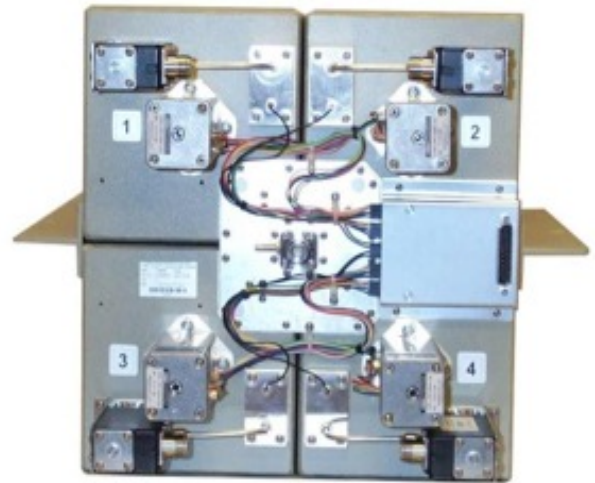
**390-470MHz****850-870MHz**

1.1 TC411 4-WAY TX COMBINER

Description

The TC411 is a 4-way TX cavity combiner module used in the BS411 and BS414 Base Stations to combine the individual TX outputs to a single cable. Up to 4 modules can be connected together with junction cables to allow a total of 16 carriers to be combined to a single antenna.

The TC411 module consists of 4 motor-tuned $\frac{1}{4}$ or $\frac{3}{4}$ lambda TEM resonators internally connected together on the output side. The inputs are provided with dual circulators with high-power loads, which are able to dissipate the reflected power when the TX antenna is missing or the cavity is tuned to a frequency not matching the transmitter. An RF detector is provided on the high-power load with its output connected to the TR412 Transceiver unit used for manual adjustment and alarm generation.

The TC411 is equipped with the TCC411 TC Combiner Controller, which controls the motors. The TCC411 has a built-in micro-controller and is connected to the TR cassette with a multi-cable. The actual TR (carrier unit) controls the combiner frequency through a dedicated serial connection. The micro-controller contains calibration tables to convert from the received channel number to the physical tuning position. At power-up, the micro-controller initialises the tuning position against a mechanical end stop. The TCC411 is connected to the O&M UART bus and can be reached with O&M commands from the BSC.



Damm Cellular Systems A/S, Denmark

Doc. No.
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Rev.
3.03

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TC411 4-way TX Combiner

Specification

Parameter	Value
Frequency:	See ordering specification
Input power	60W max.
Insertion loss 4-channel	3.0dB typ.
Insertion loss 8-channel	3.2dB typ.
Reverse isolation	50dB min.
Isolation between input ports	60dB min.
Selectivity in RX frequency band	30dB min.
Input return loss	18dB min.
Output return loss	12dB min.
Frequency spacing	175kHz ~ 300-400 MHz band 250kHz ~ 800 MHz band
Connectors:	
Input connectors (x4)	N female
Output connector	N female
System connector	25-pol. sub-D male
Supply voltage	+14V DC
Supply current normal (peak)	0.05A (1.0A)
Physical:	
Height	7U
Weight	13.6kg

Ordering

Item number	Description
104601	TC411 4-way TX combiner 390-400MHz
104602	TC411 4-way TX combiner 420-430MHz
104603	TC411 4-way TX combiner 460-470MHz
104605	TC411 4-way TX combiner 360-370MHz
104606	TC411 4-way TX combiner 336-346MHz
104608	TC411 4-way TX combiner 850-870MHz