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Christopher P. Harris

Reg. No.

Name of Person Signing

Signature P. Semi

PATENT <

REEL: 012349 FRAME: 0789

Assignment

## ASSIGNMENT

Attorney Docket No. TI-32987

WHEREAS, I, the undersigned inventor (or one of the undersigned joint inventors), of residence as listed, having invented certain new and useful improvements as below entitled, for which application for United States Letters Patent is made, the said application having been executed on the date set forth below; and

WHEREAS, TEXAS INSTRUMENTS INCORPORATED, a corporation organized and existing under the laws of the State of Delaware, with a place of business at 7839 Churchill Way, M/S 3999, Dallas, Texas 75251, is desirous of acquiring my entire right, title and interest in and to the said invention, and to the said application and any Letters Patent that may issue thereon;

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, I hereby sell and assign to the said TEXAS INSTRUMENTS INCORPORATED, its successors and assigns, my entire right, title and interest in and to the said invention and in to the said application and all patents which may be granted therefor, and all divisions, reissues, substitutions, continuations, and extensions thereof; and I hereby authorize and request the Commissioner of Patents and Trademarks to issue all patents for said invention, or patent resulting therefrom, insofar as my interest is concerned, to the said TEXAS INSTRUMENTS INCORPORATED, as assignee of my entire right, title and interest.

I also hereby sell and assign to TEXAS INSTRUMENTS INCORPORATED, its successors and assigns, my foreign rights to the invention disclosed in said application, in all countries of the world, including the right to file applications and obtain patents under the terms of the International Convention for the Protection of Industrial Property, and of the European Patent Convention, and further agree to execute any and all patent applications, assignments, affidavits, and any other papers in connection therewith necessary to perfect such patent rights.

I hereby further agree that I will communicate to said TEXAS INSTRUMENTS INCORPORATED, or to its successors, assigns, and legal representatives, any facts known to me respecting said invention, and at the expense of said assignee company, testify in any legal proceedings, sign all lawful papers, execute all divisional, continuation, reissue and substitute applications, make all lawful oaths, and generally do everything possible to aid said TEXAS INSTRUMENTS INCORPORATED, its successors, assigns and nominees to obtain and enforce proper patent protection for said invention in all countries.

IN WITNESS WHEREOF, I hereunto set hand and seal this day and year;

TITLE OF INVENTION	DECIMATED NOISE ESTIMATION AND/OR BEAMFORMING FOR WIRELESS COMMUNICATIONS
SIGNATURE OF INVENTOR AND NAME	Awid Patrick Magee  David Patrick Magee
DATE	10/23/01
RESIDENCE (CITY AND STATE)	Plano, Texas
DATE APPLICATION EXECUTED	10/23/01

PATENT REEL: 012349 FRAME: 0790

TITLE OF INVENTION	DECIMATED NOISE ESTIMATION AND/OR BEAMFORMING FOR WIRELESS COMMUNICATIONS
SIGNATURE OF	H. Suinath
INVENTOR	
AND NAME	Srinath Hosur
DATE	23 Oct. 2001
RESIDENCE (CITY AND STATE)	Plano, Texas
DATE APPLICATION EXECUTED	23 oct. 2001