Teko Telecom S.p.A. a Socio Unico
Via Meucci, 24/A
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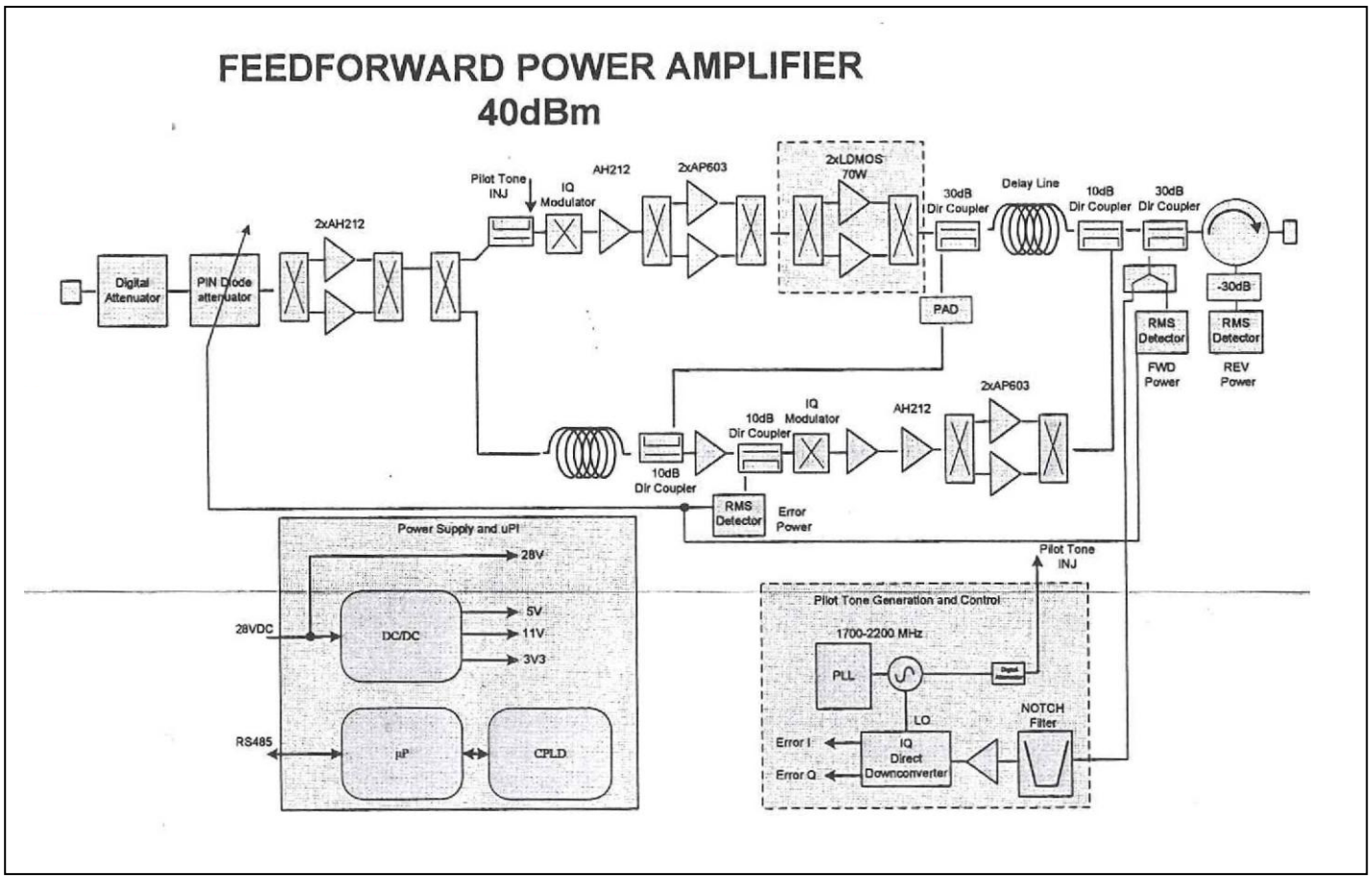
GENERAL DESCRIPTION

The amplifier is designed according to the feedforward technique, with the same basic pattern for all the standards (EGSM, AMPS, SMR, DCS, PCS, UMTS).
It is made up of two printed circuit boards (PCB), one for the power stage, housing the two LDMOS transistors in balanced configuration, and the other far the driver stages, control and communications circuits and power supply also.
The main PCB is cut in the middle to provide room for the power stage.
The main PCB is unique for all the standards, made up of FR4 substrate, the differences are on the value and kind of several components. The PCBs of the power section are however of three
different kinds: one for EGSM, AMPS, SMR, realized on AR1000 substrate, one for DCS and PCS, and one for UMTS, both an DICLAD material.



P.IVA/VAT IT 02186561201 – Reg. Imprese di Bologna n. 02186561201
Capitale sociale Euro 660.000,00 i.v. – Soggetta a direzione e coordinamento di MetaSystem Group S.p.A.
Società con Sistema di Gestione certificato secondo le norme ISO 9001:2008 ed ISO 14001:2004

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The amplifier module is used in the **Service Front End** 19/2U subrack, that hosts the duplexer, to be connected to the Service Antenna to separate/combine Downlink and Uplink paths.
In Downlink the signals from the Donor Front-End Modules are combined and amplified by the Power Amplifier; in Uplink, the RF signal from the Service antenna is amplified by a Low Noise Amplifier (LNA) and split to feed up to 4 Donor Front End Modules.

The same amplifier is used in **Very High Power Remote Units**: the modular structure of these equipment can house from 1 to 3 VHPA modules, having as result a single, double or three bands remote unit.
In down-link, the optical signal coming from Master Unit is converted into RF signal by the Fiber Optic Receiver module. RF signal is then amplified by Very High Power amplifier(s), filtered and transmitted through an antenna or a passive distribution system.
In up-link, RF signal is amplified by Low-Noise Amplifier, filtered and then converted into an optical signal by the Fiber Optic Transmitter module.

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TECHNICAL DESCRIPTION

VHPA MODULES

Teko Telecom CODE	MVHPA 0001S7	MVHPA 0001AMPS	MVHPA 0001S8	MVHPA 0001S9	MVHPA 0001PCS	MVHPA 0001AWS
Downlink RF Output Power GSM/TDMA (*)	43dBm (1 carrier)				43dBm (1 carrier)	
	40 dBm (2 carriers)				40 dBm (2 carriers)	
	31 dBm (4 carriers)				31 dBm (4 carriers)	
	34 dBm (8 carriers)				34 dBm (8 carriers)	
Downlink Output Power CDMA (*) WCDMA / L TE (*)	43dBm (1 carrier)				43dBm (1 carrier)	
	40 dBm (2 carriers)				40 dBm (2 carriers)	
	31 dBm (4 carriers)				31 dBm (4 carriers)	
	34 dBm (8 carriers)				34 dBm (8 carriers)	
Downlink Output Power iDEN (*)			43dBm (1 carrier)			
			40 dBm (2 carriers)			
			37 dBm (4 carriers)			
			34 dBm (8 carriers)			
RF output connector	SMA (f)					
Cooling	none					
Power supply	28 ÷ 30 Vdc					
Power consumption	300 W					
Operating temperature range	-5°C up to +55°C (+23°F up to + 131°F)					
Weight	~ 1,5 kg (3,3 lb)					
Dimensions	132 * 271 * 30mm					

OPERATING FREQUENCY BANDS SUMMARY TABLE

TEKO TELECOM CODE	**BAND**	**UPLINK OPERATING FREQUENCY BAND**	**DOWNLINK OPERATING FREQUENCY BAND**	**MODULATION**
MVHPA0001S7	SMR700	698 ÷ 716MHz + 776 ÷ 787MHz	728 ÷ 746 MHz + 746 ÷ 757 MHz	LTE (QAM, QPSK)
MVHPA0001S8	SMR800	806 ÷ 824 MHz	851 ÷ 869 MHz	iDEN
MVHPA0001AMPS	AMPS	824 ÷ 849 MHz	869 ÷ 894 MHz	GSM-EDGE-TDMA-CDMA-WCDMA-LTE (QAM, QPSK)
MVHPA0001S9	SMR900	896 ÷ 902 MHz	935 ÷ 941 MHz	iDEN
MVHPA0001PCS	PCS	1850 ÷ 1915 MHz	1930 ÷ 1995 MHz	GSM-EDGE-TDMA-CDMA-WCDMA-LTE (QAM, QPSK)
MVHPA0001AWS	AWS	1710 ÷ 1755 MHz	2110 ÷ 2155 MHz	CDMA-WCDMA-LTE (QAM, QPSK)

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