

1. System Connection and Debut

1.1. Master Unit

Refer to master unit panel composition diagram (figure4.1-1).

4.1.1 Connection with RF from BTS

In connecting RF signal from microcellular or BS, first confirm that the downlink signal from BTS is $\leq 20\text{dBm}$, otherwise, System may operate abnormally or circuit may be damaged.

Optimum downlink signal level input into the port connected with high band or low band (14 and 15 in figure 4.1-1): $+5 \sim +20\text{dBm}$. The maximum input should not be greater than 20dBm . $+10\text{dBm}$ is suggested.

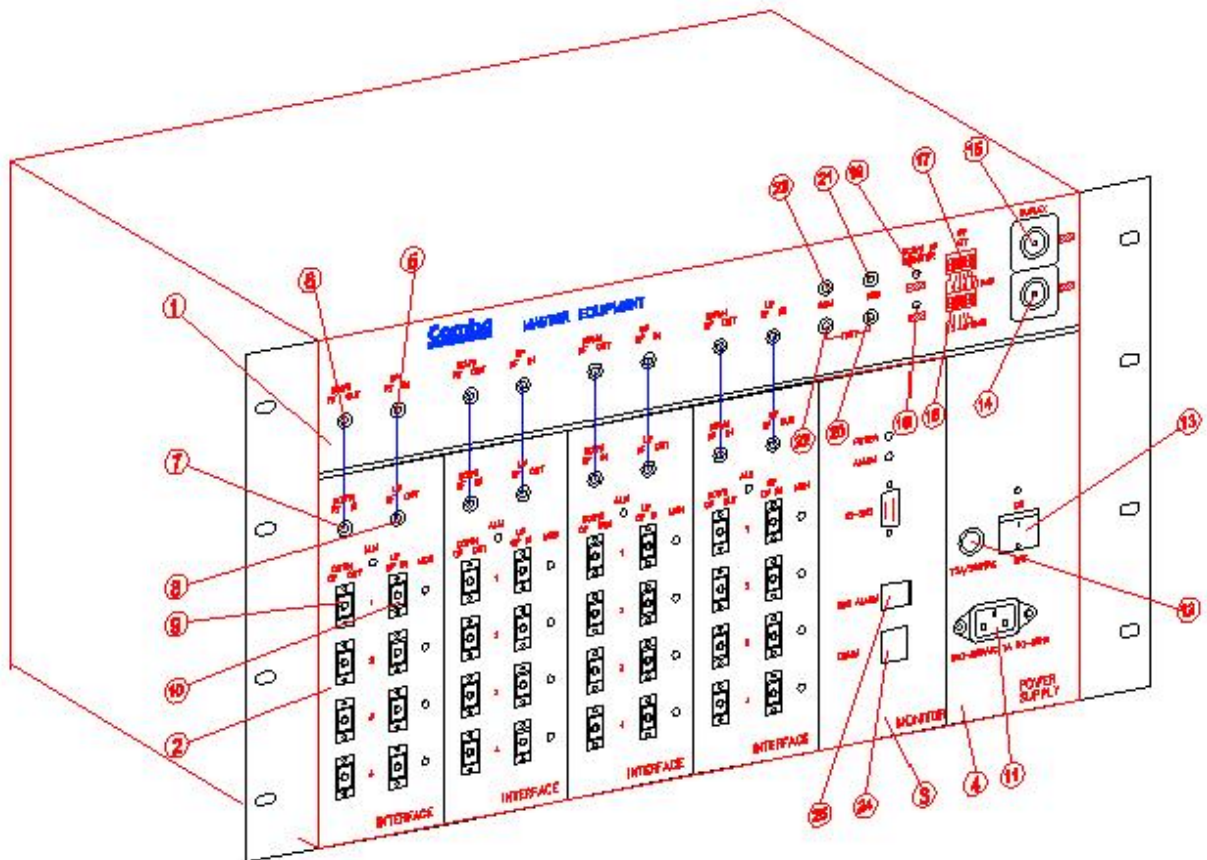


Figure 4-1 Master Unit Panel Composition Diagram

II Master Unit	⊘ Interface Unit downlink optical output port	16 1800M uplink gain adjustment dip switch
⊕ Interface Unit	⊗ Interface Unit uplink optical input port	17 900M uplink gain adjustment dip switch
⊕ Alarm Unit	11 power supply socket	18 1800M downlink RF power indicator
⊕ power supply unit	12 fuse seat	19 900M downlink RF power indicator
⊕ Master Unit uplink RF input port	13 power switch	20 1800M downlink input check port (coupling degree 10dB)

Master Unit downlink RF output port	14 high band RF connector	21 1800M uplink output check port (coupling degree 10dB)
Interface Unit downlink RF input port	15 low band RF connector	22 900M downlink input check port (coupling degree 10dB)
Interface Unit uplink RF output port		23 1800M uplink output check port (coupling degree 10dB)
	25 BS external alarm port	24 communication unit port

When the two green LED of DOWN RFIN on the front panel of the Master Unit (figure 4.1-1: 18 and 19) are on, it means that input level >0dBm. When one of them is off, it means that the input level of the correspondent one is smaller than this normal value.

If only high band or low band needs to be installed, 50 standard Terminator should be connected with the RF connector not in use. Then, the correspondent uplink gain adjustment thumb wheel does not function and the correspondent downlink RF power LED indicator is off.

4.1.2 Uplink Level Adjustment

Uplink level adjustment is a quite important step in the optimization of system operation. If uplink level is too high, it may have impact on high drop call rate of BTS, or even block BTS. If it is too low, it may reduce the uplink sensitivity at the remote coverage area. In practice, uplink attenuation should be determined according to the signal coupling way and coupling degree of BTS. In general, the noise level of signal input into BTS antenna port should be $\leq -125\text{dBm} \text{ } \text{BW}300\text{KHZ}$. On the panel, for GSM900, UP ATT manual attenuation adjustment (figure 4.1-1: 16 and 17) can provide the maximum adjustment range of over 30dBm with step of 2dB, and the correspondent attenuations are 2, 4, 8, 8, and 16dB when DIP code 1, 2, 3, 4, and 5 are at the "ON" position. For GSM1800, it provides the maximum adjustment range of over 25dBm with step of 1dB., and the correspondent attenuations are 1, 2, 4, 8, and 16dB when DIP code 1, 2, 3, 4, and 5 are at the "ON" position.

4.1.3 RF Connection Between Master Unit and Interface Unit

Caution – Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

RF connection between Master Unit (figure 4.1-1: 1) and Interface Unit (figure 4.1-1: 2) should be done with upper and lower parts corresponding with each other: 6 with 7 and 5 with 8. 4 pairs of fiber-optic connectors (SC optical flange)-EOWN OPOUT (figure 4.1-1: 9)/UP OPIN (figure 4.1-1: 10) are on the panel of the Interface Unit. Connect the uplink and downlink optical fibers from the coverage end with these fiber optic connectors. In connecting fiber optic connector, never face it toward people's eyes and skin since laser beam may hurt people's eyes and skin.

4.1.4 Check Ports

There are two pairs of RF connectors on the panel of the Master Unit: One pair is high band TEST (figure 4.1-1:23-uplink RF output, 22-downlink RF input) and the other is low band TEST (figure 4.1-1:21-uplink RF output, 20-downlink RF input). They are the check ports for low band and high band uplink and downlink RF signal debug.

1.2. Remote Unit

Caution – Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

4.2.1 Connection with RF Cable and Optical Fiber [figure 3.2-1: Remote Unit Installation Schematic Diagram].

Remote Unit has 4 antenna ports at the top of cabinet for antenna connection. Connect 50 Ω standard load for any additional port; downlink fiber-optic input port (left) and uplink fiber-optic output port (right) are at the bottom of cabinet, fiber-optic connector is SC fiber-optic adapter.

4.2.2 Check of Input and Output Optical Power

Measure the receiving power of downlink optical fiber with optical power meter. The value should be around -5dBm. Actual loss can be taken into account according to the length of cable connecting master unit and Remote Unit. Measure the output power of uplink optical fiber with optical power meter and the value should be around 0-3dBm.