

COMPANY PROFILE

Doewe Technologies, headquartered in Beijing, has been operating for a decade and currently has branches including the Beijing R&D Center, Chengdu R&D Center, Doewe Shanghai, Doewe Shenzhen, and Doewe Hong Kong. The company is fully committed to building its independent brand "Doewe," with its business covering two main categories: Advanced Sensing Measurement and Control (ASMC) and Professional Test and Measurement Solutions (PTMS).

The ASMC product line provides innovative high-precision sensing acquisition and data analytics solutions. PTMS focuses on industry-specific test and measurement solutions for audio, video, and RF applications. It has established the 5XC product system, serving sectors such as transportation, broadcasting, automotive electronics, consumer electronics, and university research institutes.

Through relentless effort, several of the company's products have become benchmark test instruments in their respective industries. Doewe Technologies also holds multiple core patents and software copyrights, participates in relevant industry standards working groups, and contributes to the formulation of national and industry standards. Building on past achievements, Doewe continues to increase its R&D investment. We have never forgotten our original aspiration, firmly believing that only profound technological accumulation creates value. We persistently pursue innovation in test and measurement technology, dedicated to technology development, application software services, and research in test and measurement solutions.

Leveraging its Beijing headquarters, related technical centers, and subsidiaries, Doewe Technologies has gradually established a nationwide pre-sales and after-sales service network, providing customers with professional technical consultation. Guided by the principles of "Rigorous, Efficient, Professional, Innovative," Doewe Technologies will continue steadfastly on this path, living up to the trust of every customer.

The journey ahead is long and challenging. We will accompany you on this path of growth to create a new future of technology together.

System Overview

The Radio Freq. Recording and Playback System (RFCS) is a complete platform for broadband radio frequency signal recording, playback, and field strength mobile testing. The core RF recording equipment boasts excellent RF performance, perfectly restoring signal scenarios for convenient post-processing and analysis. It supports recording and playback with a maximum bandwidth of 100MHz, and combined with the master control software, it can achieve timed recording and trigger recording functions. Timed recording can automatically start recording at the set time, while trigger recording supports setting a trigger threshold - once the signal exceeds the preset threshold, the recording task will be executed, meeting the user's needs in different application scenarios. The supporting road test software can mark the field strength at the location with points of different colors at corresponding positions on the map according to their magnitude, and can generate coverage effect diagrams, enabling users to more clearly and intuitively understand the signal field strength distribution in the test area.

Feature Functions

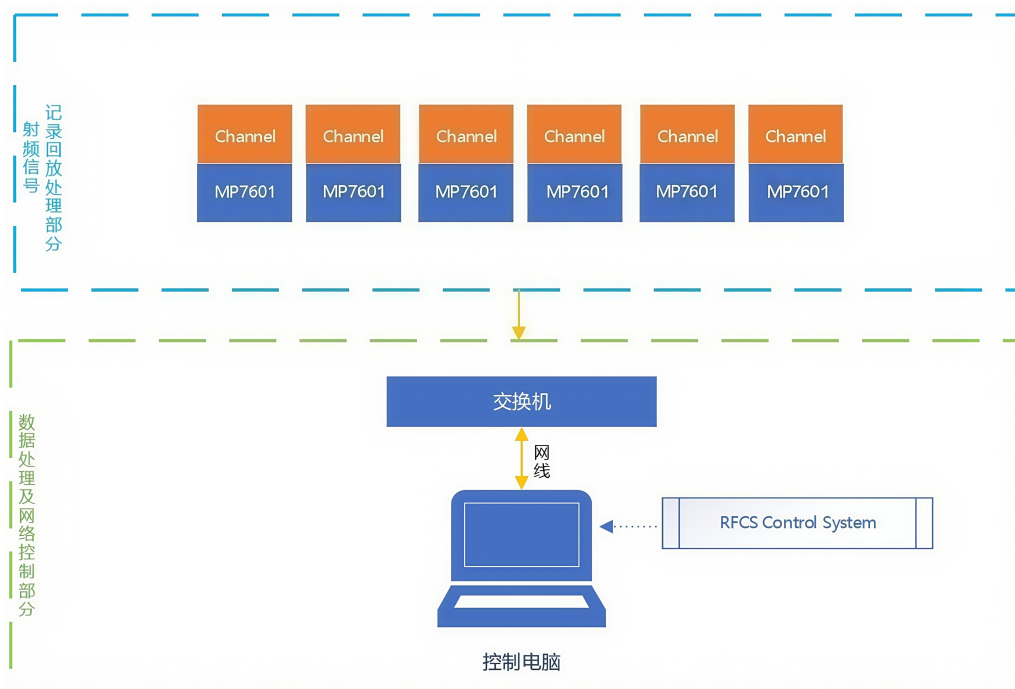
The core hardware of the system MP7601 is the industry's first device capable of supporting a real-time RF recording bandwidth of 100 MHz in a single unit. It features ultra-wide frequency range (up to 6 GHz) and recording bandwidth (100 MHz), and provides a synchronization cascade solution for up to 6 units to build an RF synchronous recording system. Beyond meeting Broadcasting testing requirements, the MP7601 addresses emerging application scenarios such as broadband satellite signal recording, Wi-Fi signal monitoring, and simultaneous multi-channel data capture.

- Recording bandwidth adjustable from 2 MHz to 100 MHz in arbitrary steps
- Frequency range covering 300 kHz to 6.0 GHz
- IQ data rate of 500 MBps
- Sampling rate of 250 MS/s
- 16-bit ADC resolution
- Maximum hold, minimum hold, and average processing display modes
- Up to 20+ marker functions for diverse marking and testing requirements
- MATLAB-compatible data format
- IQ data processing tool software included
- Syncbox for synchronized recording across up to 6 devices (optional)
- 4×2.5" internal HDD bays (supports up to 4×8TB, default configuration 4×1TB)
- Power: AC 115-230V
- Size (L×W×H cm) : 41.6×34.7×12
- Weight: 10kg



System Framework

The Radio Freq. Recording and Playback System is divided into two parts: the radio frequency signal recording and playback processing part, and the data processing and network control part. The overall architecture of the system is shown in the following figure:



The RF signal recording and playback processing part is composed of up to 6 special RF recording and playback instrument MP7601, which constitutes 6 channels. With the system software, it supports scheduled recording and trigger recording functions, and supports different central frequencies and acquisition bandwidths for different devices. The sampling equipment software provides gain control for optimal acquisition accuracy. Each function of the MP7601 can accurately meet the needs of signal reception and processing. The whole process is automated by data processing and network control, and the data processing and network control part is composed of a switch and a control computer (including general control software). Through the operation of the master control software, all MP7601 devices can be controlled in the RF signal recording and playback processing part, so as to automatically realize the recording and playback functions of a specific RF electromagnetic environment and realize the control and scheduling of the overall system. At the same time, it supports viewing task records and generating reports for subsequent data analysis and testing.





In the recording function interface, a new recording task can be added, supporting the setting of recording mode, center frequency, recording bandwidth, resolution bandwidth, recording channel, recording start time, and recording end time.



After adding a recording task, relevant setting information of the recording task can be viewed in the recording item list. In addition, the recording status of each recording task can be checked, and you can choose whether to start a specific recording task.



In the playback function, all recording tasks can also be viewed and the desired recording task can be selected for playback.



In the file playback list, all tasks to be played back can be viewed, and operations such as selecting, editing, and starting playback of tasks can be performed.



In the historical tasks function, all recorded tasks that have been played back and relevant information can be viewed, and a certain recorded task can also be selected for re-playback.



In the system configuration function, configuration information can be added or used to adjust and display channel names, IP addresses, port numbers, and corresponding physical channels. After the configuration is applied, the current connection status can also be checked for normality.



Core Parameters

Parameter	Specifications	Parameter	Specifications
Input Freq. Range	300KHz- 6000MHz	Output Freq. Range	300KHz- 6000MHz
Real-time bandwidth	50MHz@300KHz-50MHz 20MHz@ Fc: >50-100MHz 40MHz@ Fc: >100-400MHz 100MHz@ Fc: >400MHz and above	Real-time bandwidth	50MHz@300KHz - 50MHz 20MHz@ Fc: 50 - 100MHz 40MHz@ Fc: 100 - 400MHz 100MHz@ Fc: >400 and above
Freq. resolution	10Hz	Freq. Resolution	10Hz
Resolution Bandwidth (RBW)	500Hz to 5MHz	Max. Output power @CW	0dBm
Max. input power	+20dBm (peak value) +10dBm (average)	Output noise density	<-160dBm/Hz
Input noise density	<- 160dBm/Hz	Power Accuracy @ (0 to -95dBm)	±1.0dB @ -100dBm - 0dBm ±2.0dB @ <-100dBm
Input power accuracy @ (+20 to -75 dBm)	<±1.0dB @ ≤3GHz <±1.5dB @ >3GHz	Phase Noise	<-100dBc: 1KHz offset@2.4GHz <-95dBc: 1KHz offset@5.8GHz
Phase Noise	<-100dBc @1KHz offset@2.4GHz <-95dBc @1KHz offset@5.8GHz	Local Oscillator Leakage	<-50dBc
Local Oscillator Leakage	<-50dBc	Third order input inter-modulation distortion (IMD3)	<-60dBc@-10dBm (two -13dBm Tone)
Third order input inter-modulation distortion (IMD3)	<-70dBc@-10dBm (-13dBm two tone)	Output Return loss	<-10dB
Input Return Loss	<-10dB	DAC resolution	16 Bits
ADC Resolution	16 Bits	Sample rate	1000MS/s
Sampling Rate	250MS/s	Initial achievable accuracy	±50 ppb maximum (OCXO) @25 °C , after 60 minutes warm up
Initial achievable accuracy	±50 ppb maximum (OCXO) @25 °C , after 60 minutes warm up	Temperature stability	±20 ppb maximum (OCXO) @0 °C ~ 50 °C range, referenced to 25 °C
Temperature Stability	±20 ppb maximum (OCXO)@0-40 °C	Aging range, referenced to 25 °C	±1ppb maximum (OCXO) per day ±100 ppb maximum (OCXO) per year
Aging	±1ppb maximum (OCXO) per day ±100 ppb maximum (OCXO) per year	Operating Temperature	0-40 °C
Operating Temperature	0-40 °C	Warm-up time	>30 minute
Warm-up time	>30 minute		



场强覆盖测试主要功能如下:

RFCS

Radio Freq. Recording and Playback System

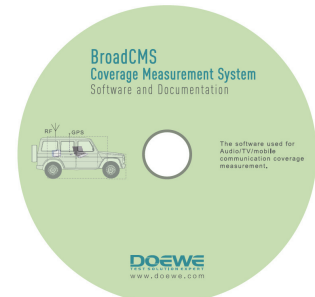


Field Strength Coverage Testing System BroadCMS

The field strength coverage testing system BroadCMS can fully support comprehensive field strength coverage drive tests for AM, FM, CDR, PAL-D/K and DTMB signals. Equipped with drive test platform software, a GPS receiving system and a map solution, the system is capable of drawing point trajectories and line trajectories, as well as conducting 2D map coverage effect evaluation. BroadCMS can be used in conjunction with the radio frequency recording and playback system RFCS, along with professional receiving antennas and precision transmission cables, and also supports secondary integration with mainstream professional broadcasting and television testers in the industry.



- It has the function of displaying signal level parameters and conducting intensity statistics. It can automatically calculate the field strength value in dBu V/m by inputting the antenna factor and cable loss as required;
- It supports GPS positioning and real-time communication with the test host, and can provide the system working status during mobile testing;
- It supports automatic saving of test information, including functions such as signal strength, longitude, and latitude;
- It supports two working modes: online map and offline map, with a map caching function, and is compatible with maps such as Google and Bing;
- It supports real-time display of the current test location and related test data in the map window;
- Test data can be exported as Google Earth files;
- It can replay the test process according to the test path and data;
- It has a coverage analysis function, which can draw planar coverage analysis maps based on test data;
- It can automatically generate test reports in Word format;
- It allows for custom threshold settings;
- It has a statistical function, which enables viewing the data distribution of current tests or completed tests;
- It has the function of exporting data to Excel.



When the mouse moves over a specific data point, the specific data information of that point will be displayed as a prompt.



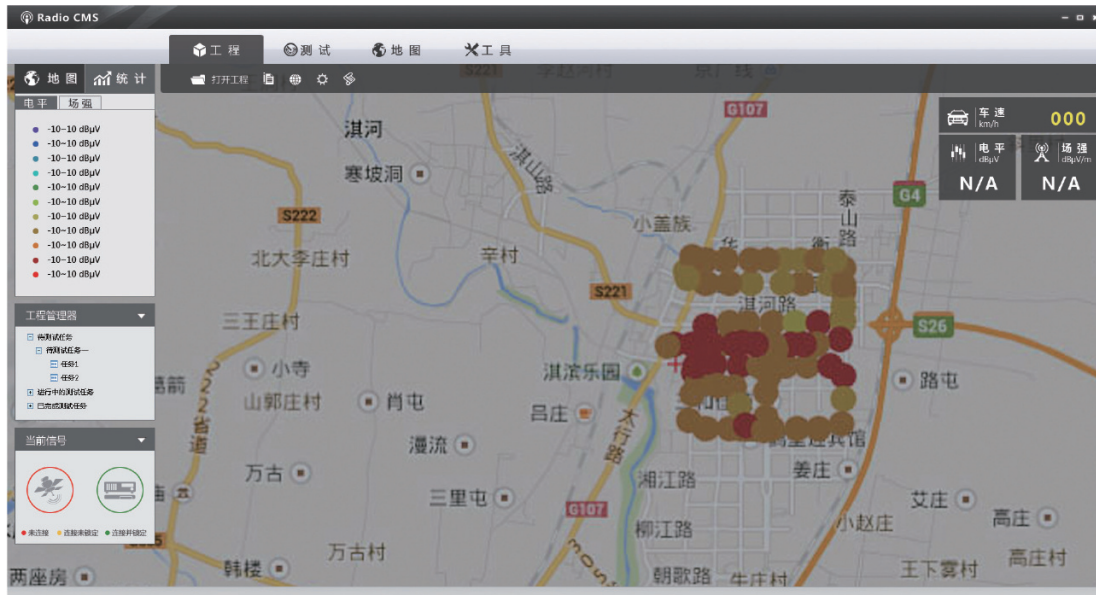
It is used for measuring the straight-line distance between two points. Select the distance measurement tool in the navigation bar, move the mouse to the map area, click to set the starting anchor point, and right-click to set the ending anchor point. The distance will be measured in real-time and displayed to the right of the anchor points.



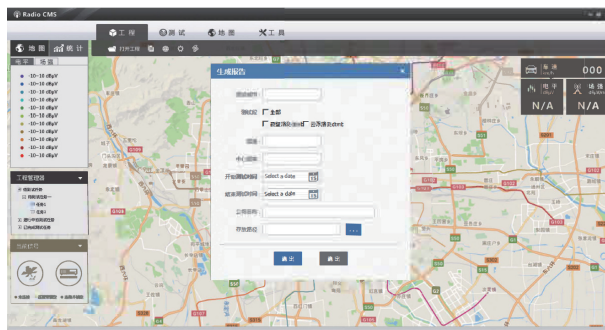
Contact Customer Service Immediately

For more inf. pls. visit <https://www.doewe.com> — 05

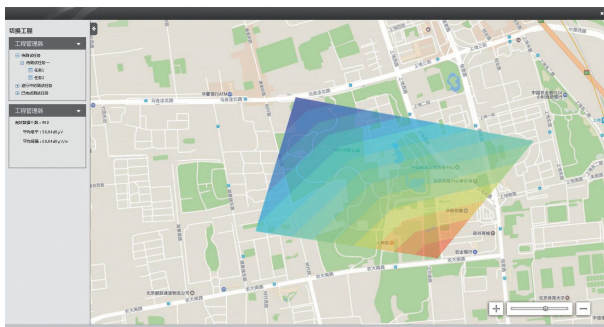
Field Strength Coverage Testing System BroadCMS



It is used to mark the information of the transmitting tower. Select the tool for marking transmitting towers in the navigation bar, move to the position on the map where the transmitting tower needs to be marked, and click the left mouse button to bring up the transmitting tower information dialog box.



PC Remote Control Software



It supports the coverage diagram function, which is used to indicate the quality of signal coverage.





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