



The **Smart Bias Tee** combines the performance of a standard Bias Tee (e.g. type 78210577) with the function of an additional modem (AISG standard) in order to provide either DC voltage as well as remote control signals via an RF feeder cable to a TMA or RCU.

The **Smart Bias Tee** provides low RF signal insertion loss from port 1 to port 2 and vice versa. The measures taken to protect against static discharge and lightning ensure a high level of reliability and operational safety.

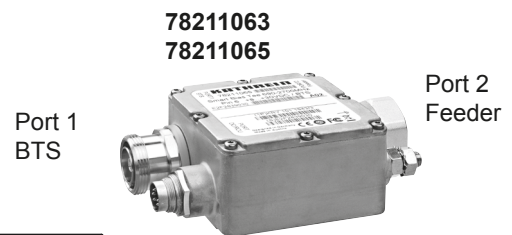
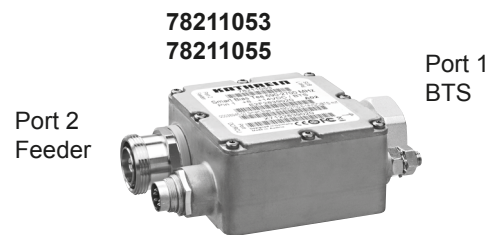
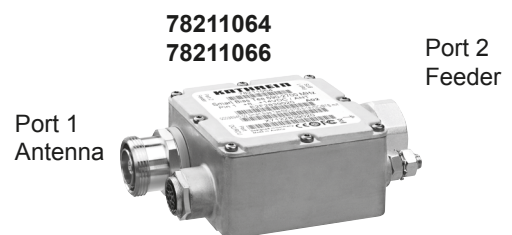
- **78211053, 78211063:**
+8 ... 14 VDC (DC on pin1) version for use near the BTS, in order to feed-in DC voltage and RCU control signals into a feeder cable (**only required for TMAs and RCUs with power supply below 15 VDC**)
- **78211054, 78211064:**
+8 ... 14 VDC (DC on pin1) version for use near the antenna, in order to control an RCU (only required if **no TMA** is in use)
- **78211055, 78211065:**
+8 ... 32 VDC (DC on pin6) version for use near the BTS, in order to feed-in DC voltage and RCU control signals into a feeder cable
- **78211056, 78211066:**
+8 ... 32 VDC (DC on pin6) version for use near the antenna, in order to control an RCU (only required if **no TMA** is in use)

Abbreviations:

RCU	=	Remote Control Unit for remote electrical control of antenna tilt
BTS	=	Base Transceiver Station
TMA	=	Tower Mounted Amplifier
AISG	=	Antenna Interface Standards Group
Port 1	=	Port for BTS or for Antenna
Port 2	=	Port for Feeder Cable
Port DC/RCU	=	Port for DC voltage and Remote Control Unit signals

Pin connections:

	782 11053	782 11054	782 11055	782 11056
	782 11063	782 11064	782 11065	782 11066
8-pin connector (IEC 60130-9)				
Pin 1	+8...+14 VDC in	+8...+14 VDC out	Not connected	Not connected
Pin 2	Not connected	Not connected	Not connected	Not connected
Pin 3	RS485-B	RS485-B	RS485-B	RS485-B
Pin 4	Not connected	Not connected	Not connected	Not connected
Pin 5	RS485-A	RS485-A	RS485-A	RS485-A
Pin 6	Not connected	Not connected	+8...+32 VDC in	+8...+32 VDC out
Pin 7	DC return (grounded)	DC return (grounded)	DC return (grounded)	DC return (grounded)
Pin 8	Not connected	Not connected	Not connected	Not connected



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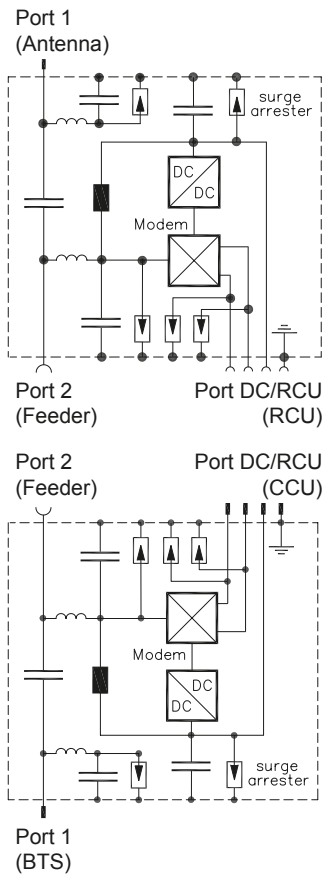
Technical Data

Type No.	78211053 +8 ... +14 VDC / BTS	78211054 +8 ... +14 VDC / Antenna	78211055 +8 ... +32 VDC / BTS	78211056 +8 ... +32 VDC / Antenna
Port 1: 7-16 male	BTS	Antenna	BTS	Antenna
Port 2: 7-16 female	Feeder	Feeder	Feeder	Feeder
Type No.	78211063 +8 ... +14 VDC / BTS	78211064 +8 ... +14 VDC / Antenna	78211065 +8 ... +32 VDC / BTS	78211066 +8 ... +32 VDC / Antenna
Port 1: 7-16 female	BTS	Antenna	BTS	Antenna
Port 2: 7-16 male	Feeder	Feeder	Feeder	Feeder
Frequency range	690 - 2700 MHz			
Insertion loss Port 1 ↔ Port 2	< 0.1 dB (690 - 2700 MHz)			
Isolation for DC and RCU signals Port 1 ↔ Port 2 Port 1 ↔ Port DC/RCU Port 2 ↔ Port DC/RCU	> 70 dB > 70 dB > 0 dB			
VSWR	< 1.1 (690 - 2700 MHz)			
Impedance	50 Ω			
Input power Port 1 or Port 2 Port DC/RCU	< 750 W (690 - 2700 MHz) < 2.5 A / +8 ... +14 VDC		< 750 W (690 - 2700 MHz) < 2.5 A / +8 ... +32 VDC	
Power consumption	Typically 0.6 W			
Lightning protection	3 kA, 10/350 μs pulse			
Intermodulation products	< – 160 dBc (3 rd order; with 2 x 20 W)			
Temperature range	–40 ... +60 °C			
Modem carrier frequency	2.176 MHz			
Application	Indoor or outdoor (IP 66)			
Weight	0.8 kg			
Packing size (w x h x d)	167 x 102 x 86 mm			
Dimensions (w x h x d)	81 x 81 x 46 mm (without connectors)			

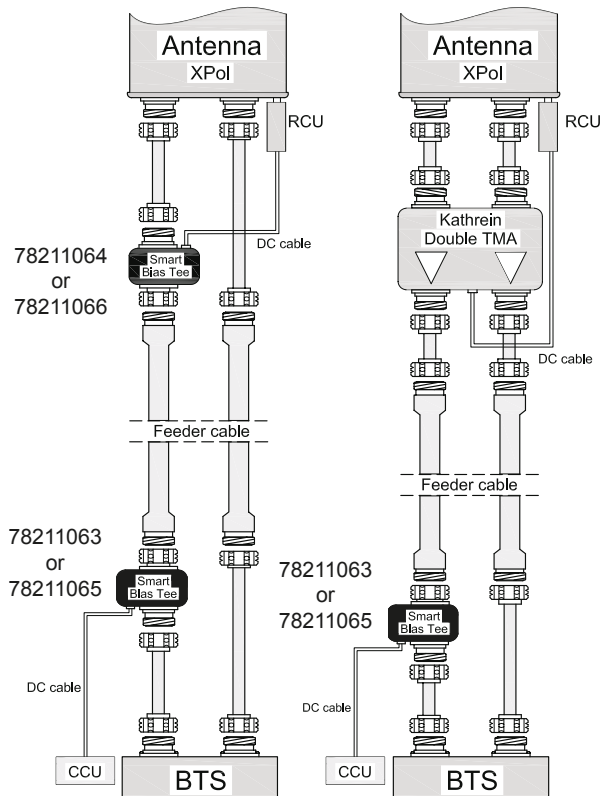
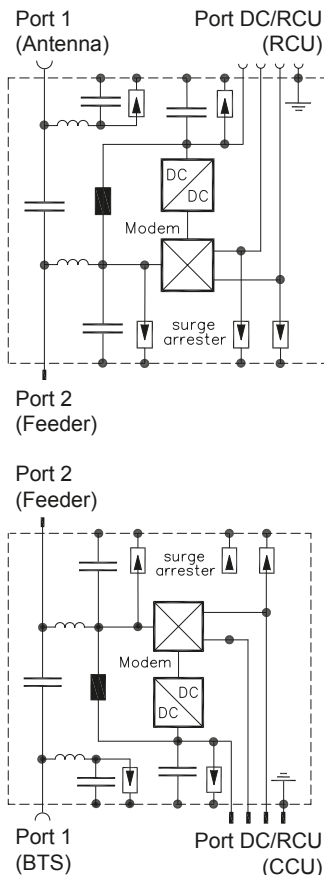
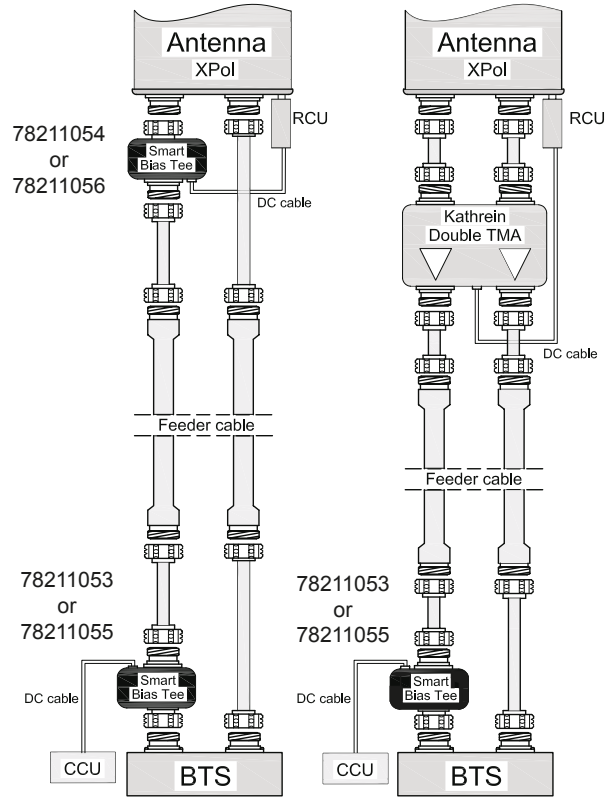
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Block diagrams:



Application Examples:



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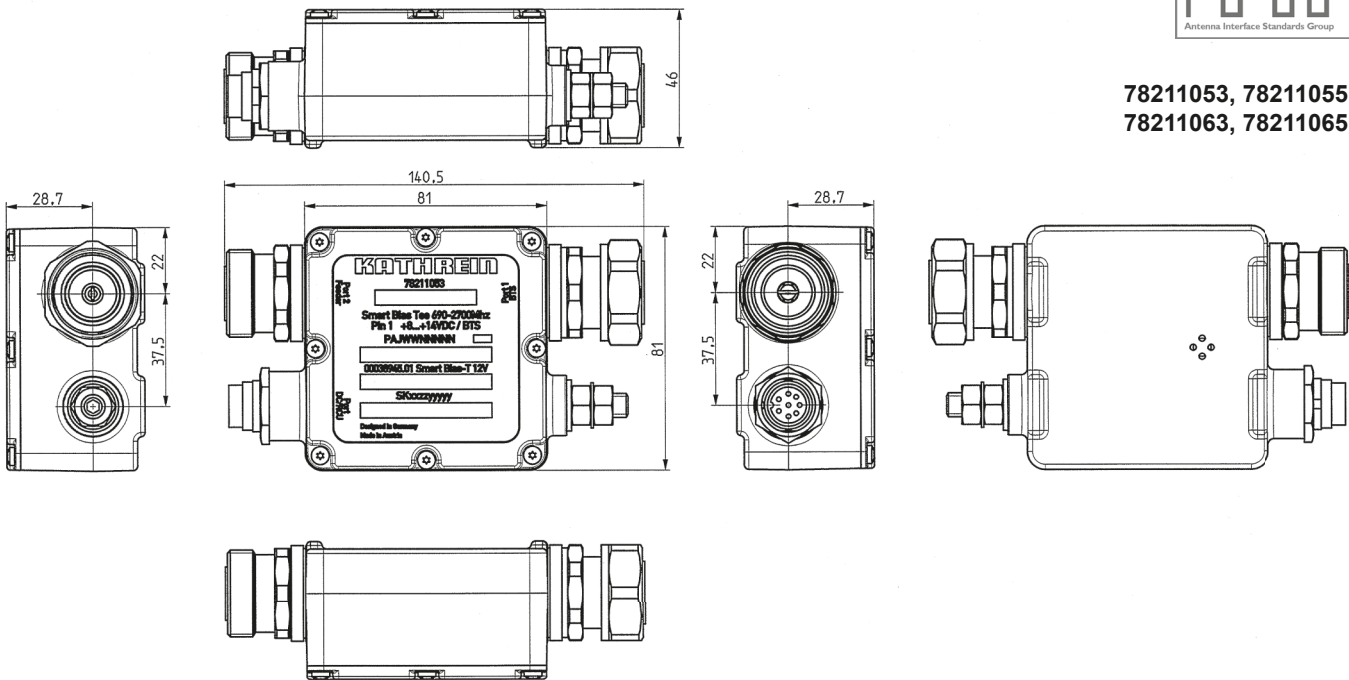
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Smart Bias Tee 690 – 2700 MHz

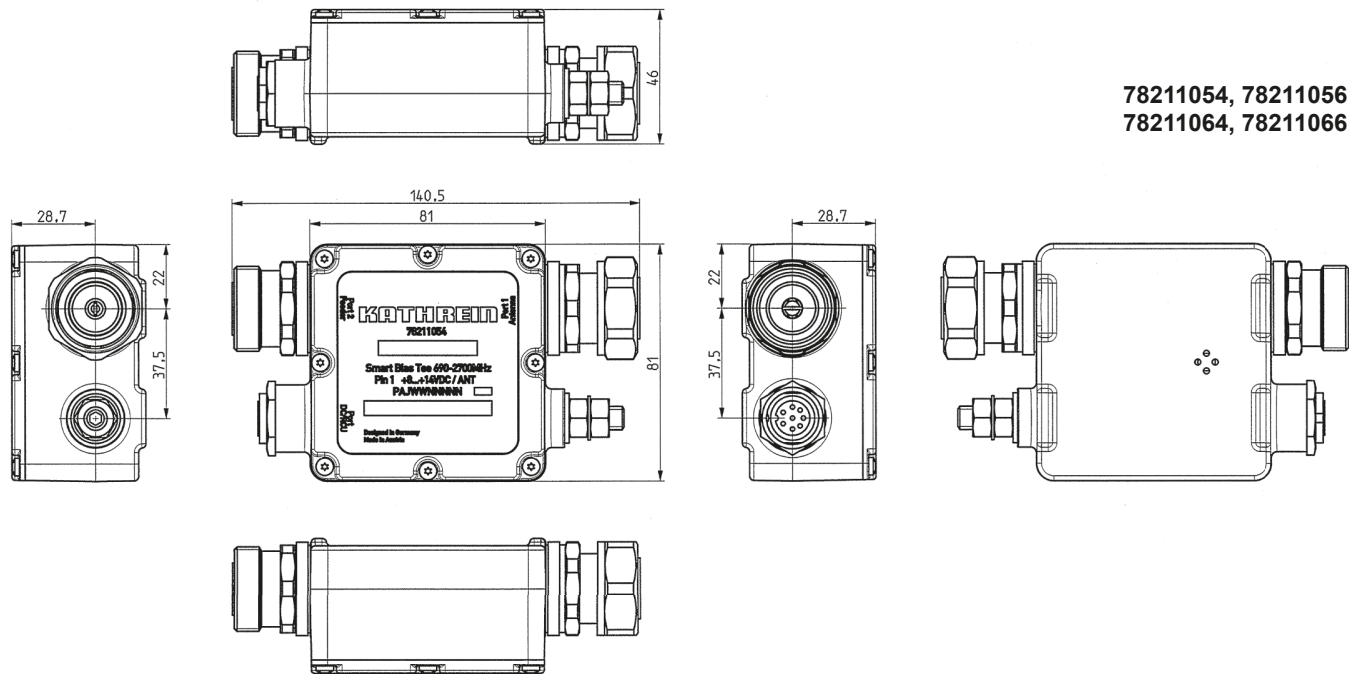
Dimensional drawings:



78211053, 78211055
78211063, 78211065



78211054, 78211056
78211064, 78211066



Please note:

The Smart Bias Tees are designed to operate under the environmental conditions as described in ETS 300 019-1-4 class 4.1 E and have passed environmental tests as recommended in ETS 300 019-2-4.

The installation team must be properly qualified and also be familiar with the relevant national safety regulations.

The coupling torque at 7-16 connectors is 25 – 30 Nm!

Hold the smart bias tee housing securely while tightening the 7-16 locking nut.

The tightening torque for fixing the AISG connector must be 0.5 – 1.0 Nm ('hand-tightened').