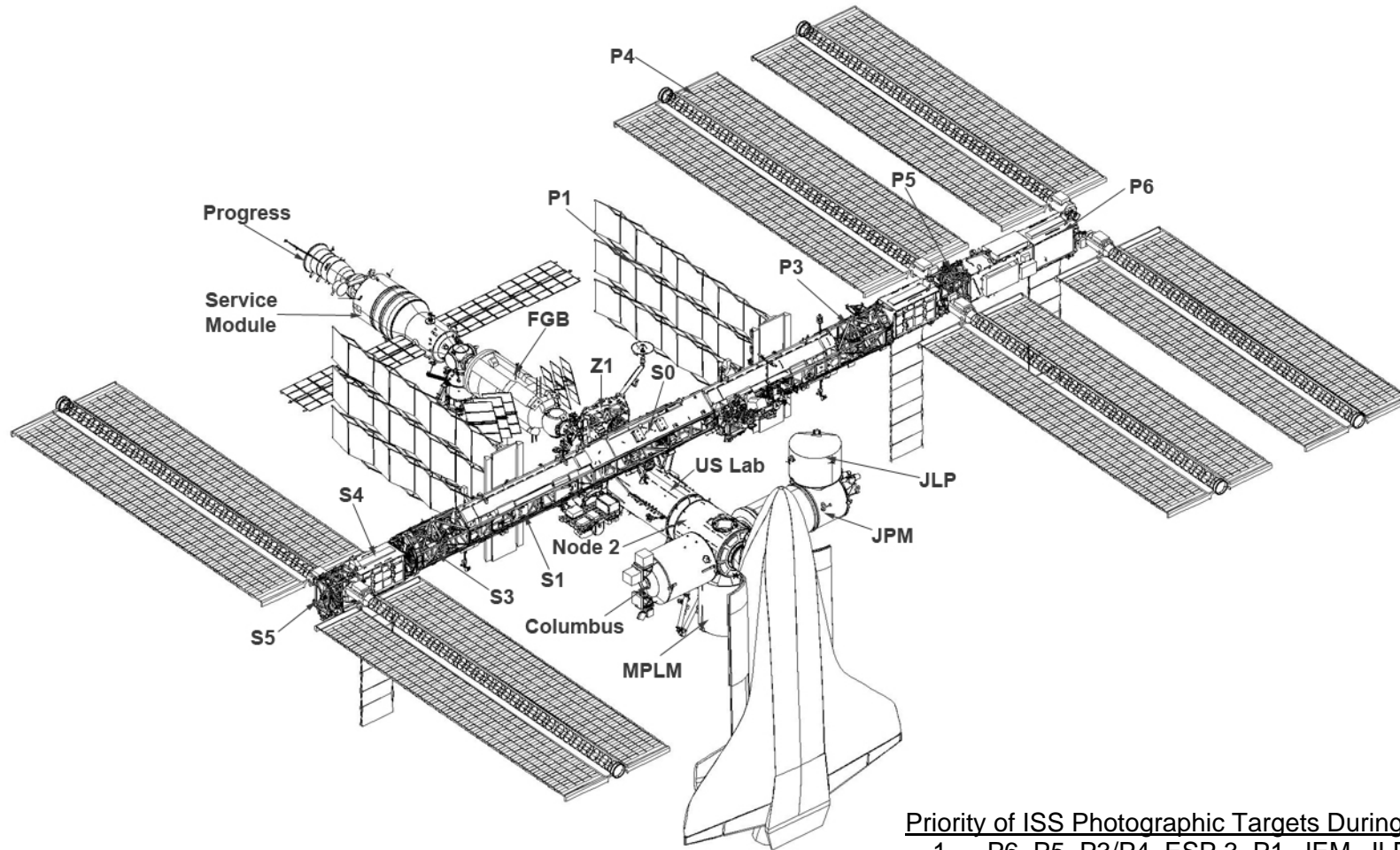
P/TV08 EXTERNAL SURVEY (Continued)

OPS

√	Item # Track #	Rqmts	Still Imagery	Video			Notes
				PLB	CC	Dnlk	
	1.	<u>OMS Pod Survey</u> <ul style="list-style-type: none"> Remove window shields 50 percent overlap mapping of both OMS pods and vertical stabilizer w/emphasis on Black Tile areas Repeat thru other window 	<u>D2Xs</u> 80-200mm @ 200mm				Download images to MCC once complete 
	2. ULF2-6	<u>ISS Still Survey</u> <ul style="list-style-type: none"> Surfaces Solar Panels Handrails MISSE SVS Targets Plasma Arcing S0,S1,S3,S4,S5,P1,P3,P4, P5,P6 Truss Radiators/ Baseplates, SAWs ESP-2 P6 Fwd PVR Base Bubble 	<u>D2Xs</u> 50mm (80-200mm @ 200mm)				Map ISS surfaces w/30% overlap from all Flt Deck windows
	3.	<u>SEITE</u> <ul style="list-style-type: none"> Obtain minimum of one photo at beginning, middle, end of OMS Burn 	<u>D2Xs</u> 28mm				Initial photo within 5 sec of burn

P/TV08 EXTERNAL SURVEY (Continued)

OPS (Continued)



Priority of ISS Photographic Targets During Docked Phase:

1. P6, P5, P3/P4, ESP 3, P1, JEM, JLP, Columbus, S1, S3/S4, Solar Arrays – W1, W6 (special emphasis on newly installed components)
2. Node 2, Columbus, JEM, JLP – W7, W8
3. PMA2 – W9, W10

P/TV08 EXTERNAL SURVEY (Concluded)

OPS (Concluded)

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

DEACTIVATION

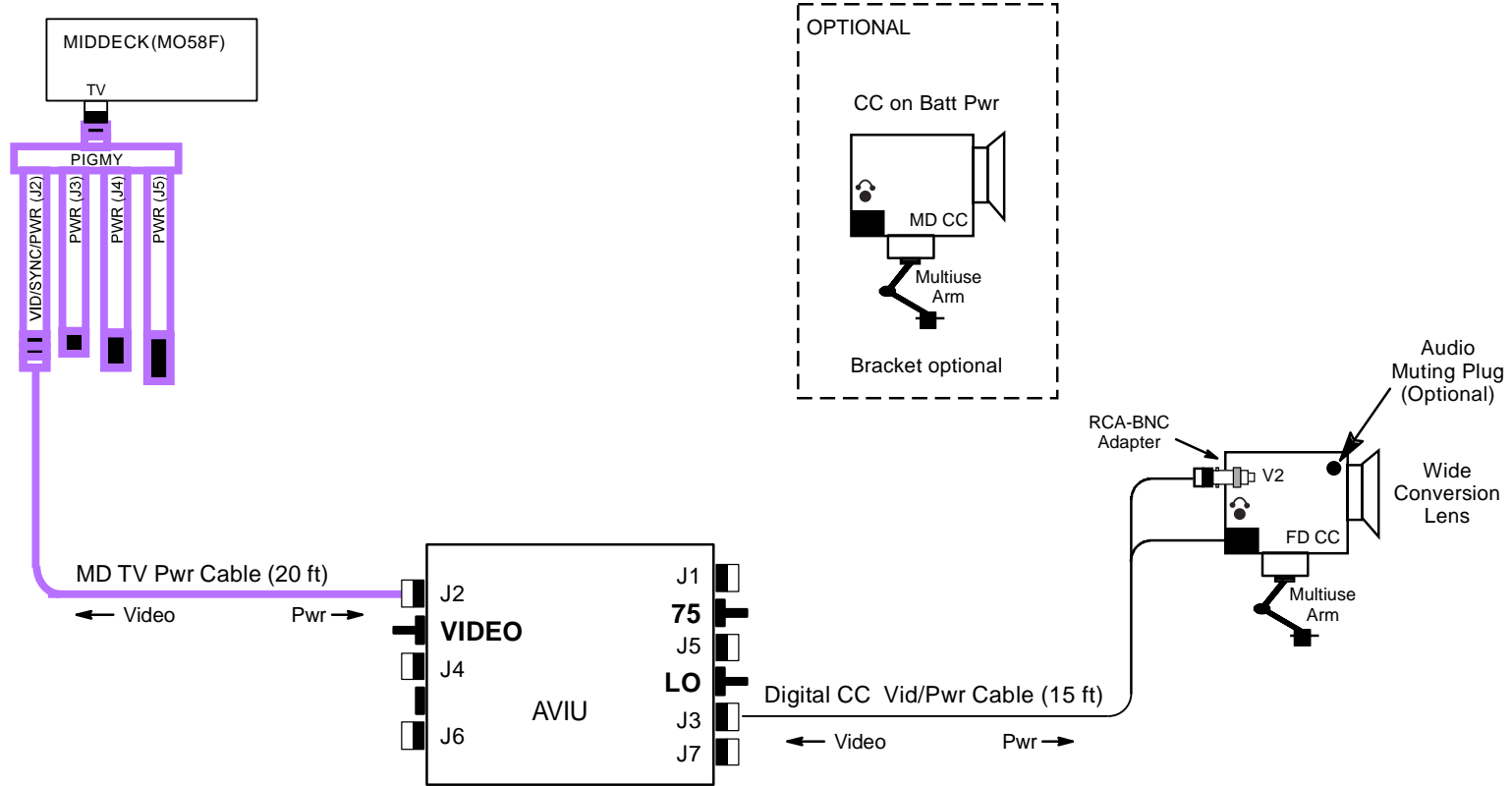
1. D2Xs
√Exp Mode – P
PWR – OFF
Flash ON/OFF – ON

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P/TV10 MIDDECK PL

P/TV10 MIDDECK PAYLOADS

H/W SUMMARY



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P/TV10 MIDDECK PAYLOADS (Continued)

SCENE SYNOPSIS

Scene contains procedures for obtaining in-cabin video conducted within orbiter/ISS

SETUP

1. Perform Camcorder Setup for MD per H/W SUMMARY, FS 1-64, as reqd

MO58F TV PWR – OFF

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



MO58F TV PWR – ON


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

P/TV10 MIDDECK PAYLOADS (Continued)

SETUP (Concluded)

2. Perform D2Xs PROGRAM w/FLASH

- 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 – 0 F
- 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 EV
 - Tilt – 45° (Direct)

P/TV10 MIDDECK PAYLOADS (Concluded)

OPS

√	Item # Track #	Rqmts	Still Imagery	Video			Notes
			DCS	PLB	CC	Dnlk	
	1.	GLACIER Video, Still Photography <ul style="list-style-type: none"> • Wide-angle video, photos showing crew interaction • Medium-angle video, photos showing stowage location • Closeup video, photos of front panel after activation for gnd verification 	<u>D2Xs</u> 12-24mm		<u>G1</u>	PLAYBACK desired	

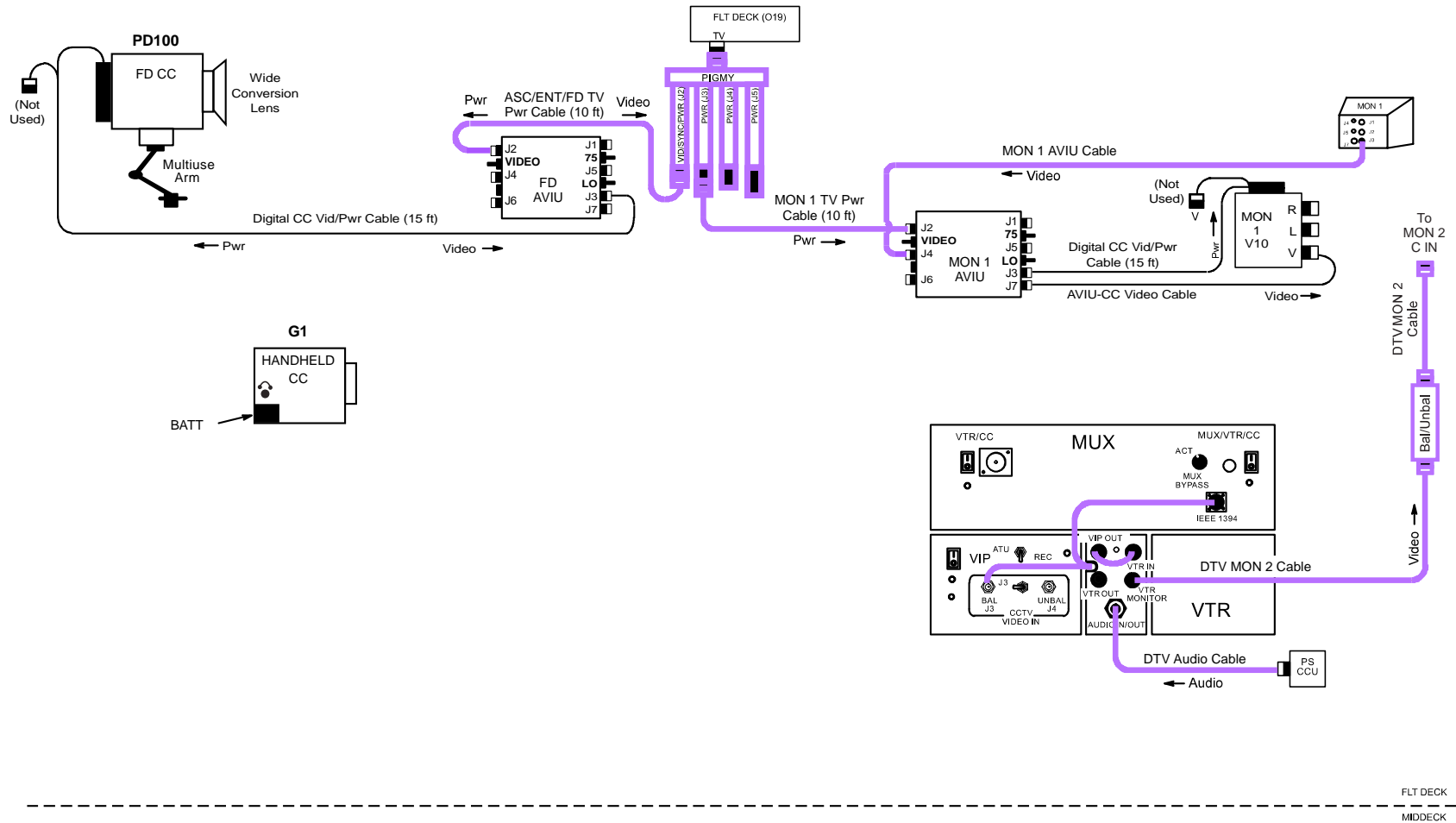
If OPS temporarily suspended, perform DEACTIVATION as reqd
 If OPS completed, go to DEACTIVATION

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P/TV11 PSSC DEPLOY

H/W SUMMARY



jsc48038_126_018r3.cvx

P/TV11 PSSC DEPLOY (Continued)




SCENE SYNOPSIS

Scene contains procedures for documenting PSSC DEPLOY w/video, still photos

SETUP

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

Handheld
CC (G1)

2. Remove Wide Conversion Lens
 - Install Batt
 - √ND FILTER – OFF
 - AF/M – M
 - AGC – OFF
 - GAIN – L
 - √OUTPUT – CAM
 - √AWB – ON
 - √.. - 
 - √STANDBY/LOCK – STANDBY
 - PWR dial – M
 - √Tape installed
 - √Viewfinder (LCD) displays “green” •||
 - SS – 1/500
 - √GAIN – ±0 dB
 - F/stop – F8.0
 - √FOCUS – M ∞-
 - Install Audio Muting Plug (optional)

P/TV11 PSSC DEPLOY (Continued)

SETUP (Continued)

3. Perform Hardware Verification for V10s, FD CC (PD100), DTV

O19,MO58F √TV PWR – ON

V10
(MON 1,2) PWR – ON

√Tape installed
DISPLAY pb – Toggle to display tape counter

FD CC (PD100) Install Wide Conversion lens
PWR – CAMERA
√Tape installed
√Viewfinder (LCD) displays “STBY”
Camr Settings:
 √AUTO LOCK – AUTO LOCK
 √FOCUS – AUTO
Install Audio Muting Plug (optional)
Install Multiuse Brkt

MON 2
L10 (MUX) SOURCE – C
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/TV11 PSSC DEPLOY (Continued)

SETUP (Continued)

4. D2Xs Setup in W9

Lens – 28-70mm @70mm

Aperture – Min, locked

Body Focus Mode – M

√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 – C_L

√BKT disabled – 0 F

Rear LCD

√ISO – 100

√QUAL – RAW

√WB – 0,A

AF Area Mode – [1]

√Focus Area – Center

√Focus Selector Lock – L

Menu Settings

MENU pb – press

Navigate Pad sel – Shooting Menu () Hi-speed Crop > On

– Custom Settings Menu > d Shooting/Display > d1 Shooting Speed > 5 fps

SB-800 Flash Settings

ON/OFF pb – OFF

Remote Release – install

Multiuse Base Plate – install in W9 sill



Multiuse Brkt

Frame on PSSC

P/TV11 PSSC DEPLOY (Continued)

SETUP (Concluded)

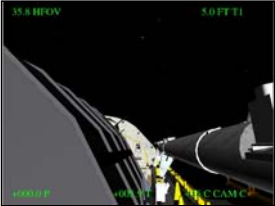
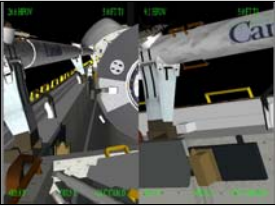

5. D2Xs Setup for Post-Deploy Photos in Ovhd Window

Lens – 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 – M
 SS – 500
 Aperture – f/8
Meter – Matrix ()
Diopter – Adjust
Frame Rate – S
√BKT disabled – 0 F
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/TV11 PSSC DEPLOY (Continued)

OPS

√	Item # Track #	Rqmts	Still Imagery	Video			Notes
			DCS	PLB	CC	Dnlk	
	1. ULF 2-33	PSSC DEPLOY <ul style="list-style-type: none"> Install Fresh Tape in V10 Recorder, Handheld CC,VTR,FD CC 					
	2.	PLB CAMR SETUP & ROUTING <ul style="list-style-type: none"> D2Xs in W9 Setup 		<u>C</u> VID OUT pb - DTV IN pb - C √View on Recorder		DNLK (if comm avail)	Start wide, then zoom in to track PSSC Track for 4 min or until out of view 
			<u>D,RMS ELB MUX</u> VID OUT pb - MON 1 IN pb - MUX 1 OUT pb - MUX 1L IN pb - D OUT pb - MUX 1R IN pb - RMS ELB √View on MON 1 V10				
			<u>D2Xs</u> 28-70mm Mounted in W9 sill				

P/TV11 PSSC DEPLOY (Continued)

OPS (Concluded)

√	Item # Track #	Rqmts	Still Imagery	Video			Notes
			DCS	PLB	CC	Dnlk	
	3.	5 MIN PRIOR TO DEPLOY <ul style="list-style-type: none"> Start V10 Recorder, VTR, Handheld, FD CCs 			<u>FD CC</u> Rcd in-cabin activities		<u>V10</u> REC pb – press to begin recording √LCD displays RED DOT <u>G1 CCs</u> REC pb - press √LCD displays RED DOT <u>VTR</u> REC pb – press,hold PLAY pb – press simo (red dot displayed)
	4.	~1 SEC PRIOR TO DEPLOY <ul style="list-style-type: none"> Start Camr, using remote cable 	<u>D2Xs</u> 28-70mm				
	5.	POST DEPLOY	<u>D2Xs</u> 400mm		<u>Handheld CC</u> Rcd PSSC in ovhd window		Obtain photos, video of PSSC as long as it is visible

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

P/TV11 PSSC DEPLOY (Concluded)

DEACTIVATION

1. D2Xs
Exp Mode - P
Film Adv - S
Flash ON/OFF - ON

2. Handheld G1
AF/M – AF
AGC – ON
PWR dial – OFF

3. TV System
Remove, mark tapes for PSSC
Go to DEACTIVATION (Cue Card, TV) as reqd

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C/L CAMR

CENTERLINE (C/L) CAMR

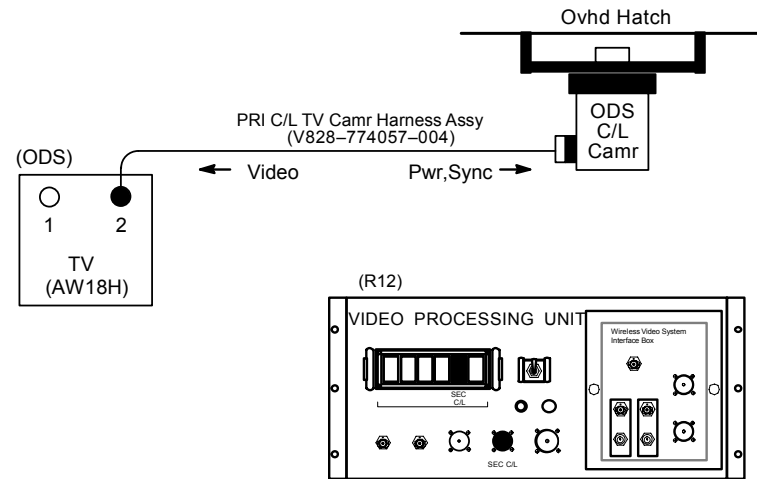
C/L CAMR INSTALL

1. ODS C/L Camr Config
- L12 (SSP 2) ✓C/L CAM PWR – OFF
- R12 (VPU) ✓SEC C/L Cap installed
 ✓Green Jumper – SEC C/L
 ✓VPU PWR – ON (LED on)
- ML60B Unstow PRI C/L Camr, PRI C/L TV Camr Harness Assy

NOTE

When connecting ODS C/L TV Camr Harness Assy, ✓pins to socket connection

- ODS ✓ODS C/L Camr Brkt mounted securely
 Mount PRI C/L Camr to ODS C/L Camr Brkt
 ✓Flex Duct attached to Camr brkt
 Config cable per dwg at right
- C/L Camr ✓SSF/STS sw – STS
- L12 (SSP 1) ✓cb SSP2 SEC C/L CAM – cl
 (SSP 2) C/L CAM PWR – SEC ON

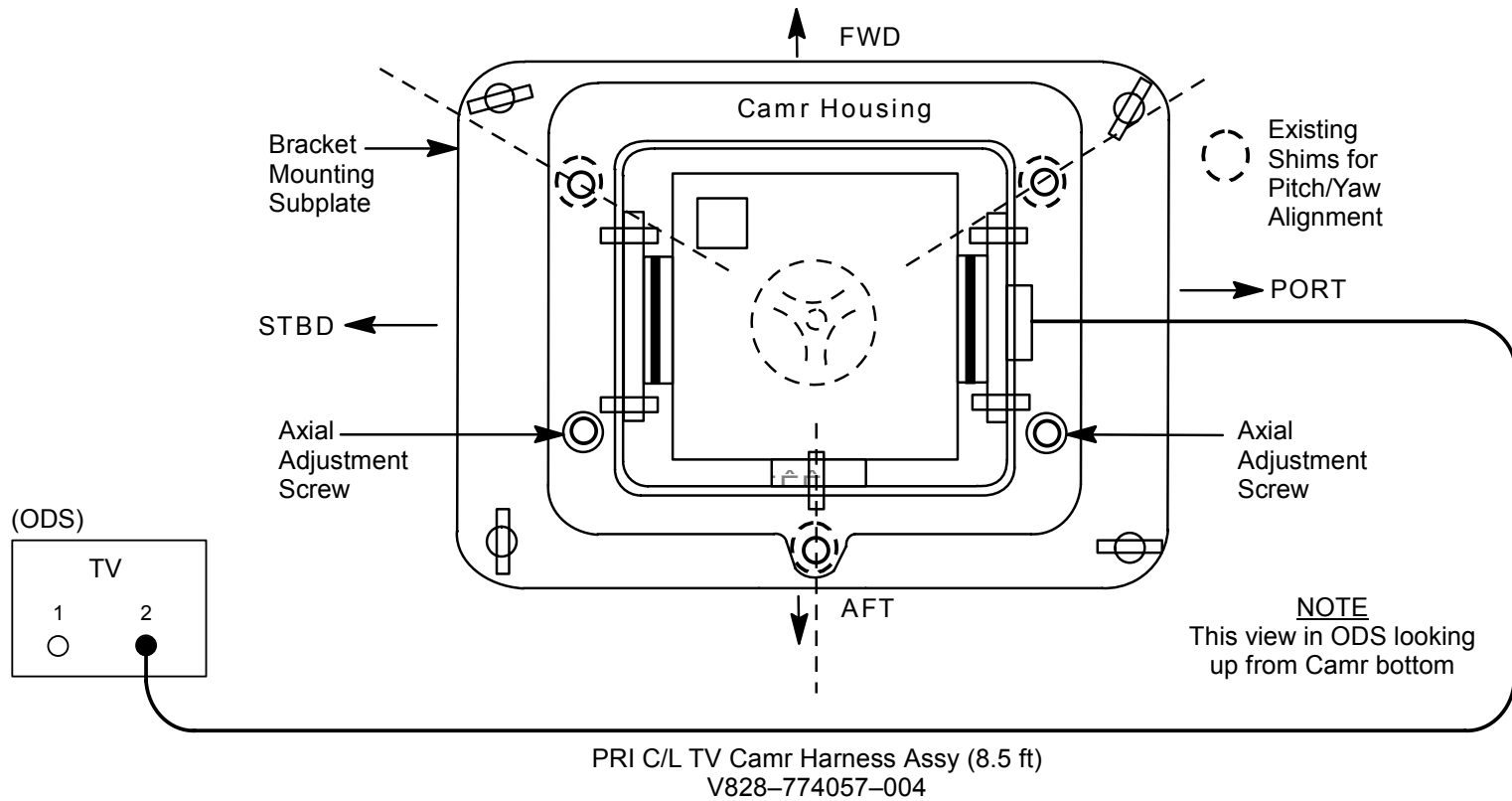


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CENTERLINE (C/L) CAMR (Continued)

C/L CAMR INSTALL (Continued)

2. Camr Position Verification



jsc48037_049r2.cvx

CENTERLINE (C/L) CAMR (Concluded)

C/L CAMR INSTALL (Concluded)

3. ODS C/L Camr Alignment Check
Perform ACTIVATION (Cue Card, TV) as reqd

A7 VID OUT MON 1(2) pb – push
IN PL2(VPU) pb – push
ALC pb – push
AVG pb – push

MON 1(2) LDATA – ON
CDATA – GRN
XHAIR – GRN

A7 Zoom to $10^\circ \pm 0.5^\circ$
Focus to see Xhair target

NOTE

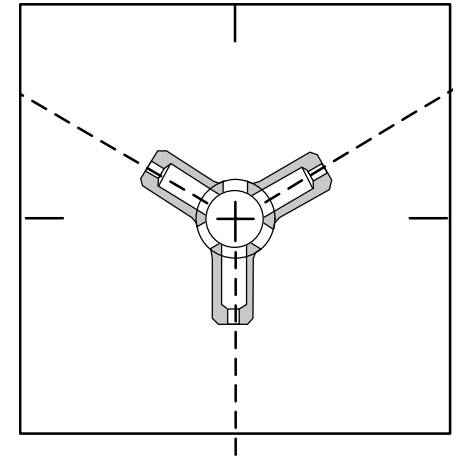
Green xhairs on monitor may move off center in calibration target when zooming in,out. Xhair will be closest to center at full zoom in position

MON 1(2) ✓ Vertical xhairs coincide w/vertical alignment wire and are parallel. If xhair marks overlay each other, no yaw(axial) alignment needed (see dwg above)

✓ Intersection of monitor vertical, horizontal xhair falls within target circular opening from $\sim 10\text{-}40^\circ$ zoom range of Camr

Report results of both alignment verifications (at 10° and 40°) to MCC

4. Deactivation
A7 CAMR CMD IRIS – CL
L12 (SSP 2) C/L CAM PWR – OFF
Go to DEACTIVATION (Cue Card, TV) as reqd



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DTV

DTV

VTR CLOCK SET

1. Activate VTR

R1 √PL AUX – ON

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

2. Set VTR clock to 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

3. Deactivate VTR as reqd

(MUX) ON/STANDBY pb – push (red LED on)
 VTR/CC PWR – off (LED off)

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D2Xs

D2Xs

DATE/TIME SET

1. MENU pb – press
2. Navigate pad – sel Menu icon **Y** setup menu
 - 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

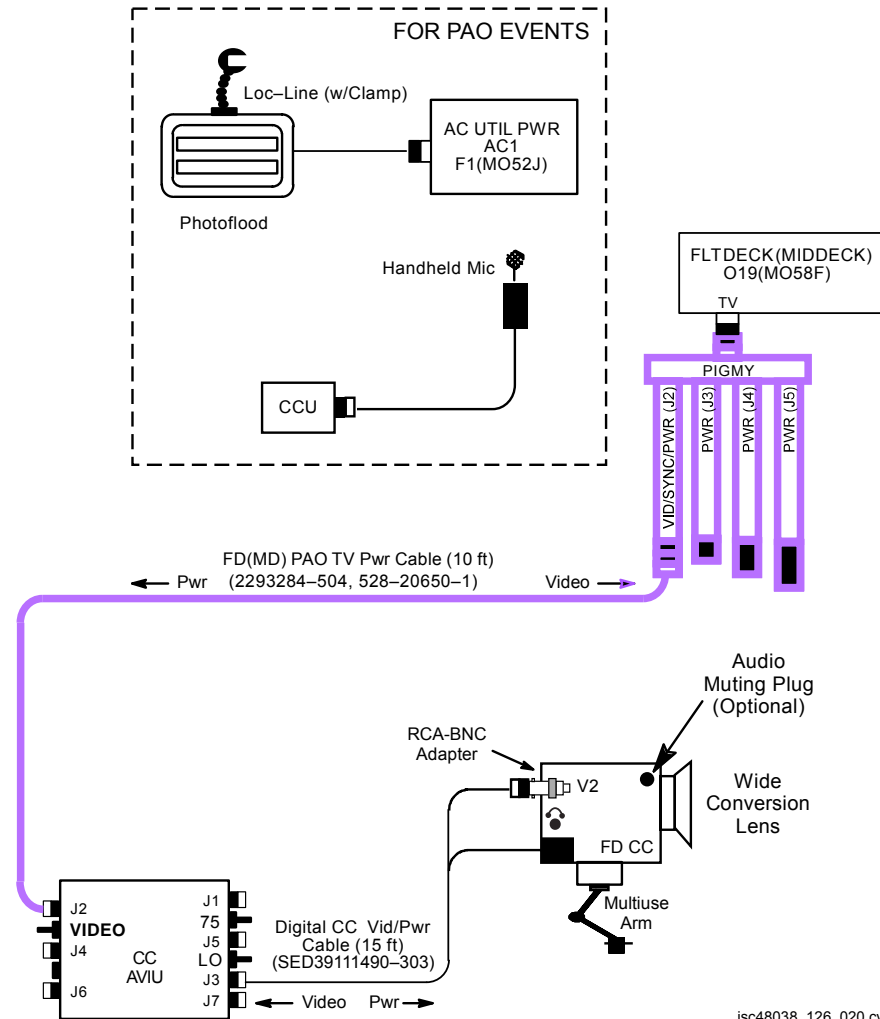
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CANON G1

ANALOG CC REC.DNLK

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
Install Audio Muting Plug (optional)
√OUTPUT – CAM
√A/V1/V2 – V2
√ []...[]-[]
√STANDBY/LOCK – STANDBY
PWR dial – “green” []
If rec to tape:
Tape – Install
√Viewfinder (LCD) displays “green” •||
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)

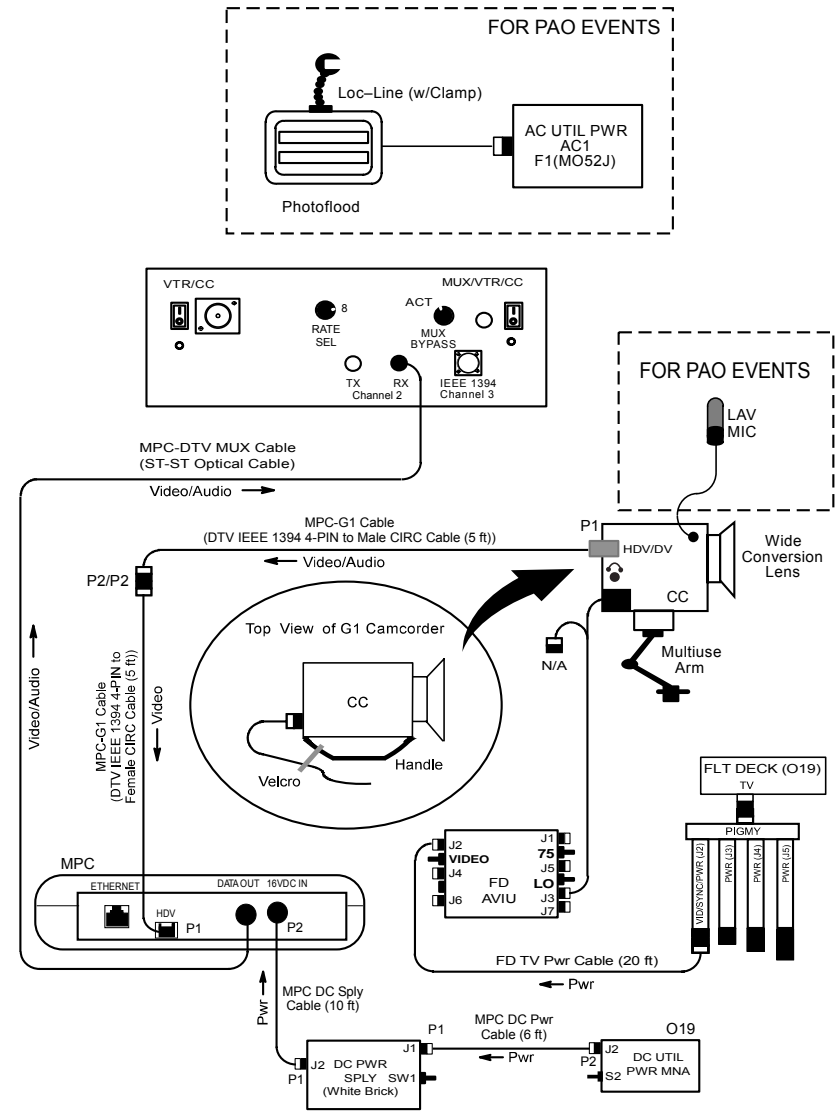
ANALOG CC REC.DNLK (Concluded)

- 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
- A7 When ready for dnlk:
 √TV DNLK – ENA
 PWR CNTL – PNL
 CONTR UNIT – MNA(B)
 CNTL – CMD (wait 10 sec for system initialization)
 VID OUT DNLK pb – push
 VID IN FLT DECK(MIDDECK) pb – push

CANON G1 (Continued)

HD DIGITAL CC DNLK

- Notify MCC, configuring for HD TV dnlk
- Config H/W per dwg at right
- CC For cable strain relief attach MPC-to-G1 Cable Velcro strap to CC strap
- AVIU SYNC/VIDEO – VIDEO
HI-Z/75 – 75
PWR SELECT – LO
- O19 √TV PWR – ON
- CC √Wide Conversion Lens installed
Install LAV MIC
√ND FILTER – OFF
√OUTPUT – CAM
√ - 
√STANDBY/LOCK – STANDBY
PWR dial – “green”
Mount Camcorder
- L10 (MUX) √MUX/VTR/CC PWR – off (LED off)
√VTR/CC/PWR – off (LED off)
Disconnect CHANNEL 3 IEEE 1394 Cable
MUX/VTR/CC PWR – on (LED on)
√MUX BYPASS – ACT
√CHANNEL 0,1 RATE SEL – 1
√2 RATE SEL – 8
- O19 DC UTIL PWR MNA – ON
- MPC PWR DC PWR SPLY PWR SW1 – ON
- MPC PWR-ON (HDV, TAXI, 5V, 3V green LEDs on)



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CANON G1 (Continued)

HD DIGITAL CC DNLK (Concluded)

L10 (MUX) √CHANNEL 2 F/O OK,DATA LEDES on

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

CC √Scene composition

 Adjust Camr angle for best framing

LAV MIC PWR – ON (talk),OFF (listen)

CC When dnlk complete:
 PWR dial – OFF

O19 TV PWR – OFF as reqd

MPC PWR – OFF
 DC PWR SPLY PWR SW1 – OFF

 PWR
 SPLY

O19 DC UTIL PWR MNA – OFF

L10 (MUX) MUX/VTR/CC PWR – off (LED off)
 Connect CHANNEL 3 IEEE 1394 Cable

 Notify MCC, returned to SD TV dnlk

 Go to DEACTIVATION (Cue Card, TV) as reqd

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WATER DUMP STILL PHOTOS

SUNLIT WATER DUMP SPRAY STILL PHOTO

Objective: Photograph water dump spray w/400mm Lens in hatch window

1. Unstow H/W

Nikon D2Xs Camr Body w/Card,Batt
400mm Lens

2. Config Camr

Lens – 400mm
Aperture – Min, locked
Lens Focus Mode – M
Focus distance – 20 ft
Body Focus Mode – M

√Batt installed


√Flash Card installed

Pwr – ON

Top LCD

√Batt

√Frames remaining sufficient

Exp Comp () – 0.0

Exp Mode – M

SS – 1/2000

f/stop – 8

Meter – Matrix ()

Diopter – Adjust

Frame Rate – S

√BKT disabled – 0 F

Rear LCD

ISO – 200

√QUAL – RAW

√WB – 0,A

AF Area Mode – [[]]

√Focus Area – Center

√Focus Selector Lock – L

WATER DUMP STILL PHOTOS (Continued)

SUNLIT WATER DUMP SPRAY STILL PHOTO (Concluded)

3. Image Capture

Posn crewmember w/Camr at side hatch window
Photograph water dump

4. Deactivation

Lens Focus Mode - M/A
Body Focus Mode - S
Exp Mode - P
ISO - 100
Pwr - OFF
Download images

WATER DUMP STILL PHOTOS (Continued)



NIGHT WATER DUMP SPRAY STILL PHOTO

Objective: Photograph water dump spray w/400mm Lens in hatch window w/Slave Flash illuminating from W1

1. Unstow Hardware

Nikon D2Xs Camr Body w/Card,Batt
400mm Lens
Nikon SB-800 Flash (2 ea)

2. Config Camr

Lens – 400mm
Aperture – Min, locked
Lens Focus Mode – M
Focus distance – 20 ft
Body Focus Mode – M
√Batt installed
√Flash Card installed
Pwr – ON
Top LCD
√Batt
√Frames remaining sufficient
Exp Comp () – 0.0
Exp Mode – A
f/stop – 8
Meter – Matrix ()
Diopter – Adjust
Frame Rate – S
√BKT disabled – 0 F
Rear LCD
ISO – 200
√QUAL – RAW
√WB – 0,A
AF Area Mode – [[]]
√Focus Area – Center
√Focus Selector Lock – L

WATER DUMP STILL PHOTOS (Continued)

NIGHT WATER DUMP SPRAY STILL PHOTO (Continued)

3. Config Master Flash

Install fresh Batts

Mount flash to Camr Body

Remove, retract Diffuser

ON/OFF pb – ON

√MODE –  TTL 

√Zoom – Auto (no M)


Navigation/SEL Pad – push SEL, hold (to enter menu system)

– sel Standby Control 'STBY'

– push SEL (to enter)

– push +/- to highlight 300

– push SEL (to select)

– sel Multi Flash Control 

– push SEL (to enter)

– push +/- to highlight 'MASTER'

– push SEL (to select)

ON/OFF pb – push (to exit MENU)

Navigation/SEL Pad – push SEL (to select '# next to CH')

– push +/- (to select '1')

– push SEL (to select Master, 'M')

MODE pb – push (to sel 'M - - -')

Navigation/SEL Pad – push SEL (to select Group 'A')

MODE pb – push (to sel 'A TTL. . .')

Navigation/SEL Pad – push +/- (to sel 'A TTL 0.0')

– push SEL (to select Group 'B')

MODE pb – push (to sel 'B - - -')

Navigation/SEL Pad – push SEL (to select Group 'C')

MODE pb – push (to sel 'C - - -')

NOTE

Adjust as reqd to aim Flash head through interdeck access

Set Tilt to +45°

Set Pan to 180° (45° up and backwards)

WATER DUMP STILL PHOTOS (Continued)


NIGHT WATER DUMP SPRAY STILL PHOTO (Continued)

4. Config Slave Flash

Install fresh Batts

ON/OFF pb – ON

Navigation/SEL Pad – push SEL, hold (to enter menu system)

– sel Multi Flash Control ,

– push SEL (to enter)

– push +/- to highlight 'REMOTE'

– push SEL (to select)

ON/OFF pb – push (to exit menu)


√'REMOTE' displayed on LCD

Navigation/SEL Pad – push SEL (to select 'CH')

– push +/- (to select '1')

– push SEL (to select 'GROUP')

– push +/- (to select 'A')

– push  (to select '85mm')

Remove, retract Diffuser

Tilt – Direct

Set Pan to 180° so wireless sensor will face aft FD when in W1

Test fire Camr to ensure Slave Flash fires

5. Image Capture

NOTE

Wait between photos until Slave Flash (FD) has recharged (Red READY LED ON w/beep)

Posn crewmember w/Camr at side hatch window

Remove hatch window UV filter

Posn second crewmember w/Remote Flash in W1 area directing flash towards water dump particles

Do not cover Flash sensors on front(sides) of Flash (see photo at right)

Clear area of interdeck access to allow for Slave Flash ops

Test fire Camr to ensure Slave Flash fires

Photograph water dump




WATER DUMP STILL PHOTOS (Continued)

NIGHT WATER DUMP SPRAY STILL PHOTO (Concluded)

6. Deactivation

Replace hatch window UV filter

For both flashes:

Navigation/SEL Pad – push SEL,hold (to enter MENU system)
– sel Multi Flash Control 
– push SEL (to select)
– push +/- to highlight 'OFF'
– push SEL (to select)

ON/OFF pb – push (to exit)
– OFF

Set Pan to 0°
Set Tilt to 45°
Install Diffuser

Lens Focus Mode – M/A
Body Focus Mode – S
Pwr – OFF
Download images

WATER DUMP STILL PHOTOS (Continued)

SUNLIT WATER DUMP 'POPCORN' PHOTOS

Objective: Photograph water dump crystals floating by windows during daylight.

1. Unstow Hardware

Nikon D2Xs Camr Body w/Card,Batt
28-70mm Lens

2. Config Camr

Lens – 28-70mm

Aperture – Min, locked

Lens Focus Mode – M

Body Focus Mode – M

√Batt installed


√Flash Card installed

Pwr – ON

Top LCD

√Batt

√Frames remaining sufficient

Exp Comp () – 0.0

Exp Mode – M

SS – 1000

Aperture – F8

Meter – Matrix ()

Diopter – Adjust

Frame Rate – S

√BKT disabled – 0 F

Rear LCD

ISO – 100

√QUAL – RAW

√WB 0,A

AF Area Mode – [[]]

√Focus Area – Center

√Focus Selector Lock – L

WATER DUMP STILL PHOTOS (Concluded)

SUNLIT WATER DUMP 'POPCORN' PHOTOS (Concluded)

3. Image Capture

Capture sunlit crystals out of window w/most crystals visible
Adjust Focus as reqd
Adjust Shutter Speed for better exposure as reqd

4. Deactivation

Lens Focus Mode – M/A
Body Focus Mode – S
Exposure Mode – P
Pwr – OFF
Download images

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FCS CHECKOUT CAMR SETUP

SETUP

1. D2Xs

Lens – 400mm

NOTE

If auto focus unachievable:
Lens Focus Mode - M

Aperture – Min, locked

Lens Focus Mode – A

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 – 500

f/stop – f/8

Meter – Matrix

Diopter – Adjust

Frame Rate – S

√BKT disabled – 0 F

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

FCS CHECKOUT CAMR SETUP (Concluded)

SETUP (Concluded)

2. G1 CC

Remove Wide Conversion Lens

Install Batt

√ND FILTER – OFF

AF/M – M

AGC – OFF

GAIN - L

√OUTPUT – CAM

√AWB - ON

√..-

√STANDBY/LOCK – STANDBY

PWR dial – M

√Tape installed

Open LCD

√'green' ●|| displayed

SS – 1/500

√GAIN – 0dB

f/stop – F8.0

√FOCUS – M ∞-

DEACTIVATION

1. D2Xs

Lens focus mode – A

EXP Mode – P

Pwr – OFF

2. G1

Install Wide Conversion Lens

AF/M – AF

AGC – ON

Pwr dial – OFF

Remove Batt

Connect Dig/CC Vid Pwr Cable

PWR dial – 'green'

Place G1 on brkt

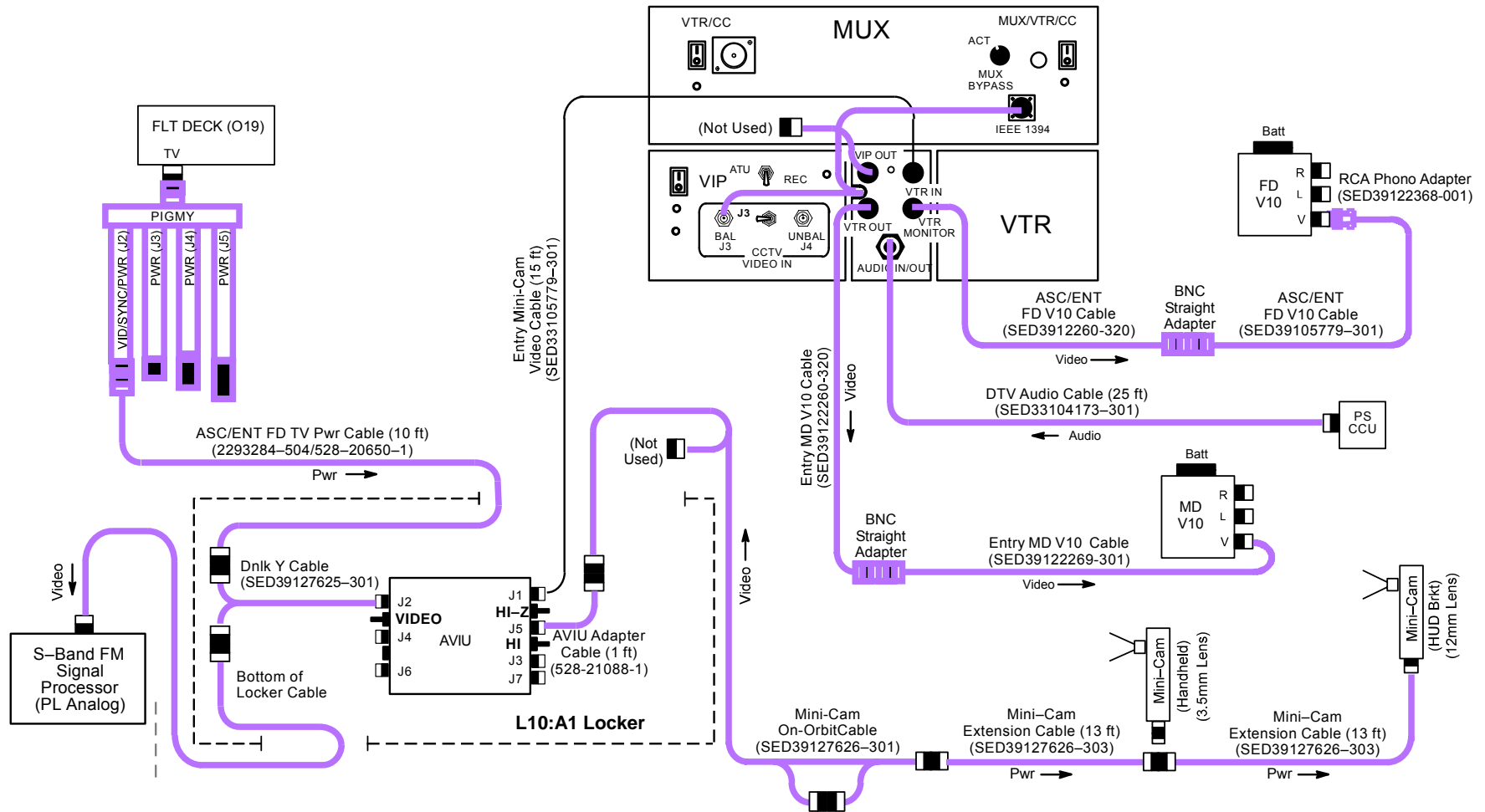
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MINI-CAM

MINI-CAM

ENTRY VIDEO SETUP



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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 2-32
 - 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 \surd TV PWR – ON
 - PS ATU Config audio as reqd for entry audio
 - L10 (MUX)
 (VTR) VTR/CC PWR – on (LED on)
 \surd ON/STANDBY LED – green

MINI-CAM (Concluded)

ENTRY VIDEO SETUP (Concluded)

Acquire two (2) V10 Li-ION batts

NOTE

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

- V10 (FD,MD) 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
- PWR – OFF
- L10 (VTR)
(MUX) ON/STANDBY pb – push (red LED off)
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

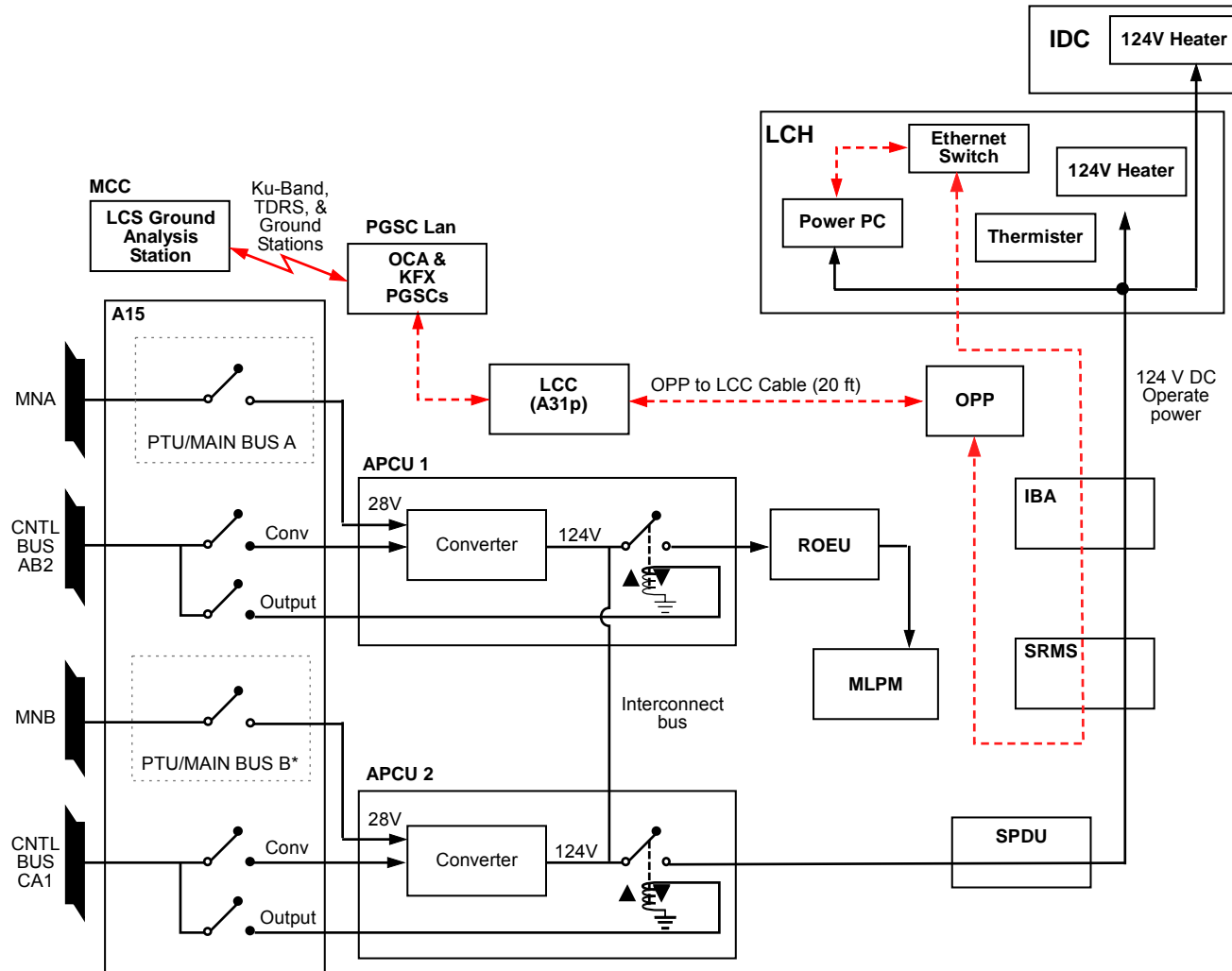
If needed, turn down brightness on HUD display

Turn off V10 when not needed

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

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

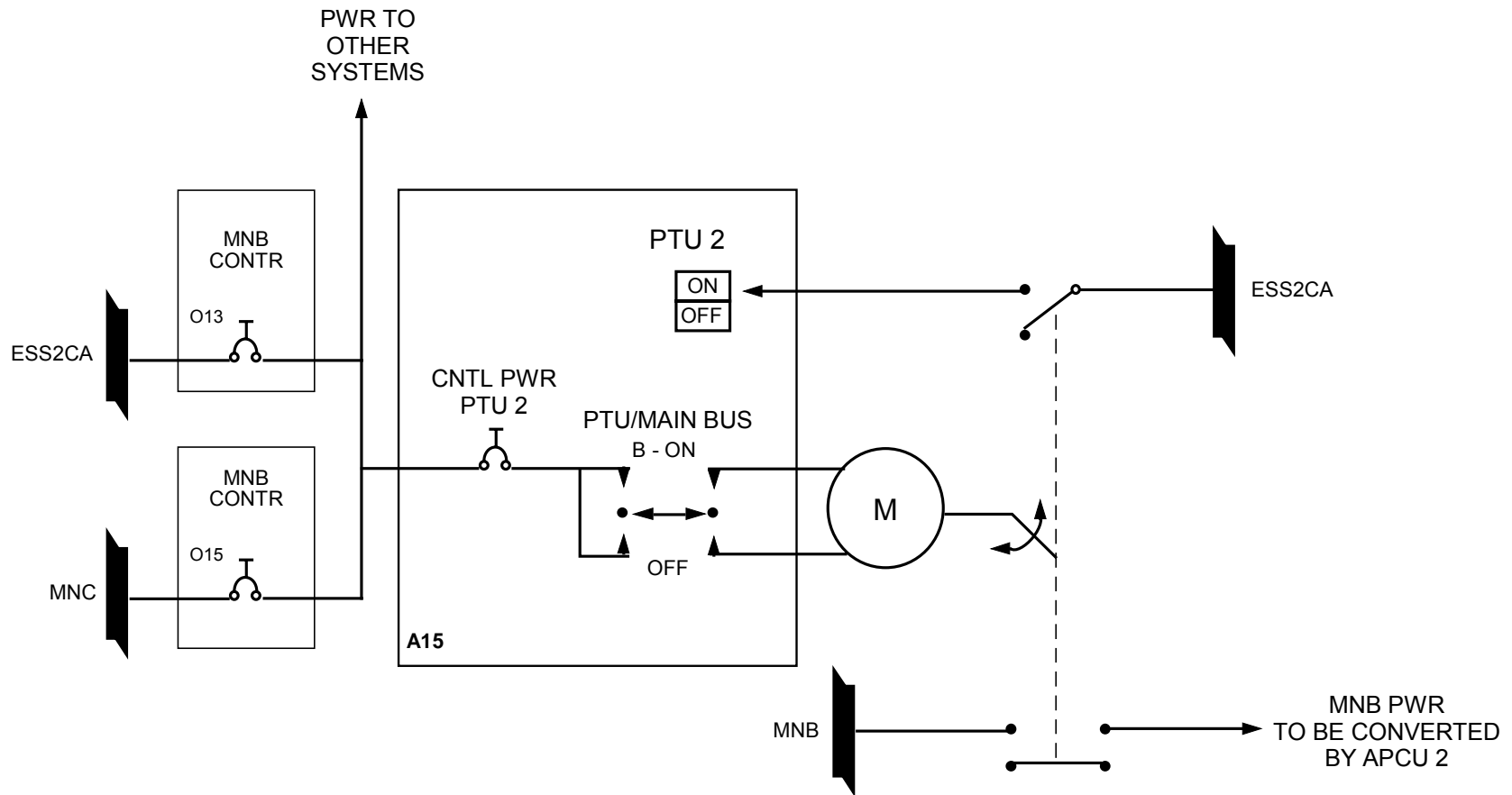


*See PTU 2/MAIN BUS B for detailed system dwg

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

PTU 2/MAIN BUS B SYSTEM DETAILS



jsc48037_PTU2_134e.cvx

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CUE CARD CONFIGURATION

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WVS.....	FS CC 3-8
PLBD VTR RECORDING	FS CC 3-10
LDRI/ITVC	FS CC 3-12
LCS.....	FS CC 3-14
IDC.....	FS CC 3-16
VIDEO SETUP.....	FS CC 3-18
D2Xs SETUP	FS CC 3-20
LDRI/ITVC A7 PLACARD.....	FS CC 3-22
DIGITAL PLAYBACK.....	FS CC 3-23

CUE CARDS

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HOOK
VELCRO

TV

ACTIVATION

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

OPERATION

Auto Ops (Auto Exposure)

√MCC has commanded sync config
A7 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

DNK Ops

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

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:
L12 (SSP 2B) MPLM KEEL CAM PWR – OFF
√HTR/ILLUM PWR – ON
A7 TV PWR CNTL – PNL
CONTR UNIT – OFF
CNTL – CMD
A3 MON 1,2 PWR – OFF
If DTV:
L10 (VTR) ON/STANDBY pb – push (red LED on)
(VIP) PWR – off (LED off)
(MUX) MUX/VTR/CC PWR – off (LED off)
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

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 LDRI/ITVC Cue Card

Keel Camr

L12 √cb CB2 – d
(SSP 2B) √MPLM KEEL CAM HTR/ILLUM PWR – ON
PWR – ON

P/TV-1a/126/O/C

(reduced copy)

FS CC 3-3

P/TV/126/FIN A

TOP
BACK OF 'TV'

HOOK
VELCRO

Illuminator Ops

Illuminator ON

L12 | If MPLM Keel Illuminator:
(SSP 2B) | \cb CB2 - cl
 \MPLM KEEL CAM PWR - ON
 HTR/ILLUM PWR - OFF, ON for
 HI (repeat for MED, LOW, OFF)

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

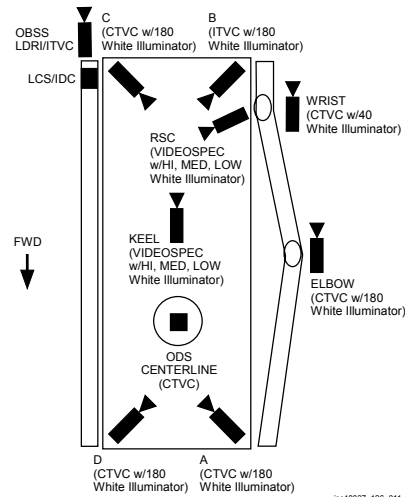
L12 | If MPLM Keel Illuminator:
(SSP 2B) | MPLM KEEL CAM HTR/ILLUM PWR - toggle until
 Illuminator OFF (leave sw in ON posn)

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:



P/TV-1b/126/O/C

(reduced copy)

FS CC 3-4

P/TV/126/FIN A

TOP

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
 √A/V1/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/ICOM 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/ICOM 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) Connect CC video input to AVIU J3
 Remove, mark, stow tape as reqd

ATU Reconfig as desired

O19 TV PWR – OFF, as reqd
 Go to DEACTIVATION (Cue Card, TV) as reqd

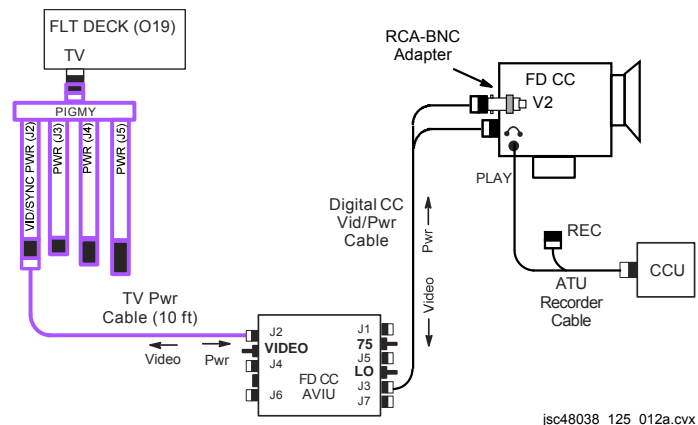
P/TV-2a/126/O/B

(reduced copy)

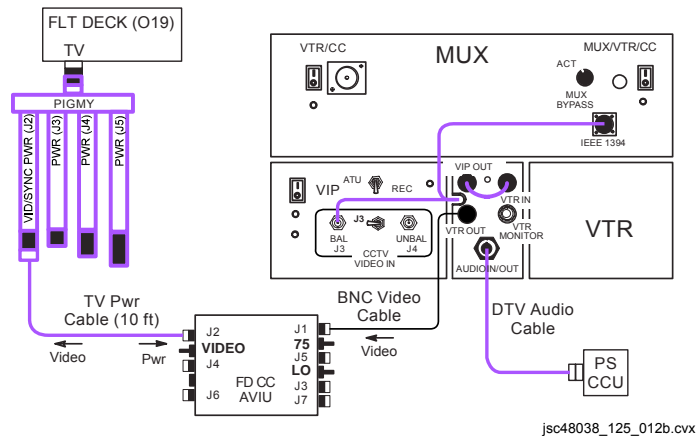
TOP
BACK OF 'ANALOG PLAYBACK'

HOOK
VELCRO

ANALOG VIA CC PLAYBACK



ANALOG VIA VTR PLAYBACK



P/TV-2b/126/O/A

(reduced copy)
FS CC 3-6

P/TV/126/FIN A

TOP

HOOK
VELCRO

ET PHOTO

D2Xs D2Xs

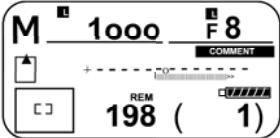
LENS SETTINGS

- √APERTURE – MIN, LOCKED
- √LENS FOCUS MODE – A


CAMR SETTINGS

PWR – ON
TOP LCD

- √BATT
- √EXP MODE – M
- √SS – 1000
- √F/STOP – 8



DIOPTR – ADJUST
√FRAME RATE – S



REAR LCD

- √ISO – 100
- √QUAL – RAW

CRITICAL FOCUS REQD EACH FRAME

P/TV-3a/126/O/B

FS CC 3-7

TOP
BACK OF 'ET PHOTO'

HOOK
VELCRO

ET PHOTO

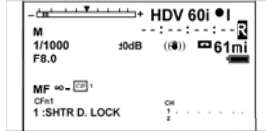
G1 CC G1 CC

LENS CAP – REMOVE
INSTALL MUTING PLUG

- √ND FILTER – OFF
- √AF/M – M
- √AGC – OFF
- √GAIN – L
- √OUTPUT – CAM
- √AWB – ON
- √POWER dial – M
- √LOCK (handle) – off (aft)
- STANDBY/LOCK – STANDBY

OPEN LCD

- √BATT SUFFICIENT
- √EXP MODE – M
- √SS – 1/1000
- √GAIN – ±0dB
- √F/STOP – F8.0
- √FOCUS MODE – MF ∞



ZOOM – WIDE TO FIND TANK, THEN TIGHT

START RECORDING

- √LCD DISPLAYS RED DOT

P/TV-3b/126/O/B

P/TV/126/FIN A

TOP

HOOK
VELCRO

HOOK
VELCRO

WVS

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

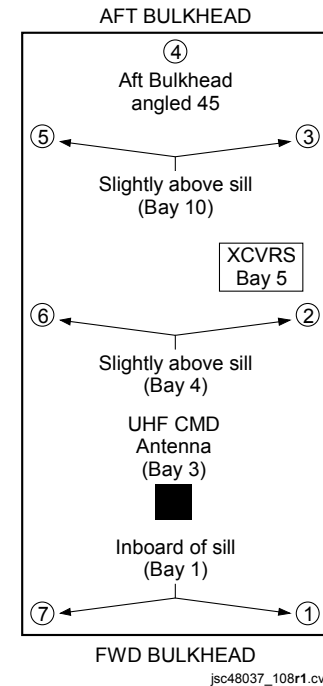
If still no joy:
For XCVR with good video:
Sel RF Camr – reselect original EVA crewmember
For XCVR w/video problem: Antenna – Manual
Sel desired antenna

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



P/TV-5a/126/O/A

(reduced copy)

FS CC 3-8

P/TV/126/FIN A

HOOK
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HOOK
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ALERT MSG TROUBLESHOOTING

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	16	18
Serial Number	1010	1007
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/126/O/A

(reduced copy)

TOP

HOOK
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PLBD VTR RECORDING

- L10 √VIP,VTR covers removed
- R1 √PL AUX – ON
- MA73C:E cb AC2 PL3Φ – cl

- L10 √Cables config'd per dwg (back of cue card)
- (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

- L9 If Audio desired:
 PS AUD PWR – AUD
 Desired Loops – RCV, Vol tw 5
 Other Loops – OFF

- A7 VID OUT DTV pb – push
 IN pb – as reqd

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

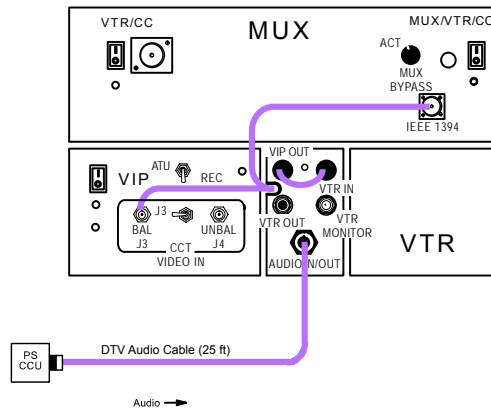
P/TV-6a/126/O/B

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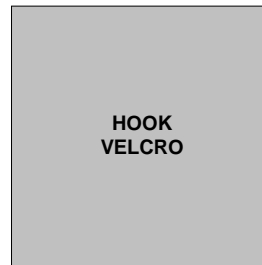
FS CC 3-10

P/TV/126/FIN A

TOP
BACK OF 'PLBD VTR RECORDING'



jsc48037_126_019.cvx



P/TV-6b/126/O/A

(reduced copy)
FS CC 3-11

P/TV/126/FIN A

HOOK
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LDRI/ITVC

HOOK
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ACTIVATION

- Config CCTV Sys
 - A7 √ACTIVATION (Cue Card, TV) performed
 - L10 (MUX) √MUX/VTR/CC PWR – on (LED on)
 - √Cabling from VTR MON port to MON 2 C-IN
 - R12 (VPU) √VPU PWR – ON (LED on)
 - √Green Jumper – LDRI/ITVC
 - MON 1,2 L-DATA – ON
 - C-DATA – GRN
 - X-HAIR – GRN
 - MON 2 SOURCE – C
- 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)
- 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)
- Enable ITVC
 - √MCC has commanded sync config
 - R12 (OBSS) 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
 - MON 2 √ITVC video displayed
- Turn LDRI Laser On
 - 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 – It on
 LDRI MODE 1 pb – push

R12 (OBSS) ITVC ENA – OFF, pause 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

P/TV-7a/126/O/B

(reduced copy)

FS CC 3-12

P/TV/126/FIN A

TOP
BACK OF 'LDRI/ITVC'

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RSC CAMR OPS

NOTE

Camr nominally pwr'd in Block 3 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 It on)

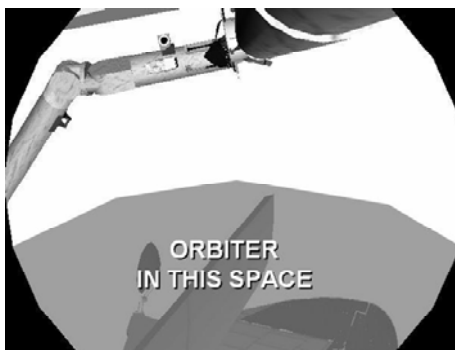
L10(VTR) STOP pb – push (no red •)

A7 VID OUT MUX 1 L pb – push (MIDDECK It 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 It 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 dot)

A8U AUTO SEQ – PROCEED (IN PROG It 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

SPEE PWR DEACT CLEANUP ACTIONS

Config RSC Illum to HI

R12 (OBSS) √SPEE PWR – OFF
ITVC ENA – OFF
RSC PWR – OFF, wait 10 sec, ON
SPEE PWR – ON, OFF, wait 10 sec, ON

Config ITVC

A7 ITVC ENA – ON
VID OUT DTV pb – push
IN PL2(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

Reset PTU

A7 CAMR CMD PAN/TILT – HI RATE
PAN – L (to hard stop)
TILT – UP (to hard stop)
PAN/TILT – RESET
PAN and TILT ITVC to values needed for Survey

Return LDRI to Mode 6

A7 VID OUT MUX 1 L pb – push
IN MIDDECK pb – push
LDRI MODE 6 pb – push
VID OUT DTV pb – push, to return to ITVC control

P/TV-7b/126/O/C

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FS CC 3-13

P/TV/126/FIN A

HOOK
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TOP

LCS

HOOK
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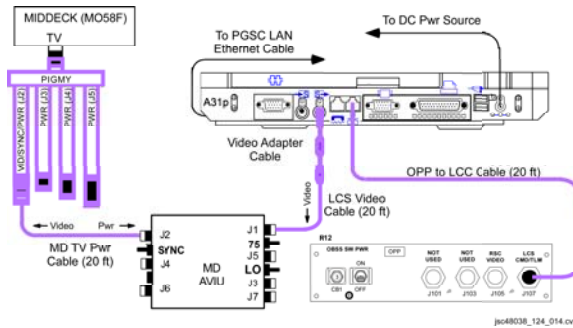
LCH ACTIVATION

- A15 Activate SSPTS APCU 2
 √PTU 2 tb – on
 APCU 2 OUTPUT – ON
 CONV – ON
- SM 179 POWER TRANSFER
 √PTU 2 APCU OUT VOLTS: 123V to 126V
 √OUTPUT – ON

LCC ACTIVATION

1. LCC Setup

√Hardware and cables configured per diagram below:



2. LCC Startup

- A31p PGSC Pwr – ON
 √Yellow 'RJ-45 Port Configured for LCS Ops' displayed on desktop crew patch
 If yellow text not displayed, perform TROUBLESHOOTING, Yellow 'RJ-45 Port Configured for LCS Ops' Not Displayed on Desktop Crew Patch
 If 'LCS Camera Controller' minimized on desktop taskbar, maximize window
 If not minimized, sel 'Shuttle Apps' > 'LCC' (wait 2-3 min from APCU 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

3. Verify LCC Desktop Video (Concluded)

- A31P Minimize all programs
 Right click on ATI icon on system tray
 Sel 'Schemes'
 Sel 'ENABLE DESKTOP DOWNLINK', 'ATI Property Page' displayed
 Sel 'Yes'
 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 dnk 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

(For SSPTS APCU 2 flights only)

(reduced copy)

P/TV-8a/126/O/A

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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's 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

Deactivating SSPTS APCU 2 will remove critical keep-alive pwr to LCH and IDC. Pwr must be reapplied within 105 min

1. Deactivate SSPTS APCU 2/LCH
A15 APCU 2 CONV – OFF
SM 179 POWER TRANSFER
√PTU 2 APCU OUT VOLTS: <10V
APCU 2 OUTPUT – OFF

(For SSPTS APCU 2 flights only)

TROUBLESHOOTING

Temp or Elec Status Yellow
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(J 107) port
A31p √OPP to LCC Cable connected to LCC RJ45 port
Exit LCC software and shut down Windows
- A15 APCU 2 CONV – OFF
OUTPUT – OFF, wait 10 sec, ON
CONV – ON
- SM 179 POWER TRANSFER
√PTU 2 APCU OUT VOLTS: 123V to 126V
- A31p LCC PGSC Pwr – ON
√A31p internal RJ45 Network Interface Card LED green
Perform LCC ACTIVATION, step 2
- √Local Area Network Connection 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

Yellow 'RJ-45 Port Configured for LCS Ops' Not Displayed on Desktop Crew Patch

- A31p Sel 'Shuttle Apps' > 'Network Configuration' > 'LCS RJ-45 Network Setup'
Enter '1' in network window
Sel 'OK'
Sel 'OK' in LCS window
Allow 20 sec for program to execute
√Yellow text displayed on desktop
Resume LCS Ops

P/TV-8b/126/O/B

(reduced copy)

HOOK
VELCROHOOK
VELCRO**IDC ACTIVATION**

1. LCC Setup √Hardware configured per LCC ACTIVATION steps 1,2 (Cue Card, LCS)

A31p PGSC Pwr – ON

2. IDC connectivity Check

A31p √A31p internal RJ45 Network Interface Card LED green
 If RJ45 Network Interface Card LED not green:
 A15 APCU 2 CONV – OFF
 OUTPUT – OFF, wait 10 sec, ON
 CONV – ON

SM 179 POWER TRANSFER
 √PTU 2 APCU OUT VOLTS: 123V to 126V

IDC SOFTWARE ACTIVATION

1. IDC Software Startup
 A31p Sel 'Shuttle Apps' > 'IDC'

2. 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 *

OPERATION**NOTE**

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

1. 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

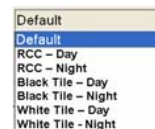
If IDC GUI GMT does not update during Ops, an attempt to shut down/restart A31p should be made

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 w/no RMS Motion:
 | Sel 'Stop Scan' after 30 sec
 If scanning w/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/126/O/B

(For SSPTS APCU 2 flights only)

(reduced copy)

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P/TV/126/FIN A

HOOK
VELCRO

HOOK
VELCRO

IDC DEACTIVATION

- IDC and Software Shutdown
A31p Sel 'Power off' on IDC GUI
IDC software > 'YES'
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

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
- lport probe failed:** Perform TROUBLESHOOTING, step 2
Condition: lport startup check failed. Expected during first pwr on attempt-resend pwr on
- lport not responding:** Perform TROUBLESHOOTING, step 2
Condition: lport 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 (with red X) tool tip on system tray:



Reseat OPP to LCC Cable (20 ft) to LCC RJ45 port
√Local Area Network Connection 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 and LCS
CMD/TLM port
 - A15 APCU 2 CONV – OFF
OUTPUT – OFF, wait 10 sec, ON
CONV – ON
- SM 179 POWER TRANSFER
√PTU 2 APCU OUT VOLTS: 123V to 126V
- 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

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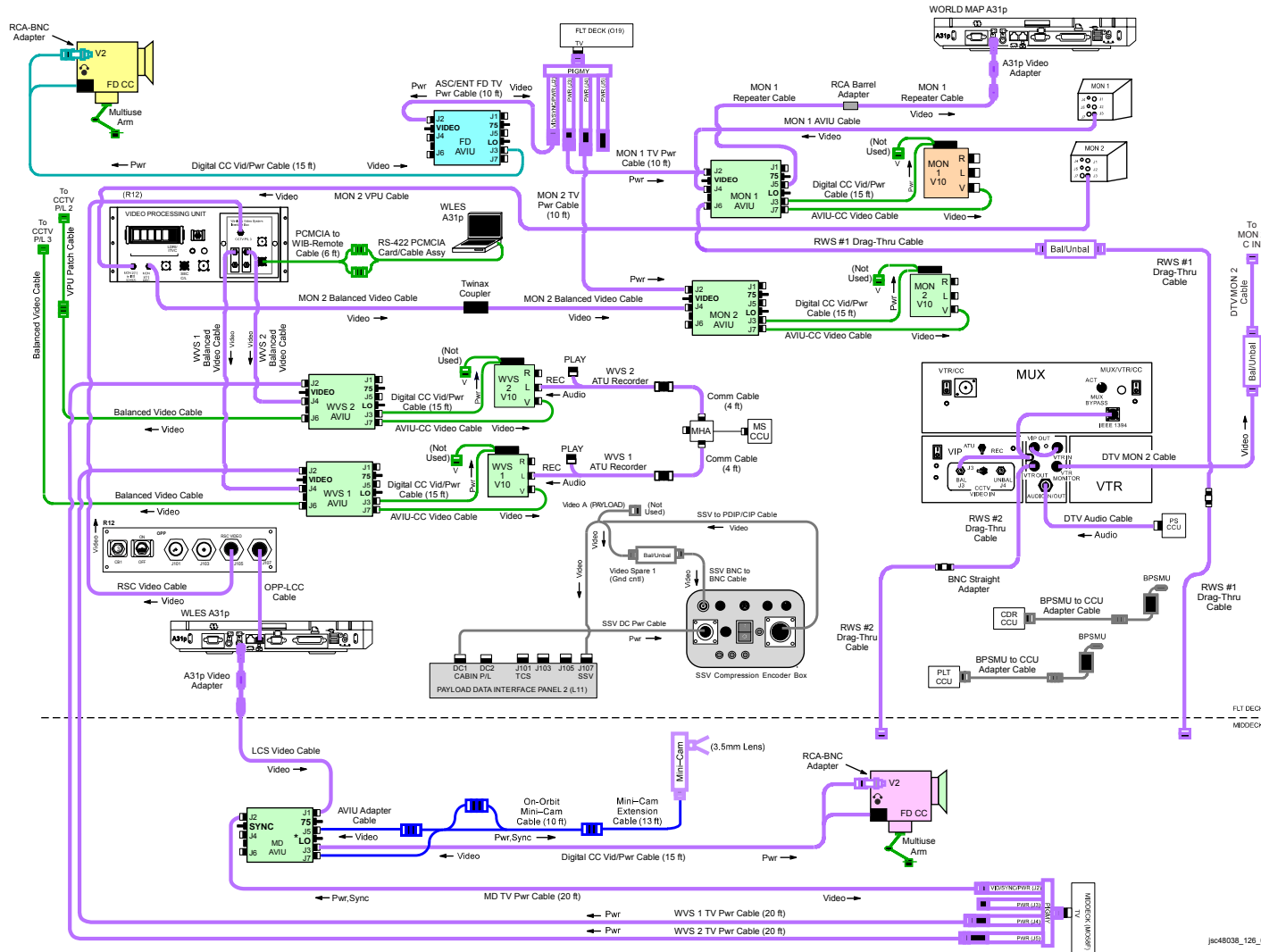
P/TV-9b/126/O/A

P/TV/126/FIN A

TOP

VIDEO SETUP

STOWAGE LOC	
Stow-n-Go	
L10:A1	
MS1 FDF	
Vol 3B	
A17/CC Bag	
MF71G	
A17/DTV Bag	



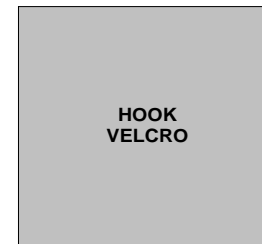
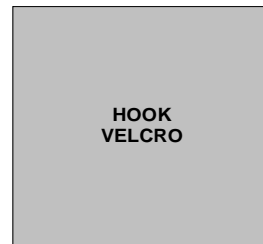
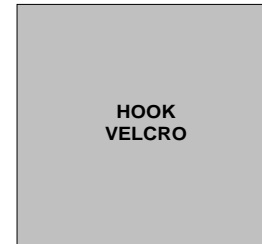
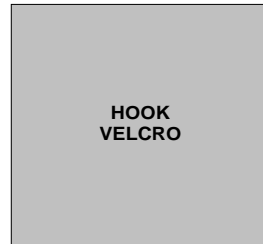
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P/TV/126/FIN A

TOP
BACK OF 'VIDEO SETUP'



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





P/TV-10b/126/O/A



P/TV/126/FIN A













D2Xs SETUP

HOOK
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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 – 0 F 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 –    √Exp Comp – 0 EV 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 – 0 F 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 –    √Exp Comp – 0 EV 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 – 0 F 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>

TOP
BACK OF 'D2Xs'

HOOK
VELCRO

D2Xs MANUAL "SUNLIT OBJECTS"	D2Xs EXPOSURE MATCH "HERO SHOT"	D2Xs CREW PHOTO
<p>Lens – as reqd</p> <p>NOTE If auto focus unachievable: Lens Focus Mode – M</p> <p>Lens Focus Mode – A Aperture – Min, locked Body Focus Mode – S √Batt installed √Flash Card installed Pwr – ON Top LCD √Batt √Frames remaining sufficient</p> <p>Exp Comp () – 0.0 Exp Mode – M SS – 500 f/stop – f/8</p> <p>Meter – Matrix () Diopter – Adjust Frame Rate – S √BKT disabled – 0 F 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>Lens – 12-24mm @ 18mm Aperture – Min, locked Body Focus Mode – S √Batt installed √Flash Card installed Pwr – ON Top LCD √Batt √Frames remaining sufficient</p> <p>Exp Comp () – 0.0 Exp Mode – P Meter – Matrix () Diopter – Adjust Frame Rate – S √BKT disabled – 0 F 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 EV 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 – 17-35mm @ 17mm Aperture – Min, locked Body Focus Mode – S √Batt installed √Flash Card installed Pwr – ON Top LCD √Batt √Frames remaining sufficient</p> <p>Exp Comp () – 0.0 Exp Mode – A f/stop – f/8 Meter – Matrix () Diopter – Adjust Frame Rate – Selftimer √BKT disabled – 0 F 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 EV Tilt – 45° (Direct)</p> <p>Accessory Equipment Shutter Release Cable – Install Multiuse Brkt – Install Multiuse Brkt Clamp – Install as reqd</p> <p><u>Technique</u> 1. Focus on crewmember 2. Body Focus Mode – M 3. Frame, Fire</p>

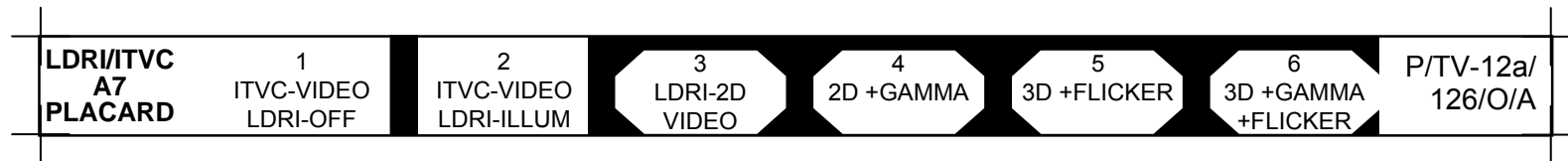
P/TV-11b/126/O/C

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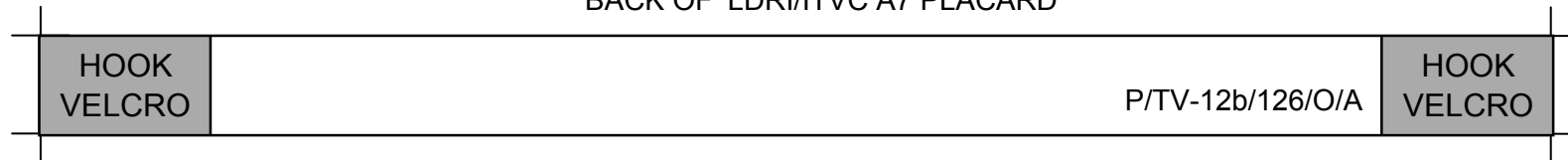
FS CC 3-21

P/TV/126/FIN A

TOP



TOP
BACK OF 'LDRI/ITVC A7 PLACARD'



DIGITAL PLAYBACK

HOOK
VELCRO

DIGITAL VIA VTR

HD DIGITAL VIA CC

NOTE

Digital Playback from CC only possible for CC Video recordings

ACTIVATION

- CC Setup per diagram (back of cue card)
For cable strain relief, attach MPC-to-G1 Cable Velcro strap to CC strap
- AVIU SYNC/VIDEO – VIDEO
HI-Z/75 – 75
PWR SELECT – LO
- O19 √TV PWR – ON
- CC PWR dial – VTR/PLAY

- If Dnkl**
Notify MCC, configuring for HD TV dnkl
- L10 (MUX) √MUX/VTR/CC PWR – off (LED off)
√VTR/CC/PWR – off (LED off)
Disconnect CHANNEL 3 IEEE 1394 Cable
MUX/VTR/CC PWR – on (LED on)
√MUX BYPASS – ACT
√CHANNEL 0,1 RATE SEL – 1
√2 RATE SEL – 8
 - O19 DC UTIL PWR MNA – ON
 - MPC PWR SPLY DC PWR SPLY PWR SW1 – ON
 - MPC PWR – ON (5V,3V green LEDs on)
 - L10 (MUX) √CHANNEL 2 F/O OK LED on

OPERATIONS

PLBK or DNKL VIDEO

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

- If Dnkl**
- MPC √HDV, TAXI LEDs – on
 - L10 (MUX) √CHANNEL 2 DATA LED – on

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

DEACTIVATION

- CC Remove, mark, stow tape as reqd
PWR dial – OFF
- O19 TV PWR – OFF, as reqd

- If Dnkl**
- MPC PWR – OFF
 - MPC PWR SPLY DC PWR SPLY PWR SW1 – OFF
 - O19 DC UTL PWR MNA – OFF
 - L10 (MUX) MUX/VTR/CC PWR – off (LED off)
Connect CHANNEL 3 IEEE 1394 cable

Notify MCC, returned to SD TV dnkl
Go to DEACTIVATION (Cue Card, TV), as reqd

ACTIVATION

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

OPERATIONS

PLBK or DNKL 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 Dnkl**
- 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(DNKL) complete:
| STOP pb – push
If VTR ops complete, go to DEACTIVATION

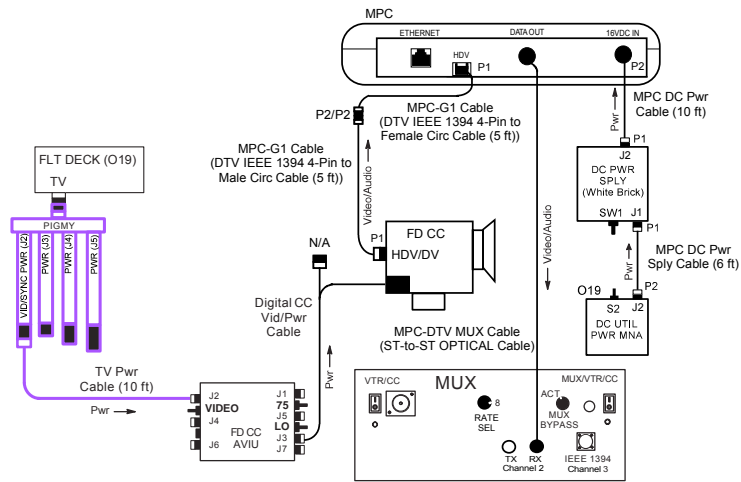
DEACTIVATION

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

TOP
BACK OF 'DIGITAL PLAYBACK'

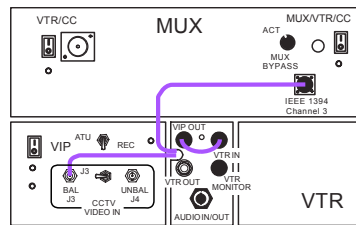
HOOK
VELCRO

HD DIGITAL VIA CC PLAYBACK



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DIGITAL VIA VTR PLAYBACK



jsc48038_126_012d.cvx

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P/TV/126/FIN A

NOTE

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NOTE

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PHOTO/TV CHECKLIST

STS
126