Система SPAUN's UNiSEqC

• Допускает подключение до 9 ресиверов
• Специальные обозначения розеток обеспечивают простоту настройки уровней сигнала для каждого ресивера
• Допускает последовательное и параллельное подключение
• Возможность смешивания с эфирным сигналом обеспечивает «экономичную» пеедачу сигнала по одному кабелю
SPAUN SUS 5581/33 NF
A very Easy-to-Install Satellite TV Signal Distribution

Satellite TV is so easily accessible today that more and more often you have not just one receiver in the living room but two or more of them located in different rooms of your apartment or house. Today’s higher class PVR receivers have usually two satellite tuners and to take full advantage of this feature, you should connect two independent coax cables to them. How many of us were so clever 10 years ago or earlier to foresee the need for that many cables?

To solve this kind of problems as well as to keep the cabling as simple as possible, a solution called SCR can be used. SCR stands for Satellite-Channel-Router and this is a European industry standard for distributing satellite signals over a single coaxial cable - CENELEC EN50494.

SPAUN use their own trademark UNiSegC to mark their products dedicated for this solution. We asked SPAUN to send us samples of their UNiSegC products so that we could test them and inform our readers what they should expect when applying them.

As usually, SPAUN had been very responsive and we received their products very soon. It was the SUS 5581/33 NF cascadable SCR Multiswitch and a number of wall sockets dedicated for the system. The sockets were of three different types: UNiSocket 310, 314 and 318.

Let us first describe the heart of the system – SCR multiswitch. SUS 5581/33 NF accepts either LNB Quadro or LNB Quad signals plus a signal from a terrestrial antenna. You can configure the multiswitch to generate a SCR signal either on one output or on three outputs. If you choose one output, you use only one coaxial cable on which you can hook up as many as eight UNiSockets. The system with three outputs lets you connect up to three sockets on each of the three coax cables. So, in the first configuration you can connect 8 independent receivers and in the second configuration – 9 receivers.

You must though keep in mind that all receivers used in this system must be compatible with SCR technology. If SCR is not clearly stated in the receiver specification, check if EN 50494 standard is mentioned or a term “unicable” (another trademark for a SCR solution). If you can put your hands on the receiver in question,
enter its installation menu and check if you can set its LNB to “SCR” “UNiSEQ” or “Uncable” type. The menu should also offer you the possibility to program the SCR frequencies or to detect them automatically.

During the system configuration, we need to assign a unique SCR frequency to each receiver. Two receivers can not operate on the same frequency. If you use only one receiver, the best idea is to assign the lowest frequency (1068 MHz) to the receiver which is the last one on the chain and thus must overcome the highest cable attenuation. Cable attenuation increases with frequency, so to make “life easier” for the last receiver, we should keep its operating frequency as low as possible. Of course the last but one receiver should operate on 1284 MHz and so on. The very first one should operate on 1800 MHz.

If a three cable installation makes more sense in your particular location, the following frequencies are available: 1068, 1284, 1400, 1516, 1632, 1864 and 1980 MHz.

A valuable feature of the SCR multiswitch is its versatility in powering it up. SPAUN supplies a wallmount power supply unit, but if this is not practical in your installation, you can power the multiswitch via its terrestrial trunkline. By the way, the included power supply unit has a convenient plug adapters what combined with its high input voltage range (220-240 V 50/60 Hz) makes it truly worldwide. There are also 5 pieces of 75 ohm terminators included in the package. You attach them to the trunk outputs and it is not used for cascading.

Although the UNiSockets are much simpler products than the SCR multiswitch, their performance also counts in the whole system. We got tree socket types. Although they look identical except for the type number printed on them, they differ in the insertion and tap losses. UNiSocket 310 has the lowest tap loss – only 15 dB, but its insertion loss is the highest from the three models – 3 dB. You should choose this model for the most distant socket from the SCR switch. Model 314 has the highest tap loss – 18 dB but the lowest insertion loss – only 1 dB. This model should be considered for the sockets located close to the SCR switch. UNiSocket 314 is an interim model with moderate tap loss – 14 dB and insertion loss – 2 dB. All these parameters are the typical values and according to the product specifications, you should be ready to accept +/- 2 dB tolerance of the tap loss for every model.

We started our tests with measuring the sockets. The results were very satisfactory for the insertion loss – all three models had lower average loss than specified. Model 310 achieved the average insertion loss 2.49 dB, model 314 – 1.99 dB and model 318 – 1.44 dB. The loss variation was small in the whole IF frequency range (950-2150 MHz). We can say that the sockets were 0.5 dB better than specified.

When we took the measurements, the uplink frequencies were: 11.96 dB for 310, 15.85 dB for 314 and 17.98 dB for 318, but slightly higher than typical value.

We built a test distribution system then. A high output power quad LNB was driving our SUS 5581/33 NF. Later, we switched to a Quattro LNB and everything worked equally good. The SCR multiswitch was configured for one output. We connected an LNB on every output. Connected an LNB on every output. SPAUN supplies a wallmount power supply unit having voltage range (100-240, 220V, 240V, 230V). The included power supply unit have a convenient plug adapters what made more sense in your particular location.

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signal strength was at 90% and signal quality at 80%. Not bad, not bad at all, if you take into account that the signal was attenuated by a long cable and the sockets. However, in real life, you do not always have the most modern receivers well prepared for the SCR system. Therefore, we decided to check how an old receiver would perform. We took a 5 years old receiver with SCR feature. At that time it was quite a novelty. We were full of doubts if it will be able to lock to the signal when connected to the last socket but to our surprise, it had no problem at all, neither at the lowest frequency (1068 MHz) nor at the highest (1980 MHz).

But this was not the end of our test. SPAUN claims in their user guide that “By internal electronics of the device, the use of special protection sockets (with shut-down on reception of non-standard DiSEqC commands to EN 50494) is not necessary.” Such statement is nothing but a challenge for a dedicated tester. So, apart from the EN 50494 compatible receivers, we connected a class-50494 compatible receiver to the single coaxial cable system built with SPAUN components and operated it in such a way to make it send various DiSEqC commands (1.0, 1.1 and 1.2). We were changing reception system configuration in the receiver menu and then zapping channels.

And indeed, in line with SPAUN’s promise, nothing could disturb the operation of UniSeqC compatible receivers. They continued to deliver undistorted video and audio. We know, however, that not every SCR system offered on the market has so advanced routers as SPAUN. So the SPAUN UniSeqC offers the additional advantage of being foolproof against users connecting regular receivers or badly configured receivers – SPAUN’s system simply ignores these commands and keeps working perfectly.

The UniSeqC system, once configured, works reliably without any maintenance. After a power shortage, the receivers boot and send commands to the SCR multiplexer to activate “their” frequencies. Everything starts to work again.

We are sure that this is the simplest and cheapest solution to make an existing installation suitable for twin tuner receivers with only one cable entering every room. The system is also attractive for new installation as the complexity of cabling is significantly reduced. You can easily combine classical multiswitches and the UniSeqC system. Several wiring examples are provided in the user guide. The only precondition is: you must use SCR compatible receivers. Fortunately, more and more new receivers are equipped with this feature.

**Expert Opinion**

**Very good workmanship of the SUS 5581/33 NF and the UNiSockets.**

**Simple installation and trouble free operation.**

**SCR switch cascadable not only with identical products but also with classical multistatus.**

**Possibility to power the switch via the terrestrial trunkline.**

**Low insertion loss of the UNiSockets.**

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**TECHNICAL DATA**

- **Manufacturer:** SPAUN electronic GmbH & Co. KG, Germany
- **Web:** www.spaun.com
- **E-mail:** contact@spaun.com
- **Phone:** +49 (0)7731 - 8673-0
- **Fax:** +49 (0)7731 - 8673-17
- **Model:** SUS 5581/33 NF
- **Function:** SCR Multiswitch compatible with EN50494
- **Inputs:** 4 satellite (LNB Quadro or Quadri) + 1 terrestrial
- **Top outputs:** 1 or 3 (switchable: 1x8 or 3x3)
- **Trunk outputs:** 5
- **Through loss:** 1.5-2.5 dB for IF and <4 dB for terrestrial signal
- **Terrestrial top loss:** 13-15 dB
- **SAT input signal:** 60-100 dBµV
- **SAT top output:** 80 dBµV for 1 x 8 output
  - 82 dBµV for 3 x 3 outputs
- **LNB remote current:** 500 mA
- **Power consumption:** < 7 W
- **Ambient temperature:** -20~+50° C

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