

TETRA Duplexer & RX Cavity Filter Specification

V1.21

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Introduction

Eleading Technologies Ltd. supplies TETRA Duplexer and Filter products. The electrical specifications will comply with the specified operational environments and conditions.

In the datasheet below there are a total of 12 types of duplexers and 11 filters. They are designed to conform to customer's previous requirement in outline dimensions. However, for ease of use, we have consolidated them into 4 common outlines to cover the 23 variants. Therefore, they are categorized as Figure A, B, C and D.

2. Model, frequency and outline drawing

No.	Product serial number	Frequency (MHz)		Figure	No.	Product serial number	Frequency (MHz)	Figure
		Rx	Tx					
1	Duplexer84301A	300-310	336-346	Figure A	13	Filter85351A	300-310	Figure C
2	Duplexer84302A	350-355	360-365	Figure A	14	Filter85352A	350-355	Figure C
3	Duplexer84303A	355-360	365-370	Figure A	15	Filter85353A	355-360	Figure C
4	Duplexer84167D	380-385	390-395	Figure A	16	Filter85079A	380-385	Figure C
5	Duplexer84168D	385-390	395-400	Figure A	17	Filter85354A	385-390	Figure C
6	Duplexer84169D	410-415	420-425	Figure A	18	Filter85355A	410-415	Figure C
7	Duplexer84170D	415-420	425-430	Figure A	19	Filter85356A	415-420	Figure C
8	Duplexer84304A	450-455	460-465	Figure A	20	Filter85357A	450-455	Figure C
9	Duplexer84305A	455-460	465-470	Figure A	21	Filter85358A	455-460	Figure C
10	Duplexer84306	806-821	851-866	Figure B	22	Filter85359	806-821	Figure D
11	Duplexer84244A	413-418	423-428	Figure A	23	Filter85361	413- 418	Figure C
12	Duplexer84250	351- 356	361-366	Figure A	24	Filter85360	351- 356	Figure C

3.Warranty and Support

Eleading Technologies shall provide warranty and support for the operational lifetime of its products.

4.Product Development

R&D usually goes the way as technical reasoning of invention;sample making ,adjustment ,calibration and examination by equipments; and ambient tests lastly.

And then manufacturing in small qty., review ,analysis,and improvement in design and quality.

5.Program Schedule

Action of manufacturing depends on delivery requirement.

6.RoHS and WEEE

The products shall meet and comply with RoHS Directive 2002/95/EC with respect to the six listed controlled substances ,including lead .

Eleading Technologies will work with suppliers to ensure WEEE compliance .

7.TETRA Duplexer Electrical

All parameter compliances are outlined in the table below. Filter specifications are identical as the receive path of the Duplexer.

Parameter(s)	Value	Unit
Product serial number	Duplexer84301A Duplexer84302A Duplexer84303A Duplexer84167D Duplexer84168D Duplexer84169D Duplexer84170D Duplexer84304A Duplexer84305A Duplexer84306 Duplexer84244A Duplexer84250	
IN Z / OUT Z (Impedance)	50	Ohms
Insertion Loss, maximum (Rx&Tx)	1.1 max@25°C	dB
	1.2@ over Operating Temp -40 to +70°C	dB
Input 3rd Order IM(2x43dbm,1MHz spacing)	-135	dBc
Input Power Average Maximum(Tx-Port)	130	Watts

Peak Envelope(Tx-Port)	520	Watts
Average Maximum(Rx-Port)	2	Watts
Peak Envelope(Rx-Port)	8	Watts
Isolation Between Bands	80	dB min
Rejection		
@71.85MHz(Rx&Tx)	80	dB min
@Rx_freq+143.7MHz(Rx&Tx)	80	dB min
Return loss, Ant Port	>22@25°C	
	>20@ over Operating Temp -40 to +70°C	
Return loss, Rx Port	>22@25°C	
	>20@ over Operating Temp -40 to +70°C	
Return loss, Tx Port	>22@25°C	
	>20@ over Operating Temp -40 to +70°C	

8.TETRA Filter Electrical

Parameter(s)	Value	Unit
Product serial number	Filter85351A Filter85352A Filter85352A Filter85079A Filter85354A Filter85355A Filter85356A Filter85357A Filter85358A Filter85359 Filter85360	
IN Z / OUT Z (Impedance)	50	Ohms
Insertion Loss, maximum	1.1 max@25°C	dB max
	1.2@ over Operating Temp -40 to +70°C	dB
Input 3rd Order IM(2x43dbm,1MHz spacing)	-135	dBc
Input Power		
Average Maximum	2	Watts
Peak Envelope	8	Watts
Rejection		
@*(Upper Stopband)	55	dB min
@71.85MHz	80	dB min
@Rx_freq+143.7MHz	80	dB min
Return loss, Ant Port	>22@25°C	
	>20@ over Operating Temp -40 to +70°C	
Return loss, Rx Port	>22@25°C	
	>20@ over Operating Temp -40 to +70°C	

***(Upper Stopband)**

Product Part Number	(Passband MHz)	(Upper Stopband MHz)
Filter 85351A	300~310	336~1000
Filter 85352A	350~355	360~1000
Filter 85353A	355~360	365~1000
Filter 85079A	380~385	390~1000
Filter 85354A	385~390	395~1000
Filter 85355A	410~415	420~1000
Filter 85356A	415~420	425~1000
Filter 85357A	450~455	460~1000
Filter 85358A	455~460	465~1000
Filter 85359	806~821	851~1000
Filter85360	351- 356	361 ~1000
Filter85361	413- 418	423 ~1000

11.Operational environment

Temperature: -40 to 70 Celsius

Humidity: 5%-85%

Altitude: 0 to 2000 meters

12.Protection category

Humidity: Connect Antenna IPx5(EN 60068-2-18)

Else IPx3(EN 60068-2-18)

Dust: Connect Antenna IP6x(EN 60068-2-68)

Else IP5x(EN 60068-2-68)

13.Testing manifestation:

Usual Testing condition: ambient as 15C-30C deg. ,and 5%-85% in humidity,and 86-106 in kPa.

14.Requirements on procession,storage and transportation:

Upon the implementation of ETSI ETS 300019 regarding to indoor base station.

Physical collision is applicable to ETSI ETS 300019-2-4 4M5. in procession.

2M3 in ETSI ETS 300019-2-2 is also applicable in transportatation and storage.

15. Physical Outline

NOTE: tolerance for all dimensions are +/-0.3mm.

Duplexer:

Figure A : 223mm × 168mm × 88mm maximum (includes turning screws)

223mm × 168mm × 80mm

(Without turning screws)

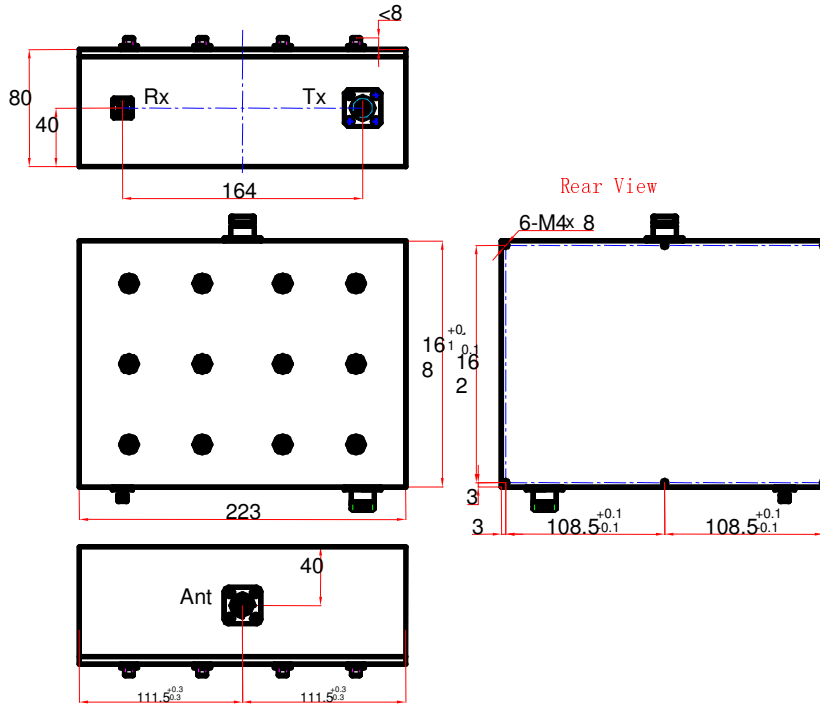


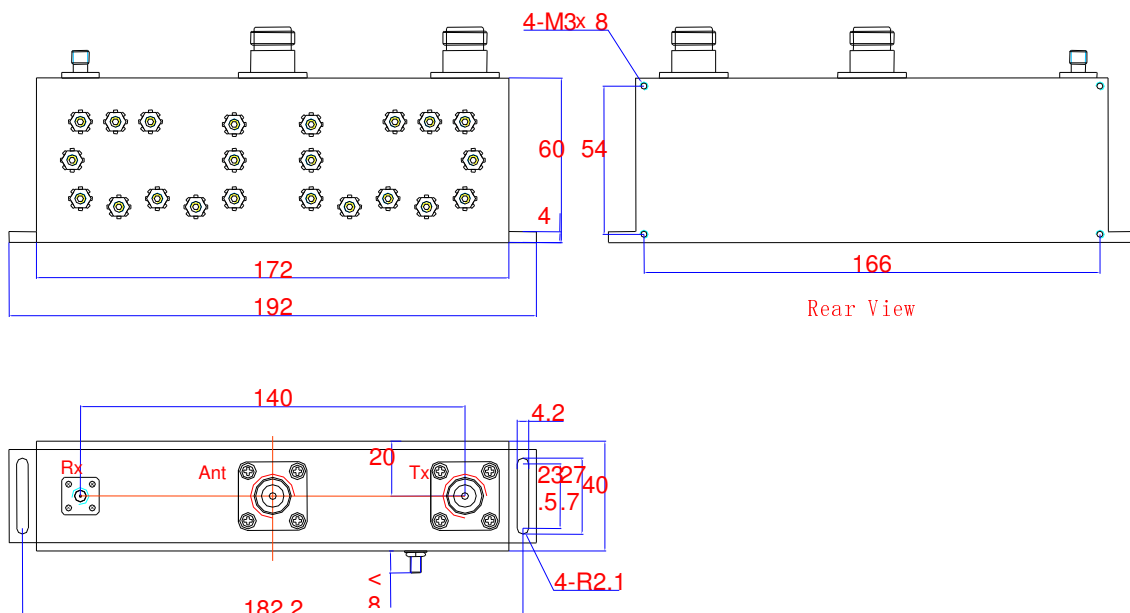
Figure B : 192mm × 60mm × 48mm maximum (includes turning screws)

192mm × 60mm × 40mm

(Without turning screws)

172mm × 60mm × 40mm

(Without Pipe Mounting Plate)



Filter:

Figure C : 166mm × 112mm × 74mm maximum (includes turning screws)
 166mm × 112mm × 67mm (Without turning screws)

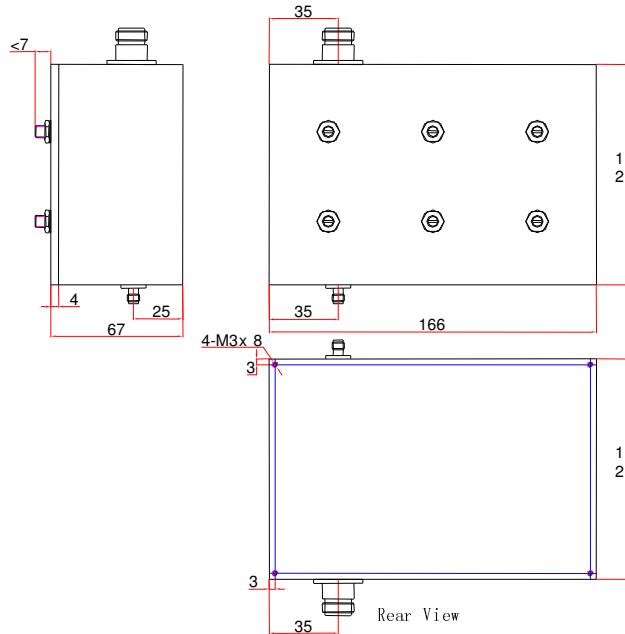
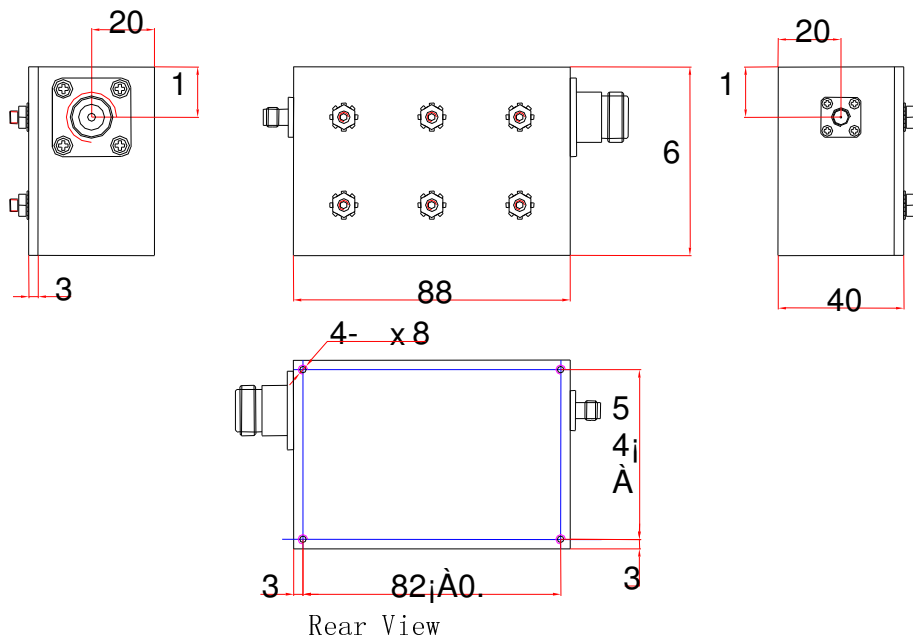


Figure D : 88mm × 60mm × 48mm maximum (includes turning screws)
 88mm × 60mm × 40mm (Without turning screws)



14.Connectors

Rx ports: SMA(F), four hole flange, gold plated inner contact

Antenna&Tx port: N(F) ,four hole flange, gold plated inner contact, the flange dimension is 25.4x25.4

15.Weight

7kg maximum for duplexer ,3.5kg maximum for filter.

16.Finish workmanship

No rust and blackening occur on the workpiece in 5 years.

No scratch or streak are seen on the surface.

Blunting on workpiece,wherever required, in order to eliminating sharp edge and point.

Matt fine finish applied ,no shiny and oily surface ,no potential coat-off and other defects seen .

17.Requirement for mark and package

As per customer's advance notification,otherwise we'll do it on our own according to usual industrial standard.

18.Performance Data&Datasheet

Eleading Technologies shall provide test data at bench ambient ,high temperature extreme and low temperature extreme for all prototype and pre-production deliverables .A production test plan shall be provided before mass production of order .

Test data shall include text data files which include a cross-section of frequency and amplitude and phase response over minimum BW_{OP} of both channels .Test plots shall be given for said parameters in addition .

19.Reliability

The unit shall exhibit over 1,000,000 hrs. (ambient temperature, ground benign)

20.Relevant legal and miscellaneous issues

Eleading guarantees the activities applicable in production and the provisions of business deals are in conformity with related Chinese regulations or acts, including those of labour safety,contract and implementation,tax-payment, and exportation.

Also, all above said activities are in line with pertinent international concerns of human rights of labour,environment protection and clauses of multinational trade.

