

# FM TRANSMITTER COMBINER CONSTANT IMPEDANCE DESIGN

TCFM Series

- **Low Cost**
- **Constant Impedance**
- **Low Insertion Loss**
- **Good Return Loss**

Fiplex' broadcast line of "FM Transmitter Combiners" are Constant Impedance branching devices used to combine two FM channel on a single antenna port.

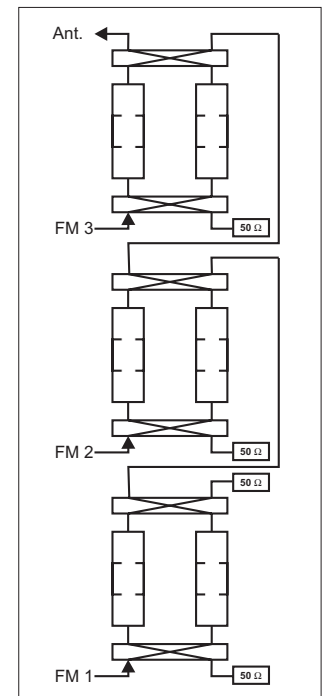
Additional FM channels can be added, by using a similar combiner in series with the first one.

TCFM Series utilize carefully designed 3 dB hybrids that provide broadband response and low incidental Insertion Loss.

Band Pass are high Q combine cavities, that shows a very good thermal stability and low Insertion Loss.

Dual cavity models are available for minimum channel separation of 1,60 MHz, while Triple cavity models are available for minimum channel separation of 0,80 MHz

Mounting Frame is provided with thermal converted paint. Standard color is Raal 7032. Other colors are available upon request.



3 channels Constant  
Impedance FM Combiner  
Block Diagram

ELECTRICAL SPECIFICATIONS		
Channel Spacing	0.8 MHz	1.6 MHz
Frequency, Wide-band Port	88 – 108 MHz	88 – 108 MHz
Frequency, Narrow-band Port	F0 +/- 100 KHz	F0 +/- 100 KHz
Max. Power	See table below	See table below
Insertion Loss, Wide-band Port	0.15 dB typ.	0.15 dB typ.
Insertion Loss, Narrow-band Port	0.25dB typ.	0.35 dB typ.
Isolation Wide-to-Narrow	50 dB min.	40 dB min.
Isolation Narrow-to-Wide	40 dB min.	30 dB min.
Impedance	50 Ohms	50 Ohms
Connectors	See table below	See table below
Return Loss	25 dB min ( VSWR 1.1:1)	25 dB min ( VSWR 1.1:1)

<b>FM CHANNELS</b>		
Frequency range	88 – 108	88 – 108
Model Designation	<b>TCFMAD-B</b>	<b>TCFMAT-B</b>
Channel Separation	1.6 MHz	0.8 MHz
Injected Power	250 W	250 W
Through Power	250 W	250 W
Dimensions , cm	42X60X150	42X80X150
Connector Injected	N(f) ; DIN 71/6	N(f) ; DIN 71/6
Connector Through	N(f) ; DIN 71/6	N(f) ; DIN 71/6
Connector Antenna	N(f) ; DIN 71/6	N(f) ; DIN 71/6
Frequency range	88 – 108	88 – 108
Model Designation	<b>TCFMBD-B</b>	<b>TCFMBT-B</b>
Channel Separation	1.6 MHz	0.8 MHz
Injected Power	500 W	500 W
Through Power	500 W	500 W
Dimensions ; cm	42X60X150	42X80X150
Connector Injected	N(f) ; DIN 71/6	N(f) ; DIN 71/6
Connector Through	EIA 7/8	EIA 7/8
Connector Antenna	EIA 7/8	EIA 7/8
Frequency range	88 – 108	88 – 108
Model Designation	<b>TCFMCD-B</b>	<b>TCFMCT-B</b>
Channel Separation	1.6 MHz	0.8 MHz
Injected Power	1 KW	1 KW
Through Power	1 KW	1 KW
Dimensions ; cm	42X60X150	42X80X150
Connector Injected	EIA 7/8	EIA 7/8
Connector Through	EIA 7/8	EIA 7/8
Connector Antenna	EIA 7/8	EIA 7/8
Frequency range	88 – 108	88 – 108
Model Designation	<b>TCFMDD-B</b>	<b>TCFMDT-B</b>
Channel Separation	1.6 MHz	0.8 MHz
Injected Power	5 KW	5 KW
Through Power	5 KW	5 KW
Dimensions ; cm	62X70X150	62X100X150
Connector Injected	EIA 1 5/8	EIA 1 5/8
Connector Through	EIA 1 5/8	EIA 1 5/8
Connector Antenna	EIA 1 5/8	EIA 1 5/8
Frequency range	88 – 108	88 – 108
Model Designation	<b>TCFMED-B</b>	<b>TCFMET-B</b>
Channel Separation	1.6 MHz	0.8 MHz
Injected Power	10 KW	10 KW
Through Power	25 KW	20 KW
Dimensions	62C70X150	62C100X150
Connector Injected	EIA 1 5/8	EIA 1 5/8
Connector Through	EIA 3 1/8	EIA 3 1/8
Connector Antenna	EIA 3 1/8	EIA 3 1/8
Frequency range	88 – 108	88 – 108
Model Designation	<b>TCFMFD-B</b>	<b>TCFMFT-B</b>
Channel Separation	1.6 MHz	0.8 MHz
Injected Power	30 KW	30 KW
Through Power	50 KW	40 KW
Dimensions	102X110X150	102X160X150
Connector Injected	EIA 1 5/8	EIA 1 5/8
Connector Through	EIA 3 1/8	EIA 3 1/8
Connector Antenna	EIA 3 1/8	EIA 3 1/8

**Notes:**

Injected is Narrow Band

Through is Wide Band