

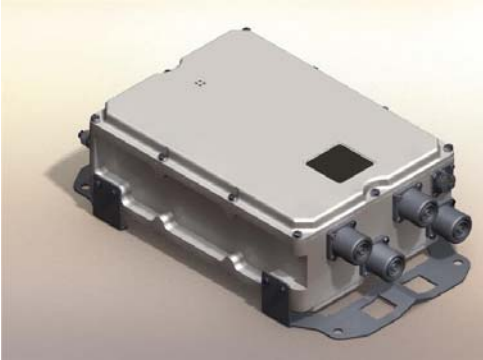
# 900 MHz Dual Technology Outdoor Antenna Sharing Combiner

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## General Information



CCI's Dual Technology Antenna Sharing Combiner (ASC) allows two Base Stations to share the same antennas and preserves Receive Diversity without any combining losses. In the Downlink direction, the transmit signal from each Base Station is directed to one of the two antenna ports. In the uplink direction, an Amplifier compensates for

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**Model ASC900VG12A  
(Variable Gain AISG 2.0  
Compatible Unit)**

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combining losses normally associated with passive combiners. The Gain of the amplifier can be controlled remotely using AISG 2.0 Protocol, and the gain level to each BTS can be independently controlled.

## Technical Description

The ASC system consists of a twin outdoor tower mount unit with two antenna inputs. The tower mount unit is dual duplexed to separate the low-power uplink signal from the high-power downlink signal at the antenna port, amplifies the low-level uplink signals using an ultra-low noise amplifier (LNA), and recombines the two paths at the BTS port. In addition, the uplink signal is split out after the LNA and routed to the BTS diversity port. The tower mount units consist of six band-pass filters, four redundant low-noise amplifiers, two splitters, bypass failure circuitry, and bias tee's which are all housed in an IP65 moisture proof enclosure, with IP68 Immersion proof connectors suited to long-life masthead mounting. The unit provides protection against lightning strikes via a multi-stage surge protection circuit. AISG 2.0 DC power and control is provided via the feeder cable from the BTS using the AISG 2.0 and 3GPP standard. The ASC is powered through the UMTS (BTS2) port. Additionally the ASC operates at constant power when powered by an AISG 2.0 Compatible Site Control Unit, or BTS. A separate AISG connector is also provided to allow direct AISG connection or "Daisy Chaining" to multiple AISG products at the top of the tower. With fully protected input ports, the unit can be installed without the concern of damaging the unit should it be incorrectly installed.

### Major Features

- ◆ Functions as a combiner for same band Base Station Equipment, (Can be same technology (e.g. GSM and GSM) or different technology (e.g. GSM and UMTS)) enabling Rx Diversity and overcomes losses normally associated with passive combiners.
- ◆ Can be used close to the antenna, enabling Remote Radio Head equipment to be combined with Coaxial fed system which uses a pair of Coaxial Feeder Lines. Gives additional gain for overcoming feeder and combining losses.
- ◆ Can be used in ground based application, as combiner and overcomes losses and maintains Diversity path.
- ◆ Has flexibility to also be used in non-DC fed system thus giving passive combining of two same band systems into coaxial feeder line pair.

### Features:

- Small, lightweight, outdoor unit
- Dual Technology Combiner (GSM 900 / UMTS 900)
- Can also be used for same technology (e.g. GSM/GSM)
- Can be used close to Antenna
- Can be used in Ground Based Applications while maintaining Diversity Path
- Can operate as a Passive Combiner in non-DC fed system
- Rx path is "Independent" of Tx path
- Can survive incorrect installation as ports are protected
- AISG 2.0 compatible unit
- ASC receives DC Voltage and AISG sampling at the UMTS BTS 2 port
- ASC operates at constant power
- High linearity
- Lightning protected
- Fail-safe bypass mode
- High reliability

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Description	Typical Specifications
<b>Electrical Specifications</b>	
Receive Frequency Range	890 – 915 MHz
Transmit Frequency Range	935 - 960 MHz
Amplifier Gain	4 to 12 dB Adjustable in 0.25 dB steps via AISG
Gain Variation	±0.2 dB in any 3.84 MHz segment
System Noise Figure	1.75 dB typical (Room Temp.) @ Max. Gain
Input Third Order Intercept Point	+9 dBm Min @ Max. Gain
Input/Output Return Loss	18 dB Min. all ports, 16 dB Min. Bypass Mode
Insertion Loss	
Transmit Passband	0.3 dB Typical, 0.5 dB Max.
Bypass Mode, Rx Passband	7.0 dB Max.
Group Delay	
Transmit Passband	±4 nS in any 3.84 MHz segment
<b>Filter Characteristics</b>	
Continuous Average Power	200 Watts max
Peak Envelope Power	2 kW max
<b>Intermodulation Performance</b>	
IMD at ANT port in Rx Band	<-115 dBm typical (2 x +43 dBm tones)
Operating Voltage	+10V to +30V DC provided via coax or AISG
Power Consumption	≤ 4 Watts
<b>Mechanical Specifications</b>	
Connectors	DIN 7-16 female x 6 (BTS (x 2), ANT (x 2), RxD (x 2)), AISG x 1
Dimensions (TMA Body Only)	270 (H) x 200 (W) x 102 (D) mm
Dimensions (Including Brackets & Connectors)	363 (H) x 211 (W) x 109.5 (D) mm
Weight (w/o Bracket)	7.0 Kg Approx.
Weight (with Bracket)	7.5 Kg Approx.
Mounting	Pole/Wall Mounting Bracket
<b>Environmental Specifications</b>	
Operating Temperature	-40° C to +60° C
Lightning Protection	8/20us, ±2KA max, 10 strikes each, IEC61000-4-5
Enclosure	IP65 (Unit Body), IP68 (Connector)
MTBF	>500,000 hours

CCI Confidential

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### Ordering Information:

- ◆ **Model ASC900VG12A**  
**(Variable Gain AISG**  
**2.0 Compatible Unit)**

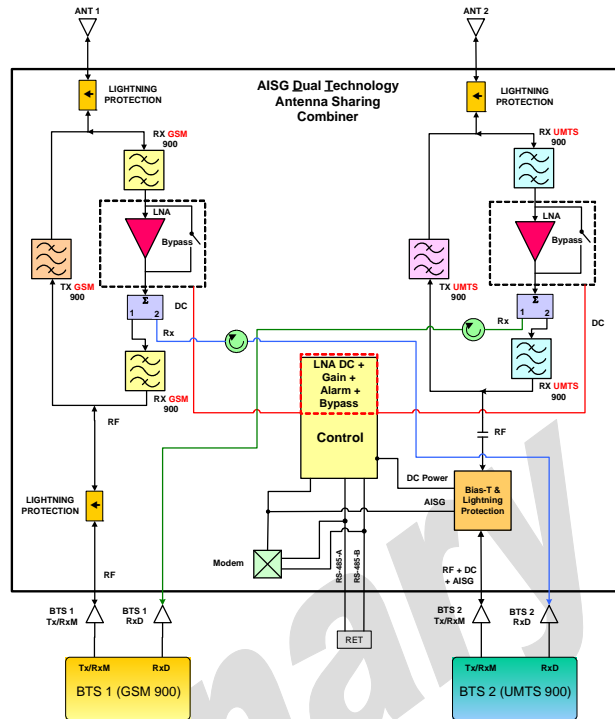
### Options:

- ◆ Pole Mount Kit

### Accessories:

- ◆ AISG 2.0 Site Controller (SCU-AISG2-3-1)
- ◆ AISG Cable Kit (RET-CBK)
- ◆ AISG 2.0 Bias-T
  1. Model BT-0821-DMDF-AG (DIN-Male RF Port, DIN-Female RF+DC+AISG Port)
  2. Model BT-0821-DFDM-AG (DIN-Female RF Port, DIN-Male RF+DC+AISG Port)
  3. Model BT-0821-DFDF-AG (DIN-Female RF Port, DIN-Female RF+DC+AISG Port)

## 900 MHz Antenna Sharing Combiner Block Diagram



## 900 MHz Antenna Sharing Combiner Outline Drawing

Dimensions  
in mm

