SURYA TELECOM

Agile DMR Series Products Introduction

Agile complying with DMR open standard, brings you versatile DMR series products, including portable radio, mobile radio, repeater, multi-site IP connection, simulcast system and trunking system.
Agile responds to your demands for smoother communication and higher management efficiency with the most valuable solution of leading digital technologies, innovative user-oriented product design, and complete product portfolio.

DMR
DIGITAL MOBILE RADIO ASSOCIATION

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An ISO 9001:2008 certified Company

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Digital Value is Here

Today, the migration from analogueue to digital is transforming the industry of professional mobile communications.

With edges that analogue system has no way to achieve, digital technologies enable you to communicate smoothly, respond instantly, and operate efficiently with superior performance and versatile applications.

A complete and scalable digital communication solution is what you expect. Who can deliver the best one?

Agile a leading provider of PMR terminal and system, keeps turning mature and advanced technologies into solutions that you can count on for problem solving. Attentively and rapidly responding to customer demands, delivers customized solutions to facilitate your digitization and higher organizational efficiency with its complete DMR portfolio fully compliant to DMR open standard: portable radio, mobile radio, repeater, multi-site IP connection, simulcast system and trunking system*.

To achieve more with Agile, digital value is right here for you.

Agile

* More products and solutions to be launched soon. For more information
  please visit our website or contact our local sales representatives.

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Agile DMR Advantages

Digital Mobile Radio (DMR) is an open digital radio standard Featured with rich functions, such as voice & data transmission, and various applications in conventional and trunking mode, DMR has received global recognitions.
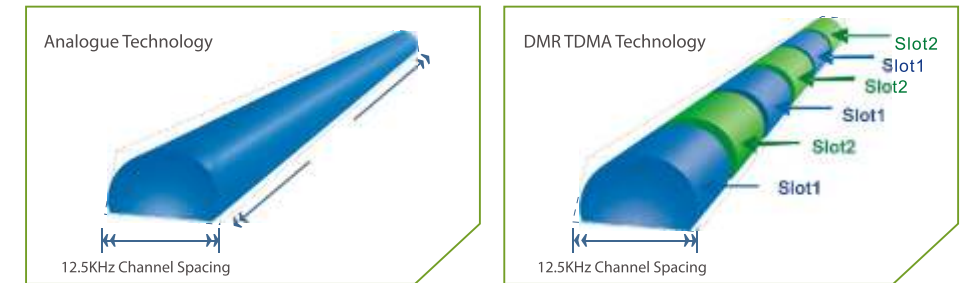
All our DMR products are fully compliant to DMR requirements and feature innovative applications.

Advanced Digital Technology ››

❶ Higher Spectrum Efficiency

Benefiting from the TDMA technology, our DMR products allow twice the channels based on the same bandwidth. This is a big help to relieve the stress of increasing shortage in spectrum resource.
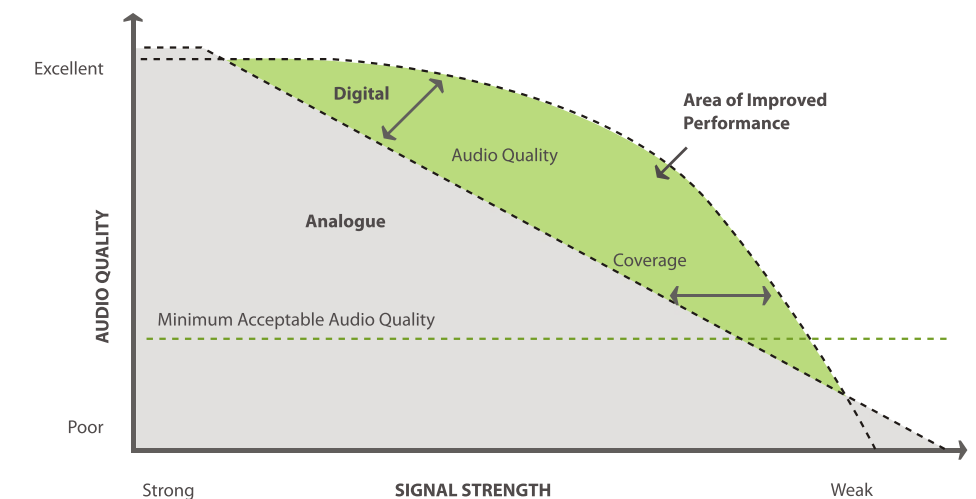
Analogue Technology	DMR TDMA Technology
12.5KHz Channel Spacing	12.5KHz Channel Spacing

Slot2
Slot1
Slot2
Slot1
Slot2
Slot1

❷ Compatible with Analogue Mode

Our DMR products can operate in either analogue or digital mode. It is compatible with the prevalent analogue system, ensuring a smooth analogue-to-digital transition.

❸ Superior Audio Quality

With the combined application of narrowband codec and digital error-correction technologies, our DMR products ensure you superior audio quality even in noisy environments or at the edge of the coverage area.

Excellent

Digital

Area of Improved Performance

Audio Quality

Analogue

Coverage

AUDIO QUALITY

Minimum Acceptable Audio Quality

Poor

Strong   SIGNAL STRENGTH   Weak

2

❹ Affordable Networking

Another advantage of the DMR TDMA approach is that you get two channels with one repeater, one antenna, and a simple repeater and duplexer. Compared with FDMA solutions, two-slot TDMA allows you to achieve 6.25 kHz efficiency while minimizing investments on network infrastructure.

❺ Secure Communication

Voice signal is easy to be monitored on analogueue channel. But now with DMR technology, your communication can be secured by either signaling or ID (up to 16776415 IDs); what's more, our DMR products are equipped with a multi-level privacy mechanism comprising analogue scrambler*, digital software and hardware encryption (encryption algorithm up to 256-bit), ensuring confidentiality of your communication.
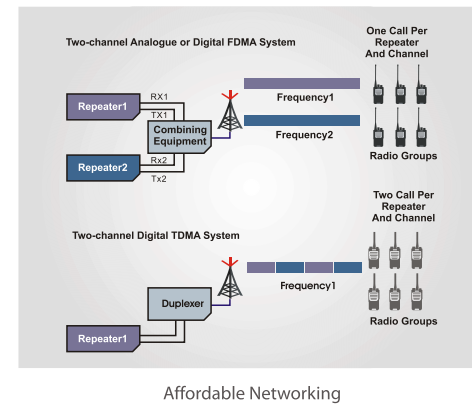
❻ Durable Battery

Compared with analogue and FDMA technology, TDMA can increase the battery's duty time by about 40%.

❼ Rich Data Services

In addition to conventional communication services, our DMR products are powered by rich data services such as Message, GPS and Telemetry.

❽ Versatile Voice Calls

The DMR intelligent signaling can realize various voice calls, including PTT ID, Private Call, Group Call, All Call, Emergency Call and Remote Monitor.

Two-channel Analogue or Digital FDMA System

One Call Per Repeater And Channel

Repeater1
RX1
TX1
Combining Equipment
Frequency1
Frequency2
Radio Groups
Repeater2
Rx2
Tx2

Two-channel Digital TDMA System

Two Call Per Repeater And Channel

Duplexer
Frequency1
Radio Groups
Repeater1

Affordable Networking

📻 Innovative Applications ››

❶ Dual-slot Pseudo Trunking

With this unique feature, the free slot can be dynamically allocated to a member who needs to communicate, enhancing frequency efficiency.

❷ Advanced Encryption

Our DMR products provide the 128-bit AES & ARCFOUR (ARC4) encryption with enhanced key management to secure your communication.

Advanced Encryption

❸ Multi-site IP Connection

The scattered repeaters of different frequency bands can be connected via IP to create a wide communication network.

Multi-site IP Connection

❹ Analog/Digital Telephone Interconnect (via DTMF signaling)

The DMR base station supports simplex voice communications between radio and telephone users. It allows a radio user to make a telephone call; or a telephone user to make either a Group or Private call to radio users. This feature utilizes the Commercial Off The Shelf (COTS) Analog Phone Patch boxes and a Plain Old Telephone Service (POTS) line to connect the Repeater to the Corporate Office Phone System (PBX) or Public Switched Telephone Network (PSTN).

Trunking System

* Indicates functions compatible with Agile analogue two-way radios.

📻 Ergonomic Design ››

❶ Large-size colour Display

The large-size TFT LCD display

❷ User-friendly Menu

The menu gives you quick access to all services and functions. All our DMR products employ the same UI style so that you can learn to operate different models easily.

❸ Antenna Design

The radio antenna and GPS antenna are integrated to ensure convenience operation and better performance.

❹ Separated Knobs

Separated by the antenna, the two knobs of portable radio stand apart from each other, which reduces misoperation when with gloves on or under dim light.

❺ Ergonomic Key

The smart body incorporates big keys for ease of use and precise operation.

❻ 2-in-1 Knob

The 2-in-1 large knob allows easy channel selection and volume control with one knob operation.

Large-size colour Display & User-friendly Menu

Innovative antenna which is integrated to ensure better performance.
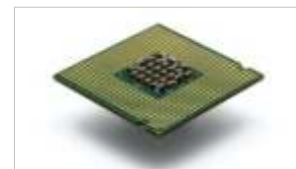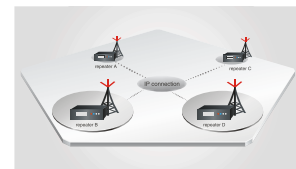
Distinctive Knob Design

Ergonomic Key

📻 Prominent Scalability ››

❶ Further Development Port

Our DMR products reserve port for you or any third party to further develop desired functions such as GPS, Call Control and Telemetry.

Further Development Port

❷ Optional Interface

A standard interface is reserved for you or any third party to further develop desired functions (such as Record, Bluetooth, RFID and Encryption Algorithm) with the optional board.

Optional Interface

Portable Radio

PD60
PD50

Professional Digital Portable Two-way Radio

Featured with compact design, IP67 protection, superior audio quality, rich applications and A/D compatibility, the portable radio family will refresh your communication experience!

PD50

PD60

Ergonomic Design

① **Large-size colour display**
PD60 adopts a 1.8" TFT LCD display (65536 colours), allowing good visibility even under outdoor strong light.

② **Ergonomic key**
The smart body incorporates big keys for ease of use and precise operation.

③ **Distinctive knob design**
Separated by the antenna, the two knobs of the portable radio stand apart from each other, which reduces misoperation when with gloves on or under dim light

④ **Integrated antenna**
The radio antenna and GPS antenna are integrated to ensure convenience and better performance.

⑤ **Rugged and reliable**
Meets MIL-STD-810C/D/E/F/G

⑥ **IP67 compliance**
All portable radios comply with IP67 requirements, withstanding immersion testing (1m for up to 30 minutes).

Additional Features

Messaging
PD60 supports text message transmission, up to 256 characters per message.

GPS
The built-in GPS port in PD60/PD50 allows GPS data transmission.

Durable battery
The supplied 2000mAh Li-Ion battery enables your radio to work for at least 14*[1] hours continuously under the duty cycle of 5-5-90*[2].

Vibration Alert
Quite useful when you are in meeting or in noisy environments.

Channel Announcement
The radio can spur a voice announcement for the current channel during power-on or channel change.

Man Down
An alarm will be triggered when the radio is down or positioned aslant for a preset time period, improving user safety.

Rich signaling
HDC1200, DTMF*[4], 2-Tone and 5-Tone offers strong scalability.

One Touch
PD60 supports One Touch features that comprise of Text Message, Voice Calls and Supplementary Services.

Scan
PD60 supports scanning of pure Analog voice and signaling, pure Digital voice and data, and also mix mode scan that comprise of Analog and Digital activities.

Supplementary Services
PD60 supports supplementary services of Radio Check, Remote Monitor, Call Alert, Radio Enable and Radio Disable.

*[1]Above 14 hours in digital mode; Above 10.5 hours in analogue mode.
*[2] 5-5-90: 5% for transmitting, 5% for receiving and 90% for standby.

All portable radios comply with IP67 requirements, withstanding immersion testing (1m for 30 min).

Mobile Radio

MD70

Professional Digital Mobile Two-way Radio

Characterized by superb performance, high reliability and strong scalability, the mobile radio family will enrich your communication experience!

Ergonomic Design

① **Large-size colour display**
2.0" TFT LCD display (260,000 colours).

② **2-in-1 knob**
Easy channel selection and volume control with one knob operation.

③ **Rugged and reliable**
Meets MIL-STD-810 C/D/E/F/G & IP54 requirements.

④ **LED indicator**
The LED is integrated around the knob to give you clear indication about the radio status.

⑤ **Secure MIC jack**
Working with a palm microphone to ensure audio quality.

⑥ **Powerful speaker**
The built-in 7W speaker generates loud and clear voice.

⑦ **7 programmable keys**

⑧ **Durable front panel**

⑨ **Standard DB26 secondary development port reserved for further development.**

Large-size colour display

Additional Features

Rich analogue signaling
Supports various analog signaling types (HDC1200, DTMF*[1], 2-Tone and 5-Tone), various squelch control types (CTCSS/CDCSS), thus providing higher function expansion capacity to the analog world.

Switchable power
50W/25W for VHF and 45W/25W for UHF.

Messaging
Supports text message transmission, upto 256 characters per message.

GPS
GPS port in MD70 allows GPS data transmission. (GPS Optional)

One Touch
Supports One Touch features that comprise of Text Message, Voice Calls and Supplementary Services.

Scan
MD70 supports scanning of pure Analog voice and signaling, pure digital voice and data, and also mix mode scan that comprise of Analog and Digital activities.

Supplementary Services
Supports supplementary services of Radio Check, Remote Monitor Call Alert, Radio Enable and Radio Disable.

Repeater

RD70

Professional Digital Repeater

Distinguished by modularized design, excellent heat dissipation and handy management, the repeater delivers you more than reliability.

Front of RD70

Rear of RD70

Ergonomic Design

① **Modularized design**
Helpful to enhance reliability and performance.

② **Large-size colour display & UI interface**
The 2.0"TFT LCD display & UI interface enables you to access and manage the repeater easily.

③ **Ergonomic navigation knob**
Easy access to functions with big navigation knob to facilitate operation.

④ **Excellent heat dissipation**
The unique cooling design combining a built-in heat pipe and a temperature-controlled fan ensures quick heat dissipation, enabling the repeater to work well even with full load.

⑤ **LED indicator**
The LED indicators enables you to identify the repeater status clearly.

⑥ **Compact body**
The 2RU/19"rack allows more installation flexibility while requiring less space.

⑦ **Built-in duplexer**
Enough space is reserved for built-in duplexer, saving installation space.

⑧ **4 programmable keys**

⑨ **Built-in speaker**

Additional Features

Repeater Diagnostic And Control (RDAC)
Supports Remote (via IP port to connect to internet) and Local diagnostic (via USB) PC applications to monitor, diagnose and control the repeater status, thus increasing the maintenance efficiency.

Dual-slot audio output
Capable of seamless recording and monitoring of your communication.

Smart analogue- Digital Switch
The repeater can be operated in both digital and analogue modes, and smartly shift to the right model according to the type of received signal.

Flexible networking
The multiple scattered repeaters of different frequencies can be interconnected via IP to form a wireless communication network, allowing automatic roaming and voice & data transmissions for terminals within the network.

Digital-analogue interconnection for smooth transition
Back to back interconnection of digital & analogue network can be achieved by wired or wireless IP, ensuring a smooth analogue-to-digital transition.

RF output power up to 50W

16 channels
Supports decoding up to maximum of 16 CDCSS/CTCSS in Analog channels, allowing repeating of different Analog voice users from various groups.

Supports analogue BS mode

Analog Repeater Knockdown
Supports repeater knockdown, that when activated via the repeater's rear accessory pin, will disabled the transmit path of the repeater.

Accessories

Agile also provides a full line of professional accessories (such as audio accessory, battery, charger and carrying accessory*) to deliver an optimal communication experience.

For Portable Radio »

High-capacity Battery
Li-IonBattery (2000mAh)
Li-Ion Battery (2500mAh)
Explosion-proof Li-Ion Battery (1800mAh) (Optional)

Carrying Case   Explosion-proof Carrying Case

Power Supply
Rapid-rate Charger (for Li-Ion/Ni-MH batteries)
Vehicle Power Adapter (Output: 12V 1A)
Switching Power Adapter (with a rapid-rate charger) (Output: 12V 1A) (Standard)
Multi-unit Rapid-rate Charger (for Li-Ion/Ni-MHbatteries)
Battery Optimizing System (with LCD)
Six-unit Switching Power

Multi-unit Rapid-rate Charger

Carrying Accessories
Carrying Case
Explosion-proof Carrying Case (for thick battery) (leather) (swivel)
Leather Strap
Spring Belt Clip

Antenna
GPS Antenna

Data Cables
Programming cable (USB)

Battery Optimizing System

Audio Accessories
Earbud with on-MIC PTT
D-earset with on-MIC PTT
Earpiece with on-MIC PTT & Transparent Acoustic Tube
3-wire Surveillance Earpiece with Transparent Acoustic Tube (Beige)
3-wire Surveillance Earpiece with Transparent Acoustic Tube (Black)
Waterproof Remote Speaker Microphone (IP57)
Receive-Only Earbud (for use with remote speaker microphone)
Receive-Only Earpiece with Transparent Acoustic Tube (for use with remote speaker microphone)

Explosion-proof Palm Microphone (IP67)
Explosion-proof Light Weight Throat-vibrating Earpiece
Explosion-proof Ear Canal Bone Induction Earpiece

For Mobile Radio »

Audio Accessories
Palm Microphone   Desktop Microphone   External Speaker   Palm Microphone with Keypad

Power Supply
External Power Supply applicable to backup batteries. If AC power malfunctions, backup battery will operate as a substitute automatically.)

Power Cord
Vehicle Power Cord
Fuse 32V 15A)
Vehicle Power Cord

Installation Accessories
Mounting Bracket for Mobile Radio
Vehicle mounting bracket

GPS Antenna   Palm Microphone   Palm Microphone with Keypad

Data Cables
Adaptor cable for repeater accessory pin
Dispatch cable

For Repeater »

Power Cord
DC Power Cord for Repeater

Installation Accessories
Installation accessory for rack-mounted power supply

External Speaker   Desktop Microphone   1DIN vehicle mounting bracket

Installation Accessory for Rack-mounted Power Supply

Duplexer Installation Kit

Data Cables
10pin programming cable (USB)
DB26 Data Cable (USB)

Duplexer Installation Kit   External Power Supply   Installation Kit

Power Supply
External Power Supply Applicable to backup batteries. If AC power malfunctions, backup battery will operate as a substitute automatically.

Duplexer
380-470MHz; RX-TX spacing: 5-13MHz   136-148MHz; RX-TX spacing:5MHz
160-174MHz; RX-TX spacing:5MHz   440-480MHz; RX-TX spacing:5MHz
148-160MHz; RX-TX spacing:5MHz   480-512MHz; RX-TX spacing:5MHz
336-370MHz; RX-TX spacing: 8-13MHz

		Portable Radio		Mobile Radio	Repeater
		PD50	**PD60**	**MD60**	**RD70**
General	Frequency Range(MHz)	UHF1: 400-470MHz; UHF2: 450-520MHz; UHF3: 350-400MHz; VHF: 136-174MHz			
	Channel Capacity	32	1024		16
	Zone Capacity	3 (each with a maximum of 16 channels)	64 (each with a maximum of 16 channels)		-
	Channel Spacing	25/20/12.5 KHz			
	Operating Voltage	7.4V(rated)		13.6 V ±15%	
		2000mAh (Li-Ion)		Ni-MH-1500mah/2000mah/2200mah/2500mah	-
	Battery Life(5-5-90 Duty Cycle, High TX Power)	Anlog: UHF1: 13.5 h 12 h (G) UHF2: 12.5 h 11 h (G) UHF3: 12.5 h 11 h (G) VHF: 11 h 10 h (G)	Digital： UHF1：15.5 h 14 h (G) UHF2：14.5 h 12.5 h (G) UHF3：14.5 h 12.5 h (G) VHF：13.5 h 12 h (G)	-	-
	Frequency Stability	± 1.5ppm			±1ppm
	Antenna Impedance	50Ω			
	Duty Cycle	-			100%
	Dimensions (H × W × D)	125 X 55 X 35mm（with standard battery, without antenna）	125 X 55 X 37mm（with standard battery, without antenna）	60 X 174 X 200 mm	88 X 483 X 366 mm
	Weight	335g（with antenna & standard battery）	355g（with antenna & standard battery）	1.7 Kg	8.5 Kg
	Front Case	PC		PC+ABS	-
	LCD Display	-	160 × 128 pixels, 65536 colours 1.8 inch, 4 rows	220 × 176 pixels, 262000 colours 2.0 inch, 4 rows	
Transmitter	RF Power Output	UHF1/UHF3 High Power: 4W UHF1/UHF3 Low Power: 1W VHF High Power: 5W VHF Low Power: 1W		Low Power UHF1 (400-470MHz): 5-25W;UHF2 (450-520MHz): 5-25W UHF3 (350-400MHz): 5-25W;VHF (136-174MHz): 5-25W High Power UHF1 (400-470MHz): 5-45W;UHF2 (450-520MHz): 5-45W UHF3 (350-400MHz): 5-45W;VHF (136-174MHz): 5-50W	5-50W（adjustable）
	FM Modulation	11KΦF3E @ 12.5 kHz 14KΦF3E @ 20 kHz 16KΦF3E @ 25 kHz			
	4FSK Digital Modulation	12.5kHz Data Only: 7K6ΦFXD；12.5kHz Data & Voice: 7K6ΦFXW			
	Modulation Limiting	± 2.5kHz @ 12.5 kHz ± 4.0kHz @ 20 kHz ± 5.0kHz @ 25 kHz			
	FM Hum & Noise	40dB @ 12.5 kHz 43dB @ 20KHz 45dB @ 25 kHz			
	Adjacent Channel Power	60dB @ 12.5 kHz 70dB @ 20/25 kHz			
	Audio Response	+1 ~ -3dB			
	Audio Distortion	≤ 3%			
	Digital Vocoder Type	AMBE++ or SELP			
	Digital Protocol	ETSI-TS102 361-1，2&3			
Receiver	**Sensitivity** Analog	0.3 μV (12dB SINAD) ； 0.22 μV (Typical) (12dB SINAD) ； 0.4 μV (20dB SINAD)			
	Sensitivity Digital	0.3 μV /BER5%			
	Selectivity TIA-603 ETSI	60dB @ 12.5 kHz / 70dB @ 20/25 kHz 60dB @ 12.5 kHz / 70dB @ 20/25 kHz		65dB@12.5kHz /75dB@20/25kHz 60dB@12.5kHz /70dB@25/20kHz	65dB@12.5kHz/ 75dB@20/25kHz 65dB@12.5kHz/ 75dB@20/25kHz
	Intermodulation TIA-603 ETSI	70dB @ 12.5/20/25 kHz 65dB @ 12.5/20/25 kHz		75dB@12.5/20/25kHz 70dB@12.5/20/25kHz	75dB@12.5/20/25kHz 70dB@12.5/20/25kHz
	Spurious Response Rejection TIA-603 ETSI	70dB @ 12.5/20/25 kHz 70dB @ 12.5/20/25 kHz		75dB@12.5/20/25kHz 70dB@12.5/20/25kHz	80dB@12.5/20/25kHz 80dB@12.5/20/25kHz
	Blocking TIA-603 ETSI	80dB 84dB		90dB 84dB	90dB 90dB
	S/N	-40dB@12.5kHz; -43dB@20kHz; -45dB@25kHz			
	Rated Audio Power Output	0.5W		Internal (@20 ohm load)3W External (@8 ohm load)7.5W	0.5W
	Rated Audio Distortion	≤ 3%			
	Audio Response	+1 ~ -3dB			
	Conducted Spurious Emission	< -57 dBm			
Environmental Specifications	Operating Temperature	-30℃ ~ +60℃			
	Storage Temperature	-40℃ ~ +85℃			
	MIL Standard	Meets MIL-STD-810 C/D/E/F/G			-
					-
	Dust & Water Intrusion	Meets IP67 Standard		IP54 Standard	-
	Humidity	Meets Per MIL-STD-810 C/D/E/F/G Standard			-
	Shock & Vibration	Meets Per MIL-STD-810 C/D/E/F/G Standard			-
GPS	TTFF (Time To First Fix) Cold Start	<1 minute			-
	TTFF (Time To First Fix) Hot Start	<10 seconds			-
	Horizontal Accuracy	<10 meters			-

All Specifications are subject to change without notice due to continuous development.