

# FFT\*-\*Q Series

1.2 GHz FULL-FEATURE EQUALIZABLE TAPS



FFT2-\*Q – 2 Port Taps  
FFT4-\*Q – 4 Port Taps  
FFT8-\*Q – 8 Port Taps  
FFT\*-PBA-V Tap Blank

## FEATURES

- Support DOCSIS® 3.1 expanded bandwidth up to 1218 MHz
- Improve network performance with signal conditioning plug-ins
- High quality RF connection with auto-seize F-connectors
- Maintain existing installed base with compatibility back to “F” series FFT housings
- Standard faceplate only options for cost effective upgrades to existing FFT deployments
- High level of network resilience with 6 kV surge resistance on feederline and F-ports
- Blank tap option FFT\*-PBA-V for future expansion
- Maintain RF and AC connections with faceplate removed with integrated bypass capability



## PRODUCT OVERVIEW

The ARRIS FFT-Q series equalizable taps offer improved return path performance for advanced two-way HFC systems while maintaining backward compatibility with the previous FFT installed base (Back to “F” Series). In addition to mechanical backwards compatibility to existing FFT tap housings, we now offer faceplate only options for plant upgrades. The faceplate only option allows the technician to easily upgrade an existing location with a simple faceplate change. This solution provides significant product cost savings, as well as reduced shipment cost, by eliminating unneeded extra housings being built and shipped.

The FFT 1.2 GHz taps continue to come equipped with an auto-seize F-connector which improves system reliability by providing increased drop center conductor clamping force and a greater surface/contact area over standard F-connectors.

For applications that require plant power on the F-port the FFT faceplate can be replaced with the BTTF F-port power extracting faceplate.



**FFT\*-\*Q INSERTION LOSS SPECIFICATIONS<sup>1</sup> (5-1218 MHz)**

Insertion Loss (dB)	Nom. Tap Value	5 MHz Typ/Max	10 MHz Typ/Max	50 MHz Typ/Max	100 MHz Typ/Max	450 MHz Typ/Max	550 MHz Typ/Max	750 MHz Typ/Max	870 MHz Typ/Max	1000 MHz Typ/Max	1218 MHz Typ/Max
<b>MODEL NO. FFT2-*Q</b>											
FFT2-4TQ	4.0	—	—	—	—	—	—	—	—	—	—
FFT2-7Q	7.0	3.2/3.9	2.8/3.6	2.7/3.5	3.0/3.6	3.3/4.2	3.3/4.2	3.4/4.2	3.4/4.3	3.5/4.3	4.0/5.2
FFT2-10Q	10.0	1.7/2.0	1.4/1.8	1.3/1.8	1.5/2.0	1.8/2.4	2.0/2.4	2.2/2.4	2.3/2.7	2.6/3.0	2.9/3.6
FFT2-12Q	12.0	1.4/1.8	1.1/1.6	1.0/1.6	1.3/1.8	1.6/2.1	1.7/2.3	1.9/2.4	2.0/2.7	2.3/3.0	2.6/3.6
FFT2-14Q	14.0	0.9/1.3	0.7/1.2	0.6/1.2	0.8/1.3	1.1/1.6	1.2/1.8	1.3/1.8	1.4/2.0	1.6/2.3	1.9/2.7
FFT2-17Q	17.0	0.7/1.2	0.6/1.1	0.5/1.1	0.8/1.2	1.0/1.5	1.1/1.5	1.2/1.6	1.3/1.6	1.4/1.6	1.7/2.2
FFT2-20Q	20.0	0.5/1.0	0.4/0.9	0.4/0.9	0.6/1.0	0.8/1.3	0.9/1.4	1.0/1.5	1.1/1.6	1.3/1.6	1.6/2.0
FFT2-23Q	23.0	0.4/0.7	0.3/0.6	0.3/0.7	0.5/0.8	0.7/1.1	0.8/1.2	0.9/1.3	1.0/1.4	1.2/1.6	1.7/2.0
FFT2-26Q	26.0	0.4/0.7	0.3/0.6	0.3/0.7	0.5/0.8	0.7/1.1	0.8/1.2	0.9/1.3	1.0/1.4	1.2/1.6	1.6/2.0
FFT2-29Q	29.0	0.3/0.7	0.2/0.6	0.2/0.7	0.4/0.8	0.5/1.1	0.6/1.2	0.7/1.3	0.9/1.4	1.1/1.6	1.5/2.0

Insertion Loss (dB)	Nom. Tap Value	5 MHz Typ/Max	10 MHz Typ/Max	50 MHz Typ/Max	100 MHz Typ/Max	450 MHz Typ/Max	550 MHz Typ/Max	750 MHz Typ/Max	870 MHz Typ/Max	1000 MHz Typ/Max	1218 MHz Typ/Max
<b>MODEL NO. FFT4-*Q</b>											
FFT4-7TQ	7.5	—	—	—	—	—	—	—	—	—	—
FFT4-10Q	10.8	3.8/3.9	3.3/3.6	3.2/3.5	3.5/3.6	3.9/4.2	4.0/4.4	4.2/4.4	4.1/4.4	4.1/4.5	4.6/5.2
FFT4-14Q	14.0	1.7/2.0	1.3/1.8	1.2/1.8	1.4/2.0	1.8/2.4	2.0/2.6	2.2/2.8	2.4/3.0	2.7/3.1	3.1/3.6
FFT4-15.5Q	15.5	1.3/1.6	1.0/1.4	0.9/1.4	1.2/1.6	1.5/1.9	1.7/2.0	1.9/2.3	2.1/2.6	2.3/3.0	2.7/3.4
FFT4-17Q	17.0	0.9/1.3	0.7/1.2	0.7/1.2	0.9/1.3	1.2/1.7	1.3/1.9	1.5/1.9	1.6/2.1	1/8/2.4	2.2/2.7
FFT4-20Q	20.0	0.7/1.2	0.6/1.1	0.5/1.1	0.8/1.2	0.9/1.5	1.0/1.5	1.2/1.6	1.3/1.8	1.4/2.0	1.8/2.2
FFT4-23Q	23.0	0.5/1.0	0.4/0.9	0.4/0.9	0.6/1.0	0.8/1.3	0.9/1.4	1.0/1.5	1.1/1.6	1.2/1.7	1.6/2.0
FFT4-26Q	26.0	0.4/0.7	0.3/0.6	0.3/0.6	0.5/0.8	0.7/1.1	0.7/1.2	0.8/1.3	1.0/1.4	1.1/1.5	1.5/1.8
FFT4-29Q	29.0	0.4/0.7	0.3/0.6	0.3/0.6	0.5/0.8	0.7/1.1	0.8/1.2	0.9/1.3	1.1/1.4	1.2/1.5	1.7/1.8

Insertion Loss (dB)	Nom. Tap Value	5 MHz Typ/Max	10 MHz Typ/Max	50 MHz Typ/Max	100 MHz Typ/Max	450 MHz Typ/Max	550 MHz Typ/Max	750 MHz Typ/Max	870 MHz Typ/Max	1000 MHz Typ/Max	1218 MHz Typ/Max
<b>MODEL NO. FFT8-*Q</b>											
FFT8-10TQ	10.0	—	—	—	—	—	—	—	—	—	—
FFT8-14Q	14.5	3.7/3.9	3.3/3.6	3.2/3.5	3.4/3.6	3.9/4.2	4.0/4.4	4.1/4.5	4.1/4.5	4.1/4.5	4.5/5.2
FFT8-17Q	17.5	1.6/2.0	1.3/1.8	1.2/1.8	1.4/2.0	1.7/2.4	2.0/2.6	2.2/2.8	2.4/2.9	2.4/3.1	3.0/3.6
FFT8-20Q	20.0	1.1/1.3	0.9/1.2	0.9/1.2	1.1/1.3	1.3/1.7	1.5/1.9	1.7/1.9	1.8/2.1	1.8/2.3	2.2/2.8
FFT8-23Q	23.5	0.9/1.1	0.8/0.9	0.7/0.9	0.9/1.1	1.2/1.3	1.3/1.5	1.4/1.6	1.5/1.8	1.7/2.0	2.1/2.2
FFT8-26Q	26.0	0.6/0.8	0.5/0.7	0.5/0.7	0.7/0.8	0.8/1.2	1.0/1.4	1.1/1.4	1.2/1.4	1.3/1.6	1.7/2.0
FFT8-29Q	29.5	0.4/0.8	0.3/0.7	0.3/0.7	0.5/0.8	0.7/1.2	0.8/1.2	0.9/1.4	1.0/1.4	1.2/1.6	1.8/2.0

**NOTE:**

<sup>1</sup> The FFT\*-\*Q is shipped standard with a jumper (T-JP) installed into the plug-in module sockets.



**SPECIFICATIONS TAP TO OUTPUT ISOLATION, NOMINAL**

MODEL NO. FFT2-*Q	5-9 MHz	10-85 MHz	86-300 MHz	301-749 MHz	750-899 MHz	900-1218 MHz
FFT2-4TQ	—	—	—	—	—	—
FFT2-7Q	20	25	21	22	20	20
FFT2-10Q	20	25	22	22	20	20
FFT2-12Q	22	25	23	23	22	20
FFT2-14Q	22	26	26	26	23	22
FFT2-17Q	26	30	30	30	28	25
FFT2-20Q	29	33	33	31	30	29
FFT2-23Q	32	36	36	34	33	31
FFT2-26Q	35	38	38	36	35	33
FFT2-29Q	38	40	40	39	37	35

MODEL NO. FFT4-*Q	5-9 MHz	10-85 MHz	86-300 MHz	301-749 MHz	750-899 MHz	900-1218 MHz
FFT4-7TQ	—	—	—	—	—	—
FFT4-10Q	20	25	23	23	22	21
FFT4-14Q	22	27	27	27	25	24
FFT4-15.5Q	24	28	28	28	26	25
FFT4-17Q	26	28	28	28	26	25
FFT4-20Q	30	34	34	34	32	29
FFT4-23Q	32	36	36	36	34	31
FFT4-26Q	34	38	38	38	36	33
FFT4-29Q	36	40	40	40	38	35

MODEL NO. FFT8-*Q	5-9 MHz	10-85 MHz	86-300 MHz	301-749 MHz	750-899 MHz	900-1218 MHz
FFT8-10TQ	—	—	—	—	—	—
FFT8-14Q	23	25	25	25	25	22
FFT8-17Q	25	30	30	30	27	25
FFT8-20Q	28	32	32	31	28	27
FFT8-23Q	30	34	34	34	32	28
FFT8-26Q	34	36	36	36	34	29
FFT8-29Q	36	38	38	37	35	31



**SPECIFICATIONS**

Tap Value:	2-way	5 – 1000 MHz	± 2.0 dB	
		1000 – 1218 MHz	± 2.5 dB	
	4-way	5 – 1000 MHz	± 2.0 dB	
		1000 – 1218 MHz	± 2.5 dB	
	8-way	5 – 1000 MHz	± 3.0 dB	
		1000 – 1218 MHz	± 3.5 dB	
Tap to Tap Isolation:		5 – 9 MHz	20 dB	
		10 – 85 MHz	25 dB	
		86 – 300 MHz	27 dB	
		301 – 749 MHz	23 dB	
		750 – 1218 MHz	20 dB	
Return Loss: Tap Ports		5 – 9 MHz	16 dB	
		10 – 749 MHz	17 dB	
		750 – 1000 MHz	17 dB	
		1001 – 1218 MHz	16 dB	
Return Loss: In/Out Ports		5 – 9 MHz	16 dB	
		2-way Taps	10 – 749 MHz	17 dB
		4- & 8-way Taps	10 – 749 MHz	16 dB
			750 – 1218 MHz	16 dB

**SPECIFICATIONS**

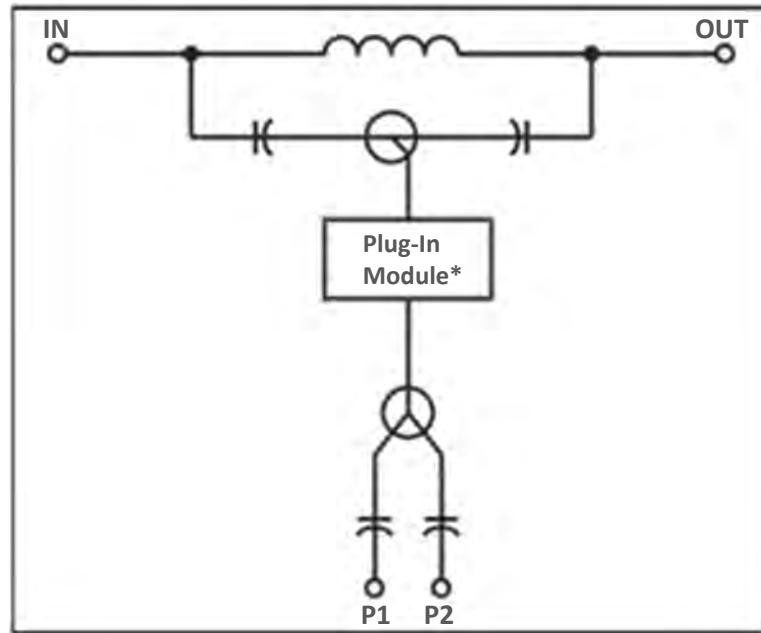
Power Passing	12 Amperes Maximum (60/90 volts)
Surge: In/Out and F-Port	6 kV Combination Wave
Hum Modulation (10 Amperes)	
5 – 10 MHz:	60 dB Minimum
11 – 750 MHz:	65 dB Minimum
751 – 1000 MHz:	60* dB Minimum
1001 – 1218 MHz:	55* dB Minimum
High Frequency Transients	Hum modulation - 73 dB for input voltage slew rates below 0.3 V/μS.
RFI	100 dB minimum
Operating Temperature	-40°C to +60°C
Dimensions	4.0 x 2.9 x 5.6 inches (10.2 x 7.4 x 14.2 cm)
Weight	1.0 lb. (0.45 kg)

\* Hum performance can degrade 2-3 dB at 60°C.

**PBA-V SPECIFICATIONS\* (5-1250 MHz)**

Insertion Loss (dB)	5 MHz Max	300 MHz Max	600 MHz Max	800 MHz Max	1000 MHz Max	1218 MHz Max	1250 MHz Max
FFT*-PBA-V	0.2	0.3	0.4	0.6	0.8	1.0	1.5
Frequency	Value						
Return Loss: In/Out (dB Minimum)							
5 to 450 MHz	20						
451 to 750 MHz	18						
751 to 1218 MHz	16						
RFI (dB Minimum)							
5 to 1200 MHz	105						

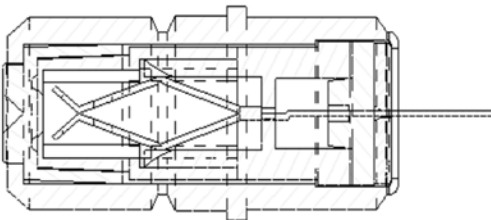
## FFT\*-\*Q Tap Block Diagram



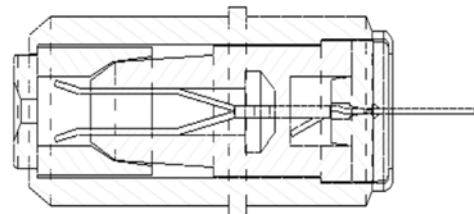
*\*Plug-In Module may be T-JP, T-EQ-\*Q, T-RPA/\*Q, or T-CS-\*Q. Block Diagram shown is for a 2-port tap. The 4-port and 8-port taps will have additional splitters after the plug-in module.*

## FFT\*-\*Q Auto-Seize Connector

Conventional F-Connector Design



Auto-Seize Q-Series F-Connector Design





2-Way Ordering Information

Complete Tap	Model Number	Faceplate Only	Model Number
594944-001-00	FFT2-4TQ	595139-001-00	FFT2-4TQ/U
594944-002-00	FFT2-7Q	595139-002-00	FFT2-7Q/U
594944-003-00	FFT2-10Q	595139-003-00	FFT2-10Q/U
594944-004-00	FFT2-12Q	595139-004-00	FFT2-12Q/U
594944-005-00	FFT2-14Q	595139-005-00	FFT2-14Q/U
594944-006-00	FFT2-17Q	595139-006-00	FFT2-17Q/U
594944-007-00	FFT2-20Q	595139-007-00	FFT2-20Q/U
594944-008-00	FFT2-23Q	595139-008-00	FFT2-23Q/U
594944-009-00	FFT2-26Q	595139-009-00	FFT2-26Q/U
594944-010-00	FFT2-29Q	595139-010-00	FFT2-29Q/U
594945-012-00	FFT*-PBA-V (Blank Plate)	N/A	N/A

4-Way Ordering Information

Complete Tap	Model Number	Faceplate Only	Model Number
594945-001-00	FFT4-7TQ	595140-001-00	FFT4-7TQ/U
594945-002-00	FFT4-10Q	595140-002-00	FFT4-10Q/U
594945-003-00	FFT4-14Q	595140-003-00	FFT4-14Q/U
594945-004-00	FFT4-15.5Q	595140-004-00	FFT4-15.5Q/U
594945-005-00	FFT4-17Q	595140-005-00	FFT4-17Q/U
594945-006-00	FFT4-20Q	595140-006-00	FFT4-20Q/U
594945-007-00	FFT4-23Q	595140-007-00	FFT4-23Q/U
594945-008-00	FFT4-26Q	595140-008-00	FFT4-26Q/U
594945-009-00	FFT4-29Q	595140-009-00	FFT4-29Q/U
594945-012-00	FFT*-PBA-V (Blank Plate)	N/A	N/A



8-Way Ordering Information

Complete Tap	Model Number	Faceplate Only	Model Number
594946-001-00	FFT8-10TQ	595141-001-00	FFT8-10TQ/U
594946-002-00	FFT8-14Q	595141-002-00	FFT8-14Q/U
594946-003-00	FFT8-17Q	595141-003-00	FFT8-17Q/U
594946-004-00	FFT8-20Q	595141-004-00	FFT8-20Q/U
594946-005-00	FFT8-23Q	595141-005-00	FFT8-23Q/U
594946-006-00	FFT8-26Q	595141-006-00	FFT8-26Q/U
594946-007-00	FFT8-29Q	595141-007-00	FFT8-29Q/U
594945-012-00	FFT*-PBA-V (Blank Plate)	N/A	N/A

RELATED PRODUCTS

- SSP Series System Passives    RF Amplifiers
- T-\*Q 1.2 GHz Tap Plug-ins    Optical Nodes

**Note:** Specifications are subject to change without notice.

**Copyright Statement:** ©ARRIS Enterprises, LLC, 2016. All rights reserved. No part of this publication may be reproduced in any form or by any means or used to make any derivative work (such as translation, transformation, or adaptation) without written permission from ARRIS Enterprises, LLC ("ARRIS"). ARRIS reserves the right to revise this publication and to make changes in content from time to time without obligation on the part of ARRIS to provide notification of such revision or change. ARRIS and the ARRIS logo are registered trademarks of ARRIS Enterprises, LLC. Other trademarks and trade names may be used in this document to refer to either the entities claiming the marks or the names of their products. ARRIS disclaims proprietary interest in the marks and names of others. The capabilities, system requirements and/or compatibility with third-party products described herein are subject to change without notice.

FFT-Q\_DS\_20APR16

(rev 04-2016)

