BOOSTER OVERVIEW:

The Booster provides an exceptional performances to extend the coverage area of radio communications in buildings and RF shielded environments.

The unit is based on a duplexed path configuration, having sharp out of band attenuation for improved isolation between the receiving and transmitting paths.

BLOCK DIAGRAM DESCRIPTION:

The Downlink path receives the RF signals from base station, amplifies them and transmits them for further distribution to the subscriber.

The Uplink path receives the RF signals from the subscribers, amplifies them and transmits them to the base station.

Two duplexers separate the signals to the proper amplifying path and isolate between the the two paths.

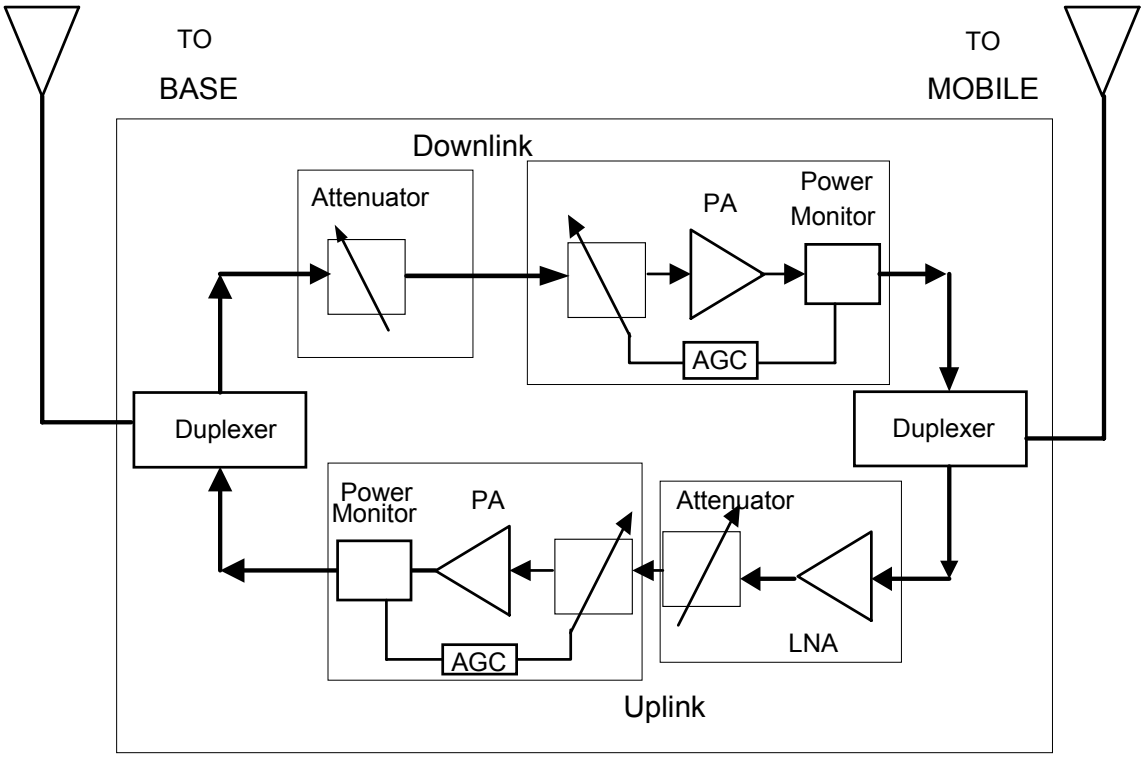
For each path there is a 40dB gain and a 30 dB step attenuator to set the Booster gain.

The power amplifiers in the Booster have an AGC option switch. When switched on, the AGC circuit limits the amplifier output power. The AGC circuit senses the output power and introduces more attenuation, when the output power exceeds the preset level. This way the gain of the amplifier is reduced, its output power is limited and the intermodulations products are kept below the desired level.

The AGC amplifier has a Power LED lamp that illuminates when the output power has reached the preset power limit.

BOOSTER OPERATION

The RF connection is made via two type “N” female connectors. The RF connector labeled “Base” is connected to the base station. The RF connection labeled “Mobile” is connected to the antenna of area to be covered by the Booster; such as inside the building.



IBDB-10W40
RF BLOCK DIAGRAM

AGC FUNCTION

The Booster has AGC function on both paths that serve to prevent the saturation of the power amplifier. Their amplifier has a directional coupler and a detector at the output of the high power amplifier to monitor the output power. When a high signal is received the automatic level control

detects the amplitude and sends a feedback signal to a voltage variable attenuator which attenuates the signal level so that the output power of the amplifier does not exceed the preset limit. The LED on the amplifier illuminates when the power output of the amplifier is within the set limit (either when the AGC is On or OFF).

The switch on the RF amplifier enables the AGC function. If the AGC is disabled then the amplifier gives maximum gain.

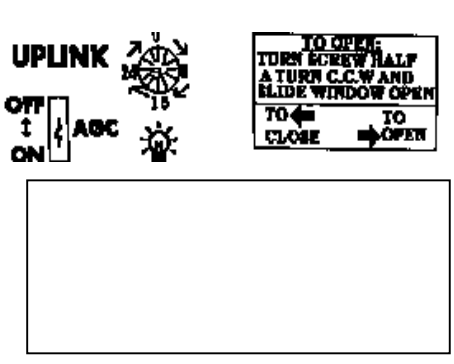
AGC AND GAIN CONTROLS

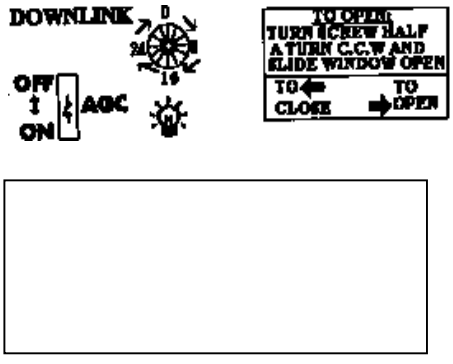
The AGC ON/OFF and GAIN SETTING functions for the up link path are reached by opening the small slide door located on the Booster left side, adjacent to the BASE antenna port. For the down link path the door is on the right side adjacent to the MOBILE antenna port.

RF Power LED: The LED illuminates when the output power exceeds the AGC Set .

AGC ON / OFF Switch: When OFF the amplifier works with its highest gain (AGC Function OFF). When set to ON (AGC Function ON) the amplifier power output cannot exceed the set limit.

Gain setting: By using the rotary knob, the attenuation can be adjusted in 2 dB steps.





ELECTRICAL SPECIFICATIONS:

Frequency Range (MHz)	Down Link (Base to Mobile)	Up Link (Mobile to Base)
	935-941	896-902
Passband Gain @Min attenuation	40 dB nominal	
Passband Ripple	+/- 1.5 dB typical	
Manual Attenuation Range	0 to 30 dB in 2 dB step	
Isolation between up and down link	70 dB min	
Noise Figure	6.0 dB max	
Amplifier Power Output @1 dB Compression	: 10 Watts typical	1 Watts typical
3rd Order output Intercept point	+50 dBm typical	+43 dBm typical
AGC Factory Power Preset	+30 dBm nom.	+24 dBm nom.
Impedance level	50 ohms	
V.S.W.R In/Out	1.5 : 1 max	
AGC Attenuation Range	25 dB typical	
AGC Selection	By ON/OFF Switch	
AGC LED Indication	LED turn ON when power reaches AGC Set Power Level. (both at On and Off Positions).	
Power Supply	: 110/220V AC, 50-60 Hz	

* *same specifications for both paths unless specified.*