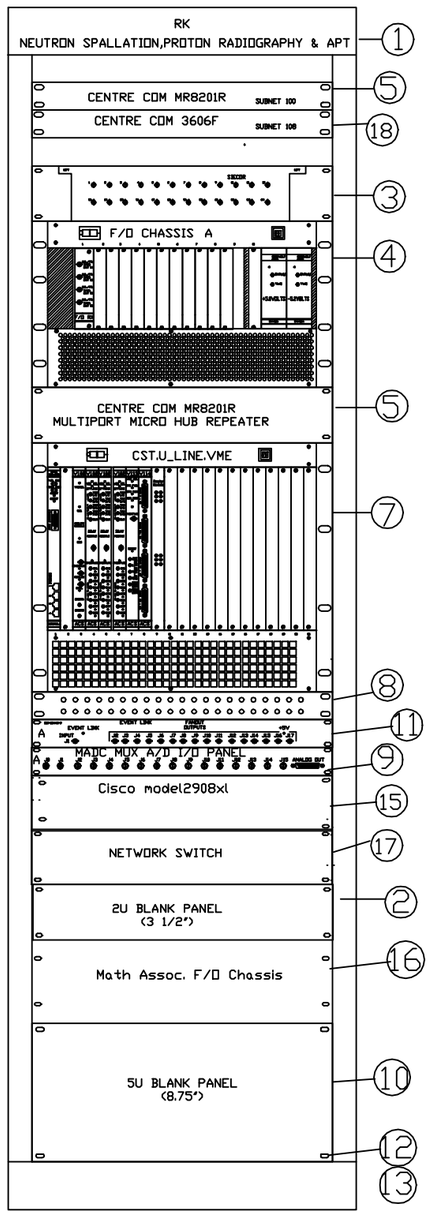
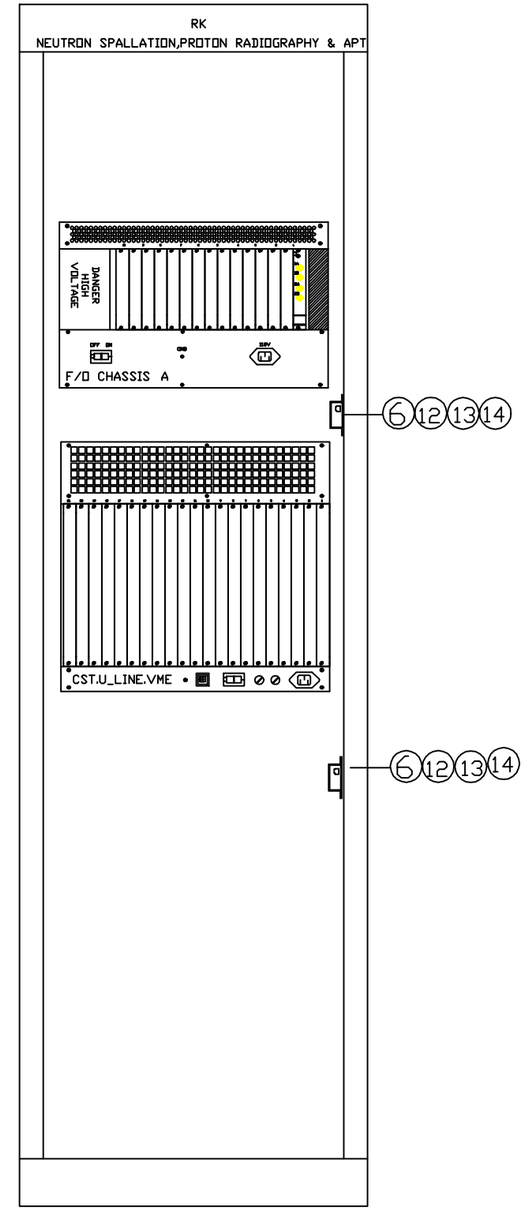
| REV. | ZONE | ECN NO. | DATE | BY | CKR | APP. |
|---|---|---|---|---|---|---|




FRONT




REAR

| -3 QTY REQD | -2 QTY REQD | -1 QTY REQD | REF DESIGNATOR | ITEM NO. | DESCRIPTION | MAT'L SPEC NO./DWG NO. |
|---|---|---|---|---|---|---|
| | | 1 | 18 | 18 | CENTRE COM 3606F | XXXX |
| | | 1 | 17 | 17 | Network SWITCH | XXXX |
| | | 1 | 16 | 16 | Math Assoc. F/O Chassis | XXXX |
| | | 1 | 15 | 15 | Cisco model2908xl | XXXX |
| | | 2 | 14 | 14 | ETHERNET TRANSCIEVER BRACKET | XXXX |
| | | 62 | 13 | 13 | WASHER FINISHING | T84230 |
| | | 62 | 12 | 12 | OVAL HEAD SCREW 10-32 X 5/8 | T59100 |
| | | 1 | 11 | 11 | FANOUT CHASSIS | DD9-E2442-5 |
| | | 1 | 10 | 10 | 8 3/4 BLANK PANEL | A45509 |
| | | 1 | 9 | 9 | MADC BREAKOUT PANEL | 94028183 |
| | | 1 | 8 | 8 | GROMMET PANEL | X |
| | | 1 | 7 | 7 | VME ULINE CHASSIS | X |
| | | 2 | 6 | 6 | ETHERNET TRANSCIEVER | MX20T |
| | | 2 | 5 | 5 | ETHERNET HUB REPEATER | MR820TR |
| | | 1 | 4 | 4 | 3U F/O CHASSIS | X |
| | | 1 | 3 | 3 | SIECOR F/O TERMINATION BOX | CNP-024-15 |
| | | 1 | 2 | 2 | 3.5" BLANK PANEL | A45503 |
| | | 1 | 1 | 1 | RACK | X |

INTERPRET IN GENERAL ACCORDANCE WITH ASME Y14.24M-1989

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

DECIMAL TOLERANCES
.X ±.030
.XX ±.015
.XXX ±.005
ANGULAR TOLERANCE
± .5°

OUTSTANDING ECN

NA
FINISH

BREAK SHARP EDGES
MAX. XX MIN. XX

Q.A. CATEGORY A-3

| | | |
|---|---|---|
| DRAWN BY | N.S. | 06/29/99 |
| CHECKED BY | | |
| DESIGN APPROVAL | | |
| ENGINEER APPROVAL | | |
| SUPVR. APPROVAL | | |

NEXT ASSEMBLY

BROOKHAVEN NATIONAL LABORATORY
ASSOCIATED UNIVERSITIES, INC.
UPTON, N.Y. 11973

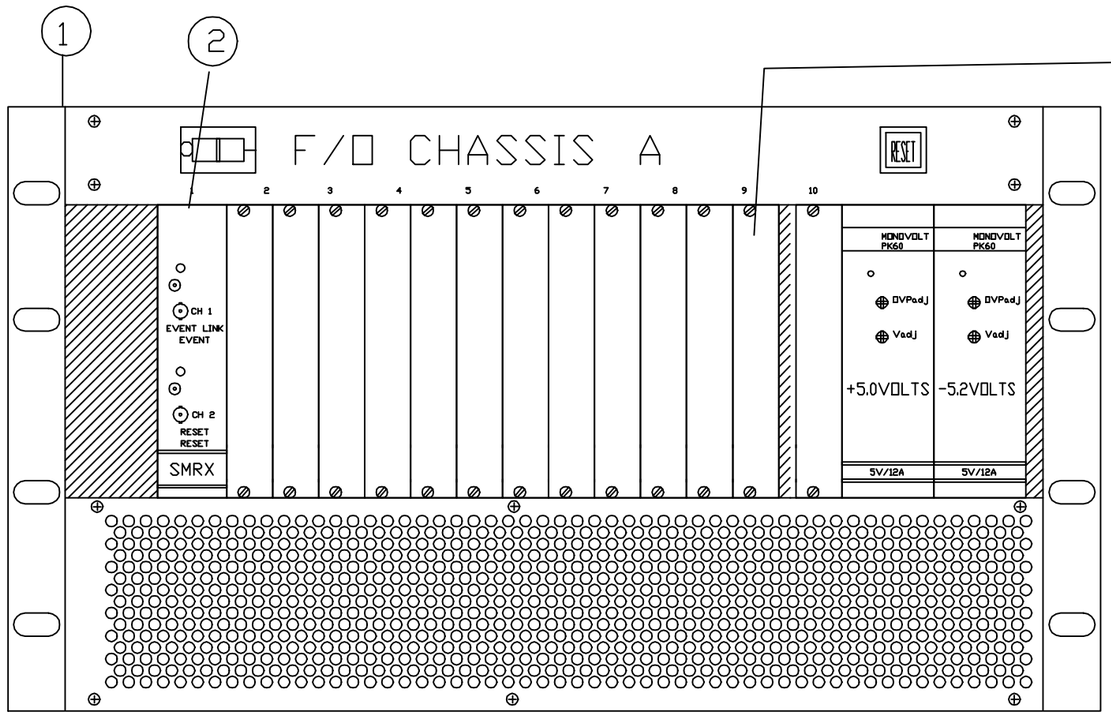
NEUTRON SPALLATION PROTON RADIOGRAPHY
& APT U LINE
ASSEMBLY

SIZE D | DRAWING NUMBER | REV. A

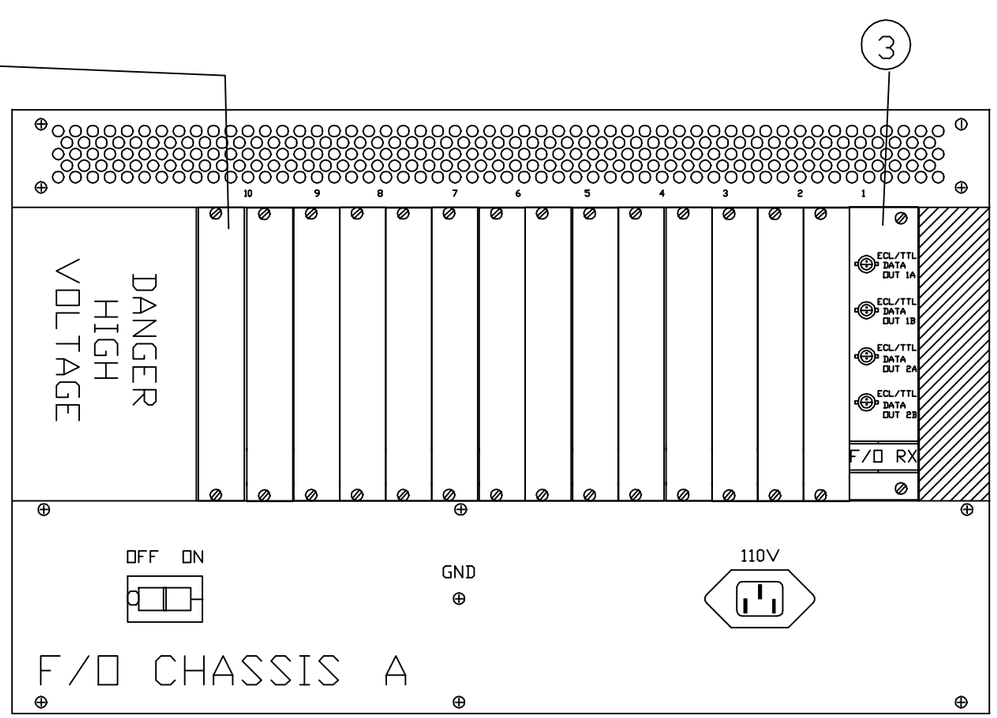
MATERIAL: ——— | SCALE: N.A. | WEIGHT: – | SHEET 1 OF 9

*AUTOCAD

| REV. | ZONE | ECN NO. | DATE | BY | CKR | APP. |
|---|---|---|---|---|---|---|




FRONT VIEW



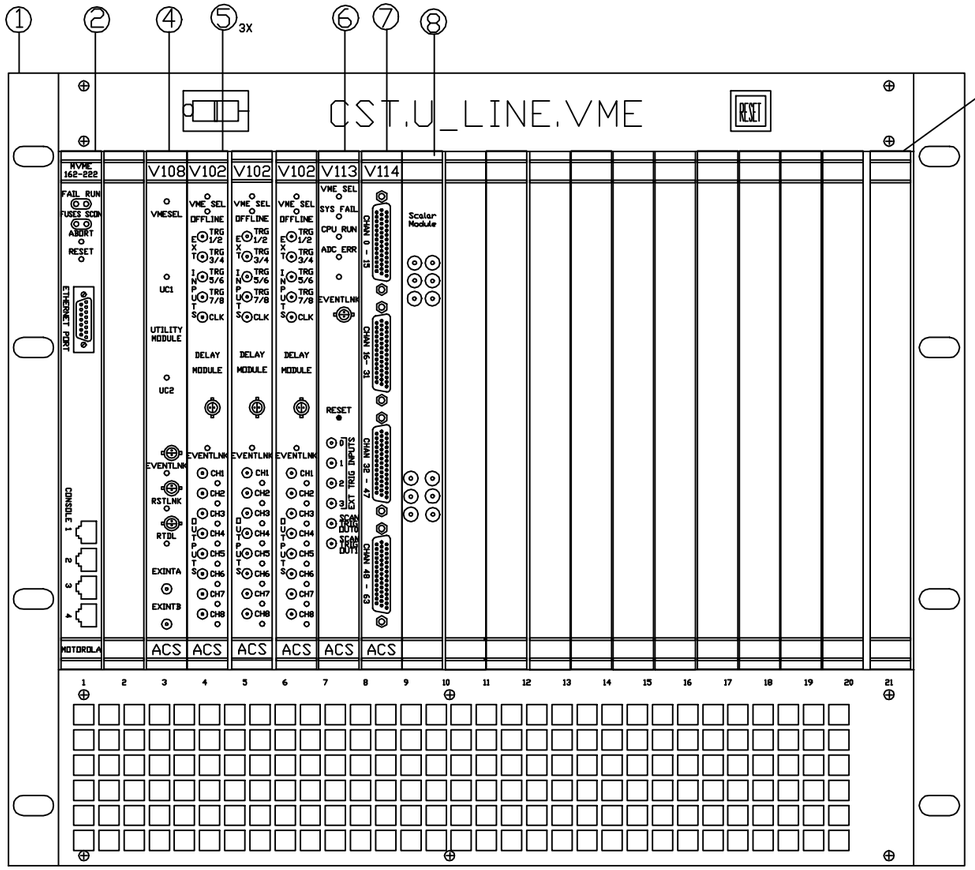

REAR VIEW

| QTY REQD -3 | QTY REQD -2 | QTY REQD -1 | REF DESIGNATOR | ITEM NO. | DESCRIPTION | MATL DWG NO.,VNL NO. |
|---|---|---|---|---|---|---|
| | | 18 | 4 | 4 | BLANK PANELS 3U | X |
| | | 1 | 3 | 3 | F/O RECIEVER TRANSITION MODULE | D09-E-2542 |
| | | 1 | 2 | 2 | F/O RECIEVER | 94028099 |
| | | 1 | 1 | 1 | F/O CHASSIS | ACS 94/3 |

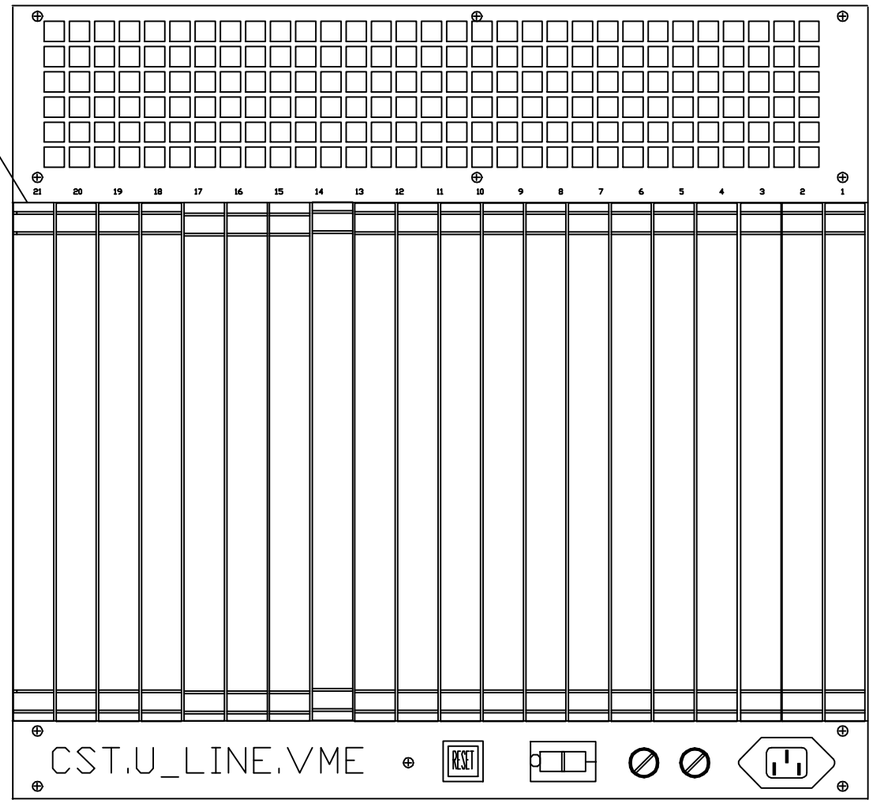
| | | | | |
|---|---|---|---|---|
| INTERPRET IN GENERAL ACCORDANCE WITH ASME Y14.24M-1989 | Q.A. CATEGORY A-3 | DATE | BROOKHAVEN NATIONAL LABORATORY ASSOCIATED UNIVERSITIES, INC. UPTON, N.Y. 11973 | |
| UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES | DRAWN BY N.S. | 06/28/99 | NEUTRON SPALLATION, PROTON RADIOGRAPHY | |
| DECIMAL TOLERANCES .X ±.030 .XX ±.015 .XXX ±.005 ANGULAR TOLERANCE ± .5° | CHECKED BY | | & APT U LINE F/O CHASSIS | |
| | DESIGN APPROVAL | | ASSEMBLY | |
| | ENGINEER APPROVAL | | | |
| | SUPVR. APPROVAL | | SIZE D — Drawing Number — REV. A | |
| NA FINISH — BREAK SHARP EDGES MAX. XX MIN. XX | NEXT ASSEMBLY | | DRAWING NUMBER | |
| OUTSTANDING ECN | | | MATERIAL: — SCALE: N.A. WEIGHT: — SHEET 2 OF 9 | |

*AUTOCAD

| REV. | ZONE | ECN NO. | DATE | BY | CKR | APP. |
|---|---|---|---|---|---|---|




FRONT VIEW




REAR VIEW

| QTY REQD | REF DESIGNATOR | ITEM NO. | DESCRIPTION | MATL DWG NO./BNL NO. |
|---|---|---|---|---|
| | 1 | 8 | 8 Scalar Bd. | |
| | 1 | 7 | 7 V114 MADC | A/RHIC/94-1922-001 |
| | 1 | 6 | 6 V113 MADC | 94028138 |
| | 3 | 5 | 5 V102 | 94028070 |
| | 1 | 4 | 4 V108 | 94028092 |
| | 34 | 3 | 3 6U BLANK PANELS | X |
| | 1 | 2 | 2 MOTOROLA CPU BD. | MVME162-222 |
| | 1 | 1 | 1 VME CHASSIS 6U | 93008000 |

INTERPRET IN GENERAL ACCORDANCE WITH ASME Y14.24M-1989

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

DECIMAL TOLERANCES
.X ±.030
.XX ±.015
.XXX ±.005
ANGULAR TOLERANCE ± .5°

NA FINISH — BREAK SHARP EDGES MAX. XX MIN. XX

OUTSTANDING ECN

Q.A. CATEGORY A-3

DRAWN BY N.S. — DATE 06/28/99

CHECKED BY

DESIGN APPROVAL

ENGINEER APPROVAL

SUPVR. APPROVAL

NEXT ASSEMBLY

BROOKHAVEN NATIONAL LABORATORY
ASSOCIATED UNIVERSITIES, INC.
UPTON, N.Y. 11973

NEUTRON SPALLATION, PROTON RADIOGRAPHY
& APT U LINE VME CHASSIS
ASSEMBLY

SIZE D — Drawing Number — REV. A
DRAWING NUMBER

MATERIAL: ——— SCALE: N.A. WEIGHT: – SHEET 3 OF 9

*AUTOCAD

| REV. | ZONE | ECN NO. | DATE | BY | CKR | APP. |
|---|---|---|---|---|---|---|

D09-E2442-5

B

EVENT LINK INPUT J1

EVENT LINK FANOUT OUTPUTS

+5V

J2 J3 J4 J5 J6 J7 J8 J9 J10 J11 J12 J13 J14 J15 J16 J17

BLDG. 911 2nd FL.
RACK 5322
EVENT FANOUT

CABLE ASSY.94028176
4' 2places

RESET

EVENT

RK5035
BLDG.911
2nd.FLOOR
AGS F/O CHASSIS
SLOT 3 REAR

ECL/TTL DATA IN 1

ECL/TTL DATA IN 2

F/O TX

TO PAGE 5

D09-E2442-5

A

EVENT LINK INPUT J1

RESET LINK FANOUT OUTPUTS

+5V

J2 J3 J4 J5 J6 J7 J8 J9 J10 J11 J12 J13 J14 J15 J16 J17

BLDG. 911 2nd FL.
RACK 5322
RESET FANOUT

| -3 QTY REQD | -2 | -1 | REF. DESIGNATOR | ITEM NO. | DESCRIPTION | MAT'L. DWG NO./BNL NO. |
|---|---|---|---|---|---|---|
| | | | | | | |

INTERPRET IN GENERAL ACCORDANCE WITH ASME Y14.24M-1989

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

DECIMAL TOLERANCES
.X ±.030
.XX ±.015
.XXX ±.005
ANGULAR TOLERANCE ± .5'

NA FINISH

BREAK SHARP EDGES
MAX. XX MIN. XX

OUTSTANDING ECN

Q.A. CATEGORY A-3

DRAWN BY N.S. DATE 06/28/99

CHECKED BY

DESIGN APPROVAL

ENGINEER APPROVAL

SUPVR. APPROVAL

NEXT ASSEMBLY

BROOKHAVEN NATIONAL LABORATORY
ASSOCIATED UNIVERSITIES, INC.
UPTON, N.Y. 11973

U line timing and communication cabling

DIAGRAMS

SIZE D

Drawing Number

DRAWING NUMBER

REV. A

MATERIAL: ——— SCALE: N.A. WEIGHT: – SHEET 4 OF 9

*AUTOCAD

| REV. | ZONE | ECN NO. | DATE | BY | CKR | APP. |
|---|---|---|---|---|---|---|

FROM PAGE 4

TO PAGE 6

RK5035
BLDG.911
2nd.FLOOR
AGS F/O CHASSIS
SLOT 3

1300nM MULTI-MODE

CHAN 1 ACTIVE
CH 1 OUTPUT
reset RESET
CHAN 2 ACTIV
CH 2 OUTPUT
EVENT EVENT

MMTX

RESET

EVENT

CABLE#043BB03

CABLE#043BB04

BLDG9112NDFL.
MEZZ
MIC104

SEE J.GOULD A7.Dwg FOR ETHERNET DOCUMENTATION

SEE J.GOULD A7.Dwg FOR ETHERNET DOCUMENTATION

1 2 3 4 5 6 A FRONT

REAR A

BRN DRN GRN BLU GRY WHT

RED

BLDG921
WALL
F/OPP

1 2 3 4 5 6 B FRONT

BLDG9112NDFL.
MEZZ
MIC104

SPARE
SPARE
SPARE
SPARE
SPARE

1 2 3 4 5 6 B FRONT

REAR B

BRN DRN GRN BLU GRY WHT

BLUE

BLDG921
WALL
F/OPP

1 2 3 4 5 6 B FRONT

BRN DRN GRN BLU GRY WHT

BRN DRN GRN BLU GRY WHT

BRN DRN GRN BLU GRY WHT

BRN DRN GRN BLU GRY WHT

BRN DRN GRN BLU GRY WHT

48 FIBER CABLE
FROM 911 TO 921

RK5322
BLDG.911
2nd.FLOOR
Math Assoc. F/O CHASSIS
Slot 10

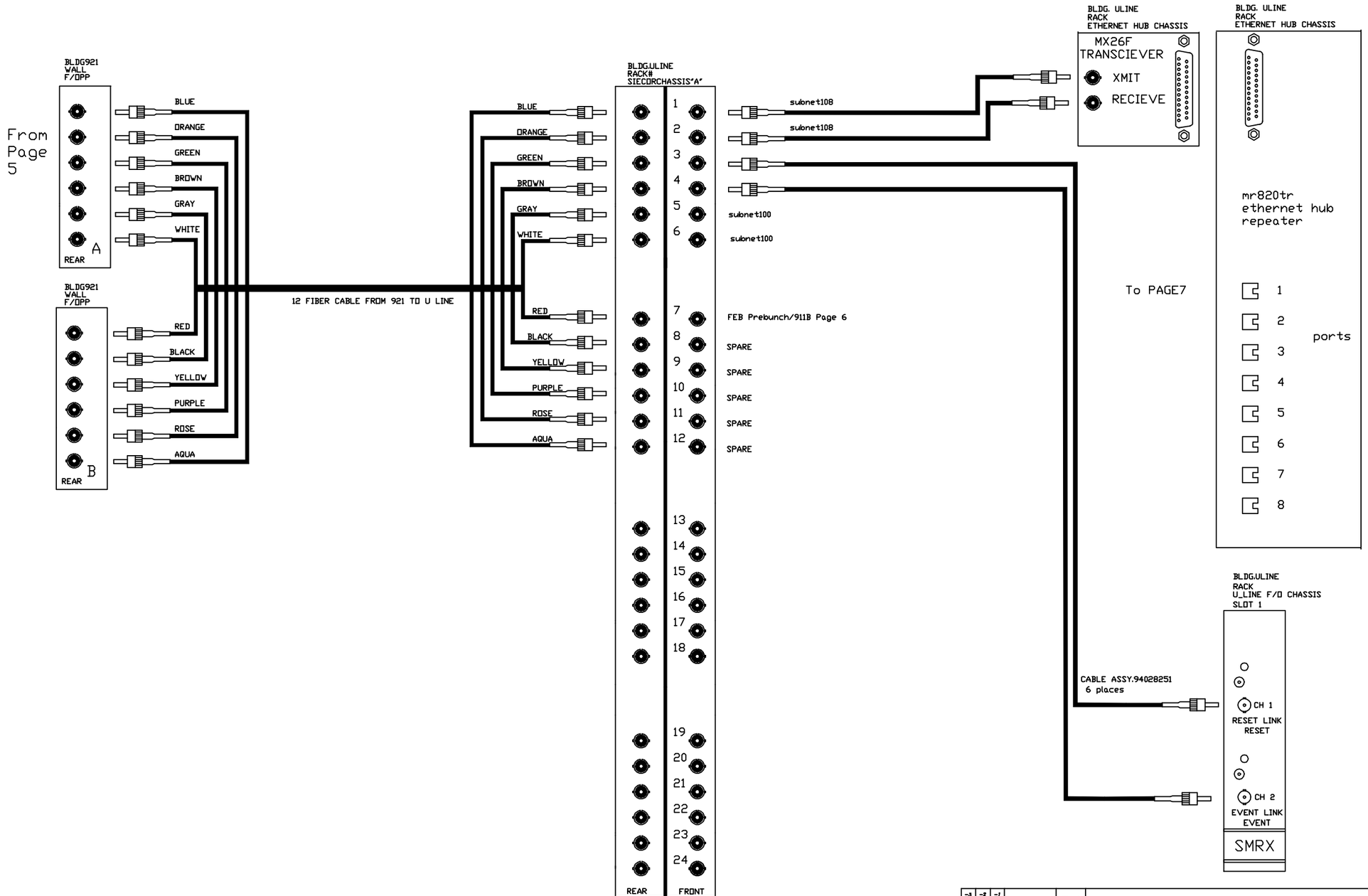
U Line signal
FEB Prebunch/911b

RK5322
BLDG.911
2nd.FLOOR
Master Reset Chassis
CFE-911-RES
V194
Slot 5 - 3B output

| -3 / -2 / -1 QTY REQD | REF DESIGNATOR | ITEM NO. | DESCRIPTION | MAT'L DWG NO./BNL NO. |
|---|---|---|---|---|

| | | | |
|---|---|---|---|
| INTERPRET IN GENERAL ACCORDANCE WITH ASME Y14.24M-1989 | Q.A. CATEGORY A-3 | DATE | BROOKHAVEN NATIONAL LABORATORY, ASSOCIATED UNIVERSITIES, INC., UPTON, N.Y. 11973 |
| UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES | DRAWN BY N.S. | 08/12/99 | U line timing and communication cabling |
| DECIMAL TOLERANCES .X ±.030 .XX ±.015 .XXX ±.005 ANGULAR TOLERANCE ± .5° | CHECKED BY / DESIGN APPROVAL / ENGINEER APPROVAL / SUPVR. APPROVAL | | DIAGRAMS |
| NA FINISH — BREAK SHARP EDGES MAX. XX MIN. XX | NEXT ASSEMBLY | | SIZE D — Drawing Number — REV. A |
| OUTSTANDING ECN | | | MATERIAL: — SCALE: N.A. WEIGHT: – SHEET 5 OF 9 |

*AUTOCAD




| QTY REQD | REF DESIGNATOR | ITEM NO. | DESCRIPTION | MAT'L DWG NO./DRL NO. |
|---|---|---|---|---|

INTERPRET IN GENERAL ACCORDANCE WITH ASME Y14.24M–1989

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

DECIMAL TOLERANCES .X ±.030 .XX ±.015 .XXX ±.005 ANGULAR TOLERANCE ± .5'

FINISH: NA

BREAK SHARP EDGES MAX. XX MIN. XX

OUTSTANDING ECN

Q.A. CATEGORY A–3

DRAWN BY: N.S. DATE: 03/28/99

CHECKED BY

DESIGN APPROVAL

ENGINEER APPROVAL

SUPVR. APPROVAL

NEXT ASSEMBLY

BROOKHAVEN NATIONAL LABORATORY
ASSOCIATED UNIVERSITIES, INC.
UPTON, N.Y. 11973

U line timing and communication cabling

DIAGRAMS

SIZE: D

Drawing Number

DRAWING NUMBER

REV.: A

MATERIAL: ——— SCALE: N.A. WEIGHT: – SHEET 6 OF 9

*AUTOCAD

| REV. | ZONE | ECN NO. | DATE | BY | CKR | APP. |
|---|---|---|---|---|---|---|

BLDG. U LINE
RACKXXXX
CST.U_LINE.VME

1

From page 6

YELLOW HUB CABLE 3'

BLDG. U LINE
RACKXXXX
CST.U_LINE.VME

MX20T

ETHERNET PORT

CABLE ASSY INMAC 08207

ETHERNET PORT

BLDG. U LINE
RACKXXXX
CST.U_LINE.VME
SLOT 1

MVME 162-222

FAIL_RUN
FUSES_SCON
ABORT
RESET

CONSOLE 1
2
3
4

MOTOROLA

BLDG. U LINE
RACKXXXX
CST.U_LINE.VME
SLOT 3

V108

VMESEL
UC1
UTILITY MODULE
UC2
EVENTLNK
RSTLNK
RTDL
EXINTA
EXINTB

ACS

CABLE ASSY. BNL A29991

BLDG. U LINE
RACKXXXX
CST.U_LINE.VME
SLOT 6

V102

VME_SEL
OFFLINE
EXT TRG 1/2
EXT TRG 3/4
INPUTS TRG 5/6
INPUTS TRG 7/8
CLK
DELAY MODULE
EVENTLNK
OUTPUTS CH1 CH2 CH3 CH4 CH5 CH6 CH7 CH8

SEE INSTRUMENT GROUP DOCUMENT

ACS

BLDG. U LINE
RACKXXXX
CST.U_LINE.VME
SLOT 7

V113

VME_SEL
SYS FAIL
CPU RUN
ADC_ERR
EVENTLNK
RESET
EXT TRIG INPUTS 0 1 2 3
SCAN TRIG OUT0
SCAN TRIG OUT1

ACS

94028220
MADC P2 CABLE

BLDG. U LINE
RACKXXXX
CST.U_LINE.VME
SLOT 8

V114

CHAN 0 - 15
CHAN 16- 31
CHAN 32 - 47
CHAN 48 - 63

SEE INSTRUMENT GROUP DOCUMENT
SPARE
SPARE
SPARE

ACS

BLDG. U LINE
RACKXXXX
CST.U_LINE.VME
SLOT 4

V102

VME_SEL
OFFLINE
EXT TRG 1/2
EXT TRG 3/4
INPUTS TRG 5/6
INPUTS TRG 7/8
CLK
DELAY MODULE
EVENTLNK
OUTPUTS CH1 CH2 CH3 CH4 CH5 CH6 CH7 CH8

SEE INSTRUMENT GROUP DOCUMENT

ACS

BLDG. U LINE
RACKXXXX
CST.U_LINE.VME
SLOT 5

V102

VME_SEL
OFFLINE
EXT TRG 1/2
EXT TRG 3/4
INPUTS TRG 5/6
INPUTS TRG 7/8
CLK
DELAY MODULE
EVENTLNK
OUTPUTS CH1 CH2 CH3 CH4 CH5 CH6 CH7 CH8

SEE INSTRUMENT GROUP DOCUMENT

ACS

BLDG. U LINE
RACKXXXX
CST.U_LINE.VME
SLOT 6

SCALAR MODULE

SEE INSTRUMENT GROUP DOCUMENT

SEE INSTRUMENT GROUP DOCUMENT

D09-E2442-5

EVENT LINK INPUT J1

EVENT LINK FANOUT OUTPUTS J2 J3 J4 J5 J6 J7 J8 J9 J10 J11 J12 J13 J14 J15 J16 J17

+5V

CABLE ASSY.94028176
4' 5places

BLDG. U LINE
RACKXXXX
U LINE F/O CHASSIS
SLOT 1 REAR

ECL/TTL DATA OUT 1A
ECL/TTL DATA OUT 1B
ECL/TTL DATA OUT 2A
ECL/TTL DATA OUT 2B

F/O RX

BLDG. U LINE
RACKXXXX
U LINE EVENT FANOUT CHASSIS
REAR OF RACK

CABLE ASSY.94028176
7' 2places

| -3 QTY REQD | -2 | -1 | REF DESIGNATOR | ITEM NO. | DESCRIPTION | MAT'L DWG NO./BNL NO. |
|---|---|---|---|---|---|---|

INTERPRET IN GENERAL ACCORDANCE WITH ASME Y14.24M-1989

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

DECIMAL TOLERANCES
.X ±.030
.XX ±.015
.XXX ±.005
ANGULAR TOLERANCE ± .5°

NA FINISH

BREAK SHARP EDGES
MAX. XX MIN. XX

OUTSTANDING ECN

Q.A. CATEGORY A-3

| | | |
|---|---|---|
| DRAWN BY | N.S. | 06/28/99 |
| CHECKED BY | | |
| DESIGN APPROVAL | | |
| ENGINEER APPROVAL | | |
| SUPVR. APPROVAL | | |

NEXT ASSEMBLY

BROOKHAVEN NATIONAL LABORATORY
ASSOCIATED UNIVERSITIES, INC.
UPTON, N.Y. 11973

U line timing and communication cabling

DIAGRAMS

SIZE D | Drawing Number | REV. A
DRAWING NUMBER

MATERIAL: ——— | SCALE: N.A. | WEIGHT: – | SHEET 7 OF 9

*AUTOCAD

| REV. | ZONE | ECN NO. | DATE | BY | CKR | APP. |
|---|---|---|---|---|---|---|

From Page 6

BLDG.ULINE
RACK#
SIECDRCHASSIS'A'

1 for subnet 108 PAGE 6
2 for subnet 108 PAGE 6
3 for RESET link PAGE 6
4 for EVENT link PAGE 6
5
6
7 FEB Prebunch/911b PAGE 9
8 SPARE
9 SPARE
10 SPARE
11 SPARE
12 SPARE
13
14
15
16
17
18
19
20
21
22
23
24

REAR FRONT

BLDG. ULINE
RACK
ETHERNET HUB CHASSIS

MX26F
TRANSCIEVER
XMIT
RECIEVE

BLDG. ULINE
RACK
ETHERNET HUB CHASSIS

mr820tr
ethernet hub
repeater

1
2
ports
3
4
5
6
7
8

BLDG. ULINE
RACK
CISCO MODEL 2908XL

1 TO MONITOR
2 TO MONITOR
3 TO MONITOR
4 TO MONITOR
5 TO MONITOR
6 TO MONITOR
7 TO MONITOR
8 TO MONITOR
ports

| -3 | -2 | -1 | QTY REQD | REF DESIGNATOR | ITEM NO. | DESCRIPTION | MAT'L DWG NO./DRL NO. |
|---|---|---|---|---|---|---|---|

INTERPRET IN GENERAL ACCORDANCE WITH ASME Y14.24M-1989
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
DECIMAL TOLERANCES .X ±.030 .XX ±.015 .XXX ±.005 ANGULAR TOLERANCE ± .5'
NA FINISH
BREAK SHARP EDGES MAX. XX MIN. XX
OUTSTANDING ECN

Q.A. CATEGORY A-3
DRAWN BY N.S. DATE 06/28/99
CHECKED BY
DESIGN APPROVAL
ENGINEER APPROVAL
SUPVR. APPROVAL
NEXT ASSEMBLY

BROOKHAVEN NATIONAL LABORATORY
ASSOCIATED UNIVERSITIES, INC.
UPTON, N.Y. 11973

U line timing and communication cabling

DIAGRAMS

SIZE D | Drawing Number | REV. A
DRAWING NUMBER

MATERIAL: —— SCALE: N.A. WEIGHT: — SHEET 8 OF 9

*AUTOCAD

| REV. | ZONE | ECN NO. | DATE | BY | CKR | APP. |
|---|---|---|---|---|---|---|

From Page 6

BLDG.ULINE
RACK#
SIECDRCHASSIS"A"

| | |
|---|---|
| 1 | for subnet 108 PAGE 6 |
| 2 | for subnet 108 PAGE 6 |
| 3 | for RESET link PAGE 6 |
| 4 | for EVENT link PAGE 6 |
| 5 | for subnet 100 PAGE 6 |
| 6 | for subnet 100 PAGE 6 |
| 7 | FEB Prebunch/911b PAGE 5 |
| 8 | SPARE |
| 9 | SPARE |
| 10 | SPARE |
| 11 | SPARE |
| 12 | SPARE |
| 13 | |
| 14 | |
| 15 | |
| 16 | |
| 17 | |
| 18 | |
| 19 | |
| 20 | |
| 21 | |
| 22 | |
| 23 | |
| 24 | |

REAR FRONT

BLDG. ULINE
RACK
Math Assoc. F/O Chassis
Slot 1

F/O Reciever

U line trailer
FEB Prebunch/911b Signal ( See Page 5 for origin)

| -3 | -2 | -1 | REF DESIGNATOR | ITEM NO. | DESCRIPTION | MATL DWG NO./BNL NO. |
|---|---|---|---|---|---|---|
| QTY REQD | | | | | | |

INTERPRET IN GENERAL ACCORDANCE WITH ASME Y14.24M-1989

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

DECIMAL TOLERANCES
.X ±.030
.XX ±.015
.XXX ±.005
ANGULAR TOLERANCE ± .5°

NA FINISH

BREAK SHARP EDGES
MAX. XX MIN. XX

OUTSTANDING ECN

Q.A. CATEGORY A-3

| | | |
|---|---|---|
| DRAWN BY | N.S. | 06/28/99 |
| CHECKED BY | | |
| DESIGN APPROVAL | | |
| ENGINEER APPROVAL | | |
| SUPVR. APPROVAL | | |

NEXT ASSEMBLY

BROOKHAVEN NATIONAL LABORATORY
ASSOCIATED UNIVERSITIES, INC.
UPTON, N.Y. 11973

U line timing and communication cabling

DIAGRAMS

SIZE D | Drawing Number | REV. A
DRAWING NUMBER

MATERIAL: ——— | SCALE: N.A. | WEIGHT: – | SHEET 9 OF 9

*AUTOCAD