

Teletics Application Note

Drilling Rig Communications with the WKSU-PA



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Drilling rigs and other mobile work camps have unique communications problems. First, they need to talk to the rest of the world, which is solved with technologies such as VSAT and cellular. Second, they need to be able to communicate with each other, including having the ability to call out over a Public Address system to the entire camp, for safety and drilling practices purposes.

Teletics currently have a number of customers who are communications providers to oil companies. Our customers will provide VSAT services as well as any other communications systems and products that the oil company wants on their drilling rig site.

The Teletics WKSU-PA was specifically designed to address the “last 500 yard” communications issues presented by this type of site for telephone voice, Public Address (PA), and internet.

Standard multi-conductor cable has a very limited life in mobile camp outdoor environments, especially drilling rig sites. Everything from animals chewing on the cable, to heavy equipment running it over and the requirement to run overhead cable to service the rig and other equipment presents stress to the cable. When you add the requirement to move the system, in some instances as often as every day, failure is unavoidable. Additionally, since the drilling rig crew is busy with other tasks during tear down, moving, and “rigging up”, they generally want the communications provider to decommission and re-commission the phone system before and after the move.

The Teletics WKSU-PA is a complete wireless phone, intercom, and public address system for use on drilling rigs (or for any other camp where portable buildings move often). Up to 20 buildings can each have a phone, PA speaker, and internet without running cables. The WKSU-PA also has an option called the 2LVOICE for connecting outside lines from satellite or cellular into the system.

Each WKSU-PA radio has an antenna connector, a connector for a PA speaker, a phone jack, an Ethernet (internet) jack, and a power connector. You simply plug in any standard phone into the unit, and connect a standard PA speaker to each unit:

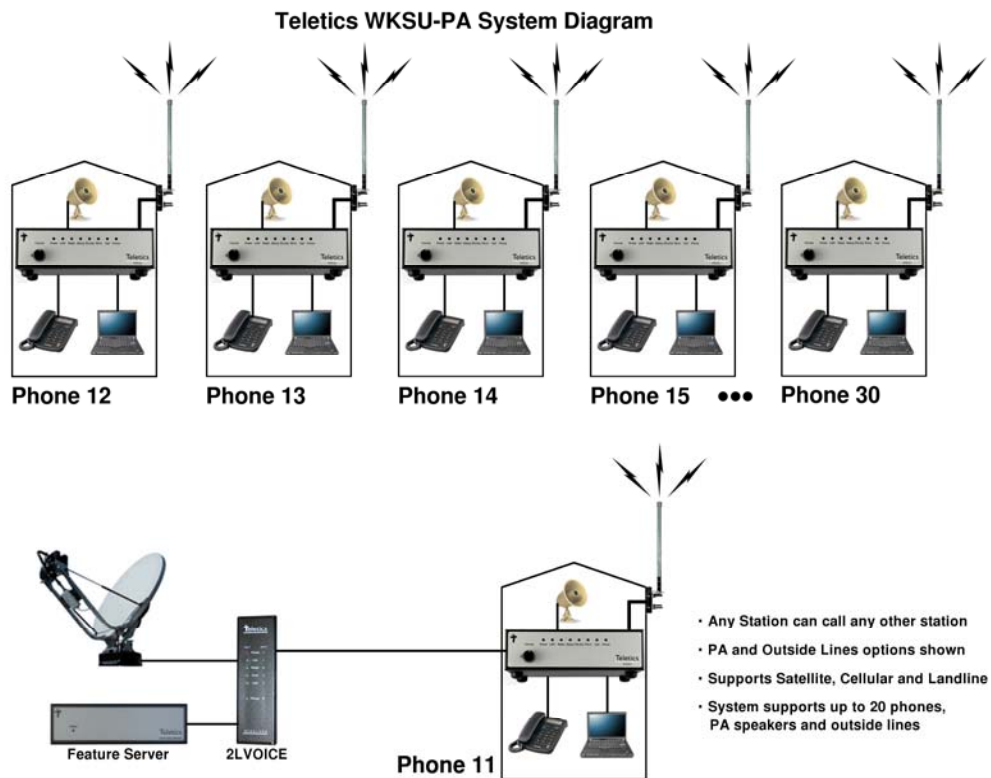


For each system, you require one Teletics Feature Server, which is the “brains” of the system, taking care of dialing between units and the PA feature. If you desire having access to an outside line, you add a 2LVOICE unit to the system and program it to provide outside line access to whatever phones on the system should be allowed to dial out and in (over VSAT for example).

For an example, let’s consider a small drilling rig camp that has a four trailers and one drilling rig. Also, for example, let’s assume that the company man and the geologist get access to one VSAT phone line each.

This system would consist of 1 Teletics Feature Server, 5 WKSU-PA radios, and 1 2LVOICE . Optionally, there may be one high power (>30W) PA amplifier added to the one WKSU-PA that is one the drilling rig, to further increase volume level.

The WKSU-PA “Master” is unit 11. This unit typically goes near the VSAT system, with the Feature Server and 2LVOICE. The 2LVOICE has two LINE ports, one for each PHONE on the VSAT terminal:



You can have up to 20 WKSU-PA radios in one system. The numbers that are given to each Phone go from 11 to 30. So if the company man in trailer 13 wants to call the tool

push on the drilling rig, and the drilling rig has WKSU-PA 14, he simply picks up his phone and dials 14.

In our example, if the two people who have outside phone line access are using phone 12 and 13, the 2LVOICE unit would be programmed (using software called TShop) to allow outside calls in and out on phone 12 and 13. The 2LVOICE simply “maps” those two VSAT phone lines to the correct WKSU-PA on the system. So, if the person using 12 or 13 dial 9 in front of a phone number, their call is routed out to the VSAT system, and if their line on the VSAT terminal rings, their phone will ring until they answer.

The PA function is accessed by putting a * character in front of the number of the WKSU-PA that you want to PA with. For instance, if the company man is at 13, and he wants to talk through the PA speaker at 14, he dials *14, waits for the beep, and then talks. His voice will come out of the PA speaker at WKSU-PA 14.

Anyone in the system can page across all speakers simultaneously by dialing ***. You can page across all speakers but yours by putting a # in front of your WKSU-PA Phone number, for instance if you are the company man and want to page everyone but yourself, you would dial #13.

The WKSU-PA system supports as many simultaneous phone conversations as there are phones and PA speakers that can be used on the system.

The internet ports on the WKSU-PA act as a wireless switch. It is on a shared priority basis. The phone system has priority over the data service to ensure voice quality.

Success with the WKSU-PA system requires proper installation practices. The most common reasons for the system not to work properly are incorrect antenna placement and bad choices for antennas, cables and mounting brackets. Teletics has a field tool, called TRadio that will indicate where radio signal strength is a problem. Additionally, cabling should be rated for the frequency used. LMR-400 when kept to 30 foot lengths and shorter is a good choice. Teletics also offers antenna mounts and outdoor enclosures for use with its equipment.

The WKSU-PA eliminates communications wiring at oil and gas or mining camp sites. The WKSU-PA can pay for itself very quickly versus cost of cabling and cabling labor, and provide a more reliable communications system as well with minimal setup between moves.

For further information on this application of the Teletics WKSU-PA system, please contact Eric Larson, Vice President – Sales and Marketing, Teletics Inc. at (403) 681 6380, Sales@teletics.com, or your local Teletics distributor.