



Caltta[®]

DMR SYSTEM





Caltta, a subsidiary of ZTE, the telecommunications and information technology giant was founded in 1985. The department dealing with two-way radio systems, which was launched in 2003, currently employs more than 700 people, holds more than 300 patents and is continuously developing a wide range of radio communication solutions.

The company provides comprehensive solutions for a wide range of industrial equipment.

- ▶ Proprietary transceivers and repeater systems with various functions
- ▶ Proprietary software for DMR transceiver systems (e.g. dispatcher)
- ▶ Many years of engineering experience backed by ZTE
- ▶ Operational tests that meet the most stringent requirements of the industrial environment

Caltta has a diversified communication solution portfolio with products based on SDR and NFV technologies to meet any customer need. Their VHF/UHF and Internet-based transceiver systems are also characterised by innovation and high reliability. Radio systems supplied by Caltta have nearly 3 million users in 50 countries around the world.

Caltta's DMR (Digital Mobile Radio) system, is based on the globally recognised ETSI technology, which is the most widely used such standard by professional users.

The advantages of the Caltta DMR digital transceiver system:

- ▶ **COMPETENCY:** reliable communication over a wide area
- ▶ **PRICE/VALUE RATIO:** one of the most competitive complex two-way radio systems on the market
- ▶ **DEMO PROGRAM:** transceivers can be tested by the customer free of charge before purchase
- ▶ **TRAINING:** in-person and on-site upon delivery of the system
- ▶ **APPLICATIONS:** integration with Caltta's dispatching system, management interface and various functions
- ▶ **SUPPORT:** site-survey, full support during the frequency licensing procedure, system installation, service centre and customer service in Hungary run by Anico Kft.

The Caltta DMR system consists of transceivers, repeaters and the dispatch console. With its extended geographic coverage, two time slots and analogue-digital compatibility, the system supports rich voice and data services that meet all the different needs of the customers.



Caltta PH600L

DMR DIGITAL HANDHELD RADIO

Rugged and Simple.
For the Everyday User,
Who Needs to Stay Connected.

▶ DIGITAL DMR, TIER II AND ANALOG COMPATIBLE

▶ NON-DISPLAY DESIGN

▶ LOUD AND CLEAR AUDIO

▶ HIGH CAPACITY 2600 MAH BATTERY

▶ 2-SLOT DMO

▶ MANDOWN FUNCTION

▶ IP68 RESISTANCE



Caltta PH600L

DMR PORTABLE RADIO

Supports DMR Tier2

DMR Tier II refers to radio equipment that can be programmed anywhere within the DMR (digital) frequency range, but generally operates in the VHF and/or UHF bands. DMR Tier II equipment must be licensed by the frequency licensing authority of the country in which it is used to avoid range problems and interference with other users. DMR Tier II equipment, including Caltta's transceivers, can use linked repeaters in order to extend the range of the system, allowing the deployment of a radio infrastructure that meets any geographical requirement.

Support 2 slots in DMO and roaming

PH600 can support 2 slots in DMO mode that double the capacity of communication by creating two voice channels on one single frequency.

Loud and Clear Sound

With the carefully optimized audio design, combined with the excellent audio encoder, it provides loud and clear sound.

Large Capacity Battery

With the 2600mAh battery and optimized power consumption in DMR mode, battery life is long enough for professional communication.

Mandown emergency function

When the Mandown emergency function is activated, the tilt switch in the radio automatically sends an alarm signal when the radio is tilted on its side for more than a preset period of time, which can be configured when the radio is delivered.

Higher Safety

The DMR standard provides higher safety and reliability for voice and data than analogue standard.

Reliable Quality

Transceivers meet the IP68 standard for dust and water resistance making it suitable for outdoor work. Shock, vibration, solar radiation and other indexes meet the Mil-STD-810 G. It qualifies for all kinds of harsh working environments.

SPECIFICATIONS

Digital Protocol:	ETSI TS 102 361-1,-2,-3
Frequency:	UHF1: 400-470MHz, VHF: 136~174MHz
Channel Capacity:	32
Zone Capacity:	2
Channel Spacing:	12.5kHz/20KHz/25KHz
Frequency Stability:	±0.5ppm
Operating Voltage:	7.4V
Battery Capacity:	2600mAh
Battery Life(5:5:90):	Analog: 18 hours, Digital: 22hours
Size (H × W × D):	100×54.5×37.5mm (without antenna)
Weight:	About 270g (With Antenna and Battery)
Vocoder:	AMBE++
Man down:	Support
Vibration:	Support
IP protection:	IP68
Encryption:	Support SW and HW



Caltta PR900

DMR DIGITAL REPEATER

Slim and Compact
High Performance and Efficiency
Easy for Operation and Configuration

▶ COMPACT 1U DESIGN

▶ SMART DIGITAL-ANALOG AUTO DETECTION

▶ CONTROL PANEL WITH 2.0" LCD SCREEN AND
MULTIPLE FUNCTION BUTTONS

▶ IP CONNECTION, MULTIPLE NETWORKING SOLUTIONS
FOR VARIOUS SCENARIOS

▶ HIGHER SECURITY AND RELIABILITY

▶ DISPATCHER CONNECTIVITY:
SUPPORT AIS PROTOCOL TO INTERWORK
WITH THE THIRD-PARTY VENDORS' DISPATCHER

▶ ACCESSORY EXPANSION FACILITY



Caltta PR900

DMR DIGITAL REPEATER

Digital Voice with Better Audio Quality

Digital voice processing reduces the impact of environmental noise on voice quality, allowing users to make clearer calls, and can be used for complicated work scenarios with constant changes.

High Spectrum and Power Efficiency

With DMR two-slot TDMA technologies, PR900 allows a single carrier with a bandwidth of 12.5 kHz to support two independent calls, with each time slot occupying a bandwidth of 6.25 kHz, which reduces transmission time in half, and saves battery power consumption by 40%, effectively prolonging the standby time of DMR radios.

High Security and Reliability

Professional encryption algorithm as well as service protection mechanisms such as authentication and remote stun, help to ensure the data security and reliability of the DMR system and end user's life safety to the utmost extent.

Standard DMR Products Embrace Interconnection

Caltta is a member of DMR Association, and our PR900 repeater is fully compliant with DMR standard, which can interconnect with any other DMR system and radios that comply with DMR standard.

Analog Compatible Design

Smart digital-analog automatic detection mechanism ensures legacy analog radios can still be used under our PR900, to guarantee customer's investment to the greatest extent.

FEATURES

Analog:

Repeat

CTCSS/CDCSS

TOT:

Time out timer

Pre-emphasis:

In analog mode, the pre-emphasis and de-emphasis feature can be enabled. When it is enabled, the analog channel supports pre-emphasis on the transmitter and de-emphasis on the receiver to improve audio clarity.

Digital features:

Repeater mode

TOT:

Time out timer

AIS protocol:

This universal protocol allows total control of repeater by third side apk developers via backside connector of repeater. For example, some dispatcher's manufacturers are doing their software adaptation for our PR900 using AIS.

Access management

IP multi-sites:

You can connect many repeaters in different locations in one system via IP.

Simulcast:

(Tier II) Simulcast system is mainly used in application scenarios where users are widely distributed, and multiple repeaters are required to form the network coverage, but the number of available frequencies for customers is limited. The system comprises multiple IP interconnected repeaters, but all repeaters in the system work at the same transmit and receive frequency, thus saving the frequency spectrum resource while providing wide coverage.

Active Link:

Wide Coverage with Wireless Link. Wide coverage solution based on back-to-back wireless link. Suitable for connecting multiple separate fixed facilities in mountainous area, forest and river where there is no IP link. Radios can roam and communicate seamlessly across sites.

Technical Specifications

General	
Digital Protocol:	ETSI TS 102 361-1,-2,-3
Frequency:	UHF1: 400-470MHz, VHF: 136-174MHz
Channel Capacity:	1024
Channel Spacing:	12.5KHz/25KHz
Max Duty Cycle:	100%.
Operating Voltage:	AC100 - 240 V @ 50 / 60 Hz DC13.6 V ±15%.
Backup Battery:	Support
Size (W × H × D):	436 mm × 44,5 mm × 366,4 mm
Weight:	8,5 Kg
Frequency Stability:	+/- 0,5 ppm
Screen:	2.0" TFT LCD, 320 × 240
Receiver	
Analog Sensitivity:	0.22 μV (12 dB SINAD)
Digital Sensitivity:	0.22 μV (5% BER)
Intermodulation:	75 dB (TIA603D), 70 dB (ETSI)
Adjacent Channel Selectivity:	65dB@12.5 KHz/70dB@25 KHz (TIA-603D); 65dB@12.5 KHz/70dB@25 KHz (ETSI)
Spurious Response Rejection:	80 dB (TIA603D); 80 dB (ETSI)
Blocking or Desensitization:	90 dB (TIA603D); 90 dB (ETSI)
FM Hum and Noise:	-40 dB@12.5KHz / -45 dB@25KHz
Audio Distortion:	≤ 3% (Typical)
Audio Response:	+ 1dB ~ - 3 dB
Conducted Spurious Emission:	- 57 dBm
Transmitter	
Low Power Output:	1W
High Power Output:	50W
FM Modulation:	25KHz: 16K0F3E
4FSK Digital Modulation:	12.5KHz Data: 7K60FXD; 12.5KHz Voice & Data: 07K60FXE
Conducted/Radiated Spurious Emission:	-36dBm @≤1 GHz , -30dBm@>1 GHz
Max deviation:	+,-2,5KHz @12,5KHz / +,-5,0KHz @25KHz
Adjacent Channel Power:	-60dB@12.5KHz , -70dB@25KHz
FM Hum and Noise:	-40dB@12.5KHz , - 45dB@25KHz
Environmental	
Operating Temperature:	-30 °C ~ + 60 °C
Storage Temperature:	-40 °C ~ + 85 °C

Single-frequency Repeater Mode:

Repeater receives audio on slot 1 of a frequency and transmits it on same frequency but in slot 2. So users can talk directly in DMO mode if distance is close and via repeater if distance is far. Just 1 single frequency is used.

Enhanced Conventional System (ECS):

Cost-effective Coverage with Dynamic Channel Allocation. Up to 8 repeaters stacked as one site with 16 channels as one site, up to 32 sites can be supported over IP link. No network controller required, suitable for high traffic with multiple facilities. Load balancing to avoid traffic congestion or single repeater failure.

Others

Write & read password

RF power 1-50W

Manage repeater via IP

Upgrade via IP

LCD display status and alarm information

Email receiving alert notification

Remote monitoring/managing software for remote access to the repeaters through internet



The logo for Anico Hamshop, featuring a stylized '@' symbol followed by the word 'anico' in a bold, italicized, lowercase sans-serif font.

@anico

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