

Dual Band Tower Mounted Amplifier, 700//800 MHz, 12 dB, 2 BTS & 2 ANT ports, AISG with 1 RET connector (1 device with 2 sub-units), with 4.3-10 connectors

- Industry leading PIM performance
- New 4.3-10 connectors for improved PIM performance and size reduction
- 2 input ports and 2 output ports
- Designed to boost UP-Link Coverage and KPIs
- Automatic LNA by-pass function
- Connectors "in line"
- TMA is operating in AISG mode
- Single AISG with 1 RET connector
- 1 device with 2 sub-units
- Built in lightning protection

#### **Product Classification**

Product Type 1-BTS:1-ANT (Uniplex) | Tower mounted amplifier

### General Specifications

Color Gray
Modularity 2-Twin

Mounting Pipe HardwareBand clamps (2)RF Connector Interface4.3-10 Female

#### Dimensions

 Height
 140 mm | 5.512 in

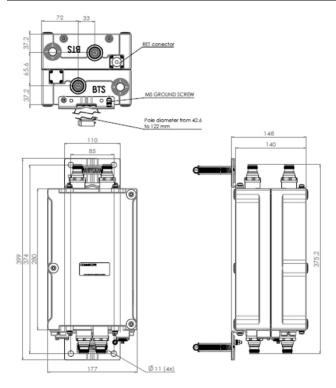
 Width
 177 mm | 6.969 in

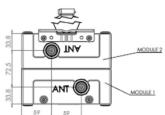
 Depth
 260 mm | 10.236 in

**Mounting Pipe Diameter Range** 42.6–122 mm

## Outline Drawing







### **Electrical Specifications**

License Band, Band Pass APT 700

License Band, LNA APT 700 | CEL 900 | EDD 800

## Electrical Specifications, dc Power/Alarm

dc Switching/Redundancy Yes
Lightning Surge Current 10 kA

**Lightning Surge Current Waveform** 8/20 waveform

## Electrical Specifications, AISG

AISG Connector 8-pin DIN Female
AISG Connector Standard IEC 60130-9

**COMMSCOPE®** 

# F14R00P41

Return Loss, minimum, dB Return Loss, typical, dB

Input Power, RMS, maximum, W

Return Loss, typical, dB 20 20 Return Loss - Bypass Mode, typical, dB 14 14  Electrical Specifications Rx (Uplink)	E14RUUP41			
Composition	Protocol	AISG 2.0		
Sub-module         1   2         1   2           Branch         1         2           Port Designation         ANT 700         ANT 800           License Band         APT 700, Band Pass APT 700, LNA         EDD 800, APT 700, LNA           Return Loss, typical, dB         20         20           Return Loss - Bypass Mode, typical, dB         14         14           Electrical Specifications RX (Uplink)         703-733         832-862           Bandwidth, MHz         30         30           Bandwidth, MHz         1.25         1.3           Group Delay Variation, maximum, ns         30         60           Group Delay Variation Bandwidth, MHz         5         5           Total Group Delay, maximum, ns         120         220           Total Group Delay, typical, ns         90         180           Return Loss, minimum, dB         16         16           Insertion Loss - Bypass Mode, typical, dB         1,8         791-821           Bandwidth, MHz         30         30           Insertion Loss, maximum, dB         0,7         0,7           Insertion Loss, typical, dB         0,5         0,5           Group Delay Variation, maximum, ns         10         18           Group	Voltage, AISG Mode	10-30 Vdc		
Branch         1         2           Port Designation         ANT 700         ANT 800           License Band         APT 700, Band Pass APT 700, LNA         EDD 800, APT 700, LNA           Return Loss, typical, dB         20         20           Return Loss - Bypass Mode, typical, dB         14         14           Electrical Specifications RX (Uplink)         Frequency Range, MHz         703-733         832-862           Bandwidth, MHz         30         30         30           Gain, nominal, dB         12         12         12           Noise Figure, typical, dB         1.25         1.3         60           Group Delay Variation, maximum, ns         30         60           Group Delay Variation Bandwidth, MHz         5         5           Total Group Delay, maximum, ns         120         220           Total Group Delay, typical, ns         90         180           Return Loss, minimum, dB         16         16           Insertion Loss - Bypass Mode, typical, dB         1,8         791-821           Bandwidth, MHz         30         30           Bandwidth, MHz         30         30           Insertion Loss, maximum, dB         0.5         0.5           Group Delay Variation,	Electrical Specifications			
Port Designation         ANT 700         ANT 800           License Band         APT 700, Band Pass APT 700, LNA         EDD 800, APT 700, LNA           Return Loss, typical, dB         20         20           Return Loss - Bypass Mode, typical, dB         14         14           Electrical Specifications Rx (Uplink)         Frequency Range, MHz         703-733         832-862           Bandwidth, MHz         30         30         30           Gain, nominal, dB         12         12         12           Noise Figure, typical, dB         1,25         1,3         60           Group Delay Variation, maximum, ns         30         60         60           Group Delay Variation Bandwidth, MHz         5         5         7           Total Group Delay, maximum, ns         120         220         10           Return Loss, minimum, dB         16         16         16           Insertion Loss - Bypass Mode, typical, dB         18         791-821           Bandwidth, MHz         30         30           Bandwidth, MHz         30         30           Bandwidth, MHz         0.7         0.7           Insertion Loss, typical, dB         0.5         0.5           Group Delay Variation Bandwidth, MHz <td>Sub-module</td> <td></td> <td>1   2</td> <td>1   2</td>	Sub-module		1   2	1   2
License BandAPT TOO, Band Pass APT TOO, LNAEDD 800, APT TOO, LNAReturn Loss, typical, dB2020Return Loss - Bypass Mode, typical, dB1414Electrical Specifications Rx (Uplink)Frequency Range, MHz703-733832-862Bandwidth, MHz3030Gain, nominal, dB1212Noise Figure, typical, dB1.251.3Group Delay Variation, maximum, ns3060Group Delay Variation Bandwidth, MHz55Total Group Delay, maximum, ns120220Total Group Delay, typical, ns90180Return Loss, minimum, dB1616Insertion Loss - Bypass Mode, typical, dB181.7Electrical Specifications Tx (Downlink)Frequency Range, MHz758-788791-821Bandwidth, MHz3030Insertion Loss, typical, dB0.70.7Insertion Loss, typical, dB0.50.5Group Delay Variation, maximum, ns1018Group Delay Variation Bandwidth, MHz55Total Group Delay, maximum, ns55	Branch		1	2
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Return Loss - Bypass Mode, typical, dB  Electrical Specifications Rx (Uplink)  Frequency Range, MHz  Bandwidth, MHz  Gain, nominal, dB  Noise Figure, typical, dB  Group Delay Variation, maximum, ns  Group Delay Variation Bandwidth, MHz  Total Group Delay, maximum, ns  Return Loss, minimum, dB  Insertion Loss - Bypass Mode, typical, dB  Insertion Loss - Bypass Mode, typical, dB  Requency Range, MHz  Frequency Range, MHz  Frequency Range, MHz  Bandwidth, MHz  Group Delay Variation STx (Downlink)  Frequency Range, MHz  Group Delay Variation, maximum, ns  Insertion Loss, maximum, dB  Insertion Loss, maximum, dB  Insertion Loss, maximum, dB  Insertion Loss, maximum, dB  Group Delay Variation, maximum, ns  Insertion Loss, typical, dB  Group Delay Variation, maximum, ns  Total Group Delay Variation Bandwidth, MHz  Total Group Delay, maximum, ns	License Band			EDD 800, LNA
Electrical Specifications Rx (Uplink)  Frequency Range, MHz 703–733 832–862  Bandwidth, MHz 30 30 30  Gain, nominal, dB 12 12  Noise Figure, typical, dB 1.25 1.3  Group Delay Variation, maximum, ns 30 60  Group Delay Variation Bandwidth, MHz 5 5 5  Total Group Delay, typical, ns 90 180  Return Loss, minimum, dB 16 16  Insertion Loss - Bypass Mode, typical, dB 1.8 1.7  Electrical Specifications Tx (Downlink)  Frequency Range, MHz 758–788 791–821  Bandwidth, MHz 30 30  Insertion Loss, maximum, dB 0.7 0.7  Insertion Loss, typical, dB 0.5 0.5  Group Delay Variation, maximum, ns 10 18  Group Delay Variation, maximum, ns 10 18  Group Delay Variation, maximum, ns 10 5 5 55	Return Loss, typical, dB		20	20
Frequency Range, MHz         703-733         832-862           Bandwidth, MHz         30         30           Gain, nominal, dB         12         12           Noise Figure, typical, dB         1.25         1.3           Group Delay Variation, maximum, ns         30         60           Group Delay Variation Bandwidth, MHz         5         5           Total Group Delay, maximum, ns         120         220           Total Group Delay, typical, ns         90         180           Return Loss, minimum, dB         16         16           Insertion Loss - Bypass Mode, typical, dB         1.8         1.7           Frequency Range, MHz         758-788         791-821           Bandwidth, MHz         30         30           Insertion Loss, maximum, dB         0.7         0.7           Insertion Loss, typical, dB         0.5         0.5           Group Delay Variation, maximum, ns         10         18           Group Delay Variation Bandwidth, MHz         5         5           Total Group Delay, maximum, ns         45         55	Return Loss - Bypass Mode, typical, dB	3	14	14
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Noise Figure, typical, dB1.251.3Group Delay Variation, maximum, ns3060Group Delay Variation Bandwidth, MHz55Total Group Delay, maximum, ns120220Total Group Delay, typical, ns90180Return Loss, minimum, dB1616Insertion Loss - Bypass Mode, typical, dB1.81.7Electrical Specifications Tx (Downlink)Frequency Range, MHz758-788791-821Bandwidth, MHz3030Insertion Loss, maximum, dB0.70.7Insertion Loss, typical, dB0.50.5Group Delay Variation, maximum, ns1018Group Delay Variation Bandwidth, MHz55Total Group Delay, maximum, ns4555	Bandwidth, MHz		30	30
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Group Delay Variation Bandwidth, MHz  Total Group Delay, maximum, ns  120  220  Total Group Delay, typical, ns  90  180  Return Loss, minimum, dB  16  Insertion Loss - Bypass Mode, typical, dB  Electrical Specifications Tx (Downlink)  Frequency Range, MHz  Frequency Range, MHz  30  Insertion Loss, maximum, dB  Insertion Loss, maximum, dB  Insertion Loss, typical, dB  Group Delay Variation, maximum, ns  10  18  Group Delay Variation Bandwidth, MHz  5  5  Total Group Delay, maximum, ns  45	Noise Figure, typical, dB		1.25	1.3
Total Group Delay, maximum, ns  120  220  Total Group Delay, typical, ns  Return Loss, minimum, dB  Insertion Loss - Bypass Mode, typical, dB  Frequency Range, MHz  Bandwidth, MHz  Bandwidth, MHz  Insertion Loss, maximum, dB  Insertion Loss, typical, dB  Insertion Loss, typica	Group Delay Variation, maximum, ns		30	60
Total Group Delay, typical, ns  Return Loss, minimum, dB Insertion Loss - Bypass Mode, typical, dB  Frequency Range, MHz  Bandwidth, MHz  Insertion Loss, maximum, dB Insertion Loss, maximum, dB Insertion Loss, typical, dB  Group Delay Variation, maximum, ns  Total Group Delay, maximum, ns	Group Delay Variation Bandwidth, MHz	:	5	5
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Insertion Loss - Bypass Mode, typical, dB1.81.7Electrical Specifications Tx (Downlink)758-788791-821Frequency Range, MHz758-788791-821Bandwidth, MHz3030Insertion Loss, maximum, dB0.70.7Insertion Loss, typical, dB0.50.5Group Delay Variation, maximum, ns1018Group Delay Variation Bandwidth, MHz55Total Group Delay, maximum, ns4555	Total Group Delay, typical, ns		90	180
Electrical Specifications Tx (Downlink)  Frequency Range, MHz  Bandwidth, MHz  30  Insertion Loss, maximum, dB  0.7  Insertion Loss, typical, dB  0.5  Group Delay Variation, maximum, ns  10  18  Group Delay Variation Bandwidth, MHz  5  Total Group Delay, maximum, ns  45  55	Return Loss, minimum, dB		16	16
Frequency Range, MHz  Bandwidth, MHz  30  0.7  Insertion Loss, maximum, dB  0.5  Group Delay Variation, maximum, ns  10  18  Group Delay Variation Bandwidth, MHz  5  Total Group Delay, maximum, ns  45	Insertion Loss - Bypass Mode, typical,	dB	1.8	1.7
Bandwidth, MHz3030Insertion Loss, maximum, dB0.70.7Insertion Loss, typical, dB0.50.5Group Delay Variation, maximum, ns1018Group Delay Variation Bandwidth, MHz55Total Group Delay, maximum, ns4555	Electrical Specifications	Tx (Downlink)		
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Insertion Loss, typical, dB0.50.5Group Delay Variation, maximum, ns1018Group Delay Variation Bandwidth, MHz55Total Group Delay, maximum, ns4555	Bandwidth, MHz		30	30
Group Delay Variation, maximum, ns 10 18 Group Delay Variation Bandwidth, MHz 5 5 Total Group Delay, maximum, ns 45 55	Insertion Loss, maximum, dB		0.7	0.7
Group Delay Variation Bandwidth, MHz 5 5  Total Group Delay, maximum, ns 45 55	Insertion Loss, typical, dB		0.5	0.5
Total Group Delay, maximum, ns 45 55	Group Delay Variation, maximum, ns		10	18
	Group Delay Variation Bandwidth, MHz	:	5	5
Total Group Delay, typical, ns 35 45	Total Group Delay, maximum, ns		45	55
	Total Group Delay, typical, ns		35	45

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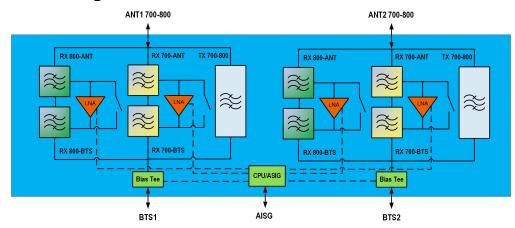
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200

Input Power, PEP, maximum, W 1000 1000 3rd Order PIM, typical, dBc -162 -162

**3rd Order PIM Test Method** Two +43 dBm carriers Two +43 dBm carriers

### Block Diagram



### **Environmental Specifications**

**Operating Temperature**  $-40 \, ^{\circ}\text{C} \text{ to } +65 \, ^{\circ}\text{C} \, (-40 \, ^{\circ}\text{F to } +149 \, ^{\circ}\text{F})$ 

**Relative Humidity** Up to 100%

Corrosion Test Method IEC 60068-2-11, 30 days
Ingress Protection Test Method IEC 60529:2001, IP67

Packaging and Weights

**Included** Mounting hardware

Volume 7 L

**Weight, net** 11 kg | 24.251 lb

### Regulatory Compliance/Certifications

#### Agency Classification

ISO 9001:2015 Designed, manufactured and/or distributed under this quality management system



#### \* Footnotes

License Band, Band Pass License Bands that are to be passed through with no amplification

COMMSC PE°

License Band, LNA

License Bands that have RxUplink amplification