

FM combiners

TYPE DESCRIPTION

xy-zppp

x - number of inputs

DPX - two inputs

TPX - three inputs

QPX - four inputs

PPX - five inputs

y - frequency range:

2 - FM band (87,5 - 108 MHz)

z - type of combiner:

A - starpoint combiner

B - constant impedance combiner

C - combination of A and B

D - with the band-pass filter on the broad-band input

ppp - maximum power per input:

300 - up to 300 W

1K5 - up to 1,5 kW

4K0 - up to 4 kW

10K - up to 10 kW

Combiners are used to combine the signals of several transmitters and translators into one antenna system. In view of the unique configurations required by individual systems, Elti perform a detailed analysis before recommending customised solutions to the customer.

Compact designs and robust construction make them easy to position and install.

Combiners are available with two cavity band-pass filters. Custom solution with three or even four cavity filters are available on request.

FM combiners are available from 300 W to 30 kW per channel. All combiners feature an adjustable coupling loop to enable tuning of the desired 3 dB width to the amplitude/phase characteristic of filters.

starpoint combiners

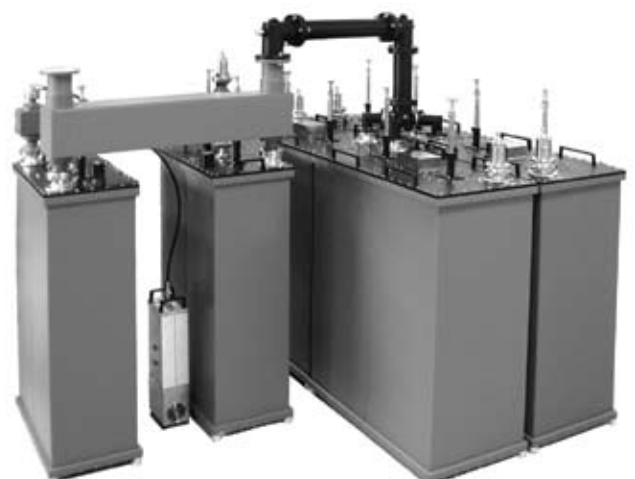
Starpoint combiners (type A) represent a compact and effective solution when there is a large channel spacing between the transmitters and translators. In the starpoint configuration it is possible to combine up to four band-pass filters. The starpoint combiner is pre-tuned to the requested frequency, and is easily retuned on site.

constant impedance combiners

Constant impedance combiners (type B) consist of pairs of 3 dB couplers and band-pass filters with the dummy load connected in modules for each of the narrow-band inputs to the combiner. They are commonly used when the channels of the transmitters and translators are close, or when connecting a new module to a broadband input in order to open additional channels.

a combination of starpoint and constant impedance combiners

When more than four transmitters and translators need to be connected in the same antenna system, a combination of starpoint and constant impedance combiners can be installed (type C).



FM starpoint combiners

TYPES

- DPX2-A300
- TPX2-A300
- QPX2-A300
- DPX2-A1K5
- TPX2-A1K5
- QPX2-A1K5
- DPX2-A4K0
- TPX2-A4K0
- QPX2-A4K0
- DPX2-A6K0
- TPX2-A6K0
- QPX2-A6K0
- DPX2-A10K
- TPX2-A10K
- QPX2-A10K
- DPX2-A20K
- TPX2-A20K
- QPX2-A20K

Starpoint combiners are available in a power range from 300 W to 20 kW per input and available with two, three and four inputs.

Minimum frequency spacing is 1,8 MHz.

All combiners are factory tuned to specified frequencies. After installation you can easily retune them yourself.



DPX2-A300



TPX2-A1K5



TPX2-A4K0



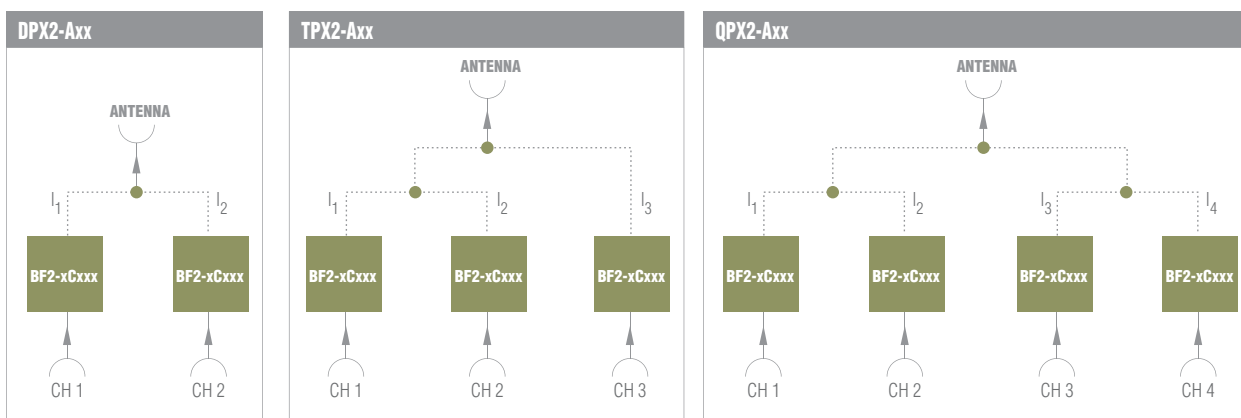
TPX2-B6K0

	DPX2-A300	TPX2-A300	QPX2-A300	DPX2-A1K5	TPX2-A1K5	QPX2-A1K5
Frequency range	87,5 - 108 MHz					
Impedance	50 Ω					
Return loss	> 28 dB					
* Isolation (between the inputs)	> 30 dB					
* Max. input power per input	300 W			1,5 kW		
3dB band-width	600 kHz (can be tuned)					
* Insertion loss	< 0,8 dB	< 0,85 dB	< 0,9 dB	< 0,5 dB	< 0,5 dB	< 0,55 dB
Min. frequency spacing	1,8 MHz					
Material	aluminium, brass, silver plated					
Operating temperature	from - 10 °C to + 50 °C					
RF connector	N, DIN 7/16 or EIA 7/8"			DIN 7/16 or EIA 7/8"		
- input	DIN 7/16 or EIA 7/8"			EIA 7/8" or EIA 1 5/8"		
- output	DIN 7/16 or EIA 7/8"			EIA 7/8" or EIA 1 5/8"		
Dimension (mm)	350 x 400 x 1.250 max.	350 x 500 x 1.250 max.	350 x 800 x 1.250 max.	420 x 500 x 1.350 max.	420x 1.200 x 1.350 max.	420x 1.200 x 1.350 max.
Weight	25 kg	36,5 kg	51 kg	47 kg	75 kg	102 kg

* Parameter values correspond to the minimum frequency spacing between the channels of the combiner

	DPX2-A4K0	TPX2-A4K0	QPX2-A4K0	DPX2-A6K0 DPX2-A10K DPX2-A20K	TPX2-A6K0 TPX2-A10K TPX2-A20K	QPX2-A6K0 QPX2-A10K QPX2-A20K
Frequency range	87,5 - 108 MHz					
Impedance	50 Ω					
Return loss	> 28 dB					
* Isolation (between the inputs)	> 30 dB					
* Max. power per input	4 kW			6 kW 10 kW 20 kW		
MPX2-A4K0 MPX2-A6K0 MPX2-A10K MPX2-A20K						
3dB band-width	600 kHz (can be tuned)					
* Insertion loss	< 0,3 dB	< 0,35 dB	< 0,35 dB	< 0,2 dB	< 0,2 dB	< 0,25 dB
Min. frequency spacing	1,8 MHz					
Material	aluminium, brass, silver plated					
Operating temperature	- 10 °C to + 50 °C					
RF connector	EIA 7/8"		EIA 7/8"	EIA 1 5/8"		
- input	EIA 1 5/8"		EIA 1 5/8"	EIA 3 1/8"		
- output	EIA 1 5/8"		EIA 3 1/8"	EIA 3 1/8"		
Dimension (mm)	720 x 700 x 1.350 max.	720 x 1.300 x 1.350 max.	720 x 1.300 x 1.350 max.	900 x 900 x 1.350 max.	900 x 1.700 x 1.350 max.	900 x 1.700 x 1.350 max.
Weight	93 kg	137 kg	181 kg	167 kg 180 kg 320 kg	250 kg 275 kg 480 kg	335 kg 365 kg 640 kg
MPX2-A4K0 MPX2-A6K0 MPX2-A10K MPX2-A20K						
Cooling	fan-less convectional cooling			fan-less convectional cooling forced with fans fan-less convectional cooling		
MPX2-A4K0 MPX2-A6K0 MPX2-A10K MPX2-A20K						

* Values of the Insertion loss and Input power correspond to the minimum frequency spacing between the channels of the combiner



FM constant impedance combiners

TYPES

DPX2-B600

TPX2-B600

QPX2-B600

DPX2-B3K0

TPX2-B3K0

QPX2-B3K0

PPX2-B3K0

DPX2-B8K0

TPX2-B8K0

QPX2-B8K0

DPX2-B12K

TPX2-B12K

QPX2-B12K

DPX2-B30K

Constant impedance combiners, also known as constant impedance filters (CIF), are available in a power range from 600 W to 30 kW per input, and available with 2 - 10 inputs.

Minimum frequency spacing is 800 kHz, which adheres to strict technical specification.

All combiners are factory tuned to specified frequencies. Retuning is easily performed after installation.

Combination of CIF and starpoint combiners offer cost-efficient solutions to the customer.



DPX2-B600



DPX2-B3K0



DPX2-B8K0



DPX2-B12K

	DPX2-B600	TPX2-B600	QPX2-B600	DPX2-B3K0	TPX2-B3K0	QPX2-B3K0	PPX2-B3K0
Frequency range	87,5 - 108 MHz						
Impedance	50 Ω						
Return loss (narrowband)	> 30 dB						
Return loss (broadband)	> 25 dB min. > 28 dB opt.						
* Isolation (between the inputs)	> 30 dB						
* Max. power per input	600 W			3 kW			
3 dB band-width	600 kHz (can be tuned)						
* Insertion loss (narrowband)	< 0,9 dB	< 1,0 dB	< 1,0 dB	< 0,5 dB	< 0,55 dB	< 0,6 dB	< 0,7 dB
* Insertion loss (broadband)	< 0,15 dB	< 0,2 dB	< 0,25 dB	< 0,15 dB	< 0,15 dB	< 0,2 dB	< 0,2 dB
Min. frequency spacing	800 kHz						
Material	aluminium, brass, silver plated						
Operating temperature	- 10 °C to + 50 °C						
RF connector	N, DIN 7/16 or EIA 7/8"			DIN 7/16 or EIA 7/8"			
- input	DIN 7/16 or EIA 7/8"			EIA 7/8" or EIA 1 5/8"			
- output							
Dimension (mm)	450 x 900 x 1.350 max.	450 x 1.900 x 1.350 max.	450 x 2.900 x 1.350 max.	650 x 1.050 x 1.350 max.	650 x 2.050 x 1.350 max.	650 x 3.050 x 1.350 max.	650 x 4.200 x 1.350 max.
Weight	41 kg	83 kg	125 kg	56 kg	113 kg	170 kg	230 kg

* Parameter values correspond to the minimum frequency spacing between the channels of the combiner

	DPX2-B8K0	TPX2-B8K0	QPX2-B8K0	DPX2-B12K DPX2-B30K	TPX2-B12K	QPX2-B12K
Frequency range	87,5 - 108 MHz					
Impedance	50 Ω					
Return loss (narrowband)	> 30 dB					
Return loss (broadband)	> 25 dB min. > 28 dB opt.					
* Isolation (between the inputs)	> 30 dB					
* Max. power per input	8 kW			12 kW (MPX2-B12K) or 30 kW (DPX2-B30K)		
3dB band-width	600 kHz (can be tuned)					
* Insertion loss (narrowband)	< 0,3 dB	< 0,35 dB	< 0,35 dB	< 0,2 dB	< 0,25 dB	< 0,25 dB
* Insertion loss (broadband)	< 0,15 dB	< 0,15 dB	< 0,2 dB	< 0,1 dB	< 0,1 dB	< 0,15 dB
Min. frequency spacing	800 kHz					
Material	aluminium, brass, silver plated					
Operating temperature	- 10 °C to + 50 °C					
RF connector	EIA 7/8" or EIA 1 5/8"			1 5/8" (MPX2-B12K) or 3 1/8" (DPX2-B30K)		
- input	EIA 1 5/8" or EIA 3 1/8"			3 1/8" (MPX2-B12K) or 4 1/2" (DPX2-B30K)		
- output						
Dimension (mm)	600 x 1.000 x 1.350 max.	600 x 2.000 x 1.350 max.	600 x 3.000 x 1.350 max.	850 x 1.000 x 1.350 max.	850 x 2.200 x 1.350 max.	850 x 3.400 x 1.350 max.
Weight	95 kg	195 kg	295 kg	195 kg 350 kg	400 kg	610 kg

* Parameter values correspond to the minimum frequency spacing between the channels of the combiner

