

PD685

DMR handheld radio



The flagship PD6 series

The handheld radio PD685 ideal companion for the move to digital radio. As a member of Hytera's PD6 series, the PD685 offers a light-weight metal housing and supports both digital and analog radio. Thanks to its full keypad, three programmable keys and its bright LCD display, the PD685 can be operated easily and without complications.

Small, lightweight and narrow

The radios of the PD6 series are only 27 mm deep, making them particularly compact. The housings are trimmed in a high-quality aluminum frame and are comfortable to carry for long periods with a weight of only 310 g (PD685).

Long battery service life

With the supplied 1500 mAh lithium-ion battery, the handheld radio PD685 has an operating period of at least 16 hours in digital mode. With the optionally available 2000-mAh battery, it will even be 20 hours.

Technical Data PD685

General data	
Frequency range	VHF: 136 – 174 MHz UHF: 400 – 470 MHz 400 – 527 MHz
Supported operating modes	<ul style="list-style-type: none"> ▪ DMR Tier II (ETSI TS 102 361-1/2/3) ▪ Simulcast ▪ XPT Digital Trunking ▪ DMR Tier III (ETSI TS 102 361-1/2/3/4) ▪ Analog
Number of channels	1024
Number of zones	64
Channel spacing	12.5 / 20 / 25 kHz (analog) 12.5 kHz (digital)
Operating voltage	7.4 V (nominal)
Batteries available	1500 mAh (lithium-ion battery) 2000 mAh (lithium-ion battery)
Battery service life (5-5-90 duty cycle, high transmitting power, standard battery)	approx. 11 hours (analog) approx. 16 hours (analog) (with 1500 mAh) approx. 22 hours (digital) (with 2000 mAh)
Frequency stability	± 0.5 ppm
Antenna impedance	50 Ω
Dimensions (H x W x D, without antenna)	119 x 54 x 27 mm
Weight (with antenna and standard battery)	approx. 310 g
Programmable keys	3
LCD display	160 x 128 pixels, 65,536 colors, 1,8 inches, 4 rows

Environmental conditions	
Operating temperature range	- 20 °C to + 60 °C
Storage temperature range	- 40 °C to + 85 °C
ESD	IEC 61000-4-2 (Level 4), ± 8 kV (contact), ± 15 kV (air)
Protection against dust and moisture	IP67
Shock and vibration resistance	MIL-STD-810 C / D / E / F / G
Relative humidity	MIL-STD-810 C / D / E / F / G

GPS (optional)	
Time to first fix (TTFF)	1 Minute (cold start) < 10 seconds (warm start)
Horizontal accuracy	< 10 meter

Transmitter	
Transmitting power	VHF: 1 / 5 W UHF: 1 / 4 W
Modulation	11 K0F3E at 12.5 kHz 14 K0F3E at 20 kHz 16 K0F3E at 25 kHz
4FSK digital modulation	12.5 kHz (data only): 7K60FXD 12.5 kHz (data and voice): 7K60FXW
Interfering signals and harmonics	- 36 dBm (< 1 GHz) - 30 dBm (> 1 GHz)
Modulation limiting	±2.5 kHz at 12.5 kHz ±4.0 kHz at 20 kHz ±5.0 kHz at 25 kHz
Noise cancellation	40 dB at 12.5 kHz 43 dB at 20 kHz 45 dB at 25 kHz
Adjacent channel selectivity	60 dB at 12.5 kHz 70 dB at 20 / 25 kHz
Audio response (TIA-603D)	+ 1 dB to - 3 dB
Nominal audio distortion	≤ 3 %
Digital vocoder type	AMBE +2™

Receiver	
Sensitivity (analog)	0.22 µV (typical) (12 dB SINAD) 0.3 µV (12 dB SINAD) 0.4 µV (20 dB SINAD)
Sensitivity (digital)	0.22 µV / BER 5 %
Adjacent channel selectivity TIA-603	60 dB at 12.5 kHz / 70 dB at 20 and 25 kHz
ETSI	60 dB at 12.5 kHz / 70 dB at 20 and 25 kHz
Intermodulation TIA-603	70 dB at 12.5 / 20 / 25 kHz
ETSI	65 dB at 12.5 / 20 / 25 kHz
Spurious response rejection TIA-603	70 dB at 12.5 / 20 / 25 kHz
ETSI	70 dB at 12.5 / 20 / 25 kHz
Signal-noise ratio (S/N)	40 dB at 12.5 kHz 43 dB at 20 kHz 45 dB at 25 kHz
Nominal audio power output	0.5 W
Nominal audio distortion	≤ 3 %
Audio response (TIA-603D)	+ 1 dB to - 3 dB
Conducted spurious emission	< - 57 dBm

All technical information was determined at the factory and in accordance with the corresponding standards. Subject to change on the basis of continuous development.



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SGS Certificate DE11/81829313

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