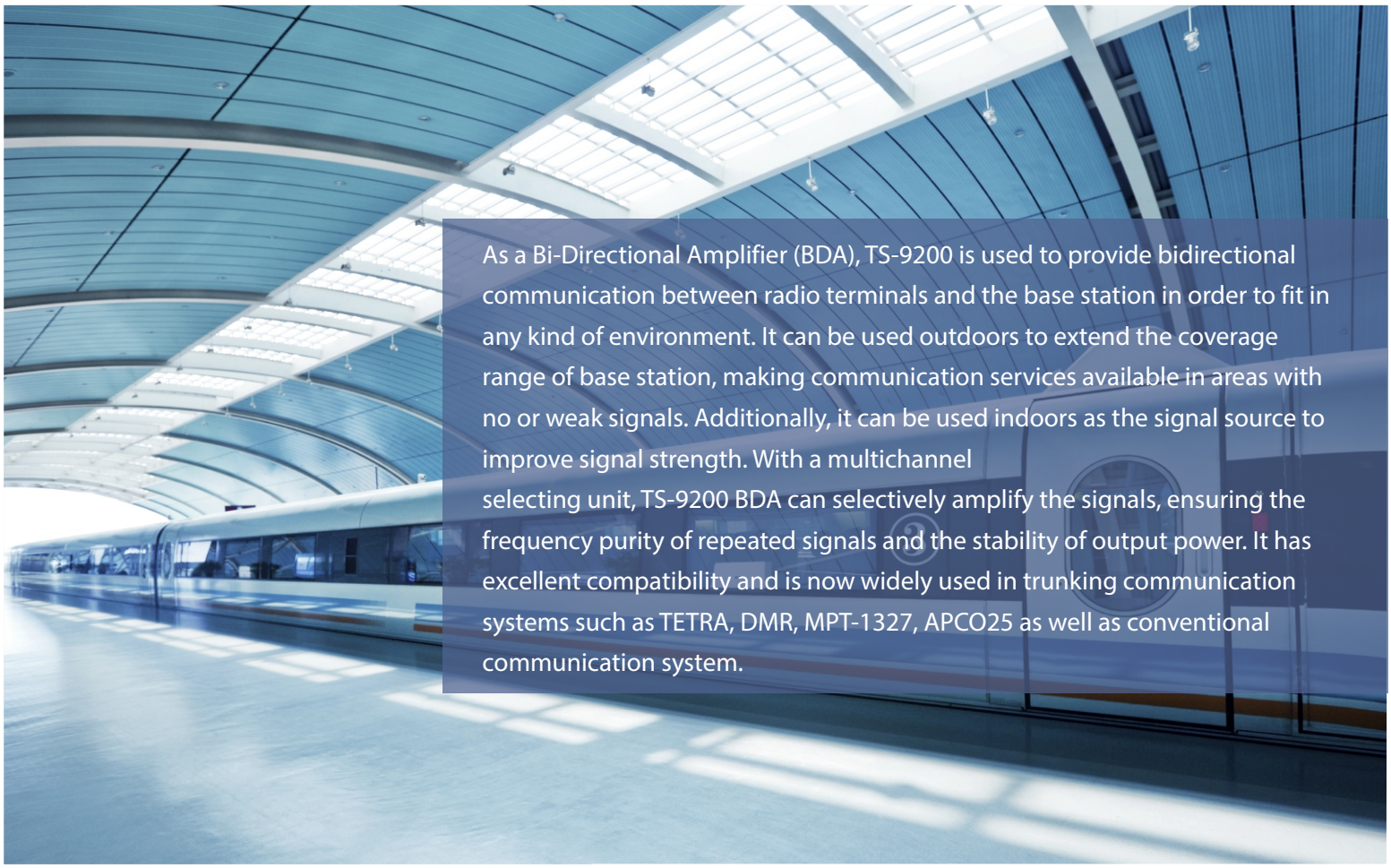
Hytera

TS-9200

Bi-Directional Amplifier

BDA Type:

- Integrated RF BDA
- Analog Fiber Optical BDA (Coupling by air)
- Analog Fiber Optical BDA (Coupling directly)
- Digital Fiber Optical BDA (Coupling by air)
- Digital Fiber Optical BDA (Coupling directly)



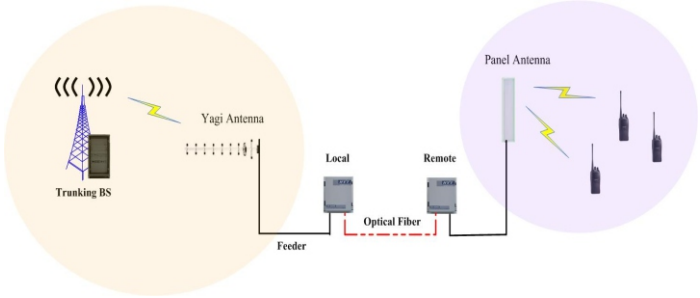
As a Bi-Directional Amplifier (BDA), TS-9200 is used to provide bidirectional communication between radio terminals and the base station in order to fit in any kind of environment. It can be used outdoors to extend the coverage range of base station, making communication services available in areas with no or weak signals. Additionally, it can be used indoors as the signal source to improve signal strength. With a multichannel selecting unit, TS-9200 BDA can selectively amplify the signals, ensuring the frequency purity of repeated signals and the stability of output power. It has excellent compatibility and is now widely used in trunking communication systems such as TETRA, DMR, MPT-1327, APCO25 as well as conventional communication system.

TS-9200

Bi-Directional Amplifier

Product Highlights

- Modularized design, easy for maintenance.
- Flexible monitoring (GSM, ethernet or serial port), convenient for maintenance and management.
- SDR (Software Definition Radio) technology, filtering irrelative and ensuring stable output power & clean spectrum output.
- Function of Channel Switch. With this functions, the channel will automatically be shut down if there is no call in the coverage, which can strongly reduce the impact of base stations.
- Dustproof, moistureproof & waterproof, with low requirements on installation environment;
- With high-linearity power amplifier and high-rejection duplexer, capable of rejecting intermodulation and spurious signals;



Fiber optical BDA(Coupling by air)

Application Examples

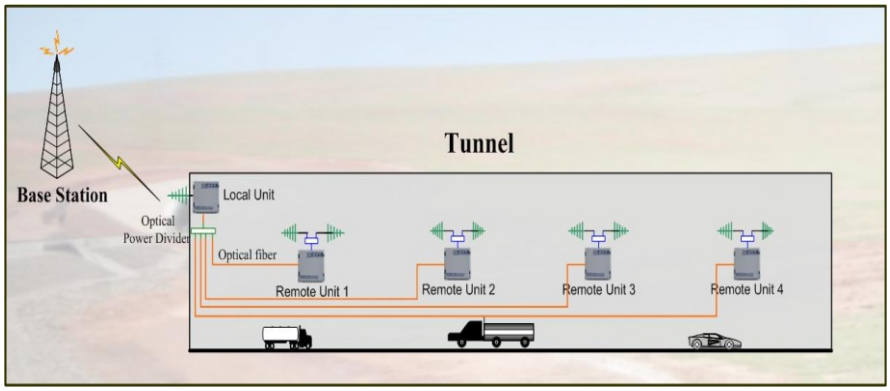
●Coverage Solution for Tunnels
Signals are strongly shielded in long and narrow tunnels due to barriers such as mountains. As a result, there is almost no signal except the entrance and exit. BDA would throw this problem away.

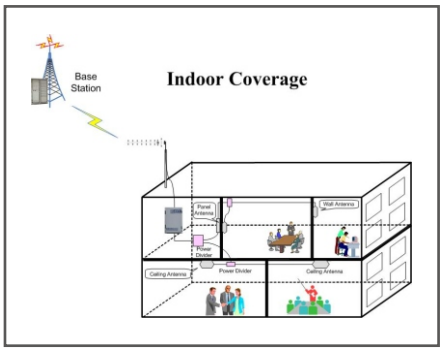
●Coverage Solution for Roads and Railways
Install BDAs between base stations of trunking system along highways, railways or rivers, and users will enjoy the following benefits: coverage range extension of trunking system; the reduction of base station number and frequency resource occupation; significant cut of system construction cost and winning of a cost-effective zonal coverage solution with high performance.

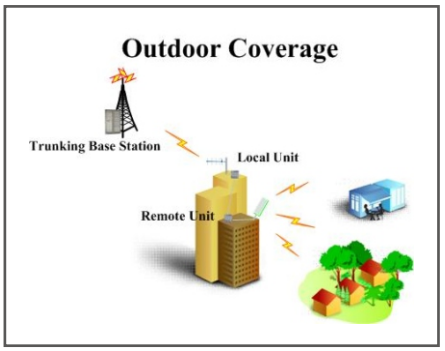
●Coverage Solution for Indoor Areas
Most trunking systems adopt the large coverage system. As a result, the signals are weak when getting to the indoor area due to the attenuation such as space loss and penetration loss. This is why signal blind areas or poor communication quality occur in the lower floors, basements, Mine and elevators of high-rise buildings. In these cases, BDA is the best solution thanks to its ability to improve signal strength and ensure communication quality.

●Coverage Solution for Outskirts Areas
In suburbs and remote town areas, BDA is the best coverage solution, not only for its affordability and easy installation, but also for its functions (equal to a small base station).

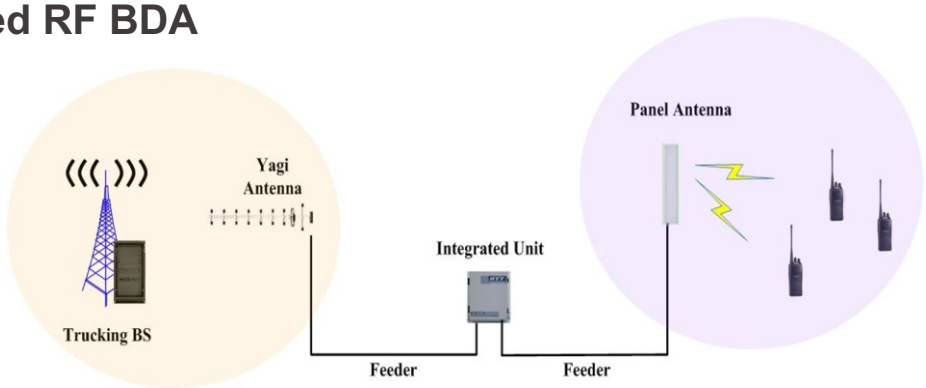
●Coverage Solution for Congested Residential Areas
In congested residential areas, buildings vary in height and the space size between two buildings is small with complex electromagnetic environment. This may cause the signal to attenuate quickly. Therefore, low coverage rate and poor communication quality result. Luckily, these problems can be eliminated by using BDAs.







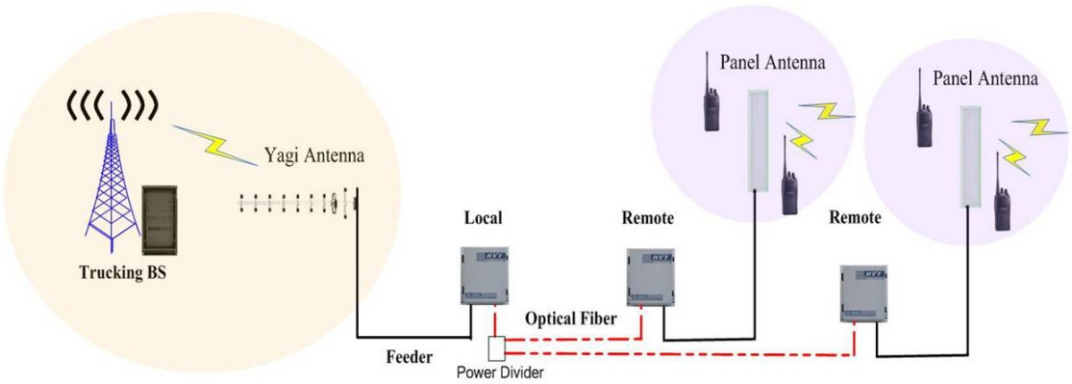
Integrated RF BDA



Frequency Range	VHF/ 350-470MHz/800MHz
Amplifier Type	Band-selective / Channel-selective(8 channels)
Protection	Ip65
Weight	25kg
Dimension (W*H*L)	357mm×217mm×453mm
Power Supply	Standard:AC220V±20%, 50±5HzOptional: DC-40～-55
Connector Type	N-connector (female)
Monitoring Mode	Standard Interface:RS232 Optional: GSM/Ethernet
Environment Humidity	≤ 95% RH
Operating Temperature	-25℃～+55℃
Input\Output Impedance	50Ω
Noise Factor	≤5dB
Signal Delay	≤ 18us (Channel-selective) ≤ 6us (Band-selective)
Power Consumption	≤ 230W

Downlink		Uplink	
Gain	95±3dB(Channel-selective) 90±3dB(Band-selective)	Gain	95±3dB(Channel-selective) 90±3dB(Band-selective)
Max Input Level	≤-10dBm	Input Level	≤-10dBm
Max Output Power	40dBm(UHF/800M) 37dBm(VHF)	Max Output Power	33dBm(UHF/800M) 30dBm (VHF)

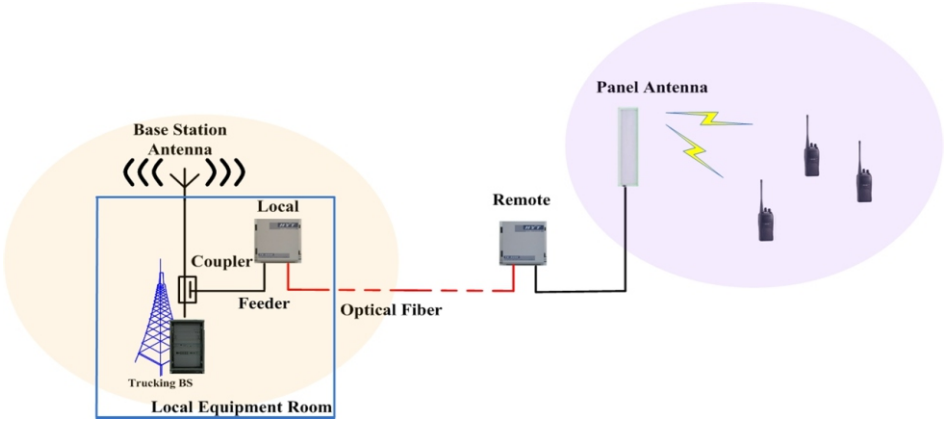
Analog Fiber Optical BDA (Coupling by air)



Frequency Range	VHF/ 350-470MHz/800MHz
Amplifier Type	Band-selective / Channel-selective(8 channels)
Protection	Master Unit:IP40, Slave Unit:IP65
Weight	Master Unit≤25kg, Slave Unit≤25kg
Dimension (W*H*L)	400*200*530mm
Power Supply	Standard:AC220V±20%, 50±5Hz,Optional: DC-40～-55V
Connector Type	N-connector (female)
Monitoring Mode	Standard Interface:RS232 Optional: GSM/Ethernet
Environment Humidity	≤ 95% RH
Operating Temperature	-25℃～+55℃
Input\Output Impedance	50Ω
Noise Factor	≤5dB
Signal Delay	≤18us (Channel-selective) ≤ 6us (Band-selective)
Power Consumption	Master Unit≤90W, Slave Unit≤130W

Downlink		Uplink	
Gain	95±3dB(Channel-selective) 90±3dB(Band-selective)	Gain	90±3dB(Channel-selective) 85±3dB(Band-selective)
Max Input Level	≤-10dBm	Input Level	≤-10dBm
Max Output Power	37dBm	Max Output Power	30dBm

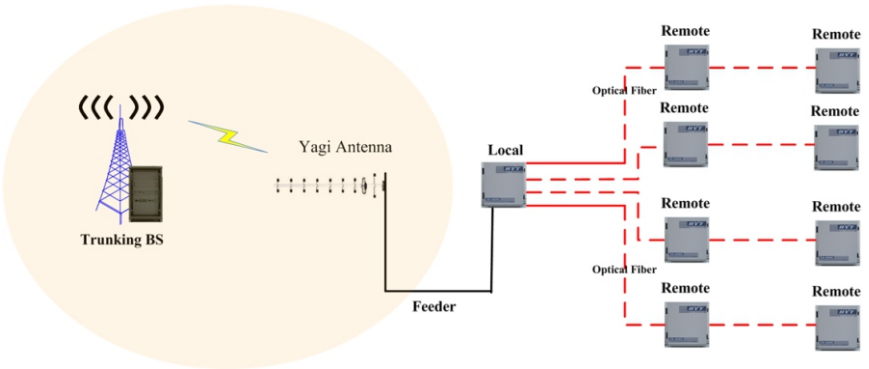
Analog Fiber Optical BDA (Coupling directly)



Frequency Range	350-470MHz/800MHz
Amplifier Type	Band-selective
Protection	Master Unit:IP40, Slave Unit:IP55
Weight	Master Unit≤8kg, Slave Unit≤25kg
Dimension (W*H*L)	Master Unit:310*133*483mm Slave Unit:400*200*530mm
Power Supply	Standard:AC220V±20%, 50±5Hz, Optional: DC-40～-55V
Connector Type	N-connector (female)
Monitoring Mode	Standard Interface:RS232 Optional: GSM/Ethernet
Environment Humidity	≤ 95% RH
Operating Temperature	-25℃～+55℃
Input\Output Impedance	50Ω
Noise Factor	≤5dB
Signal Delay	≤ 18us (Channel-selective) ≤ 6us (Band-selective)
Power Consumption	Master Unit≤20W, Slave Unit≤130W

Downlink		Uplink	
Gain	55±3dB	Gain	50±3dB
Max Input Level	≤10dBm	Input Level	≤-10dBm
Max Output Power	37dBm	Max Output Power	-10dBm

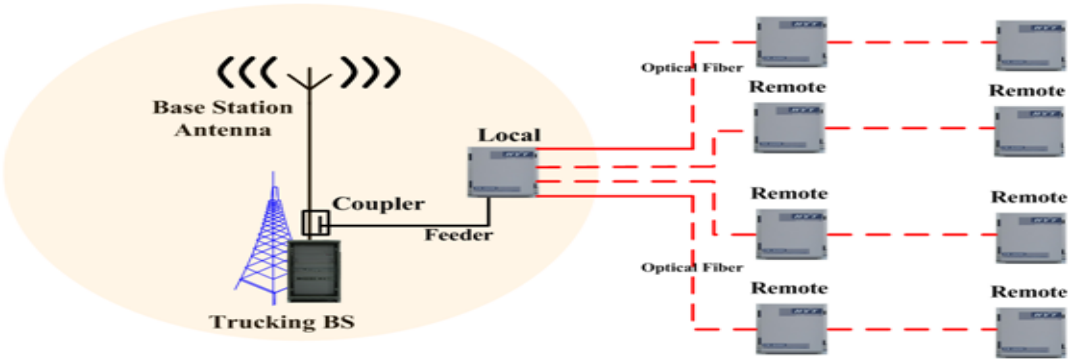
Digital Fiber Optical BDA (Coupling by air)



Frequency Range	350-470MHz/800MHz
Amplifier Type	16 or 24 Channels selective
Protection	Master Unit:IP40 ,Slave Unit:IP55
Weight	Master Unit≤25kg, Slave Unit≤25kg
Dimension (W*H*L)	400*200*530mm
Power Supply	Standard:AC220V±20%, 50±5Hz, Optional: DC-40～-55V
Connector Type	N-connector (female)
Network	Star, chain type, ring type
Monitoring Mode	Standard Interface:RS232 Optional: GSM/Ethernet
Environment Humidity	≤ 95% RH
Operating Temperature	-25℃～+55℃
Input\Output Impedance	50Ω
Noise Factor	≤5dB
Signal Delay	≤ 18us; Provide automatic and manual delay compensation function
Power Consumption	Master Unit≤90W, Slave Unit≤130W

Downlink		Uplink	
Gain	95±3dB(Channel-selective)	Gain	90±3dB(Channel-selective)
Max Input Level	≤-10dBm	Input Level	≤-10dBm
Max Output Power	37dBm	Max Output Power	30dBm

Digital Fiber Optical BDA (Coupling directly)



Frequency Range	350-470MHz
Amplifier Type	16 Channels selective
Protection	Master Unit:IP40, Slave Unit:IP55
Weight	Master Unit≤8kg, Slave Unit≤25kg
Dimension (W*H*L)	Master Unit:310*133*483mm Slave Unit:400*200*530mm
Power Supply	Standard:AC220V±20%, 50±5Hz, Optional: DC-40～-55V
Connector Type	N-connector (female)
Networking	Star, chain type, ring type
Monitoring Mode	Standard Interface:RS232 Optional: GSM/Ethernet
Environment Humidity	≤ 95% RH
Operating Temperature	Master Unit: -10℃～+50℃ Slave Unit: -25℃～+55℃
Input\Output Impedance	50Ω
Noise Factor	≤5dB
Signal Delay	≤ 18us；Provide automatic and manual delay compensation function
Power Consumption	Master Unit≤90W, Slave Unit≤130W

Downlink		Uplink	
Gain	50dB(Channel-selective)	Gain	50dB(Channel-selective)
Max Input Level	≤-10dBm	Input Level	≤-10dBm
Max Output Power	37dBm	Max Output Power	-10dBm

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