Chart 5-4 Set Provisioning Data (Cont'd)

Step   **Procedure**

```
--- Port1 Throughput ---
 3. 1.5Mbps  (CH1)      *1 *2 *3 *4
 4.  3Mbps  (CH1-02)
 5.  6Mbps  (CH1-04)
 6. 12Mbps  (CH1-08)
 7. 24Mbps  (CH1-16)
 8. 30Mbps  (CH1-20)
 9. 42Mbps  (CH1-28)
Current Setting : 2
Enter Selection ([RET]=No Change) : 1
```

Notes: *1 For 8*1.5M at Main/Main*
*2 For 8*1.5M/For 16*1.5M at Main/Main*
*3 For 16*1.5M/For 28*1.5M at Main/Main*
*4 For 28*1.5M*

Throughput for Main signal is selectable at Main Shared according to Main signal interface.

```
--- Port1+2 Throughput ---
 3. 1.5Mbps  (CH1)      *1 *2 *3
 4.  3Mbps  (CH1-02)
 5.  6Mbps  (CH1-04)
 6. 12Mbps  (CH1-08)
 7. 24Mbps  (CH1-16)
 8. 30Mbps  (CH1-20)
 9. 42Mbps  (CH1-28)
Current Setting : 2
Enter Selection ([RET]=No Change) : 1
```

Notes: *1 For 8*1.5M at Main Shared*
*2 For 16*1.5M at Main Shared*
*3 For 28*1.5M at Main Shared*

When Port1 throughput is 1.5Mbps, following Framing format selection appears,

```
--- Port1 1.5M Framing Format ---
 1. UF     (Unframed)
 2. SF     (ANSI T1.107)
 3. ESF    (ANSI T1.107)
Current Setting : 2
Enter Selection ([RET]=No Change) : 1
```

Chart 5-4 Set Provisioning Data (Cont'd)

Step	Procedure

When Port1/Port2 Assignment is set to SC Shared, WS Shared or Main Shared, following Port switching selection appears,

```
--- Port Switching ---
1. Enable
2. Disable
Current Setting : 2
Enter Selection ([RET]=No Change) : 1
```

11   Press the "1" or "2" key and press the "Enter" key,

```
--- Port1 Setting ---
1. Auto Negotiation (AUTO-MDI/MDIX)
2. 10BASE-T       /    Half Duplex  (MDI)
3. 10BASE-T       /    Half Duplex  (MDIX)
4. 10BASE-T       /    Full Duplex  (MDI)
5. 10BASE-T       /    Full Duplex  (MDIX)
6. 100BASE-TX     /    Half Duplex  (MDI)
7. 100BASE-TX     /    Full Duplex  (MDIX)
8. 100BASE-TX     /    Half Duplex  (MDI)
9. 100BASE-TX     /    Full Duplex  (MDIX)
Current Setting : 1
Enter Selection([RET]=No Change): 3
```

12   Enter corresponding Port1 interface mode number and press the "Enter" key,

```
--- Port1 Collision Report ---
1. Enable
2. Disable
Current Setting : 1
Enter Selection([RET]=No Change): 2
```

Port1 Collision Report selection is displayed when the "Auto Negotiation (Auto MDI / MDIX)" or "**** / Half Duplex (****)" is selected in Port1 Setting.

13   Press the "1" or "2" key and press the "Enter" key,

Chart 5-4 Set Provisioning Data (Cont'd)

Step	Procedure

```
--- Port1 Flow Control ---
1. Enable
2. Disable
Current Setting : 1
Enter Selection([RET]=No Change): 2
```

14   Press the "1" or "2" key and press the "Enter" key,

```
--- Port1 Far End Link Down Control ---
1. Enabled
2. Disabled
Current Setting : 1
Enter Selection([RET]=No Change): 2
```

Note: Not displayed when Port setting is "Enable".

15   Press the "1" or "2" key and press the "Enter" key,

When LAN Port2 is used, continue the setting as follows,

```
--- Port2 Throughput ---
1. 64kbps
2. 128kbps
Current Setting : 2
Enter Selection ([RET]=No Change) : 1
```

When Port2 is assigned to 1.5Mbps Main signal, throughput for Main signal is selectable at Main/SC according to Main signal interface.

When Port2 throughput is 1.5Mbps, following Framing format selection appears,

```
--- Port2 1.5M Framing Format ---
1. UF     (Unframed)
2. SF     (ANSI T1.107)
3. ESF    (ANSI T1.107)
Current Setting : 2
Enter Selection ([RET]=No Change) : 1
```

16   Press the "2" key for "Set Provisioning Data" and press the "Enter" key (refer to Step 1),

---

Chart 5-4 Set Provisioning Data (Cont'd)

Step	Procedure

---

17   Press the "1" key for "Main/LAN Signal Configuration" and press the "Enter" key,

```
--- LAN (Main / WS / SC) function ---
1. Used
2. Not Used
Current Setting : 1
Enter Selection ([RET]=No Change) : 2
```

18   Press the "1" key and press the "Enter" key when LAN is not provided,

```
--- Port2 Setting ---
1. Auto Negotiation (AUTO-MDI/MDIX)
2. 10BASE-T        /    Half  Duplex   (MDI)
3. 10BASE-T        /    Half  Duplex   (MDIX)
4. 10BASE-T        /    Full  Duplex   (MDI)
5. 10BASE-T        /    Full  Duplex   (MDIX)
6. 100BASE-TX      /    Half  Duplex   (MDI)
7. 100BASE-TX      /    Full  Duplex   (MDIX)
8. 100BASE-TX      /    Half  Duplex   (MDI)
9. 100BASE-TX      /    Full  Duplex   (MDIX)
Current Setting : 1
Enter Selection([RET]=No Change): 3
```

19   Enter corresponding Port2 interface mode number and press the "Enter" key,

```
--- Port2 Collision Report ---
1. Enable
2. Disable
Current Setting : 1
Enter Selection([RET]=No Change): 2
```

Port2 Collision Report selection is displayed when the "Auto Negotiation (Auto MDI / MDIX)" or "**** / Half Duplex (****)" is selected in Port1 Setting.

20   Press the "1" or "2" key and press the "Enter" key,

Chart 5-4 Set Provisioning Data (Cont'd)

Step	Procedure

```
--- Port2 Flow Control ---
1. Enable
2. Disable
Current Setting : 1
Enter Selection([RET]=No Change): 2
```

21   Press the "1" or "2" key and press the "Enter" key,

```
--- Port2 Far End Link Down Control ---
1. Enabled
2. Disabled
Current Setting : 1
Enter Selection([RET]=No Change): 2
```

Note: Not displayed when Port setting is "Enable".

22   Press the "1" or "2" key and press the "Enter" key,

```
--- Main Interface Setting ---
--- CH01 Usage ---
1. Used
2. Not Used
Current Setting : 1
Enter Selection ([RET] = No Change) :
```

The main channel signal to be used is selected from the following items.

Used :   When the 1.5 Mbps signal is applied, select the "Used" in corresponding channel.

Not Used : When the 1.5 Mbps signal is not applied, select the "Not Used" in corresponding channel.

23   Press the "1" or "2" key and press the "Enter" key,

```
--- CH02 Usage ---
1. Used
2. Not Used
Current Setting : 1
Enter Selection ([RET] = No Change) :
```

24   Press the "1" or "2" key and press the "Enter" key,

Chart 5-4 Set Provisioning Data (Cont'd)

Step	Procedure

```
--- CH03 Usage ---
1. Used
2. Not Used
Current Setting : 1
Enter Selection ([RET] = No Change) :
```

25   Press the "1" or "2" key and press the "Enter" key,

```
--- CH04 Usage ---
1. Used
2. Not Used
Current Setting : 1
Enter Selection ([RET] = No Change) :
```

26   Press the "1" or "2" key and press the "Enter" key,

```
--- CH01-04 Bipolar Code Select ---
1. AMI
2. B8ZS
Current Setting : 1
Enter Selection ([RET] = No Change) :
```

27   Press the "1" or "2" key and press the "Enter" key,

```
--- CH01-04 Line Length Select ---
1.     0 -  133ft (   0 -  40m )
2.   133 -  266ft (  40 -  81m )
3.   266 -  399ft (  81 - 121m)
4.   399 -  533ft ( 121 - 162m)
5.   533 -  655ft ( 162 - 199m)
Current Setting : 1
Enter Selection ([RET] = No Change) : 2
```

28   Enter item number for corresponding Line Lengh and press the "Enter" key,

         Set AMI or B8ZS and line length for each 4 CH block.

Chart 5-4 Set Provisioning Data (Cont'd)

Step	Procedure

For 45 MB system

29   Press the "1" key on the Set Provisioning Data menu for the Main/LAN Signal configuration and press the "Enter" key,

```
--- LAN (Main / WS / SC) function ---
1. Used
2. Not Used
Current Setting : 2
Enter Selection ([RET]=No Change) : 1
```

30   Press the "1" key and press the "Enter" when LAN is provided,

```
-- LAN Interface Setting --
--- Port1/Port2 Assignment ---
  1. SC     /  NA
  2. WS     /  NA........ *1
  3. Main   /  NA.
  4. SC     /  SC
  5. SC     /  WS........ *1
  6. Main   /  SC.
  7. Main   /  WS......... *1
  8. Main   /  Main.
  9. SC Shared
10. WS Shared....... *1
11. Main Shared

Enter Selection :  6
```

*Note: *1; displayed only when optional WS is provided.*

31   Enter the item number for the signal assignment and press the "Enter" key,

When Port1 is assigned to SC/NA, SC/WS or Port1+Port2 to SC Shared, the throughput for SC signal is selectable from either 64kbps or 128kbps.

When SC/NA, SC/WS

```
--- Port1 Throughput ---
1. 64kbps
2. 128kbps
Current Setting : 1
Enter Selection ([RET]=No Change) : 2
```

Chart 5-4 Set Provisioning Data (Cont'd)

Step	Procedure

When WS is used, throughput for WS signal is fixed in 1.5Mbps., then, following Framing Format selection appears,

```
--- Port1 1.5M Framing Format ---
1. UF      (Unframed)
2. SF      (ANSI T1.107)
3. ESF     (ANSI T1.107)
Current Setting : 2
Enter Selection ([RET]=No Change) : 1
```

When Main is used, throughput for Main signal in Port1 is fixed in 44Mbps.

32   Press the "1", "2" or "3" key and press the "Enter" key or press only "Enter" key for no change,

```
--- Port1 Setting ---
1. Auto Negotiation (AUTO-MDI/MDIX)
2. 10BASE-T        /    Half Duplex   (MDI)
3. 10BASE-T        /    Half Duplex   (MDIX)
4. 10BASE-T        /    Full Duplex   (MDI)
5. 10BASE-T        /    Full Duplex   (MDIX)
6. 100BASE-TX      /    Half Duplex   (MDI)
7. 100BASE-TX      /    Full Duplex   (MDIX)
8. 100BASE-TX      /    Half Duplex   (MDI)
9. 100BASE-TX      /    Full Duplex   (MDIX)
Current Setting : 1
Enter Selection([RET]=No Change): 4
```

33   Enter item number which is corresponding Port1 interface mode and press the "Enter" key,

---

Chart 5-4 Set Provisioning Data (Cont'd)

Step	Procedure

```
--- Port1 Collision Report ---
1. Enable
2. Disable
Current Setting : 1
Enter Selection([RET]=No Change): 2
```

Port1 Collision Report selection is displayed when the "Auto Negotiation (Auto MDI / MDIX)" or "**** / Half Duplex (****)" is selected in Port1 Setting.

34   Press the "1" or "2" key and press the "Enter" key,

```
--- Port1 Flow Control ---
1. Enable
2. Disable
Current Setting : 1
Enter Selection([RET]=No Change): 2
```

35   Press the "1" or "2" key and press the "Enter" key,

```
--- Port1 Far End Link Down Control ---
1. Enabled
2. Disabled
Current Setting : 1
Enter Selection([RET]=No Change): 2
```

Note: Not displayed when Port setting is "Enable".

Press the "1" or "2" key and press the "Enter" key,

When LAN Port2 is used, continue the setting for Port2 as follows,

```
--- Port2 Throughput ---
1. 64kbps
2. 128kbps
Current Setting : 2
Enter Selection ([RET]=No Change) : 1
```

When Port2 is assigned to 1.5Mbps Main signal, throughput for Main signal is selectable at Main/SC according to Main signal interface.

Chart 5-4 Set Provisioning Data (Cont'd)

Step	Procedure

When Port2 throughput is 1.5Mbps (WS Used), following Framing format selection appears,

```
--- Port2 1.5M Framing Format ---
1. UF     (Unframed)
2. SF     (ANSI T1.107)
3. ESF    (ANSI T1.107)
Current Setting : 2
Enter Selection ([RET]=No Change) : 1
```

```
--- Port2 Setting ---
1. Auto Negotiation (AUTO-MDI/MDIX)
2. 10BASE-T      /    Half Duplex   (MDI)
3. 10BASE-T      /    Half Duplex   (MDIX)
4. 10BASE-T      /    Full Duplex   (MDI)
5. 10BASE-T      /    Full Duplex   (MDIX)
6. 100BASE-TX    /    Half Duplex   (MDI)
7. 100BASE-TX    /    Full Duplex   (MDIX)
8. 100BASE-TX    /    Half Duplex   (MDI)
9. 100BASE-TX    /    Full Duplex   (MDIX)
Current Setting : 1
Enter Selection([RET]=No Change): 4
```

36   Enter corresponding Port2 interface mode number and press the "Enter" key,

```
--- Port2 Flow Control ---
1. Enable
2. Disable
Current Setting : 1
Enter Selection([RET]=No Change): 2
```

37   Press the "1" or "2" key and press the "Enter" key,

```
--- Port2 Far End Link Down Control ---
1. Enabled
2. Disabled
Current Setting : 1
Enter Selection([RET]=No Change): 2
```

Note: Not displayed when Port setting is "Enable".

38   Press the "1" or "2" key and press the "Enter" key,

Chart 5-4 Set Provisioning Data (Cont'd)

Step	Procedure

```
--- Main Interface Setting ---
--- 45M Line Length Select ---
1. 0 - 255ft      (0 - 68m)
2. 255 - 450ft    (68 - 135m)
Current Setting : 1
Enter Selection([RET]=No Change): 2
```

39   Press the "1" or "2" key and press the "Enter" key,

40   After pressing the "Enter" key, the menu shown in step 1 is displayed,

41   Press the "2" key for setting the BER Threshold and press the "Enter" key,

```
--- BER Threshold ---
1. High BER
2. Low BER
Enter Selection : 1
```

42   Press the "1" key and "Enter" key for setting the High BER threshold level,

```
--- High BER ---
1. 3E-4
2. 3E-5
3. 3E-6
Current Setting : 1
Enter Selection ([RET] = No Change) :
```

Note : Normally, apply 3E-4 recommended values (default).

43   After setting the High BER, press the "Enter" key,

44   Press the "2" key for setting the BER Threshold and press the "Enter" key,

```
--- BER Threshold ---
1. High BER
2. Low BER
Enter Selection : 2
```

Chart 5-4 Set Provisioning Data (Cont'd)

Step	Procedure
45	Press the "2" key for setting of Low BER threshold,

```
--- Low BER ---
1. 3E-6
2. 3E-7
3. 3E-8
Current Setting : 1
Enter Selection ([RET] = No Change) :
```

Note : Normally, apply 3E-6 recommended values (default).

46	Press the "1", "2" or "3" key for corresponding of the Low BER threshold and press the "Enter" key,
47	After pressing the "Enter" key, the menu shown in step 1 is displayed,

---

48	Press the "3" key for setting the Wayside Interface and press the "Enter" key,

```
--- Wayside Interface Usage ---
1. Not Used
2. 1.5MB        (AMI)
3. 1.5MB        (B8ZS)
Current Setting : 1
Enter Selection ([RET] = No Change) : 1
```

49	Press the "1", "2" or "3" key for corresponding of the Wayside Interface and press the "Enter" key,

```
--- Wayside Interface Line Length ---
1.    0 -  133ft (   0 -  40m )
2.  133 -  266ft (  40 -  81m )
3.  266 -  399ft (  81 - 121m)
4.  399 -  533ft ( 121 - 162m)
5.  533 -  655ft ( 162 - 199m)
Current Setting : 1
Enter Selection ([RET] = No Change) :
```

Note: Not displayed whenWS domain is used for LAN.

50	Chose corresponding of line Wayside interface length,
51	After pressing the "Enter" key, the menu shown in step 1 is displayed,

---

Chart 5-4 Set Provisioning Data (Cont'd)

Step	Procedure

---

52   Press the "Enter" key, the menu shown in step 1 is displayed,

53   Press the "4" key for setting the SC Assignment and press the "Enter" key,

            When the SC is applied in LAN-Port1/Port-2 Assignement, this SC Assignement seting item is masked.

            DSC CH is assigned to LAN Port by LAN-Port1/Port2 Assignement preference as follows.

LAN-Port1/Port2 Assignment		Port1(2) Throughput	DSC CH/LAN Port Assignment
Port1	**Port2**		
SC	N/A	Port1 1. 64 kbps	LAN Port1 for DSC1
		Port1 2. 128 kbps	LAN Port1 for DSC1+DSC2
SC	SC	-	LAN Port1 for DSC1, LAN Port2 for DSC2
SC	WS	Port1 1. 64 kbps	LAN Port1 for DSC1
		Port1 2. 128 kbps	LAN Port1 for DSC1+DSC2
Main	SC	Port2 1. 64 kbps	LAN Port2 for DSC2
		Port2 2. 128 kbps	LAN Port2 for DSC1+DSC2
SC (Shared)		Port1+2 1. 64 kbps	LAN Port1+2 for DSC1
		Port1+2 2. 128 kbps	LAN Port1+2 for DSC1+DSC2

Chart 5-4 Set Provisioning Data (Cont'd)

Step	Procedure

```
--- RS232C Setting ---
1. Not Used
2. DSC1
3. DSC2
Current Setting : 0
Enter Selection ([RET] = No Change) : 1
```

SC Assignment sets Used/Not Used for service channel and signal assignment. As service channel, two digital V.11 (64K) signals and one RS232C channel can be used.

SC items which are not assigned for Main interface appear at No.1 and No.2.

54   Press the "1", "2" or "3" key for setting of the RS232C interface and press the "Enter" key,

```
--- V11-1 Setting ---
1. Not Used
2. DSC1
3. DSC2
Current Setting : 0
Enter Selection ([RET] = No Change) : 3
```

55   Press the "1", "2" or "3" key for setting of the V11-1 interface and press the "Enter" key,

Note: *Two V11 channels can be used either 64k or 9.6k. But when 9.6k is used, "contra directional" should be selected as clock direction.*

```
--- V11-1 Directional Setting ---
1. Co-Directional
2. Contra-Directional
Current Setting : 0
Enter Selection ([RET] = No Change) : 1
```

56   Press the "1" or "2" key for setting of the V11-1 directional and press the "Enter" key,

Chart 5-4 Set Provisioning Data (Cont'd)

Step	Procedure

```
--- V11-2 Setting ---
1. Not Used
2. DSC1
3. DSC2
Current Setting : 0
Enter Selection ([RET] = No Change) : 3
```

57   Press the "1", "2" or "3" key for setting of the V11-2 interface and press the "Enter" key,

```
--- V11-2 Directional Setting ---
1. Co-Directional
2. Contra-Directional
Current Setting : 0
Enter Selection ([RET] = No Change) : 1
```

58   Press the "1" or "2" key for setting of the V11-2 directional and press the "Enter" key,

59   After pressing the "Enter" key, the menu shown in step 1 is displayed,

60   Press the "5" key for setting the MTPC TX PWR and press the "Enter" key,

```
--- MTPC TX PWR ---
Current (-23 to 0dB) : -15
Enter Selection ([RET] = No Change) :
```

MTPC TX PWR sets the transmission power in MTPC operation. If the attenuation is set to 0 dB, maximum output power is obtained. The level is not indicated in the ATPC mode.

The MTPC range depends channel capacity as
   8 × 1.5MB   :
                    −23 dB to 0 dB system.
   16 × 1.5MB/28 × 1.5MB/1 × 45MB:
                    −20 dB to 0 dB system.

61   After pressing the "Enter" key, the menu shown in step 1 is displayed,

---

Chart 5-4 Set Provisioning Data (Cont'd)

Step	Procedure

---

62   Press the "6" key for setting the ATPC Range and press the "Enter" key,

```
--- ATPC Maximum PWR ---
Current (-23 to 0dB) : 0
Enter Selection ([RET] = No Change) :

--- ATPC Minimum PWR ---
Current (-23 to [MAX]dB) : -10
Enter Selection ([RET] = No Change) :
```

ATPC Range sets the maximum or minimum transmission power during ATPC operation. If the ATPC Maximum PWR is set to 0 dB, the maximum output power is obtained. In the MTPC mode, ATPC menu will not appear.

Note: *Example of ATPC setting.*
Where ATPC MAXIMUM PWR of ATPC Range is set to 0 dB, ATPC MINIMUM PWR is set to -10 dB and RX Threshold to -60 dBm. In this case, if RX level is lower than -60 dBm, monitor/control is performed with the interval of 8 msec. RX level is monitored in 1 dB step, and TX output is controlled in 1 dB step.
However, a fixed hysteresis of 5 dB referred to the RX Threshold is implemented for ATPC operation.
Example: If RX Threshold is set to -60 dBm, no output control is made unless the RX level goes below -60 dBm or goes above -55 dBm, so that the receive level is maintained within -60 to -55 dBm by ATPC.
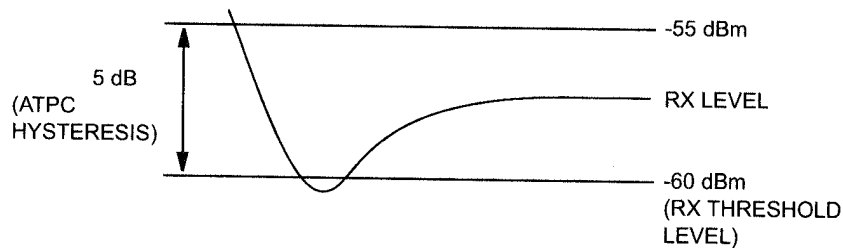
63   After pressing the "Enter" key, the menu shown in step 1 is displayed,

---

Chart 5-4 Set Provisioning Data (Cont'd)

Step	Procedure

---

64 Press the "8" key for setting the RX Threshold and press the "Enter" key,

```
--- RX Threshold---
Current (-70 to -30dBm) : -55
Enter Selection ([RET] = No Change) :
```

   RX Threshold sets the threshold value of receiving level.

65 After pressing the "Enter" key, the menu shown in step 1 is displayed,

---

66 Press the "9" key for setting the Additional ATT and press the "Enter" key,

```
--- Additional ATT ---
Current (0 to 5dB) : 0
Enter Selection ([RET] = No Change) :
```

   The additional ATT is a span attenuator that is used to reduce the transmit power like in cases where the transmission length is short. First, the transmit output power is adjusted by setting the MTPC TX Power. If the MTPC TX Power setting is insufficient, then set the Additional ATT. The available setting range is from 0 to 5 dB.

67 After pressing the "Enter" key, the menu shown in step 1 is displayed,

---

68 Press the "1", "0" key for setting the TRP ALM Mode and press the "Enter" key,

```
--- TRP ALM Mode ---
 1. MAX Hold
 2. MIN Hold
 3. Hold
Current Setting : 3
Enter Selection ([RET] = No Change) :
```

Chart 5-4 Set Provisioning Data (Cont'd)

Step	Procedure
	This item defines the TRP transmit power level when communication between MDP and TRP is lost. This function is not used when the equipment is set in MTPC mode and is not displayed.
	MAX Hold : Selects this to control the TRP output level for the ATPC Maximum PWR setting level.
	MIN Hold : Selects this to control the TRP output level for the ATPC Minimum PWR setting level.
	Hold : Selects this to keep the TRP to output level to maintain the level at the time of failure has occurred.
69	After pressing the "Enter" key, the menu shown in step 1 is displayed,

---

70	Press the "1", "1" key for setting the TX SW Priority and press the "Enter" key (in 1+1 system only),

```
--- TXSW Priority ---
1. Non-priority
2. Priority No. 1
Current Setting : 1
Enter Selection ([RET] = No Change) :1
```

71	Press "1" or "2" key to select Non-priority/Priority No.1 mode and press the "Enter" key,
72	Press the "1", "2" key for setting the RX SW Priority and press the "Enter" key (in 1+1 system only),
73	After pressing the "Enter" key, the menu shown in step 1 is displayed,

---

Chart 5-4 Set Provisioning Data (Cont'd)

Step	Procedure

```
--- RXSW Priority ---
1. Non-priority
2. Priority No. 1
Current Setting : 2
Enter Selection ([RET] = No Change) :1
```

74   Press "1" or "2" key to select RXSW Priority mode and press the "Enter" key,

75   Press the "1", "3" key for setting the Channel Usage Error and press the "Enter" key,

       Note: Applies only to 8/16/28 × 1.5 MB system.

76   After pressing the "Enter" key, the menu shown in step 1 is displayed,

---

```
--- Channel Usage Error ---
1. Report
2. Not Report
Current Setting : 2
Enter Selection ([RET] = No Change) :
```

This item sets the whether Main Interface Usage alarm is displayed, or it does not displayed.

Report: In Main Interface Setting item, when 1.5 MB bipolar signal is inputted into the channel which has chosen "Not Used", alarm is displayed.

Not Report: In Main Interface Setting item, when 1.5 MB bipolar signal is inputted into the channel which has chosen "Not Used", alarm is not displayed.

Note: The alarm of Channel Usage Error is displayed on the Channel Usage Error item of Alarm/Status. And the MDP ALM indicator on the front of the MDP is lighted.

77   After pressing the "Enter" key, the menu shown in step 1 is displayed,

---

Chart 5-4 Set Provisioning Data (Cont'd)

Step	Procedure

78   Press the "1", "6" key for setting the AIS Activation Condition and press the "Enter" key,

```
--- AIS Activation Condition ---
1. LOF or High BER
2. LOF
Current Setting : 1
Enter Selection ([RET] = No Change) :
```

AIS Activation Condition sets the whether AIS signal for main 1.5 MB is by LOF, High BER or both alarm conditions.

LOF or High BER:
When the High BER or LOF ALM is occurred, Main 1.5 MB AIS signal is generated.

Note: Setting point of High BER ALM can be set by BER threshold item in 3×10^{-4} to 3×10^{-6}.

LOF: When the LOF ALM is occurred, Main 1.5 MB AIS signal is generated.

79   After pressing the "Enter" key, the menu shown in step 1 is displayed,

---

80   Press the "1", "7" key for setting the AIS Activation Delay Time and press the "Enter" key,

```
--- AIS Activation Delay Time ---
1. Exclude
2. Include
Current Setting : 2
Enter Selection ([RET] = No Change) :
```

AIS Activation Delay Time sets the whether AIS signal generation for main 1.5 MB has delay time or it has not.

81   After pressing the "Enter" key, the menu shown in step 1 is displayed,

---

Chart 5-4 Set Provisioning Data (Cont'd)

Step	Procedure

---

82   Press the "1", "8" key for setting the AIS Generated Report and press the "Enter" key,

```
--- AIS Generated Report ---
CH Select        (CH01-08) : 6

--- AIS Generated Report ---
1. Report
2. Not Report
Current Setting : 1
Enter Selection ([RET]=No Change) :
```

AIS Generated Report sets the whether AIS signal generation for main 1.5 MB is reported or not reported.

Note : CH Select (CH01-08) for 8 × 1.5MB system
          CH Select (CH01-16) for 16 × 1.5MB system
          CH Select (CH01-28) for 28 × 1.5MB system

83   After pressing the "Enter" key, the menu shown in step 1 is displayed,

---

84   Press the "1", "9" key for setting the AIS Received Report and press the "Enter" key,

```
--- AIS Received Report ---
CH Select        (CH01-08) : 6

--- AIS Received Report ---
1. Report
2. Not Report
Current Setting : 1
Enter Selection ([RET]=No Change) :
```

AIS Received Report sets the whether AIS signal generation for main 1.5 MB is reported or not reported.

Note : CH Select (CH01-08) for 8 × 1.5MB system
          CH Select (CH01-16) for 16 × 1.5MB system
          CH Select (CH01-28) for 28 × 1.5MB system

85   After setting the Provisioning data, proceed to Chart 5-4 for the optional relay house keeping setting, as required. Otherwise, press the "ESC" key to go back to the Main menu.

5.6 Relay/House Keeping Setting

Chart 5-5 Relay/House Keeping Setting

This chart describes the procedure for setting the parallel alarm output and the control input/output of House Keeping.

The procedure in this chart is to be performed, if required.

Step	Procedure

---

1   Press the "ESC" key twice to go back to the following Main menu,

```
--- NEC PDH RADIO  VER. X.XX.XX ---
0. Logout
1. Alarm / Status
2. Performance Monitor
3. Provisioning Data
4. System Configuration
5. Inventory Data
6. Relay / House Keeping
7. Maintenance
Enter Selection :
```

2   Press the "6" key for Relay/House Keeping and press the "Enter" key,

```
Enter Selection : 6

--- Relay / House Keeping ---
1. Display Current State
2. Relay Configuration
3. Output Control
Enter Selection :
```

The relay configuration setting and alarm output selection is explained below.

Display Current State

Selects to display House Keeping current state.

3   Press the "1" key and press the "Enter" key to display Relay/ House Keeping Current state,

---

Chart 5-5 Relay/House Keeping Setting (Cont'd)

Step	Procedure

```
--- Display Current State ---
HK-IN1     HK-IN2     HK-IN3     HK-IN4     HK-IN5     HK-IN6
Open       Open       Open       Open       Open       Open

HK-OUT1    HK-OUT2    HK-OUT3    HK-OUT4
On         Off        Off        Off
```

HK-OUT appears, only when relay output is assigned.

4　　Press the "2" key for setting the Relay Configuration and press the "Enter" key,
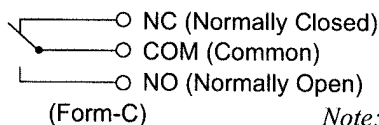
<u>Relay Configuration</u>

Eleven (11) relays are provided to the parallel alarm/control outputs. The relays from RL1 to RL3 are fixed as MAINT, PS and CPU alarm and are not be able to change the setting. The relays from RL4 to RL7 are assigned for equipment alarm outputs by default value. The relays from RL8 to RL11 are defined as HK CONT outputs by default value. The relays RL8 to RL11 are possible to assign as alarm outputs instead of HK CONT outputs as shown in the table below. The alarm items which are assignable alarm output through RL4 to RL11 are referred to Table 2-2 in chapter 2 of Operation.

Chart 5-5 Relay/House Keeping Setting (Cont'd)

Step   **Procedure**

Relay	RL08	RL09	RL10	RL11
1. HK-OUT 1/2/3/4 Enable	HK-OUT4	HK-OUT3	HK-OUT2	HK-OUT1
2. HK-OUT 1/2/3 Enable	ALM	HK-OUT3	HK-OUT2	HK-OUT1
3. HK-OUT 1/2 Enable	ALM	ALM	HK-OUT2	HK-OUT1
4. HK-OUT 1 Enable	ALM	ALM	ALM	HK-OUT1
5. HK-OUT Disable	ALM	ALM	ALM	ALM

RL1 to RL11 are Form-C relays. In the normal or control off conditions, between COM and NC terminals of the relays makes and between COM and NO terminals breaks. In the alarm or control on conditions, between COM and NC terminals of the relays breaks and between COM and NO terminals makes.

O NC (Normally Closed)
O COM (Common)
O NO (Normally Open)

(Form-C)   *Note:The relay is rated at 0.2 A.*

If the four HK control output are required, press the "1" key and press the "Enter" key,

```
--- Relay Configuration ---
1. HK-OUT 1/2/3/4    Enable
2. HK-OUT 1/2/3      Enable
3. HK-OUT 1/2        Enable
4. HK-OUT 1          Enable
5. HK-OUT            Disable
Enter Selection ([RET] = No Change) : 1
```

5   Then, select the number corresponding to the desired alarm name,

```
        RL01 RL02 RL03 RL04 RL05 RL06 RL07 RL08 RL09 RL10 RL11
HK-OUT1  --   –    –    –    –    –    –    –    –    –   HK
HK-OUT2  --   –    –    –    –    –    –    –    –   HK   –
HK-OUT3  --   –    –    –    –    –    –    –   HK   –    –
HK-OUT4  --   –    –    –    –    –    –   HK   –    –    –
```

Chart 5-5 Relay/House Keeping Setting (Cont'd)

Step	Procedure

	RL01	RL02	RL03	RL04	RL05	RL06	RL07	RL08	RL09	RL10	RL11
MAINT	Out	Mask	Mask	Mask	Mask	Mask	Mask	HK	HK	HK	HK
PS ALM 1	–	Out	–	–	–	–	–	HK	HK	HK	HK
PS ALM 2	–	Out	–	–	–	–	–	HK	HK	HK	HK
CPU ALM	–	–	Out	–	–	–	–	HK	HK	HK	HK
1.TRP ALM1	–	–	–	Out	–	–	–	HK	HK	HK	HK
2.TRP ALM2	–	–	–	Out	–	–	–	HK	HK	HK	HK
3.MDP ALM1	–	–	–	–	Out	–	–	HK	HK	HK	HK
4.MDP ALM2	–	–	–	–	Out	–	–	HK	HK	HK	HK
Enter Selection([RET]=No Change):											

displayed when HK-OUT are
selected to enable

Mask : Indicates that no alarm is issued at Maintenance.

Out : Indicates that an alarm is issued from the corresponding relay.

– : No relation

HK : Indicates that the Relay is assigned for HK control.

Note: While the CPU is initialized by pressing the RESET switch, alarm(s) is in normal conditions. After initialization, the alarm information is properly provided through relay contacts.

```
--- Relay Configuration ---
 4. RL04 (Out)
 5. RL05 (Out)
 6. RL06 (Out)
 7. RL07 (Out)
 8. RL08 (Out)
 9. RL09
10. RL10
11. RL11
Enter Selection([RET]=No Change):
```

Notes: 1. "Out" is appended to a relay that has already been assigned to the alarm, selecting it unassigns the alarm to the relay.

2. If "Are You Sure? (Y/N)" is displayed, press the "Y" key. Otherwise, it is not registered.

Chart 5-5 Relay/House Keeping Setting (Cont'd)

Step	Procedure
6	If required, press the "3" key to control external equipment connected to the relays assigned as HK-OUT,

```
--- Output Control ---
1. HK-OUT1 (CONT Off)
2. HK-OUT2 (CONT Off)
3. HK-OUT3 (CONT On)
4. HK-OUT4 (CONT Off)
Enter Selection : 1
```

- Output Control

  This function can be used to remotely control external apparatus in the station (e.g. A/C on/off).

  CONT Off:

  COM and NC terminals of relay are connected.

  CONT On:

  COM and NO terminals of relay are connected.

  Notes: 1. *Output control item is displayed only when the HK-OUT Enable is selected in the relay configuration (step 4).*

  2. *A setup will be cleared if a power supply is turned off.*

| 7 | After setting the Relay/House Keeping setting, press the "ESC" key to go back to the Main menu. |

5.8/L6/U6/10.5/11/24 GHz 15/28/50 MB
PDH DIGITAL MICROWAVE RADIO SYSTEM
NLite L
(PDH 1+0/1+1 SYSTEM)

SECTION III INSTALLATION AND INITIAL LINE UP

CONTENTS

CONTENTS

1. GENERAL

This section provides installation and initial line up information on the 5.8/ L6/U6/10.5/11/24 GHz 15/28/50 MB microwave radio system.

This manual is described for the firmware version of as follows.
        SW UNIT: 2.4.4
        MD UNIT: 1.30

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2. INSTALLATION

The standard installation is summarized in this section. Included herein are information on typical installation work flow and guides for MDP installation, TRP installation, waveguide connection and cable connections. The installation flow diagram is shown below.
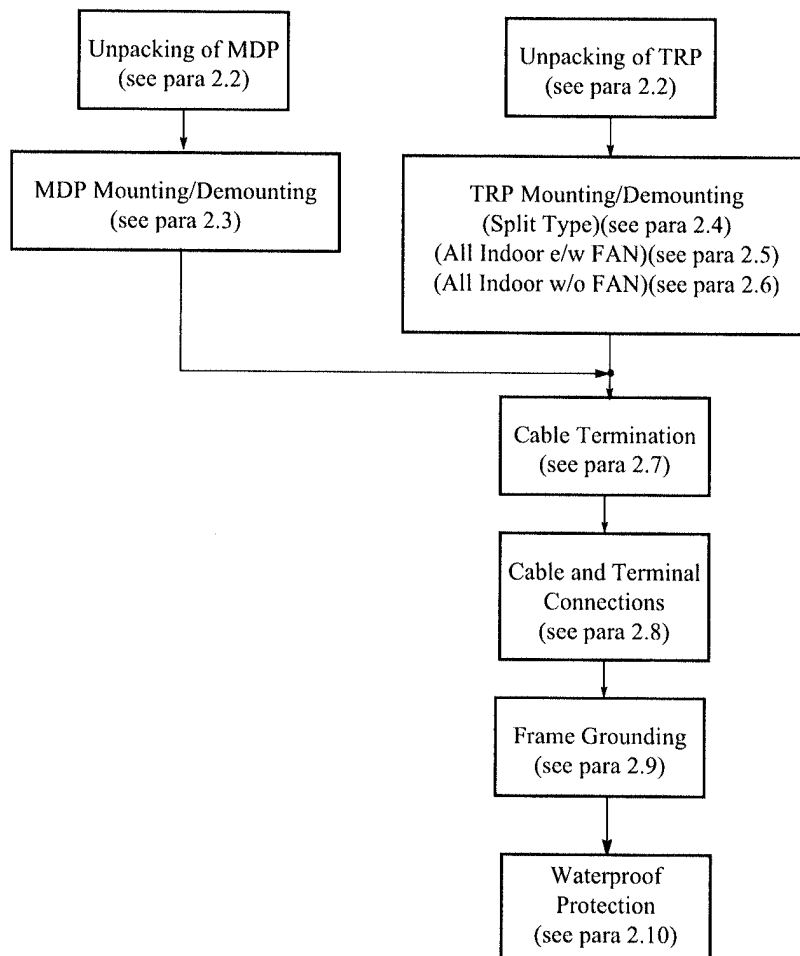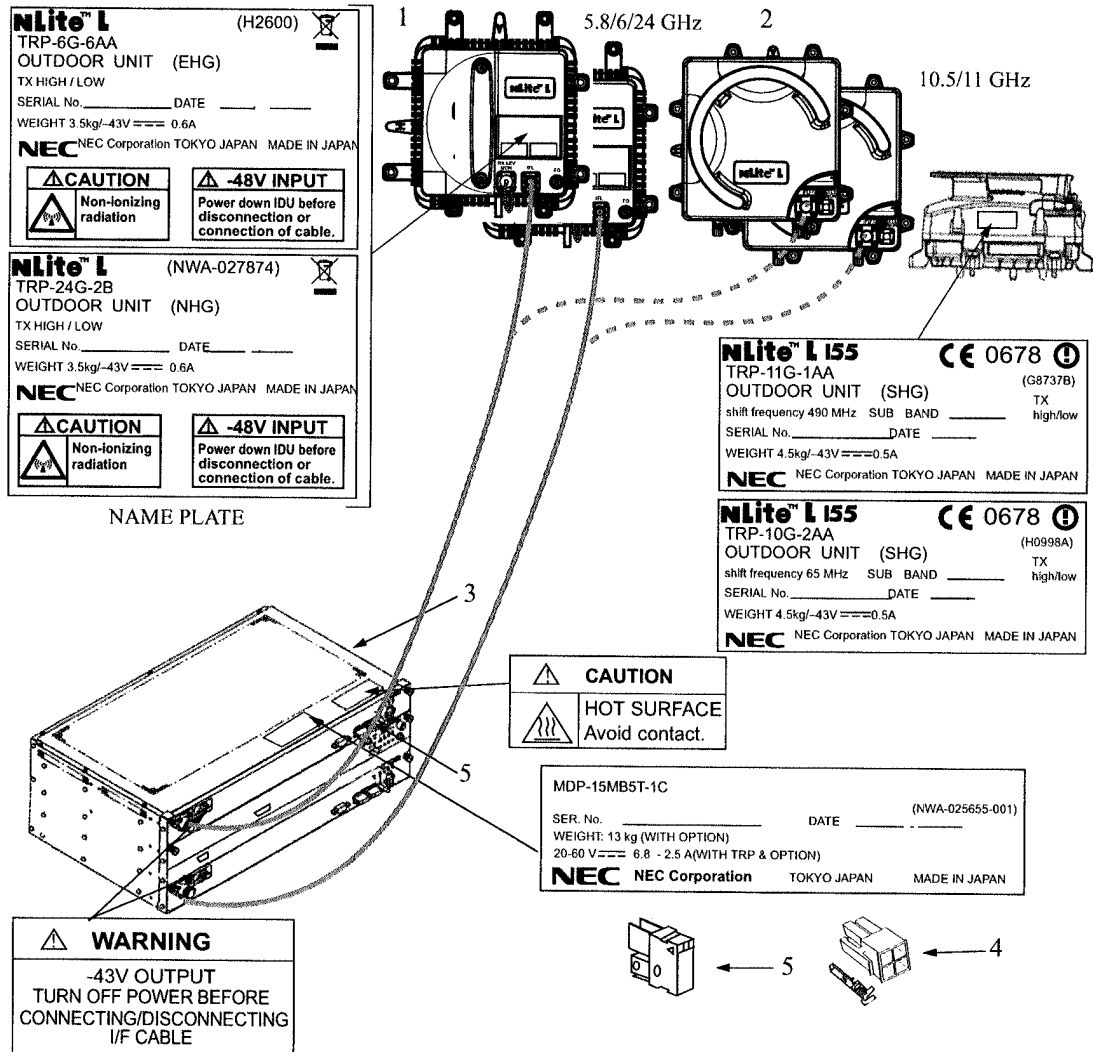
```
┌─────────────────────┐              ┌─────────────────────┐
│  Unpacking of MDP   │              │  Unpacking of TRP   │
│  (see para 2.2)     │              │  (see para 2.2)     │
└─────────────────────┘              └─────────────────────┘
           │                                    │
           ▼                                    ▼
┌─────────────────────┐        ┌──────────────────────────────────┐
│ MDP Mounting/       │        │    TRP Mounting/Demounting       │
│ Demounting          │        │    (Split Type)(see para 2.4)    │
│ (see para 2.3)      │        │ (All Indoor e/w FAN)(see para 2.5)│
└─────────────────────┘        │ (All Indoor w/o FAN)(see para 2.6)│
           │                   └──────────────────────────────────┘
           │                                    │
           └────────────────────────────────────┤
                                                 ▼
                                    ┌─────────────────────┐
                                    │  Cable Termination  │
                                    │  (see para 2.7)     │
                                    └─────────────────────┘
                                                 │
                                                 ▼
                                    ┌─────────────────────┐
                                    │  Cable and Terminal │
                                    │  Connections        │
                                    │  (see para 2.8)     │
                                    └─────────────────────┘
                                                 │
                                                 ▼
                                    ┌─────────────────────┐
                                    │  Frame Grounding    │
                                    │  (see para 2.9)     │
                                    └─────────────────────┘
                                                 │
                                                 ▼
                                    ┌─────────────────────┐
                                    │  Waterproof         │
                                    │  Protection         │
                                    │  (see para 2.10)    │
                                    └─────────────────────┘
```

Fig. 2-1 Typical Installation Flow Diagram

2.1 Packing List

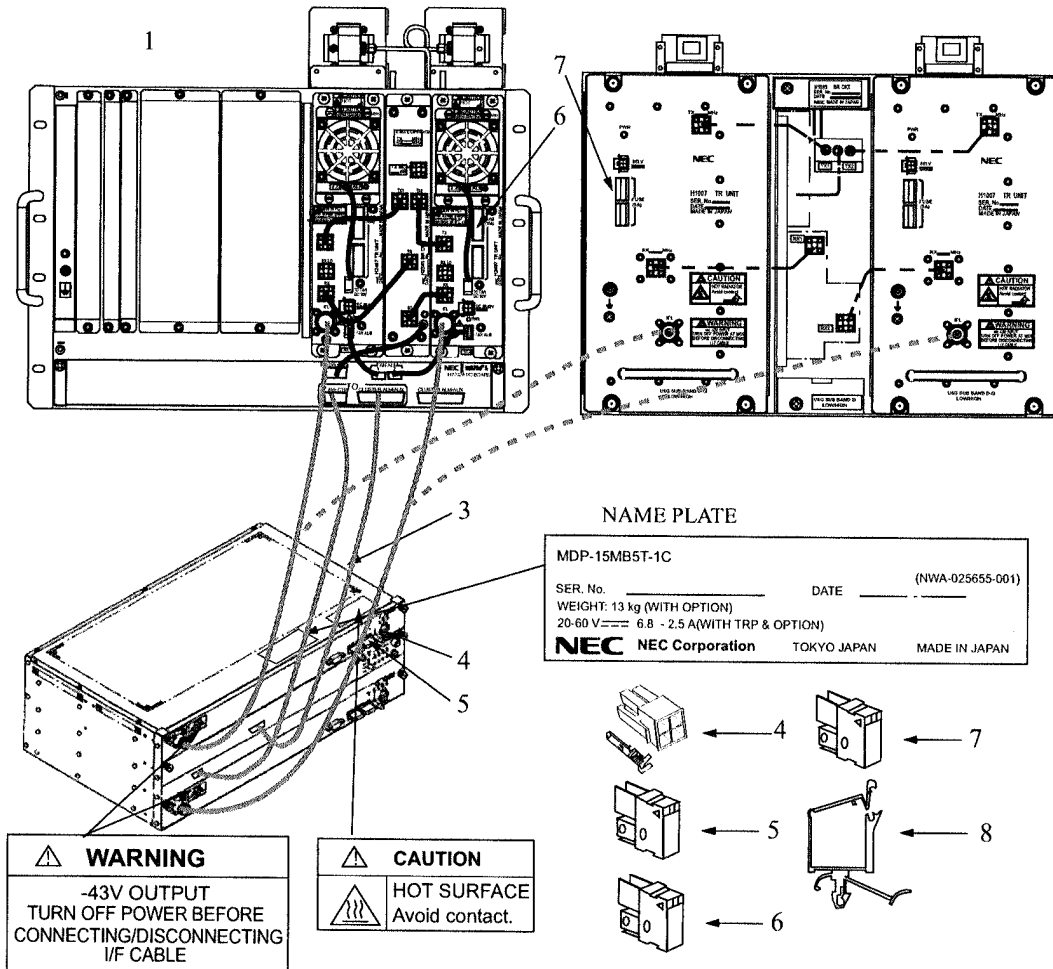Each unpacked component of the [ ] GHz [ ] MB digital radio system must be checked as shown below.

PACKING LIST	DRAWING NO.
TRP and MDP	Fig. 2-2
Installation Kit	Fig. 2-3 *

*Note: * These are standard packing.*

NLite™ L (H2600)
TRP-6G-6AA
OUTDOOR UNIT (EHG)
TX HIGH / LOW
SERIAL No._____ DATE _____ _____
WEIGHT 3.5kg/–43V === 0.6A
NEC NEC Corporation TOKYO JAPAN MADE IN JAPAN

⚠CAUTION	⚠ -48V INPUT
Non-ionizing radiation	Power down IDU before disconnection or connection of cable.

NLite™ L (NWA-027874)
TRP-24G-2B
OUTDOOR UNIT (NHG)
TX HIGH / LOW
SERIAL No._____ DATE_____ _____
WEIGHT 3.5kg/–43V === 0.6A
NEC NEC Corporation TOKYO JAPAN MADE IN JAPAN

⚠CAUTION	⚠ -48V INPUT
Non-ionizing radiation	Power down IDU before disconnection or connection of cable.

NAME PLATE

5.8/6/24 GHz

10.5/11 GHz

NLite™ L I55 CE 0678 ⓞ
TRP-11G-1AA (G8737B)
OUTDOOR UNIT (SHG) TX
shift frequency 490 MHz SUB BAND _____ high/low
SERIAL No._____DATE _____
WEIGHT 4.5kg/–43V===0.5A
NEC NEC Corporation TOKYO JAPAN MADE IN JAPAN

NLite™ L I55 CE 0678 ⓞ
TRP-10G-2AA (H0998A)
OUTDOOR UNIT (SHG) TX
shift frequency 65 MHz SUB BAND _____ high/low
SERIAL No._____DATE _____
WEIGHT 4.5kg/–43V===0.5A
NEC NEC Corporation TOKYO JAPAN MADE IN JAPAN

⚠ CAUTION
⚠ HOT SURFACE Avoid contact.

MDP-15MB5T-1C
(NWA-025655-001)
SER. No. _____ DATE _____ _____
WEIGHT: 13 kg (WITH OPTION)
20-60 V=== 6.8 - 2.5 A(WITH TRP & OPTION)
NEC NEC Corporation TOKYO JAPAN MADE IN JAPAN

⚠ WARNING
-43V OUTPUT TURN OFF POWER BEFORE CONNECTING/DISCONNECTING I/F CABLE

Note: Other cables and connectors except those described in the table must be provided by the customer.
We recommended that use IF line cable which is conformed with the UL standard.

No.	DESCRIPTION
1	TRP-6G-6AA, TRP-24G-2B
2	TRP-10G-2AA, TRP-11G-1AA
3	MDP-15MB5T-1A/B/C/D, MDP-28MB7T-1A/B/C/D, MDP-50MB6T-1A/B/C/D, MDP-50MB6T-2A/C/D
4	Power Connector (Molex Housing M5557-4R (×1ea)
	Cable Terminal (Molex 5556T) (×4ea)
5	7.5 A Fuse (SMP75) (× 2ea) (For MDP)

Fig. 2-2 Packing List for the TRP and MDP (1/2)

NAME PLATE

MDP-15MB5T-1C	
SER. No. _____ DATE _____	(NWA-025655-001)
WEIGHT: 13 kg (WITH OPTION)	
20-60 V=== 6.8 - 2.5 A(WITH TRP & OPTION)	
NEC NEC Corporation TOKYO JAPAN MADE IN JAPAN	

⚠ **WARNING**		⚠ **CAUTION**
-43V OUTPUT TURN OFF POWER BEFORE CONNECTING/DISCONNECTING I/F CABLE		⚠ **HOT SURFACE** Avoid contact.

Note: Other cables and connectors except those described in the table must be provided by the customer.
We recommended that use IF line cable which is conformed with the UL standard.

No.	DESCRIPTION
1	TRP-L6G-2F, TRP-L6G -101A, TRP-U6G -102A, TRP-U6G -101A, TRP-10G -101A, TRP-11G -101A, TRP-11G -102A
2	TRP-U6G -3AA, TRP-11G -3AA
3	MDP-15MB5T-1A/B/C/D, MDP-28MB7T-1A/B/C/D, MDP-50MB6T-1A/B/C/D, MDP-50MB6T-2A/C/D
4	Power Connector (Molex Housing M5557-4R (×1ea)
	Cable Terminal (Molex 5556T) (×4ea)
5	7.5 A Fuse (SMP75) (× 2ea) (For MDP)
6	10 A Fuse (SMP100) (× 2ea) (For TRP)
7	5.0 A Fuse (SMP50) (× 2ea) (For TRP)
8	Cable Holder (× 2ea) (For TRP)

Fig. 2-2 Packing List for the TRP and MDP (2/2)

MODULAR CONNECTOR (MALE)
MODULAR CONNECTOR (MALE)
MODULAR CONNECTOR (MALE)
MODULAR CONNECTOR (MALE)
MODULAR CONNECTOR (MALE)
MODULAR CONNECTOR (MALE)
D-SUB CONNECTOR (MALE)
D-SUB CONNECTOR (MALE)
MOLEX CONNECTOR (FEMALE)

D-SUB CONNECTOR (MALE)

MOLEX CONNECTOR (FEMALE)
D-SUB CONNECTOR (MALE)
D-SUB CONNECTOR (MALE)
D-SUB CONNECTOR (MALE)
MODULAR CONNECTOR (MALE)
MTRPLAR CONNECTOR (MALE)
MODULAR CONNECTOR (MALE)
MODULAR CONNECTOR (MALE)

N-P CONNECTOR

N-P CONNECTOR

5.8/6/24 GHz

10.5 GHz

5.8/6/24 GHz

10.5 GHz

For 8/16 × 1.5 MB System

Fig. 2-3 Packing List for Installation Kit of MDP and TRP (1/6)

For 28 × 1.5 MB System

Fig. 2-3 Packing List for Installation Kit of MDP and TRP (2/6)

MODULAR CONNECTOR (MALE)
MODULAR CONNECTOR (MALE)
MODULAR CONNECTOR (MALE)
MODULAR CONNECTOR (MALE)
MODULAR CONNECTOR (MALE)
MODULAR CONNECTOR (MALE)
MODULAR CONNECTOR (MALE)
BNC CONNECTOR (MALE)
BNC CONNECTOR (MALE)
MODULAR CONNECTOR (MALE)

MOLEX CONNECTOR (FEMALE)

MOLEX CONNECTOR (FEMALE)

D-SUB CONNECTOR (MALE)
D-SUB CONNECTOR (MALE)
D-SUB CONNECTOR (MALE)
MODULAR CONNECTOR (MALE)
MTRPLAR CONNECTOR (MALE)
MODULAR CONNECTOR (MALE)
MODULAR CONNECTOR (MALE)

For 1 x DS3 System

N-P CONNECTOR

N-P CONNECTOR

N-P CONNECTOR

5.8/6/24 GHz

11 GHz

5.8/6/24 GHz

11 GHz

Fig. 2-3 Packing List for Installation Kit of MDP and TRP (3/6)

Fig. 2-3 Packing List for Installation Kit of MDP and TRP (4/6)

For 8/16 × 1.5 MB System

Fig. 2-3 Packing List for Installation Kit of MDP and TRP (5/6)
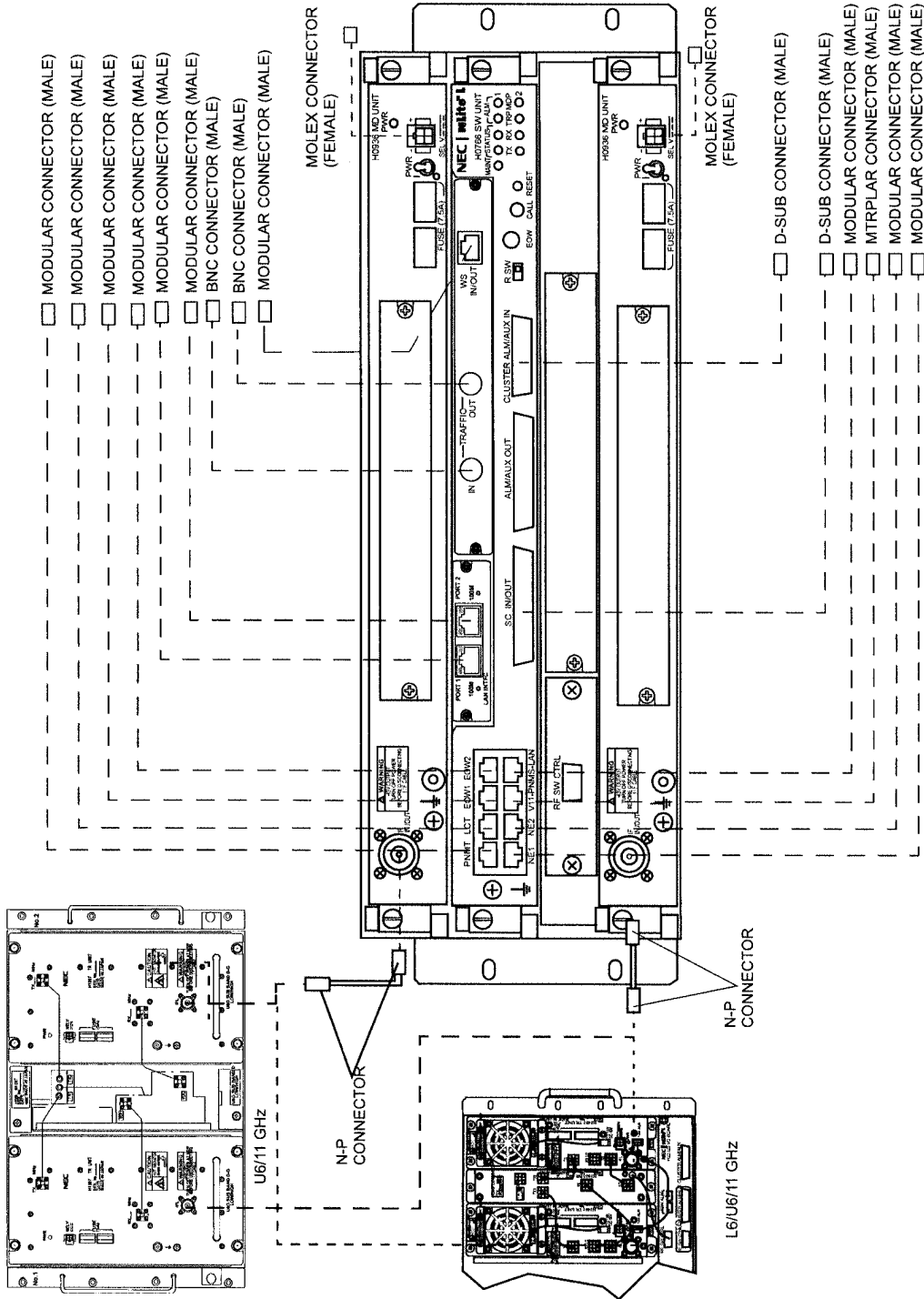
Fig. 2-3 Packing List for Installation Kit of MDP and TRP (6/6)

For 1 x DS3 System

2.2 Unpacking of MDP and TRP

The procedures to unpack the MDP and TRP are shown in following chart.

- For MDP :   Chart 2-1
- For TRP :   Chart 2-2 to Chart 2-4

Note: When conveying the MDP or TRP to another place, the original packing should be made to avoid damage.

Chart 2-1 Unpacking Methods of MDP

Step	Procedure

---

1   Cut P.P. tape at top of carton. And then open carton.
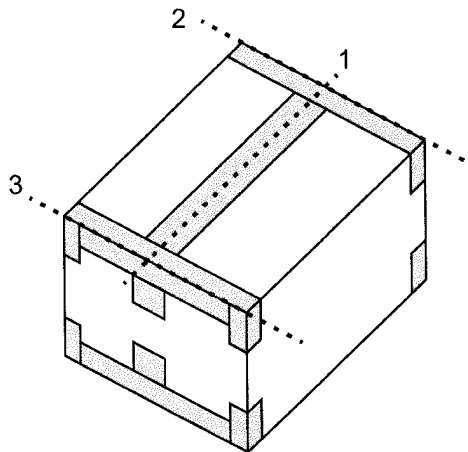
Chart 2-1 Unpacking Methods of MDP (Cont'd)

Step	Procedure
2	Take out carton, cushioning material and carton.

CUSHIONING MATERIAL

MDP

CUSHIONING MATERIAL
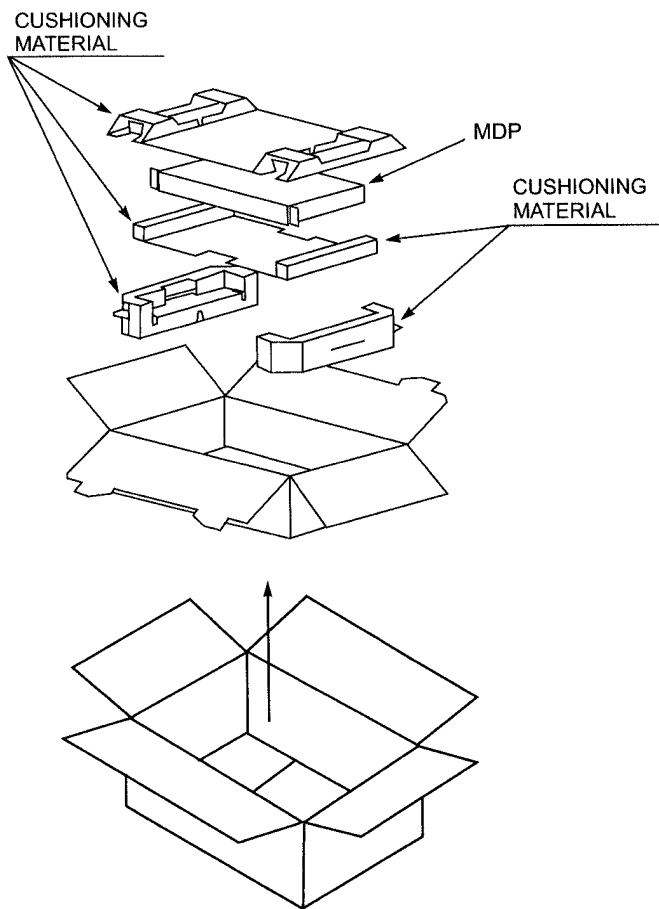
Chart 2-2 Unpacking Methods of Sprit Type TRP

Step	Procedure
1	Take off the hook of a cover as shown below. Then, open the top cover,

HOOK
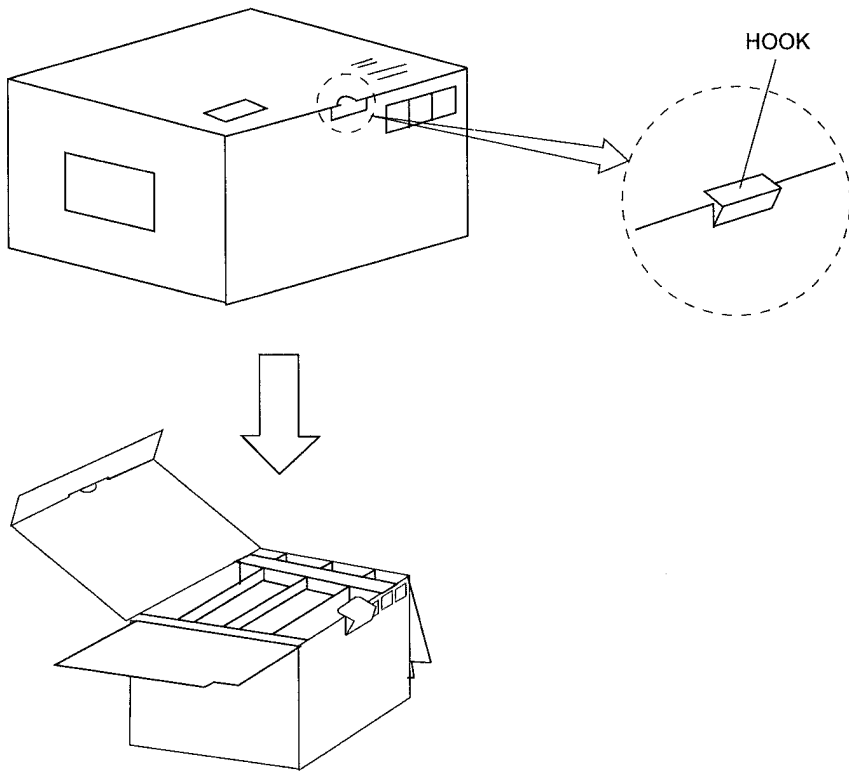
Chart 2-2 Unpacking Methods of Sprit Type TRP (Cont'd)

Step	Procedure

---

2   Take out cushioning material, buffer material and poly sheet,

3   Take out the TRP from carton,

4   Remove poly sheet from the TRP,

TOP PAD

POLY SHEET

TRP
5.8/6/24 GHz

TRP
10.5/11 GHz
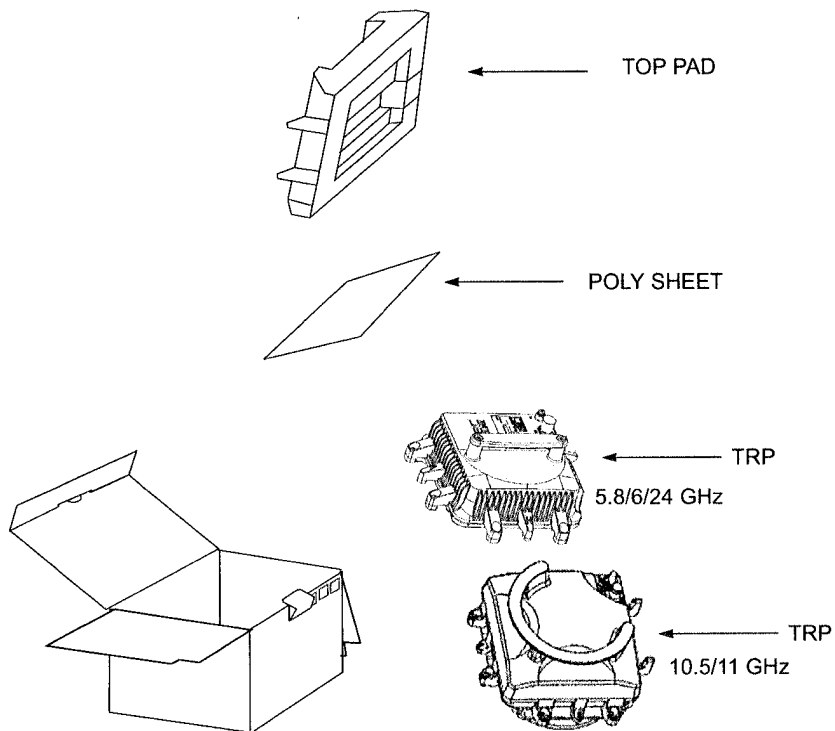
5   Inspect the TRP and accessories.

Chart 2-3 Unpacking Methods of e/w FAN Type TRP

Step	Procedure
1	Cut P.P. tape at top of carton.
2	Open top cover of the carton.
3	Remove cushion slab from the carton.

CUSHION SLAB

ACCESSORY BOX

TAPE

SPACER

P.P.TAPE

ACCESSORY BOX

ACCESSORIES

POLY SHEET

FRONT COVER

CUSHION MATERIAL

CARTON
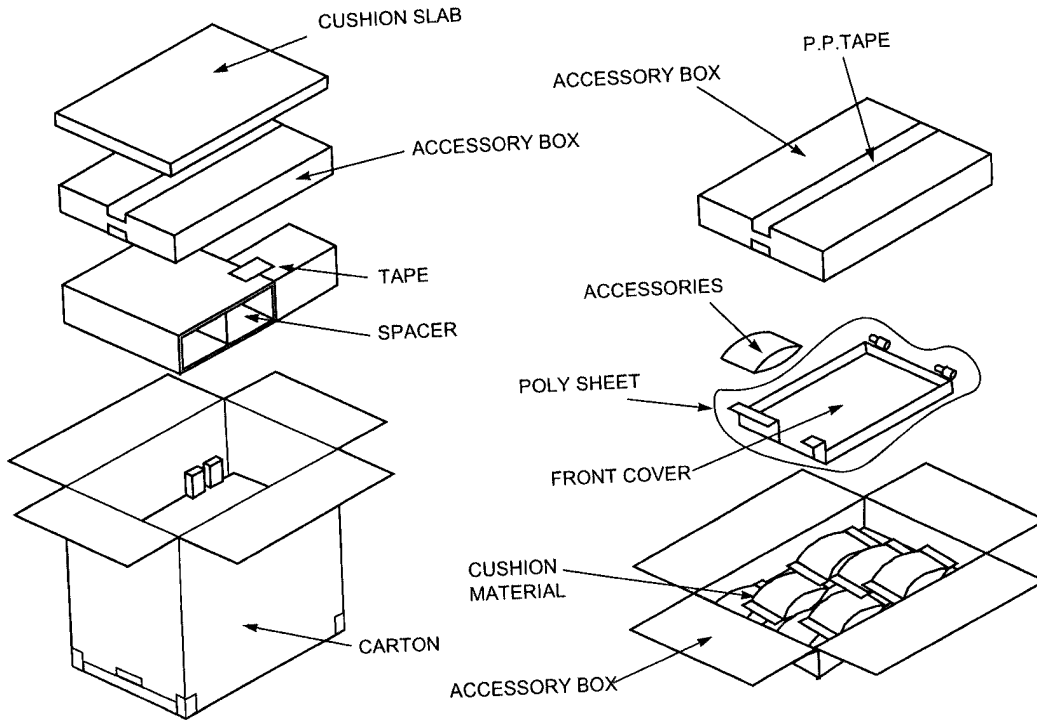
ACCESSORY BOX

4   Take out accessory box.

Chart 2-3 Unpacking Methods of e/w FAN Type TRP (Cont'd)

Step	Procedure

---

5   Cut P.P. tape at top of the accessory box.

6   Open the top cover of the accessory box.

7   Take out accessory sack from the accessory box.

8   Take out the equipment front cover from the accessory box.

9   Remove poly sheet from the front cover.
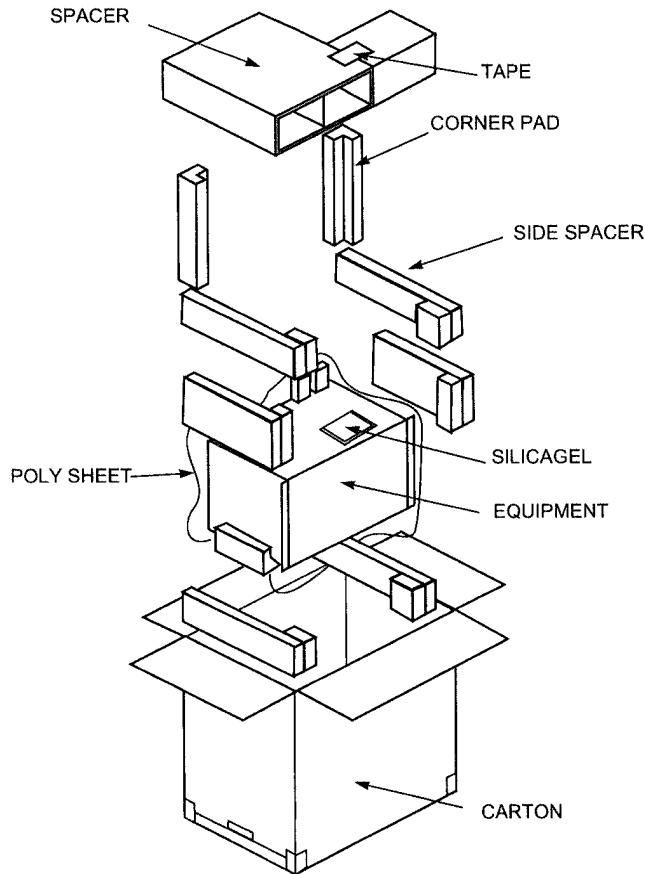
10   Take out the spacer from carton.

11   Take out the corner PAD and side PAD from carton.

Chart 2-3 Unpacking Methods of e/w FAN Type TRP (Cont'd)

Step	Procedure
12	Take out the equipment from carton.
13	Remove poly sheet from the equipment.
14	Inspect the TRP equipment and accessories.

Chart 2-4 Unpacking Methods of w/o FAN Type TRP

Step	Procedure
1	Cut P.P. tape at top of carton.
2	Open top cover of the carton.
3	Remove corner pat from the carton.

CORNER PAT

ACCESSORIES

CORNER PAT

CAUTION LABEL
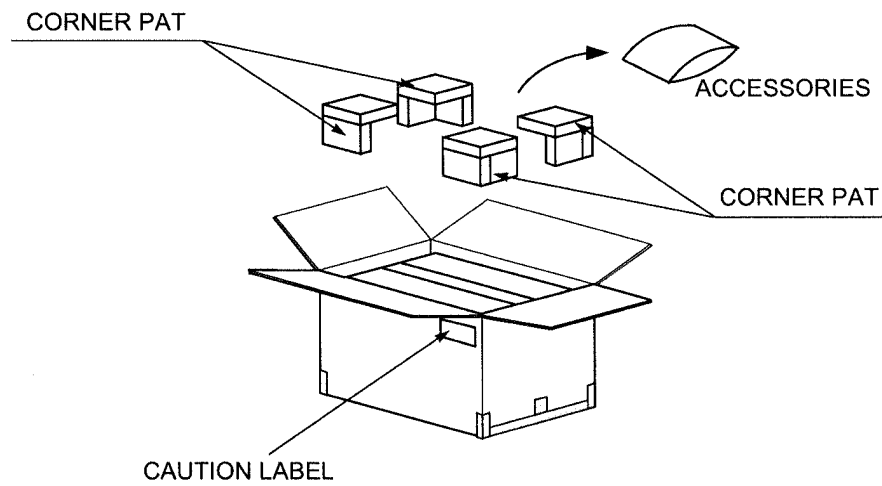
4	Take out accessories.
5	Open the top cover of inner carton.
6	Take out top pat from carton.
7	Take out the TRP from carton.

Chart 2-4 Unpacking Methods of w/o FAN Type TRP (Cont'd)

Step	Procedure

---

8   Open the top cover of the inner carton.
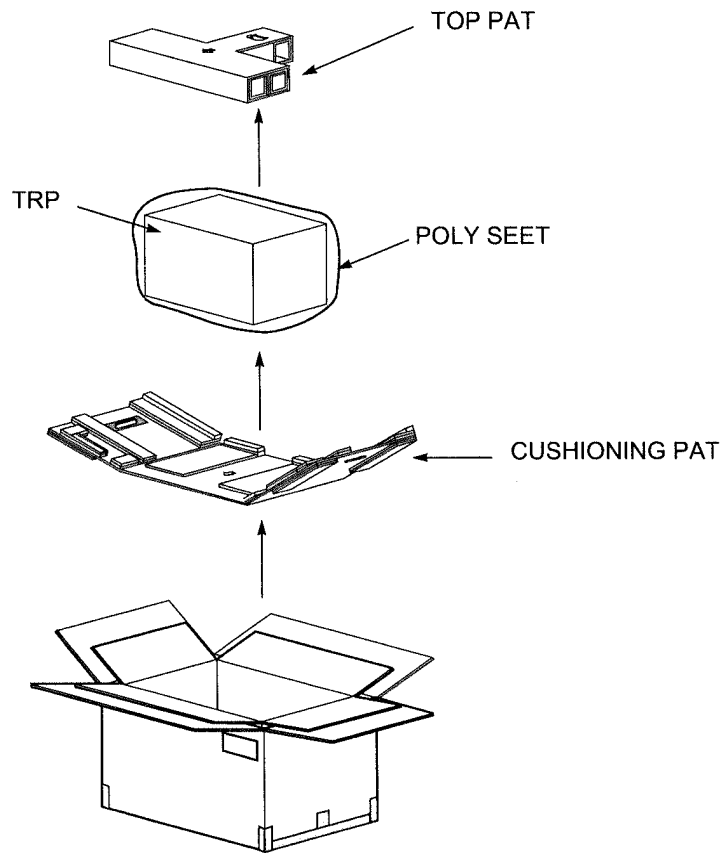
9   Take out the TRP from carton.

10   Remove poly sheet.

11   Inspect the TRP.

2.3 MDP Mounting/Demounting

2.3.1 MDP Mounting

The installation procedure for MDP is shown in Chart 2-5. The MDP should be installed in the radio station indoor.

Install the equipment in the place where it is not restricted access location regulated with UL60950-1.

**Chart 2-5 Mounting Methods of MDP**

Step   **Procedure**

---

1   Change the two brackets to desired position on the MDP, if necessary.
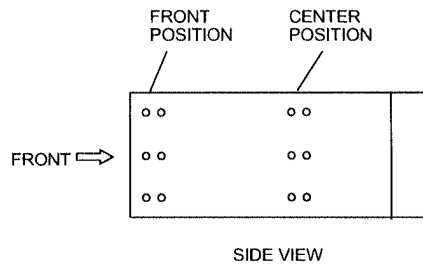
2   Align the MDP to the mounting position on the 19-inch rack.
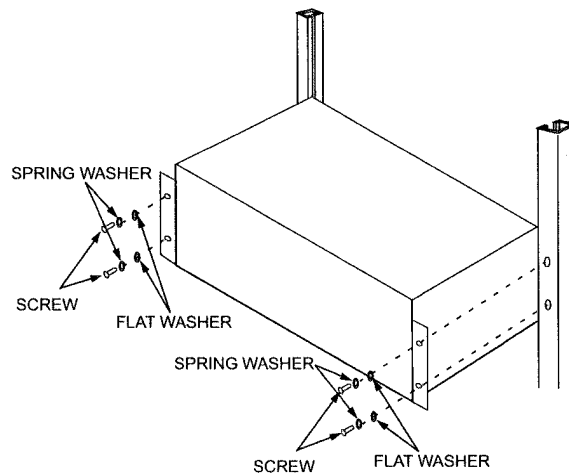
Chart 2-5 Mounting Methods of MDP (Cont'd)

Step	Procedure

| 3 | Fix each side of the MDP to the 19-inch rack with the two screws. |
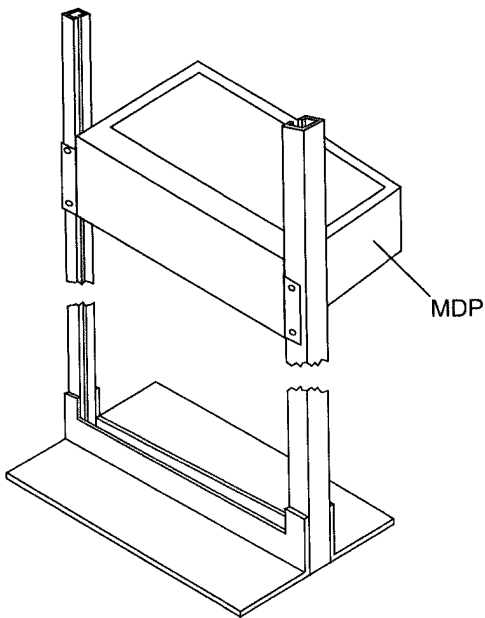
Fixing Front Position
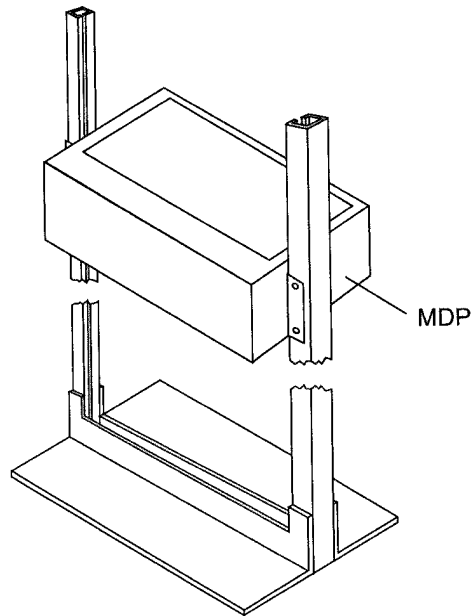
Fixing Center Position

Chart 2-5   Mounting Methods of MDP (Cont'd)

Step	Procedure
4	To mount the MDP in a 19-inch rack, leave space for one unit at the top and bottom to allow heat from the MDP to radiate.
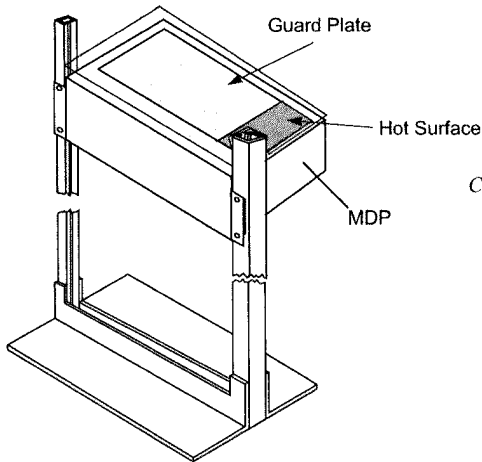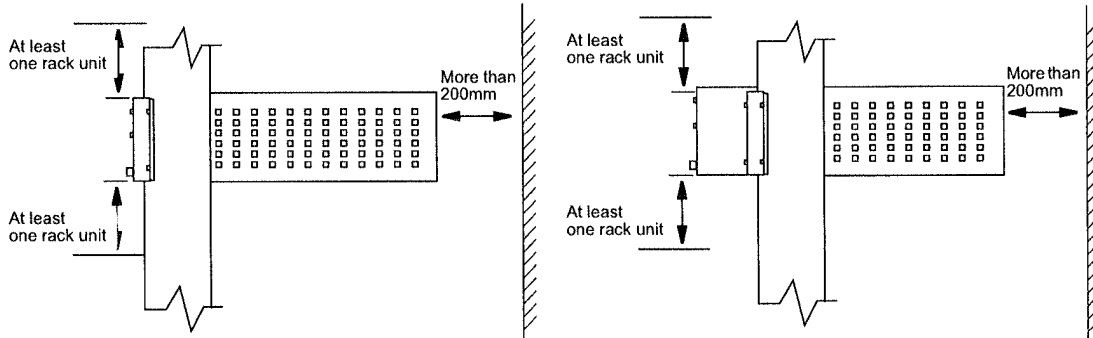
Caution: *Install the equipment in the place where it is not restricted access location regulated with UL60950-1.*

When open space above MDP is more than one rack unit (approximately 45 mm), besides the environment temperature is higher than +104°F (+40°C) , to avoid contact with the hot surface of the MDP, install a guard plate as shown in figure left.

2.3.2 MDP Demounting

For demounting the MDP (if necessary), use the following procedure.

Chart 2-6 MDP Demounting

Step	Procedure
1	Turn off the power switch of the MD UNIT No.1 and No.2,
2	Disconnect power supply cables from the SELV jack on the MD UNIT No.1 and No.2,
3	Disconnect IFL cables from the MD UNIT No.1 and No.2,
4	Disconnect signal cables from the signal interface connectors on the CTRL UNIT,
5	Disconnect ground cables from the MD UNIT No.1 and No.2,
6	Remove the four holding bolts from both sides of the MDP,
7	Remove the MDP from the rack.
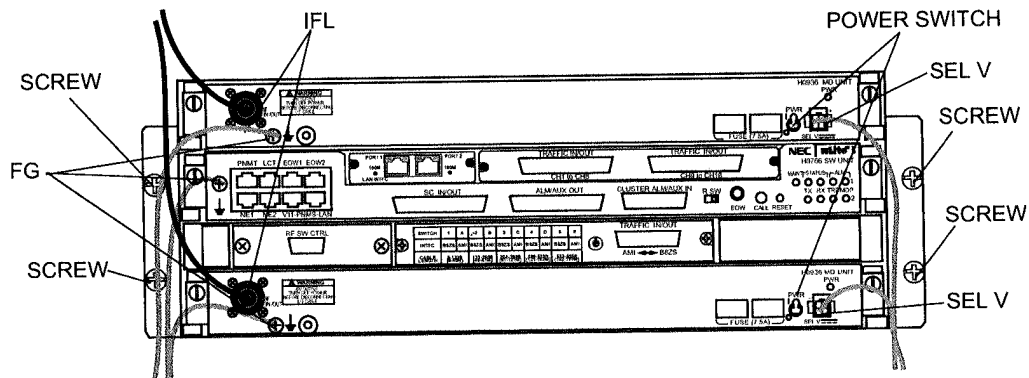
2.4 TRP Mounting/Demounting (Split Type)

Install the equipment in the place where it is not restricted access location regulated with UL60950-1.

2.4.1 TRP Mounting (Coaxial Cable Type)

<u>5.8/L6/U6 GHz TRP MOUNTING (Connecting Coaxial Cable)</u>

MOUNTING BRACKET

THIN NUT
THICK NUT
SPRING WASHER
FLAT WASHER

U-BOLT
Tightening torque:
34.0 N·m ± 10%
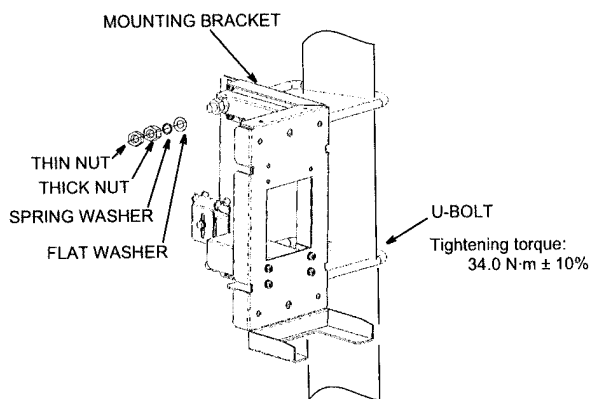
Step 1. Mount the bracket to the pole, point to the opposite station and tighten it with two U-bolts,

Note: The diameter of pole is from 48.5 to 114.5 millimeters.

M6
Tightening torque: *4.0 N·m ± 10%*
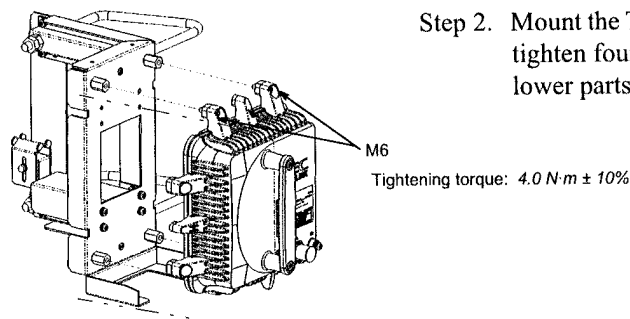
Step 2. Mount the TRP on to the bracket and tighten four bolts (M6) at upper and lower parts of the ODU,
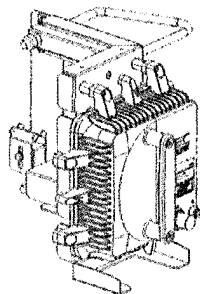
Step 3. Check that the TRP and the bracket are fixed firmly,

Caution: Before connecting the IFL cable between the MDP and TRP, using the circuit tester, check that the resistance of the I/F cable between center conductor and insulation is more than 100 MΩ.

Fig. 2-4 5.8/L6/U6 GHz Band TRP, Pole Mounting (1/3)

5.8/L6/U6 GHz TRP MOUNTING (Connecting Coaxial Cable)

CABLE HOLDER

COAXIAL CABLE

TRP

TIGHTEN BOLTS (M5)
Tightening torque: 3.0 N·m± 10%

Nut

O-Ring

Washer

Spring Washer

ANTENNA

Bolt (M4)

Transducer

Note: Tightening torque is 1.4 N·m ± 10%.
*Note: Be careful not to damage the O-ring.*

POLE

COAXIAL CABLE

TRP
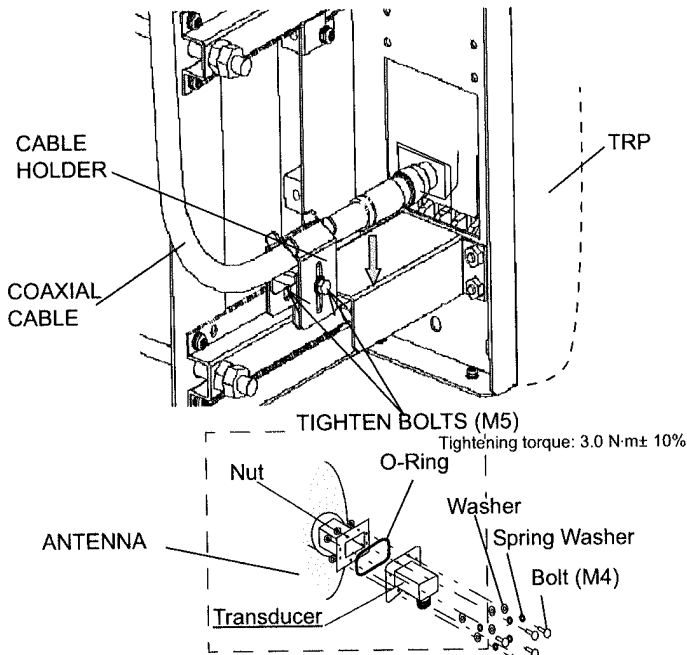
Step 4. Connect the Coaxial cable to the RF IN/OUT connector of the TRP,

Step 5. Down the cable to fix the Coaxial cable to the Cable Holder, then tighten the two bolts,

Step 6. Install the Coaxial cables to the antenna and TRP.

(When the wave guide flange is provided to the antenna port, fit the transducer with eight bolts.)
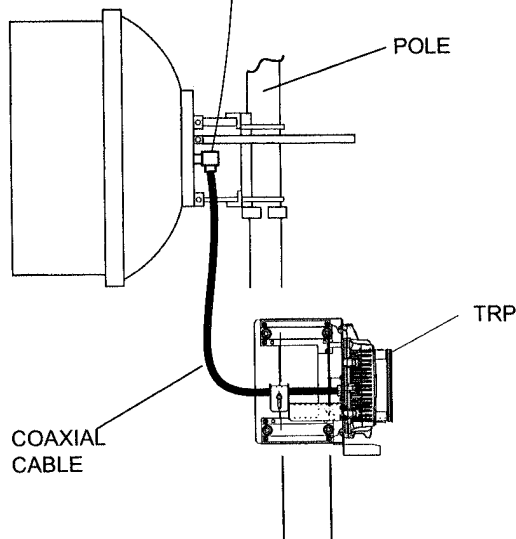
Note: Fix the coaxial cable to the pole or member with cable hanger or cable ties after antenna orientation has been completed.

Caution: Wrap the coaxial cable connection points with a self-bonding tape for waterproof.

Fig. 2-4 5.8/L6/U6 GHz Band TRP, Pole Mounting (2/3)

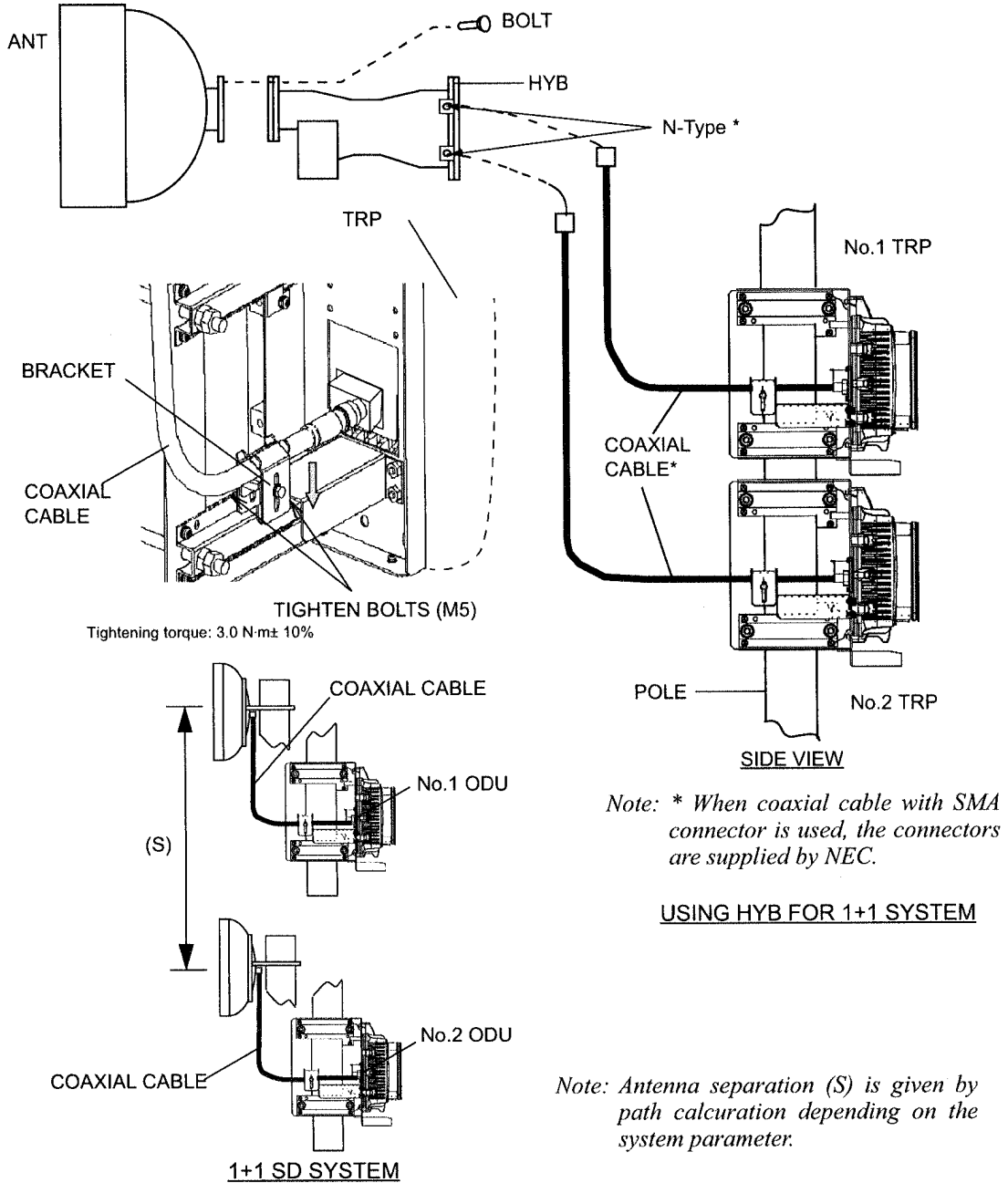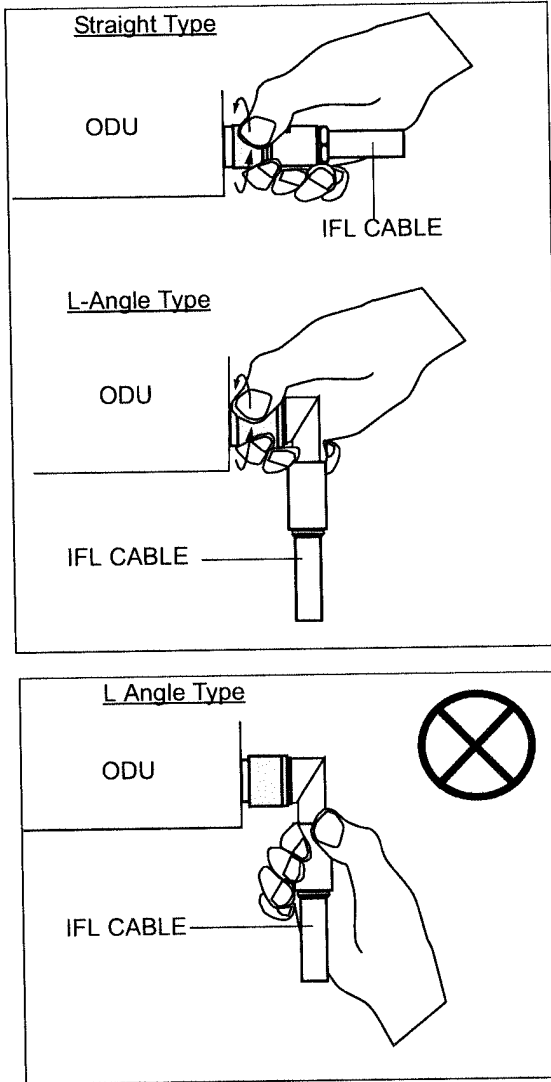<u>5.8/L6/U6 GHz TRP MOUNTING (Connecting Coaxial Cable)</u>

ANT

BOLT

HYB

N-Type *

TRP

No.1 TRP

BRACKET

COAXIAL
CABLE

COAXIAL
CABLE*

TIGHTEN BOLTS (M5)

Tightening torque: 3.0 N·m± 10%

POLE

No.2 TRP

COAXIAL CABLE

<u>SIDE VIEW</u>

No.1 ODU

*Note: * When coaxial cable with SMA
connector is used, the connectors
are supplied by NEC.*

(S)

<u>USING HYB FOR 1+1 SYSTEM</u>

No.2 ODU

COAXIAL CABLE

*Note: Antenna separation (S) is given by
path calcuration depending on the
system parameter.*

<u>1+1 SD SYSTEM</u>

Caution: Wrap the coaxial cable connection points with a self-bonding tape for waterproof.

Fig. 2-4 5.8/L6/U6 GHz Band TRP, Pole Mounting (3/3)

Straight Type

ODU

IFL CABLE

L-Angle Type

ODU

IFL CABLE

L Angle Type

ODU

IFL CABLE

Caution

When connecting the IFL cable to the ODU, tighten the N-male connector with engage connector nut only using fingers and holding the cable with another hand.

Tighten the engage connector nut only for the L-angle connector also.

**(Tightening Torque : 0.7 to 1.2 N•m (7 to 12 kg•cm))**

If rotate other parts of the L-angle connector as illustrated left, it can cause connector damage.

2.4.2 TRP Demounting (Coaxial Cable Type)

For demounting the TRP (if necessary), use the following procedure.

Chart 2-7 TRP Demounting

Step	Procedure
1	Turn off the power switch of the MD UNIT No.1 and No.2,
2	Disconnect IFL cables from the TRP No.1 and No.2,
3	Loosen screws of the Cable Holder,
4	Disconnect coaxial cable from the RF IN/OUT of the TRP,
5	Disconnect ground cable from "FG" terminal on the TRP,
6	Remove the four holding bolts from both sides of the TRP,
7	Remove the TRP from the bracket.
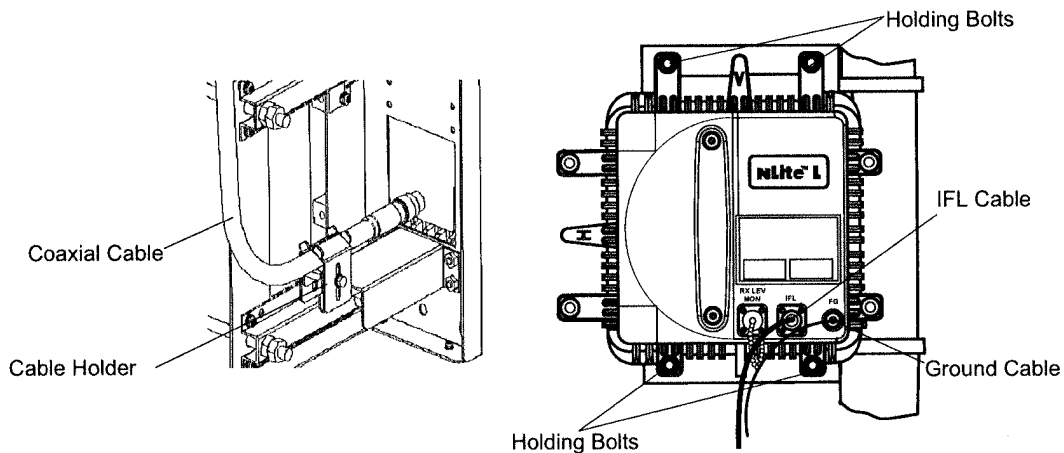
2.4.3 TRP Mounting (Antenna Direct Mounting)

The procedures for mounting and demounting the TRP are described here. There are two types of mounting for the antenna direct mounting type and waveguide connecting type. The TRP should be installed in the radio station. The tools for installation are listed in Table 2-1.

Table 2-1 Tools

TOOLS
Wrench or Monkey wrench
Screwdriver
Torque Wrench

Caution 1. *How to use small and large O-rings are shown in following table. Two (small and large) O-rings are attached in 24 GHz band Andrew/RFS direct mount antenna. 10.5/11 GHz band antenna does not have small O-ring (Small O-ring is not used for Andrew/RFS direct mount antenna). If the small O-ring is used for TRP direct mount installation, a gap may occur between TRP and antenna for RF interface. Therefore it may happen transmit or receive level down.*
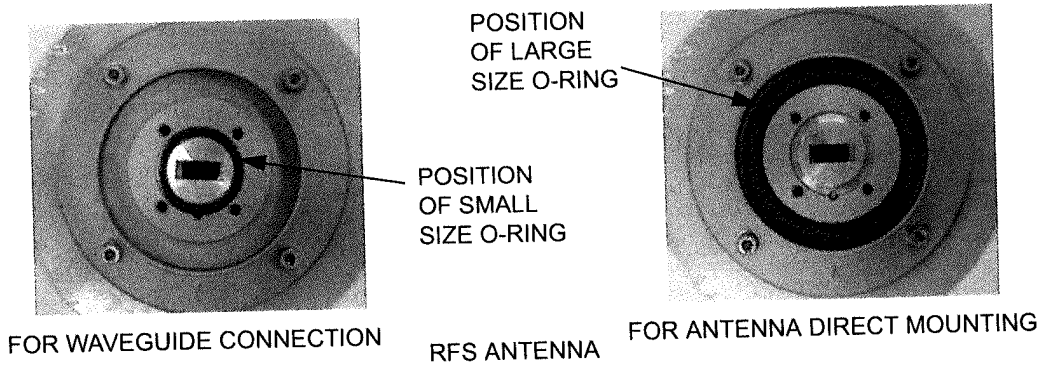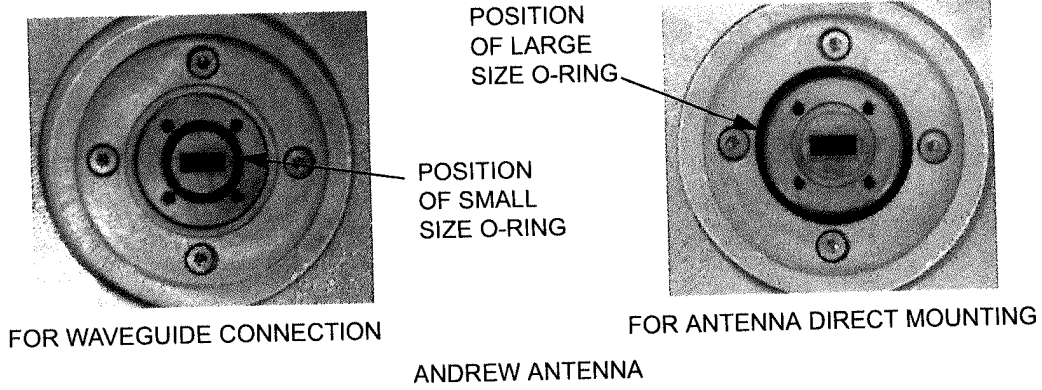
Caution 2. *Do not apply silicon grease at O-ring.*

SYSTEM	ATTACHENENT POSITION OF O-RING (BETWEEN:)	O-RING		REMARKS
		SMALL SIZE	**LARGE SIZE**	
1+0	ANT — TRP	Not used	Used	Antenna direct mounting
	ANT — WG/TRP (24 GHz BAND)	Used	Not used	Waveguide connection
1+1	ANT — HYB	Not used	Used	Antenna direct mounting
	ANT — WG/HYB (24 GHz BAND)	Used	Not used	Waveguide connection

Notes: 10.5/11 GHz antenna for direct mount is not possible to connect the ordinary waveguide flanges.

POSITION
OF LARGE
SIZE O-RING

POSITION
OF SMALL
SIZE O-RING

FOR WAVEGUIDE CONNECTION   FOR ANTENNA DIRECT MOUNTING

ANDREW ANTENNA

POSITION
OF LARGE
SIZE O-RING

POSITION
OF SMALL
SIZE O-RING

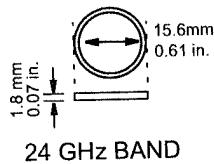FOR WAVEGUIDE CONNECTION   RFS ANTENNA   FOR ANTENNA DIRECT MOUNTING

Notes: 1. Do not use both small O-ring and large O-ring simultaneously.

2. O-ring size is different with frequency band as follows:

40mm
1.57 in.

4 mm
0.16 in.

10-11 GHz BAND

32mm
1.26 in.

4 mm
0.16 in.

24 GHz BAND
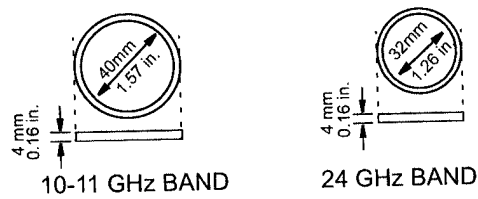
LARGE SIZE O-RING FOR ANTENNA DIRECT MOUNTING

15.6mm
0.61 in.

1.8 mm
0.07 in.

24 GHz BAND

SMALL SIZE O-RING FOR WAVEGUIDE CONNECTION

| Chart 2-8 Change of Polarization (Antenna Direct Mounting)	
Step	**Procedure**

CHANGE OF POLARIZATION

TRP DIRECT MOUNTING TYPE ANTENNA
(Example (ANDREW) 1/2)

Note: *The details are referred to the installation manual which is attached to the antenna. The installation or removal of the antenna requires qualified experienced personnel.*

Note: *The antenna is set to V-polarization when shipped from the factory.*

1   Keep the antenna stand horizontally,
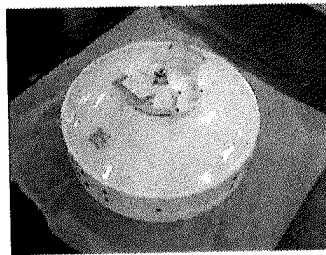
2   If you change to H polarization, loosen the four screws with the Allen key wrench and then rotate the Transition hub of feed, keeping the antenna stand horizontal.
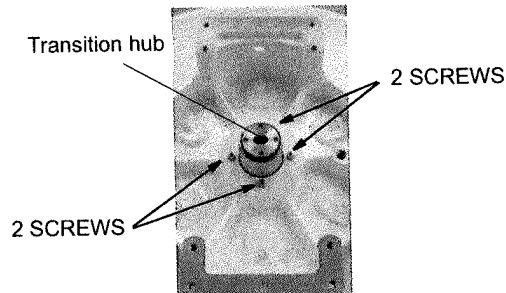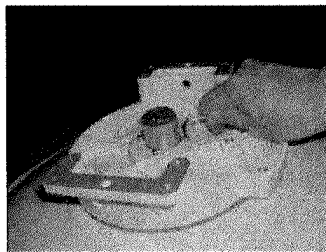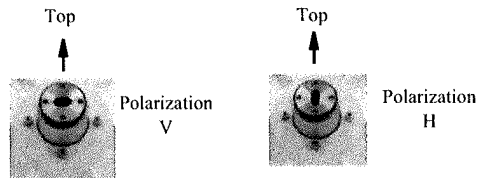

Transition hub   2 SCREWS

2 SCREWS

Chart 2-8 (Cont'd)

Step   **Procedure**

Note: Do not remove the screw complete from the screw hole.
      Hold the feed horn with hand.

3   Holding the feed with hand, rotate the feed 90 degrees,

         Check that the aperture part of the Transition hub is rotated 90
         degrees, then fix it with the screws that were loosened in step 2,

4   Check that the aperture part of the Transition hub is rotated 90
         degrees, then fix it with the screws that were loosened in step 2

         Note: When a large and a small gasket are included in the
               antenna package. Please use the large one (The small
               gasket is not used in antenna mount)