



STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

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E-Mail: siting.council@ct.gov

Web Site: portal.ct.gov/csc

VIA ELECTRONIC MAIL

August 17, 2023

Eric Breun
Site Acquisition Agent
Transcend Wireless
1 International Blvd. Suite 400
Mahwah, NJ 07495
ebreun@transcendwireless.com

RE: **EM-T-MOBILE-018-230123** – T-Mobile notice of intent to modify an existing telecommunications facility located at 761 Federal Road, Brookfield, Connecticut.

Dear Eric Breun:

The Connecticut Siting Council (Council) is in receipt of the correspondence dated July 21, 2023 regarding a temporary project change for the above-referenced exempt modification request acknowledged by the Council on February 14, 2023.

The request to temporarily install antennas and associated equipment on the existing mast to facilitate continuity of service and coordination of construction with other entities collocated at the facility during a required electrical outage is approved with the following conditions:

1. The temporary antenna configuration is to be implemented as specified in the revised Structural Compliance Verification prepared by Centek Engineering, dated July 17, 2023 and the correspondence dated July 21, 2023; and
2. Any antenna and associated antenna mounting equipment, or other equipment at this facility owned and operated by T-Mobile associated with the temporary antenna configuration shall be removed upon completion of the modifications acknowledged by the Council on February 14, 2023.

This approval applies only to the temporary project change in the correspondence dated July 21, 2023. All other conditions of the Council's February 14, 2023 acknowledgment of the exempt modification remain unchanged.

Thank you for your attention and cooperation.

Sincerely,

Melanie A. Bachman
Executive Director

MAB/ANM/laf

c: The Honorable Tara Carr, First Selectperson, Town of Brookfield (tcarr@brookfieldct.gov)

From: Kyle Richers <krichers@transcendwireless.com>
Sent: Friday, July 21, 2023 2:13 PM
To: Bachman, Melanie <Melanie.Bachman@ct.gov>; CSC-DL Siting Council <Siting.Council@ct.gov>
Cc: 'Reid, Dan' <dreid@transcendwireless.com>
Subject: T-Mobile Temporary Configuration at 761 Federal Road, Brookfield -- CTFF896A

Hi Melanie,

We are reaching out regarding the existing Sprint/T-Mobile facility at 761 Federal Road in Brookfield. T-Mobile was approved earlier this year for an exempt modification under EM-T-Mobile-018-230123. Since this facility is located on an Eversource transmission tower, the work is required to be completed during an outage period. The scope-of-work entails removing and replacing the antenna mast, which also has existing AT&T equipment located on it. As part of its work, T-Mobile would be required to remove and put back the AT&T equipment once the new antenna mast is in place. AT&T's equipment would need to go offline for several days. Although AT&T was initially planning a modification of their own that would work in concert with T-Mobile, this upgrade has been pushed to next year on the build plan.

In light of the issues and constraints associated with this modification, T-Mobile is requesting an approval for a temporary configuration. The scope-of-work, as described below, would allow T-Mobile to swap the existing antennas and put its new technologies on-air without needing to replace the antenna mast. This would also allow the AT&T equipment to remain in place and on-air. Attached is an analysis completed to confirm the existing mast and structure can accommodate the replacement antennas. This temporary work would require an outage that is planned for November or December of this year.

T-Mobile would ultimately still plan to complete the modification that was initially approved. This would most likely take place sometime in 2024, when AT&T can incorporate their own upgrade. Please let us know if T-Mobile can move forward with its plan for a temporary configuration and if any more information is required.

Tower

Remove and Replace

- (2) RFS APXVSP18-C and (1) RFS APXV9ERR18-C for (3) Commscope FVV-65B-R3B 600/700/1900/2100 MHz Panel Antennas

Add

- (3) TMA

Existing to Remain

- (18) 1-1/4" coax

Ground

- Existing cabinets to remain
- Add (6) ground-mounted RRUs

Kyle Richers
Transcend Wireless
1 International Blvd, Suite 400
Mahwah, NJ 07495
908-447-4716
krichers@transcendwireless.com

July 17, 2023

Mr. Rich Badon
Eversource Energy
56 Prospect Street
Hartford, CT 06103

Re.: *Temp Antenna Upgrade ~ Structural Compliance Verification*
Tower No. 2683
T-Mobile Site No. CTFF896A
761 Federal Road
Brookfield, CT

CEN TEK Project No. 21005.40

Dear Mr. Badon,

Centek Engineering, Inc. has reviewed the proposed T-Mobile temporary antenna replacement at the above referenced site. The purpose of the review was to determine the necessity for the transmission structure to be reanalyzed to the latest requirements of OTRM 059. The existing structure is a steel pole transmission tower approximately 90-ft tall with a PCS mast designed to support T-Mobile's (formally Sprint's) antennas at a rad center elevation of 110-ft +/- AGL and AT&T's antennas at a rad center elevation of 100-ft +/- AGL. A comparison of the existing and proposed configuration was prepared:

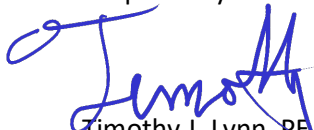
- **T-Mobile (Sprint) (Existing Loading):**
Antennas: Two (2) RFS APXVSP18-C and one (1) RFS APXV9ERR18-C panel antennas flush mounted on the existing mast with a RAD center elevation of 110-ft above grade level.
Coax Cables: Eighteen (18) 1-1/4" coax cables running on the exterior of the pole/mast.
- **T-Mobile (Proposed Loading):**
Antennas: Three (3) Commscope FVV-65B-R3B panel antennas flush mounted on the existing mast with a RAD center elevation of 110-ft above grade level.
Coax Cables: Eighteen (18) 1-1/4" coax cables running on the exterior of the pole/ mast.

The comparison assumes that no change will be made to the existing mast, cables or AT&T tower mounted equipment. Refer to Attachment 1 for a detailed comparative analysis summarized as follows:

	<u>Existing Loading</u>	<u>Proposed Loading</u>	<u>Result</u>
Total Wind Area (sf)	17.7	17.7	PASS
Total Weight (lbs)	186	129	PASS

In conclusion, it was determined that the proposed loading was less than the existing loading and a full structural analysis is not required per section 5 of OTRM 059. If there are any questions regarding this matter, please feel free to call.

Respectfully Submitted by:


Timothy J. Lynn, PE
Structural Engineer



Subject: **Upgrade Comparative Analysis**
 Job No. **21005.40**
 Carrier Site Ref: **CTFF896A**
 Location: **761 Federal Road Brookfield, CT**
 Rev 0: 7/17/23 Prepared by: T.J.L. Checked by: C.F.C.

Existing Loading Condition							
Equipment Model	Properties				Quantity	Total Area (sf)	Total Weight (lbs)
	Height (in)	Width (in)	Depth (in)	Weight (lbs/plf)			
APXVSPP18-C	72	11.8	7.9	62	2	11.8	124
APXV9ERR18-C	72	11.8	7.9	62	1	5.9	62
						17.7	186.0

Proposed Loading Condition							
Equipment Model	Properties				Quantity	Total Area (sf)	Total Weight (lbs)
	Height (in)	Width (in)	Depth (in)	Weight (lbs/plf)			
FVV-65B-R3	71.969	11.811	7.126	43	3	17.7	129
						17.7	129.0

Conclusion

Proposed loading is less then the design loading thefore full analysis of the tower is not required per OTRM 059.



Triple Band Dual Polarized Antenna, 806-1995, 80deg, 14-17dBi, 1.8m, VET, 0-10deg, 0.5m AISG Cable, RET

Product Description

This antenna is an ideal choice for dual band site upgrade for high traffic areas. It features 4 ports in 1900 MHz and 2 ports in 800 MHz.

Features/Benefits

- Variable electrical downtilt – provides enhanced precision in controlling intercell interference. The tilt is infield adjustable 0-10 deg.
- High suppression of all upper sidelobes (Typically < 18 dB)
- Independent control of electrical downtilt for 800 and PCS bands
- Low profile for low visual impact
- Quick and easy to adjust
- High front-to-back ratio
- AISG 2.0 compatible remote tilt



Technical Specifications

Electrical Specifications

Frequency Range, MHz	806-869	1850-1995	1850-1995
Horizontal Beamwidth, deg	80	80	80
Vertical Beamwidth, deg	11.5	5.5	5.5
Electrical Downtilt, deg		0-10	
Gain, dBi (dBd)	14 (11.9)	17 (14.9)	17 (14.9)
1st Upper Sidelobe Suppression, dB, typ. @ T0° & T8°		>18	
Front-To-Back Ratio, dB, @ 180° ± 15°	>30	>27	>27
Polarization		Dual pol +/-45°	
Return Loss, dB		> 14	
Isolation between Ports, dB		>28	
3rd Order IMP @ 2 x 43 dBm, @ 2 min. duration		>110	
Cross Polar Discrimination (XPD) 0°, dB	>20	>20	>20
Cross Polar Discrimination (XPD) ± 60°, dB	>5	>11	>11
HBW Squint across same band ports, °	±5	±5	±5
Impedance, Ohms		50	
Maximum Power Input, W		250	
Lightning Protection		Direct Ground	
Connector Type		(6) 7-16 DIN Female	

Mechanical Specifications

Dimensions - HxVxD, mm (in)	1829 x 302 x 200 (72.0 x 11.8 x 7.9)
Weight w/o Mtg Hardware, kg (lb)	28.2 (62)
Rated Wind Speed, km/h (mph)	241 (150)
Radome Material	ASA
Radome Color	Light Grey RAL7035
Mounting Hardware Material	Diecasted Aluminum and Galvanized Steel

Ordering Information

Mounting Hardware	APM40-2 Downtilt Kit
AISG System Cable	0.5 m, included
Mounting Pipe Diameter, mm (in)	60-120 (2.4-4.7)
Mounting Hardware Weight, kg (lb)	3.4 (7.5)

All information contained in the present datasheet is subject to confirmation at time of ordering.

Cross Polarized Triple Band Antenna, 806-1995MHz, 65deg, 16/18dBi, 6ft, VET, RET

This antenna is an ideal choice for site upgrades and new deployments where three frequency bands, or MIMO/4 RX diversity, is used to add capacity and increase coverage. Only 12 inches wide and 6 feet high, it maintains the size of a dual band antenna, while adding a third antenna path with no compromise in RF performance. It can be used for 2G, 3G and 4G technologies. This multi-band antenna features superior pattern symmetry and a phase shifter for each radiating dipole providing exceptional patterns at all tilt settings. It is supplied with a field replaceable AISG 2.0 antenna control unit (ACU) for remote electrical tilt (RET) compatibility.

FEATURES / BENEFITS

- ⌚ Cross polarization — triple band version with 6 ports (2x 806-869 MHz and 4x 1850-1995 MHz)
- ⌚ One phase shifter per radiating element — improves radiating patterns
- ⌚ Superior X-Pol Discrimination — Improves Rx diversity
- ⌚ High suppression of upper sidelobes — reduces cell interference
- ⌚ Enhanced tilt range from 0-10 degrees — ideal for applications in dense areas
- ⌚ Variable electrical downtilt — provides enhanced precision in controlling intercell interference
- ⌚ High reliability — designed to last in a tower top environment
- ⌚ Design incorporates low windload — minimizes tower loading
- ⌚ Quick and easy to install — reduces installation time and costs
- ⌚ Includes one 0.5m AISG Jumpers



APXVSP18 Series

Technical Features

ELECTRICAL SPECIFICATIONS

Frequency Range	MHz	806-869	1850-1995
Gain	dBi (dBd)	15.5 (13.4)	18.0 (15.9)
Horizontal Beamwidth	deg	65	
Vertical Beamwidth	deg	11.5	5.5
Electrical Downtilt Range	deg	0-10	
1st Upper Sidelobe Suppression	dB	> 18	
Front-To-Back Ratio	dB	> 27	> 28
Polarization		Dual pol +/-45°	
VSWR		< 1.5:1	
Isolation between Ports	dB	> 28	
3rd Order IMP @ 2 x 43 dBm	dBc	> 153	
Cross Polar Discrimination (XPD) 0°	dB	> 15	> 20
Impedance	Ohms	50.0	
Maximum Power Input	W	250.0	

MECHANICAL SPECIFICATIONS

Lightning Protection		Direct Ground	
Connector Type/Location		(6) 7-16 Long Neck Female/Bottom	
Dimensions - HxWxD	mm (in)	1829 x 302 x 200 (72 x 11.8 x 7.9)	
Weight w/o Mtg Hardware	kg (lb)	28 (62)	
Survival/Rated Wind Speed	km/h (mph)	240 (150) / 150 (93.2)	
Applied Wind Load Standard		DIN 1055-4	
Wind Load @ Rated Wind, Front	N (lbf)	412 (93) 412	
Wind Load @ Rated Wind, Max.	N (lbf)	510 (115) null	
Wind Load @ Rated Wind, Side	N (lbf)	510 (115)	
Wind Load @ Rated Wind, Rear	N (lbf)	468 (105)	

TESTING AND ENVIRONMENTAL

Operation temperature	°C (°F)	-40 to 60 (-40 to 140)
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MATERIAL

Radome Material/Color		ASA/Light Grey RAL7035
Mounting Hardware Material		Diecasted Aluminum and Galvanized Steel

ORDERING INFORMATION

Shipping Weight	kg (lb)	39 (86.5)
Packing Dimensions	mm (in)	2020 x 384 x 379 (79.5 x 15.1 x 14.9)

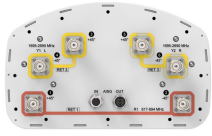
APXVSP18-C-A20

REV: B

REV DATE: 20.10.2015

www.rfsworld.com

FVV-65B-R3



6-port sector antenna, 2x 617-894 and 4x 1695-2690 MHz, 65° HPBW, 3x RET, 600 MHz-Ready Antenna Technology

General Specifications

Antenna Type	Sector
Band	Multiband
Color	Light gray
Grounding Type	RF connector inner conductor and body grounded to reflector and mounting bracket
Performance Note	Outdoor usage
Radome Material	Fiberglass, UV resistant
Reflector Material	Aluminum
RF Connector Interface	4.3-10 Female
RF Connector Location	Bottom
RF Connector Quantity, high band	4
RF Connector Quantity, low band	2
RF Connector Quantity, total	6

Remote Electrical Tilt (RET) Information

RET Hardware	CommRET v2
RET Interface	8-pin DIN Female 8-pin DIN Male
RET Interface, quantity	1 female 1 male
Input Voltage	10-30 Vdc
Internal RET	High band (2) Low band (1)
Power Consumption, active state, maximum	10 W
Power Consumption, idle state, maximum	2 W
Protocol	3GPP/AISG 2.0

Dimensions

Width	300 mm 11.811 in
Depth	181 mm 7.126 in
Length	1828 mm 71.969 in

FVV-65B-R3

Net Weight, without mounting kit

19.6 kg | 43.211 lb

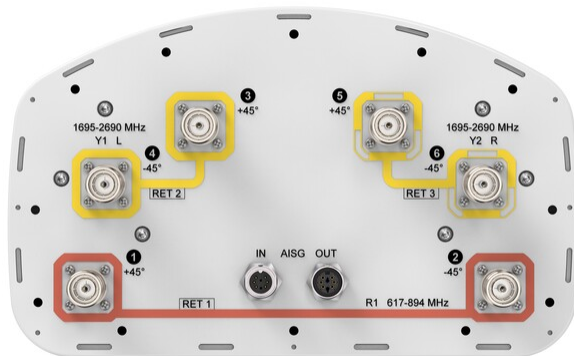
Array Layout



Array ID	Frequency (MHz)	RF Connector	RET (SRET)	AISG No.	AISG RET UID
R1	617-894	1 - 2	1	AISG1	CPxxxxxxxxxxxxxxxxR1
Y1	1695-2690	3 - 4	2	AISG1	CPxxxxxxxxxxxxxxxxY1
Y2	1695-2690	5 - 6	3	AISG1	CPxxxxxxxxxxxxxxxxY2

(Sizes of colored boxes are not true depictions of array sizes)

Port Configuration



Electrical Specifications

Impedance	50 ohm
Operating Frequency Band	1695 – 2690 MHz 617 – 894 MHz
Polarization	±45°
Total Input Power, maximum	900 W @ 50 °C

Electrical Specifications



56 Prospect Street,
Hartford, CT 06103

P.O. Box 270
Hartford, CT 06141-0270
(860) 665-5000

July 18, 2023

Kyle Richers
Transcend Wireless
10 Industrial Ave Suite 3
Mahwah NJ 07430

RE: T-Mobile Antenna Site CTFF896A, Federal Rd, Brookfield CT, Eversource Structure 2683

Dear Mr. Richers:

Based on our review of the "Temp Antenna Upgrade ~ Structural Compliance Verification" letter provided by Centek Engineering, we accept the proposed antenna upgrade.

Please work with Christopher Gelinias of Eversource Real Estate to process the site lease amendment. Please do not hesitate to contact us with questions or concerns. Christopher can be contacted at 860-665-2008, and I can be contacted at (203) 623-0409.

Sincerely,

Richard Badon

Richard Badon
Transmission Line Engineering

Ref: 2023-0717 - CTFF896A - Temp Antenna Swap Comparison Letter (21005.40)