

# Spectrum Management

Keysight Technologies  
and Bird

## Achieve higher returns from your network with more efficient bandwidth allocation

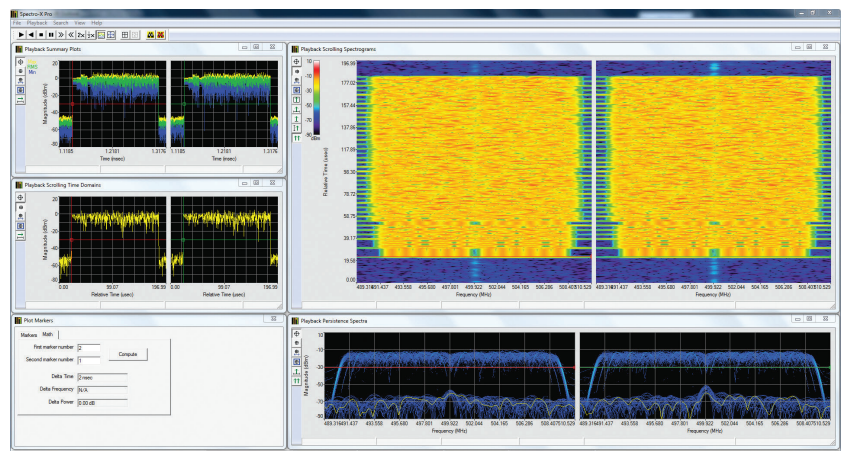
Bandwidth is the currency of data and voice communications and to maximize Return on Investment (ROI) network operators must use spectrum management tools to allocate their bandwidth efficiently. Users must adhere to strict spectral masks so that the network operator can predict usage, allocate resources and charge correctly.

A spectrum management tool that uses a signal analyzer with limited memory can only record network activity over a very short period of time. The random snapshot that results can easily miss users who are violating the bandwidth rules. These can include users whose transmitted spectrum does not roll off steeply enough, whose power levels are causing adjacent channel interference, who are unauthorized or who are accessing a bandwidth slot at the wrong time.

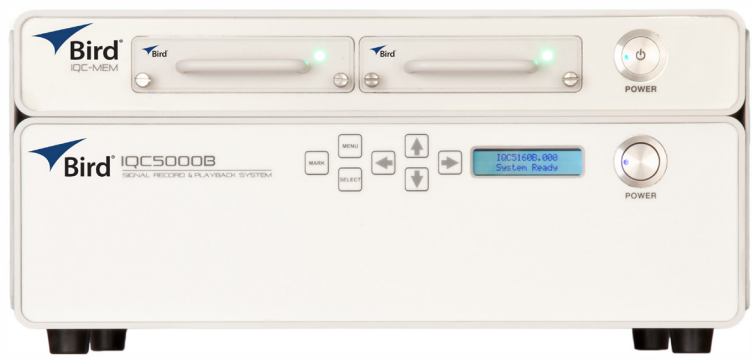
A new spectrum management solution from Bird and Keysight Technologies allows network operators to simultaneously monitor and record two bandwidth allocations over an extended period of time, up to days. The solution combines Keysight's X-series signal analyzers with a Bird IQC5000B dual-channel signal recorder and playback system. When used in conjunction with the Bird suite of software analysis tools, network operators can search for carriers of interest and identify bandwidth allocation or power level violations that can lead to loss of revenue.

The Keysight UXA, PXA, MXA or EXA signal analyzer acts as the microwave or RF front end, pre-selector and down converter, presenting digital I & Q sample streams to the Bird IQC5000B. The signal analyzer's superior noise floor, SFDR, amplitude and phase flatness over the span bandwidth ensures a very high fidelity signal, which the IQC5000B then stores in either its internal solid state memory or an external, attached disk array. The result is a high fidelity, gap-free recording of the spectrum.

- Spectrum management solution
- Allows efficient bandwidth allocation
- Network operators can maximize their bandwidth ROI
- Long duration storage of network data, up to days
- Interfaces to Keysight X-Series signal analyzers
- Achieve higher return on network investment



# Spectrum Management



The Bird IQC5000B can capture and record simultaneously two spans, each with a 160 MHz bandwidth. In addition, the Bird IQC control software can implement captures based on time of day or externally generated trigger signals that can facilitate monitoring based on the occurrence of network specific events.

The time period over which the capture bandwidth is recorded is only dependent on the size of the internal memory modules and any disk arrays connected to the IQC5000B. Using a 15 TB disk array, 80 hours of record time is possible at a 10 MHz band width and over 3 hours at the full 255 MHz capture bandwidth. Captured files can be transferred to the X-Series internal PC for analysis or to an external PC via the PCIe interface.

The spectrum management solution allows network operators to record network activity over an extended period of time allowing the identification of errant users who are violating the bandwidth allocation rules and causing loss of revenue to the operator. With a spectrum management solution from Keysight and Bird you can achieve higher return on your network investments.

## System Components

### Keysight Technologies

N9040B	UXA signal analyzer
N9030B	PXA signal analyzer
N9020B	MXA signal analyzer
N9010B	EXA signal analyzer

### Bird

IQC5255B	Signal record and playback system
IQC5000B-ME2	Internal RAID0 SSD disk storage: 2 TB
IQC5000B-S15	External RAID0 SSD external disk storage: 15 TB.

To learn how this solution can address your specific needs please contact Keysight's solutions partner, Bird [www.keysight.com/find/bird](http://www.keysight.com/find/bird)



Keysight & Solutions Partners  
Extending our solutions to meet your needs

Keysight and its Solutions Partners work together to help customers meet their unique challenges, in design, manufacturing, installation or support. To learn more about the program, our partners and solutions go to [www.keysight.com/find/solutionspartner](http://www.keysight.com/find/solutionspartner)

Bird manufactures systems that are used to help engineers better understand the challenges of the electromagnetic spectrum. These systems are used to assist engineers in the design, characterization, and/or validation of RF systems within several markets. **More information**

For information on Keysight Technologies' products, applications and services, go to [www.keysight.com](http://www.keysight.com)

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