

Distributed
Antenna Solutions

DAS

for Public Safety, LTE, Cellular
and WiFi Networks

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PROCOM**
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DAS product types

Amphenol Procom offers an extensive portfolio of products for your DAS solution. We carry a wide range of both indoor antennas and passive devices, especially for public safety applications. Below are the four main product categories that we supply:



OUTDOOR DONOR ANTENNAS

used in an "off air" DAS system transmits and receives the signal from the local base station.

The quality of the donor antenna is a very important factor, as it provides the signal integrity for the entire DAS solution. Typically, you would use a high gain directional antenna, like a yagi or shrouded yagi.

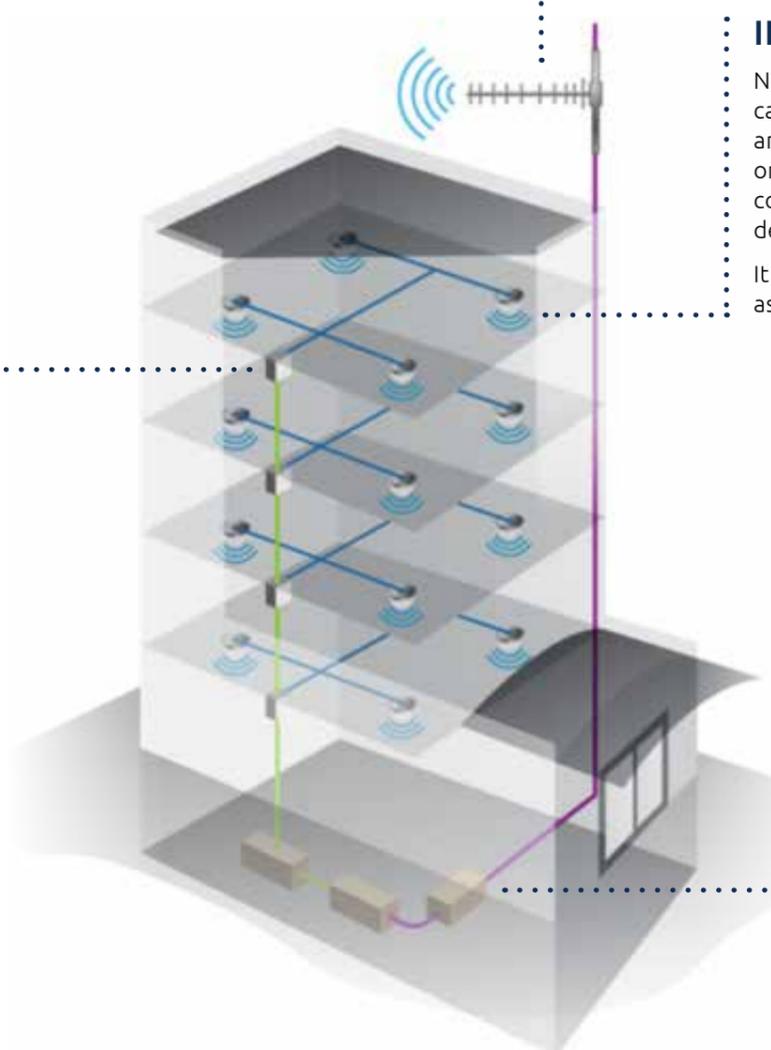


PASSIVE DEVICES Amphenol Procom carries three different types of passive DAS devices:

Directional Couplers which only couple power flowing in one direction. Power entering the output port is coupled to the isolated port but not to the coupled port. These could be used to split some of the power from the main feeder cable to each floor and with careful design consideration, each floor will have a balanced and equal amount of power distributed.

Tappers are very similar to Directional Couplers but without the directivity.

Power splitters are devices that take an input signal and delivers multiple output signals with specific phase and amplitude characteristics. Typically these splits will be 2,3, or 4 way.



INDOOR DAS ANTENNAS

No matter if it is an active DAS for a high-rise building or large campus, or a passive DAS for small to medium implementations, the antenna selection is crucial. You will need to consider and plan with omnidirectional or directional antennas. Perhaps the plan will look at combing TETRA UHF and LTE in one antenna. Finally, you'll need to decide if you are deploying a MIMO or SISO system.

It is typically a critical parameter that the indoor DAS antennas are as discrete as possible, low PIM and cover multiple frequency bands.



ACTIVE REPEATER In installations where signal is ported over long distances an active repeater will boost signal where needed.

Active repeaters come in both analog and digital versions. A digital channel & band selective repeater has the advantage of ensuring out-of-channel rejection to avoid interfering with adjacent channels, as well as, minimizing interference towards the base stations.



Indoor DAS Antennas

Our antennas are designed to be high performance low PIM. We have a variety of unobtrusive models which are MIMO or SISO and cover Public Safety and LTE/cellular in a single unit. Additionally, several of our Omnidirectional antenna

benefit from being "Super Slim" – these antennas are only 18mm in height for SISO and 40mm for MIMO. Connector configurations are N type, 7/16-DIN and 4.3-10.



Product	Type	Pattern	Gain	Pol	VHF	UHF	600MHz	GPS	698-2700MHz	4000MHz	6000MHz
XCPI	SISO	Directional	2.0 dBic	RHCP	✓	✓					
PLPI/TETRA	SISO	Directional	7.0 dBi	V-POL		✓					
PLPO/TETRA	SISO	Directional	7.0 dBi	V-POL		✓					
PCPI 70 RH	SISO	Directional	7.0 dBic	RHCP		✓					
PCPI LH/TETRA	SISO	Directional	7.0 dBic	LHCP		✓					
PCPI RH/TETRA	SISO	Directional	7.0 dBic	RHCP		✓					
PCPO RH/TETRA	SISO	Directional	7.0 dBic	RHCP		✓					
PCPO LH/TETRA	SISO	Directional	7.0 dBic	LHCP		✓					
752.01.05.00	SISO	Directional	4.0 dBi	V-POL		✓					
5047000	SISO	Directional	4.5 dBi	V-POL		✓					
5047420	SISO	Directional	4.5 dBi	V-POL		✓					
5211388	SISO	Omni	2.1 dBi	V-POL		✓					
5211421	SISO	Omni	2.1 dBi	V-POL		✓					
5211460	SISO	Omni	2.1 dBi	V-POL		✓					
MA100PQ01	SISO	Omni	2.1 dBi	V-POL		✓					
MA100RS00	SISO	Omni	2.1 dBi	V-POL		✓					
5086100A	SISO	Omni	4.5 dBi	H-POL		✓	✓		✓		
UWB-1-380-6000	SISO	Omni	6.0 dBi	V-POL		✓	✓		✓	✓	
5052460	SISO	Omni	4.0 dBi	V-POL		✓	✓		✓	✓	
PCPI GPS EXTEND	SISO	Omni	5.0 dBic	RHCP				✓			
PCPI WIFI	SISO	Omni	5.0 dBic	RHCP					✓		
5087000	SISO	Omni	6.3 dBi	H-POL					✓	✓	
5052470	SISO	Omni	4.5 dBi	V-POL					✓	✓	✓
7824400	MIMO	Directional	11.0 dBi	X-POL					✓		
5005300A	MIMO	Omni	5.0 dBi	V-POL					✓		
5003500	SISO	Directional	7.5 dBi	V-POL					✓		
5029000	SISO	Directional	5.0 dBi	V-POL					✓		
7691400	SISO	Directional	7.5 dBi	X-POL					✓		
5052450	SISO	Omni	4.5 dBi	V-POL					✓		
7835700	SISO	Omni	4.0 dBi	V-POL					✓		
7825700	SISO	Omni	3.4 dBi	V-POL					✓		
7834450	MIMO	Directional	7.5 dBi	V/H-POL					✓	✓	
5086000A	SISO	Omni	6.0 dBi	H-POL					✓	✓	
5003700	SISO	Directional	7.0 dBi	V-POL					✓	✓	

Outdoor Donor Antennas

With over 100 models in our offering portfolio for "off air" DAS donor antenna structures like; Log Periodic, Yagis and Shrouded Yagis, there is a product for every installation requirement. These robust professional antennas are built to withstand the

harshesht of environments covering VHF, UHF, TETRA, LTE and Cellular frequencies, and have options for gain, connector and mounting configurations. Below we have listed a few our directional donor antennas.

Product	Type	Pattern	Gain	UHF	600MHz	700-1000	1800-2100	2300-2700
LPU/R	MIMO	Directional	7.9 dBd	✓	✓	✓		
7478000	MIMO	Directional	7.5 - 10 dBd			✓	✓	✓
7175890	MIMO	Directional	10.0 dBd			✓		



Directional Couplers

Our directional couplers are designed to give optimum performance between 380-2700 MHz or 698-2700 MHz, achieving PIM @ -153 dBc, IP65 rating, making them ideal for indoor or outdoor environments. Our 36 different models are summarized in the table below:

Product	Band	PIM	Power	Connector	3dB	6dB	10dB	15dB	20dB	30dB
ADC-XX-WBS-LP-DF-CC	380-2700 MHz	-153 dBc	500 W	DIN-7/16	✓	✓	✓	✓	✓	✓
ADC-XX-WBS-LP-43F-CC	380-2700 MHz	-153 dBc	400 W	4.3-10	✓	✓	✓	✓	✓	✓
ADC-XX-WBS-LP-NF-CC	380-2700 MHz	-153 dBc	300 W	N Female	✓	✓	✓	✓	✓	✓
ADC-XX-WBM-LP-DF-CC	698-2700 MHz	-153 dBc	500 W	DIN-7/16	✓	✓	✓	✓	✓	✓
ADC-XX-WBM-LP-43F-CC	698-2700 MHz	-153 dBc	400 W	4.3-10	✓	✓	✓	✓	✓	✓
ADC-XX-WBM-LP-NF-CC	698-2700 MHz	-153 dBc	300 W	N Female	✓	✓	✓	✓	✓	✓



Power Splitters

Our Power Splitters cover the bands of 380-2700 MHz or 698 - 2700 MHz with a PIM value of -153 dBc and power ratings of 300, 400 and 500W dependant on connector configurations. Offered with 2, 3 or 4 way splits. Mechanically sound and robust which will allow these to be utilized indoors and outdoors with a IP65 rating.

Product	Band	PIM	Power	Connector	2 way	3 way	4 way
APS-XX-WBS-LP-DF-CC	380-2700 MHz	-153 dBc	500 W	DIN-7/16	✓	✓	✓
APS-XX-WBS-LP-43F-CC	380-2700 MHz	-153 dBc	400 W	4.3-10	✓	✓	✓
APS-XX-WBS-LP-NF-CC	380-2700 MHz	-153 dBc	300 W	N Female	✓	✓	✓
APS-XX-WBM-LP-DF-CC	698-2700 MHz	-153 dBc	500 W	DIN-7/16	✓	✓	✓
APS-XX-WBM-LP-43F-CC	698-2700 MHz	-153 dBc	400 W	4.3-10	✓	✓	✓
APS-XX-WBM-LP-NF-CC	698-2700 MHz	-153 dBc	300 W	N Female	✓	✓	✓

Power Tappers

These devices tap off a portion of the signal from the main line. The PRO Tappers are symmetrical around the main line, meaning that you will have the same good SWR from both sides of the main line. 500 W power taper with 4.8 to 30 dB coupling covering the 150 - 2700 MHz.

Product	Band	PIM	Power	Connector	4.8dB	6dB	8 dB	10dB	15dB	20dB	30dB	30dB
PRO-TAP 150-2700-XX-N (f)	150-2700 MHz	-150 dBc	500 W	N Female	✓	✓	✓	✓	✓	✓	✓	✓
PRO-TAP 150-2700-XX-7/16 (f)	150-2700 MHz	-150 dBc	500 W	DIN-7/16	✓	✓	✓	✓	✓	✓	✓	✓



Band & Channel Selective Digital Repeater

The CSR-DMT is a UHF full band bi-directional digitally controlled amplifier with built-in DSP-filtering that offers communication improvement in PMR, DMR, LMR and TETRA networks.

UHF radio networks are deployed and used in a wide range of different markets like Public Safety, Transportation, Utilities, Government, Military, Oil & Gas industries. Even the best network designs and rollouts will leave areas that have gaps or insufficient coverage, specifically inside buildings and tunnels.

The end result is poor or no coverage that compromises operational effectiveness and potentially safety of life.

The CSR-DMT digital channel selective repeater overcomes the lack of coverage by amplifying the UHF signal that is available outside and repeating it inside. Connected to the repeater is a donor antenna that is pointed towards the nearest base station and the repeated signal can then be distributed inside by single or multiple antennas like a Distributed Antenna System (DAS).

- ▲ Full band repeater.
- ▲ Digital processing based filtering.
- ▲ Fully reconfigurable through software. Four band-segments in DL/UL directions. Bi-directional.
- ▲ UL & DL gain is separately adjustable. Automatic gain control.
- ▲ Compact design for easy installation. Small dimensions and light weight. Status indicating LEDs.
- ▲ Local control.



About Amphenol Procom

At Amphenol Procom, we are committed to providing solutions that can be trusted no matter how extreme the environment, or how complex the complete networks solution might be. Our mission is simply to: *“deliver the world’s most trusted and flexible solutions for professional wireless communication where connectivity and dependability are critical”*

Your network relies on the quality of its components; if one goes down, it can take the rest with it. That’s why our products are built for quality and tested to the extreme - so that performance is not compromised under any circumstances. Amphenol Procom consists of the former Procom, Jaybeam and Skymast brands, that with manufacturing in Denmark and the UK serve a wide range of market segments such as Public Safety, Aviation, Telecom, Hazardous Environments, IOT, Transportation and Industry.

We have more than 7.000 products in our portfolio, mainly covering base station antennas, portable & mobile antennas, combiners, filters and DAS solutions.

Amphenol Procom is a division of the Amphenol Corporation, a \$7 billion-dollar organization that is one of the largest manufacturers of interconnect products in the world. The company designs, manufactures and markets electrical, electronic and fiber optic connectors, coaxial and flat-ribbon cable, and interconnect systems.



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