ROHDE&SCHWARZ

BROADCASTING DIVISION

Application Note

2T pulse shapes

Products:

CCVS+COMPONENT GENERATOR	***SAF***
CCVS GENERATOR	***SFF***
TV-GENERATOR	***SGPF***

7BM15_0E

2T pulse shapes

All 2T pulses produced by the Video Generators SGPF, SAF and SFF feature minimal preshoots and postshoots so that the pulse base is increased to 420 ns (nominal 400 ns) at the nominal half-amplitude duration of 200 ns.
The 2T pulse is therefore wider at the base and narrower at the top.
The 2T k factor is determined from the base width and is approximately 0.5%.

This pulse shape is of advantage for performing evaluations on an oscilloscope. Since there are no pre- and postshoots, any distortion displayed on the oscilloscope is caused by the device under test. Reading off the result is thus simplified as value differences do not have to be taken into account.

If the 2T pulse is $\cos^2$-shaped, it has significant spectral components up to and above 8 MHz. Since according to ITU-R BT. 470 the bandwidth of the B/G system standard is 5 MHz, or pursuant to ITU-R BT. 601 a sampling rate of 13.5 MHz is used - yielding a maximum bandwidth of up to 6 MHz - symmetrical pre- and postshoots of up to 1.3% will result according to the standard.

If nevertheless the $\cos^2$ signal is required, it can be generated at any time by SAF and SFF with the aid of the SIGNAL EDIT menu:
After calling up SIGNAL EDIT, select the signal element MOD. PULSE.
This element can be modified

	LOCATION	26.000 µs	(desired location in n x 37.037-ns grid)
	WIDTH	200 ns	
	LEVEL Y	700 mV	(desired amplitude)
	LEVEL CB	0 mV	
	LEVEL CR	0 mV	
(or	LEVEL SC	0 mV)	

and contains the $\cos^2$-pulse at the 6 MHz bandwidth of the SAF or SFF.

Care should be taken that the pulse peak falls within the 37.037 ns grid. If this condition is not adhered to, the pre- and postshoots will be asymmetrical since the 13.5-MHz samples produced by the generator are then not symmetrical about the pulse center.

It is recommended to adjust for symmetrical pre- and postshoots with the aid of an oscilloscope whenever the timing of the 2T pulse varies.

Supplement to SGPF, SAF and SFF manual.