Developing a coordinated interference solution in Paraguay

There is no better time to be a mobile operator in Paraguay than right now. Wireless subscribers increased more than 800 percent since the year 2000.

The growth is fueled by a number of factors. The national government has invested heavily in wireless infrastructure, throwing its full support behind the nationwide rollout of LTE services and even subsidizing Wi-Fi in the country’s major metro areas.

For one particular carrier, things are especially good ever since CommScope helped them turn a potentially damaging interference issue into a significant growth opportunity.

Lingering interference threatens future growth

The issue began in 2011 when one of Paraguay’s most successful carriers first detected significant adjacent channel interference in its 900 MHz band. The interference was degrading system capabilities in the packet-switched traffic, resulting in dropped calls for circuit-switched traffic.

The interference was being caused by two other carriers who were operating in the nearby 850 MHz band. Their transmit signals were leaking into the 900 MHz receive band of the affected operator. The interference was most severe at locations shared by all three carriers. The affected operator spent more than a year testing numerous off-the-shelf interference filtering solutions with minimum improvements.

Wireless workshop leads to interference solution

In October 2012, during a wireless solutions workshop hosted by CommScope and its local agent, officials from the affected operator met with representatives from the two interfering carriers in an attempt to resolve the issue. The parties agreed to have CommScope’s interference management team lead them in reaching a solution.

Having been briefed on the situation as well as the overall RF environment, the CommScope team hosted a webinar to...
show the carriers their options for mitigating the interference and to address any questions they may have. Shortly after the webinar, the affected carrier formally engaged CommScope to develop an interference mitigation solution that would be acceptable for all involved.

**CommScope guides successful project development**

CommScope product managers, engineers and the regional sales team immediately began meeting with each carrier to outline the specific performance specifications. CommScope also involved its local agent, who would be handling the installation.

Having worked extensively in the 850 and 900 MHz bands, CommScope had already developed a solution they believed would work well. The E15V88P06 filter is a 900 MHz band co-location filter with excellent 850 MHz band rejection.

Although the original solution was intended for deployment with all three networks, that was not necessary. After the E15V88P06 test filter was installed on the affected carrier’s network, the noise floor came down significantly. CommScope and its client both agreed that further mitigation involving the other two carriers’ networks was not needed.

Installation was handled by one of CommScope’s local agents. Afterwards, the affected carriers reported significant improvement in their network performance.

**Helping the entire country move forward**

Based on these results, the project quickly moved toward full-scale production and installation of the filters. CommScope’s local agent, which has since developed an excellent working relationship with the client, handled installation and remains involved in performance monitoring.

Meanwhile, the same filter solution has been recommended by Paraguay’s National Telecommunications Commission for use by the country’s other mobile operators as well. If implemented, the solution is expected to improve mobile service across the country and help boost sales volume for all.

**References**

1. Paraguay mobile subscriptions, 2000–2012
   Source: [http://www.statista.com](http://www.statista.com)