

INSTALLATION AND OPERATING INSTRUCTIONS FOR MW-IBDB-10W40 BOOSTER





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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.

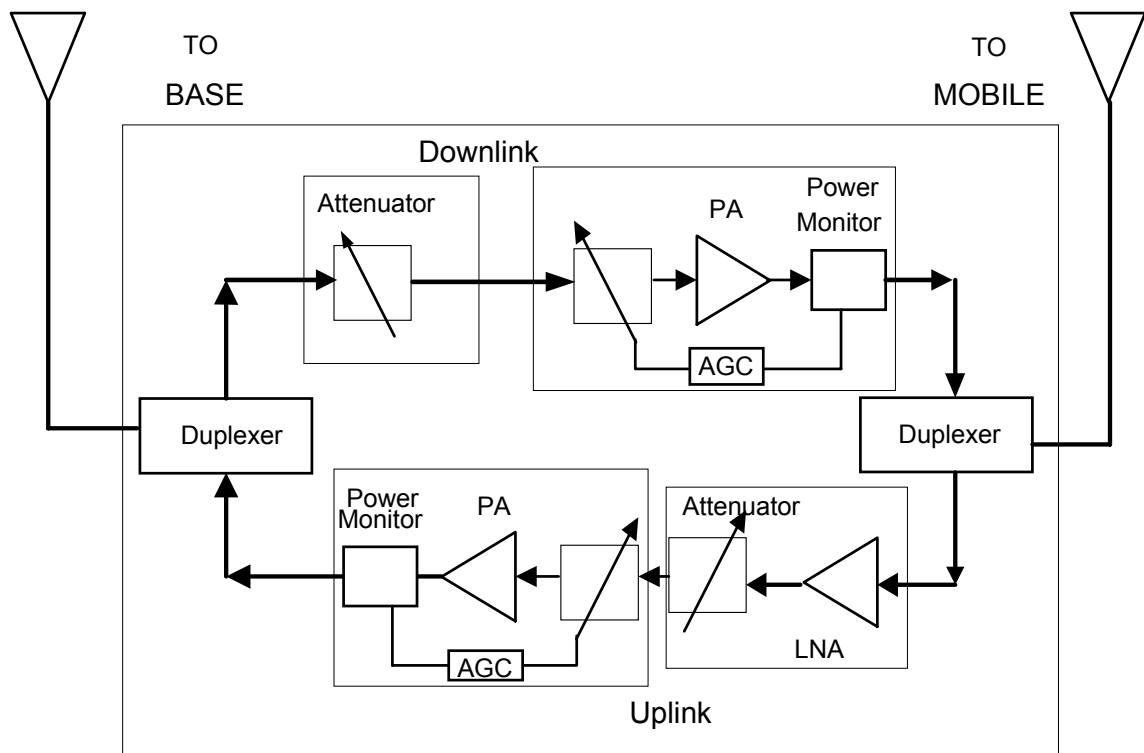
For each path there is a 40dB gain and a 30 dB step attenuator to set the Booster gain.

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



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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

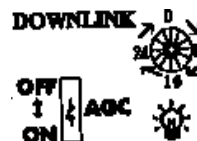
The AGC ON/OFF and GAIN SETTING functions for the up link path are reached by opening the small slide door located on the Booster left side, adjacent to the BASE antenna port. For the down link path the door is on the right side adjacent to the MOBILE antenna port.

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.

Warning: The AGC switch must be always ON in order to limit the spurious signals.

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





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ELECTRICAL SPECIFICATIONS:

Frequency Range (MHz)	See table
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
3rd Order output Intercept point	Downlink +50 dBm typical Uplink +43 dBm typical
3rd Order IMD Downlink @2 tone +27 dBm each Uplink @2 tone +20 dBm each	45 dBc typical 45 dBc typical
AGC Factory Power Preset	Downlink +30 dBm nom. Uplink +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

System Frequency Range

SYSTEM TYPE	MODEL No	DOWN-LINK	UP-LINK
E-SMR (iDEN)	MW-IBDB-ESMR-10W40A	851-866	806-821
SMR - 900 MHz	MW-IBDB-SMR-10W40A-PS9	935-941	896-902



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ENVIRONMENTAL CONDITIONS:

Operating temperature	: - 10°C to + 50°C
Storage temperature	: - 50°C to + 90°C

MECHANICAL SPECIFICATIONS:

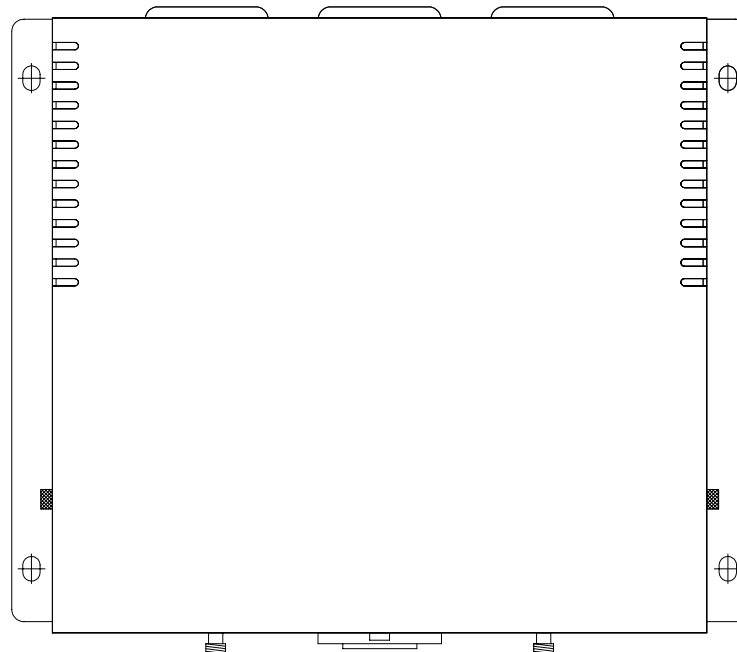
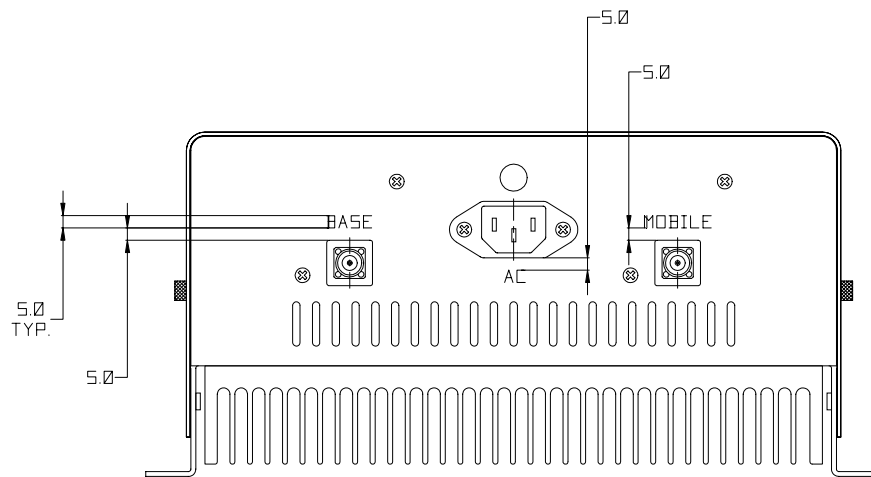
Size mm(Inch)	265(10.4) x 250(9.8) x140(5.5)
RF Connectors	N-type Female
Weight	8 kg. Approx

RF EXPOSURE WARNING

In order to satisfy the FCC RF exposure requirements, you must ensure that the installation complies with the following:

One antenna is connected via cable that has typical 1~10 dB attenuation (depends on the length of the cable) to the BDA base port. This antenna is installed outdoor and has very sharp beam (Yagi type or similar) pointed to the donor (BTS). This type of antenna has about 10 dBi gain. Typical specifications: gain: 8 dBd (=10.1 dBi), VSWR: better than 1.5:1 , Impedance: 50 ohm. The outdoor antenna must be installed to provide a minimum separation distance of 0.5 m (50 cm) from persons within the area.

The second antenna is connected via cable that has typical 1~10 dB attenuation (depends on the length of the cable) to the BDA MOBILE port. This type of antenna is omnidirectional (isotropic), or wide beam, with 0 to 2 dBi typical gain and is installed and distributes indoor (in buildings, tunnels, basements, park lots, shopping centers etc.). Typical specifications: gain: 2 dBi, VSWR: better than 2:1 , Impedance: 50 ohm. For direct connection to the BDA this antenna must be installed to provide a minimum separation distance of 0.5 m (50 cm) from persons within the area.



MECHANICAL OUTLINE



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DEKOLINK WIRELESS LIMITED WARRANTY

Dekolink Wireless [Ltd.] ("Dekolink"), manufacturer of this product (the "Product") warrants to the original purchaser ("Purchaser") that the Product is free from defects in materials and workmanship for a term that ends on the earlier of twelve (12) months from the date of activation of the Product or fifteen (15) months from the date of shipment of the Product by Dekolink. The obligations of Dekolink under this warranty shall be limited solely to the repair or exchange or giving credit for, at the option of Dekolink, any Product that may prove defective in accordance with evidence satisfactory to Dekolink. Any repair or replacement of the Product by Dekolink shall not extend the original warranty period. This warranty is exclusive to the original Purchaser and is not assignable.

This warranty applies only upon the condition that the Product has been installed, maintained and operated under conditions of normal use. The provisions of this warranty shall not apply if, in Dekolink's judgment, the Product has been subject to misuse or neglect, damaged in an accident or by act of vandalism, or repaired or altered in any way that adversely affects its performance or reliability.

To obtain warranty service, Purchaser may, upon the prior written authorization of Dekolink or its authorized service representative, return the defective Product to Dekolink's authorized service center. All shipping and insurance charges are the sole responsibility of Purchaser and are not included in this warranty.

Dekolink expressly excludes and disclaims all other warranties, including but not limited to any warranties of merchantability or fitness for a particular purpose.

Dekolink shall in no event be liable for any special, indirect, incidental, consequential or punitive damages or for loss, damage, or expense, including loss of use, profits, revenue, or goodwill, directly or indirectly arising from purchaser's use or inability to use the merchandise, or for loss or destruction of other property or from any other cause, even if Dekolink has been advised of the possibility of such damage. Some states do not allow the exclusion or limitation of incidental or consequential damages so these limitations may not apply under certain circumstances.

The liability of Dekolink shall in no event exceed an amount equivalent to the purchase price paid by the purchaser for the defective product.

This warranty shall not be extended, altered or varied except by a written instrument duly signed by Dekolink.